

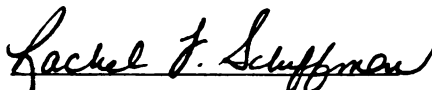


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Assessment of the Social Support Relationship
Between Lay Community Volunteers
and Women with At-risk Pregnancy

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**ASSESSMENT OF THE SOCIAL SUPPORT RELATIONSHIP
BETWEEN LAY COMMUNITY VOLUNTEERS
AND WOMEN WITH AT-RISK PREGNANCY**

By

Carol Ann Ludwick Powers

A THESIS

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ABSTRACT

ASSESSMENT OF THE SOCIAL SUPPORT RELATIONSHIP BETWEEN LAY COMMUNITY VOLUNTEERS AND WOMEN WITH AT-RISK PREGNANCY

By

Carol Ann Ludwick Powers

This secondary analysis of data described lay volunteers' assessments of their social support relationships with at-risk pregnant women and investigated associations between their assessments and psychosocial characteristics and behaviors of the support recipients. The sample consisted of 64 dyads: predominantly low income and minority support recipients from an urban setting, and their paired support providers. Providers' Assessment of the Support Relationship scale scores showed a positive mean assessment and accounted for a small but significant percentage of the variance in the recipient's participation in the relationship. Association between provider's assessment and psychosocial characteristics of perceived social support, perceived stress, and depression in the support recipient was not significant. The study provides preliminary evidence that positive support relationships can develop between lay support providers and at-risk pregnant women and that high perceived stress and depressive symptomatology do not preclude formation of a positive relationship. The implication for primary care providers is that the use of lay support providers for augmenting social support may be considered as a viable option.

To the healthCARE workers in Muskegon, lay community volunteers
who have faithfully kept the vision.
To Dan, for his gifts of encouragement and time,
and for always believing in me.
To Abby and Ben and Elizabeth, our children,
who as fellow students taught me to just do it.
To my parents, who rooted me in caring.

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TABLE OF CONTENTS

LIST OF TABLES	viii
LIST OF FIGURES	ix
INTRODUCTION	1
Statement of the Problem	3
CONCEPTUAL DEFINITIONS	5
Assessment of the Support Relationship	5
Participation in the Support Relationship	8
Psychosocial Characteristics	9
Perceived Social Support	9
Perceived Stress	10
Depression	11
Adequacy of Prenatal Care	11
THEORETICAL FRAMEWORK	13
REVIEW OF THE LITERATURE	19
Lay Health Worker Social Support Interventions during Pregnancy	19
Evaluation of Support Relationships by the Relationship Participants	22
Social Support related to Adequacy of Prenatal Care	23
Psychosocial Characteristics of Individuals related to Interaction	24
METHODS	28
Study Design	30
Sample	30
Instruments	31
Assessment of the Support Relationship Scale	31
Measure of Perceived Support	32
Perceived Stress Scale	32
Center for Epidemiological Studies-Depression Scale	33
Operational Definitions of Variables	34
Assessment of the Support Relationship	34

Participation in the Support Relationship	34
Adequacy of Prenatal Care.	35
Psychosocial Characteristics of the Support Recipient	36
Procedures	36
Data Analysis	37
Demographics	37
Research Question 1	37
Research Question 2	37
Research Question 3	37
Research Question 4	38
Research Question 5	38
Assumptions	38
Limitations	39
Protection of Human Subjects	40
RESULTS	41
Sample Description	41
Results Related to Research Questions	43
Research Question 1	43
Research Question 2	43
Research Question 3	44
Research Question 4	45
Research Question 5	46
DISCUSSION	48
Support Recipients	49
Demographics	49
Psychosocial Characteristics	49
Providers' Relationship Assessments	53
Participation in the Support Relationship	55
Participation in Prenatal Care	57
Relationship between Psychosocial Characteristics and Assessment	59
IMPLICATIONS for the ADVANCED PRACTICE NURSE in PRIMARY CARE	61
IMPLICATIONS for FUTURE RESEARCH	65
SUMMARY	68
APPENDIX A: Instruments	70
APPENDIX B: Procedures for Primary Study	74

APPENDIX C: UCRIHS Approval	75
APPENDIX D: Permission to Access Data	76
APPENDIX E: Table E1 Summary of Adequacy of Prenatal Care Utilization Data . . .	77
LIST OF REFERENCES	78

LIST OF TABLES

Table 1 - Frequency and Percent of Demographic Characteristics of Support Recipients and Support Providers	42
Table 2 - Support Provider's Assessment of the Support Relationship	44
Table 3 - Summary of Stepwise Regression Analysis for Variables Predicting Participation in the Relationship	46
Table 4 - Mean Provider's Assessment of Relationship Scores by APNCU Category	47
Table 5 - Descriptive Statistics for Psychosocial Characteristics of Support Recipients	47
Table E1 - Summary of Adequacy of Prenatal Care Utilization Data	77

LIST OF FIGURES

Figure 1 - King's conceptual framework: Dynamic interacting systems	14
Figure 2 - Conceptualization of the support relationship within King's interacting systems framework	16

INTRODUCTION

Pregnancy is a significant life cycle transition, comprising extensive physiological, psychological, and social changes (Friedman, 1992; Thompson, 1990). Adaptation in roles, expectations, demands, and social relationships is required. Such transition periods are typically associated with increased stress, which has been shown to have adverse effects on both physical and psychological health (Cobb, 1976; Cohen & Williamson, 1988; Affonso et al., 1991). Although research findings have been equivocal (Istvan, 1986; Lobel, 1994), maternal stress during pregnancy has been associated with increased incidence of preterm delivery, low birth weight, and maternal psychological distress (Lobel, Dunkel-Schetter, & Scrimshaw, 1992; Newton & Hunt, 1984; Norbeck & Tilden, 1983; Wadwa, Sandman, Porto, Dunkel-Schetter, & Garite, 1993; Zuckerman, Amaro, Bauchner, & Cabral, 1989). Pregnant women of low socioeconomic status are at greater risk for stress-mediated effects on their pregnancy because they face chronic everyday stressors associated with poverty (Hoffman & Hatch, 1996; Makosky, 1982; Olds et al., 1997; Turner, Wheaton, & Lloyd, 1995). The stressful life conditions of this population have been associated with increased risk for the development of depressive symptomatology (Hall, Gurley, Sachs, & Kryscio, 1991; Hobfoll, Ritter, Laven, Hulsizer, & Cameron, 1995; Kaplan, Roberts, Camacho, & Coyne, 1987; Seguin, Potvin, St.-Denis, & Loiselle, 1995; Zuckerman et al., 1989), and are compounded by the effects of social isolation (Belle, 1982; Hobfoll et al.; Kaplan et al.; Orr & James, 1984).

Social support has been shown to have a protective effect on health particularly in times of crisis and in major developmental transitions (cf. Berkman, 1984; Cobb, 1976). This effect is proposed to result from moderation of the stress reaction, a so-called stress-buffering effect (Cohen & Wills, 1985; Norbeck & Tilden, 1983), whereby a person's perception or appraisal that support is available from significant others reduces the intensity of the stress response (Wethington & Kessler, 1986). Research evidence has suggested positive associations between social support during pregnancy and the health of both mother and infant (Collins, Dunkel-Schetter, Lobel, & Scrimshaw, 1993; Heins, Nance, & Ferguson, 1987; Nuckolls, Cassel, & Kaplan, 1972; Oakley, Rajan, & Grant, 1990; Poland, Giblin, Waller, & Hankin, 1992; Rothberg & Lits, 1991; Unger & Wandersman, 1985).

An intervention model for the provision of social support, which has attracted the attention of policymakers, involves the use of lay community volunteers to provide social support during pregnancy and early parenting through a one-to-one caring relationship (Gottlieb, 1988). Following this intervention model, indigenous women are trained to provide social support in the home environment, in a nonhierarchical relationship that naturally respects the values, beliefs, realities, and cultural norms of the client (Lapierre, Perreault, & Goulet, 1995). The present study focused on such an intervention, examining the support relationship between trained volunteer mothers from the community (support providers) and at-risk pregnant women (support recipients) participating in the Mothers Offering Mothers Support (MOMS) Program. The MOMS program was initiated as a social support intervention to provide a one-to-one caring relationship for pregnant

women at risk for preterm delivery or delivery of a low birth weight infant by virtue of medical or socioeconomic risk factors (Roman, Lindsay, & Moore, 1997). Support was provided by a volunteer veteran mother who shared similar life circumstances with the pregnant woman and had had a similar experience of at-risk pregnancy. The purpose of this study was to describe the support provider's assessment of the support relationship, and to investigate associations between the provider's assessment of the relationship and selected psychosocial characteristics of the support recipient, as well as the recipient's participation in the relationship and in prenatal care. The perspectives of the provider and the recipient relative to relationship assessment were also compared.

Statement of the Problem

Most studies evaluating social support interventions of this type have focused on such outcomes as reduced incidence of low birth weight or preterm infants (Heins et al., 1987; Julnes, Konefal, Pindur, & Kim, 1994; Poland et al., 1992; Spencer, Thomas, & Morris, 1989) or the mother's participation in prenatal care (Heins et al.; Julnes et al.; Poland et al.). The results of these studies have been nondefinitive. What is lacking is empirical research on the support relationship itself, attempting to uncover what is at the core of a positive helping relationship and to identify the psychosocial characteristics of women most likely to participate in and benefit from interventions of this type.

Support relationships are influenced by many variables, variables within each of the participants as well as variables of the relationship and its environmental context, including specific stressors (Dunkel-Schetter, Blasband, Feinstein, & Herbert, 1992). Most of the social support research has been approached from the perspective of the support recipient

(Dunkel-Schetter et al., 1992; House & Kahn, 1985). “As a result, we know almost nothing about the perceptions of the provider or the degree of congruence between the two actors’ perceptions, yet degree of congruity has important implications for the quality and the effects of support, as well as for the probability that it will continue” (Shumaker & Brownell, 1984, p. 18-19). By looking at the relationship from the perspective of the support provider, this study attempted to fill a gap in the social support literature.

The present study, conducted through a secondary analysis of data, addressed the following questions:

- 1) What is the support provider’s assessment of the support relationship, globally and specifically in terms of contacting, communicating with, and helping the recipient mother?
- 2) Is there a positive correlation between the provider’s assessment and the recipient’s assessment of the support relationship?
- 3) Does the provider’s assessment of the support relationship predict the support recipient’s participation in the support relationship?
- 4) Is adequacy of prenatal care for the recipient mother associated with the provider’s assessment of the support relationship?
- 5) Is there an association between the recipient mother’s psychosocial characteristics of perceived social support, perceived stress, and depression and the provider’s assessment of the support relationship?

The support relationship between an indigenous lay support provider and an at-risk pregnant woman was the key to the intervention model in the present study. The more that support relationship is understood and related to relevant psychosocial variables in the

target population, the more knowledgeable primary care providers can be in implementing and facilitating social support enhancement in diverse settings. This type of intervention holds promise for use particularly in primary care settings in economically disadvantaged communities, where the benefits of providing outreach and social support through home visiting have been recognized as complementary to traditional prenatal care, but where limited financial and professional resources are available for the provision of such services (Halpern & Lerner, 1987; Julnes et al., 1994; Klerman, 1990). The identification and training of indigenous support providers and the supervision and support of their work, along with identification of pregnant women who could benefit from such a social support relationship, would be included in the role of the advanced practice nurse (APN) as empowerer and change agent.

Conceptual Definitions

Assessment of the Support Relationship

The focus of the present study was the assessment of the support relationship by the support provider in that relationship. The support relationship which was assessed has not been conceptually defined as such in the literature. Gottlieb (1981) acknowledged it, however, when he referred to “the interpersonal processes which may lie at the heart of social support” (p. 205). It is essentially a therapeutic or helping relationship, in this case involving a lay person in the helper role. Kanfer and Goldstein (1991) specified four elements that distinguish a helping relationship from other interpersonal interactions: it is unilateral, in that it focuses on the needs and problems of only one of the participants, the client or recipient; it is systematic, in that there is a specified purpose or therapeutic goal;

it is formal in its intentionality, which includes training of the helper and informed consent by the recipient; and it is time-limited according to the guidelines of the intervention. A positive helping relationship is characterized by feelings of liking, respect, and trust between provider and recipient (Goldstein & Higginbotham, 1991). The relationship is enhanced when the individuals share a common culture and language, have similar backgrounds, values, and attitudes, and have mutual interests and experiences (Giblin, 1989; Goldstein & Higginbotham). These similarities give the support provider an empathic understanding of the recipient's world and her perspective of her difficulties and the barriers she must overcome (Cohen & McKay, 1983). A positive relationship will be evidenced in openness and communication in interaction (Goldstein & Higginbotham). On the other hand, if interaction generates feelings of rejection, lack of self-worth, or powerlessness in either participant, it will be avoided, resulting in failure of the relationship (Chalmers, 1992). For this study, the support relationship was defined as an interactive interpersonal process between two individuals who share a common background and culture, which has as its goal the provision of social support to one of the participants, the support recipient, by the other, a lay support provider.

The social support that is provided in supportive interactions is referred to as received or enacted support (Barrera, 1986), and is classified under three categories based on the conceptualization of social support by House (1981): emotional support (caring and esteem), tangible or instrumental support (tangible goods and services), and informational support (advice and guidance) (Collins et al., 1993; Cronenwett, 1985; Dunkel-Schetter, Folkman, & Lazarus, 1987; Gottlieb, 1978; Sarason, Sarason, & Pierce, 1990; Shumaker

& Brownell, 1984; Unger & Wandersman, 1985). These categories of support define the resources that are actually provided in supportive interactions and comprise the functional dimensions of social support (Cohen & Wills, 1985). In the intervention under study here, emotional support was provided through listening and the development of a caring relationship, focusing on the strengths of the support recipient; instrumental support consisted of giving tangible assistance with such needs as transportation and child care; and informational support involved sharing accurate information about pregnancy, birth, and community resources, as well as modeling positive parenting (Roman et al., 1997). In layman's terminology, the provision of support resources is most often identified as "helping", which will be the conceptual term used in this study.

The recipient's sense of being supported, however, derives not so much from what is done by the support provider per se, but from what the provider's behavior or manner signifies to the recipient about her level of involvement and engagement in the relationship (Pearlin, Lieberman, Menaghan, & Mullan, 1981; Sarason et al., 1990). Cobb (1976), in his classic work, defined social support as "information leading the subject to believe that he is cared for and loved...esteemed and valued...[and] belongs to a network of communication and mutual obligation" (p. 300). To establish a positive helping relationship, the support provider must in some way be able to communicate such information to the support recipient.

The response of the recipient to support provision is equally important in supportive interactions. An accepting response by the recipient to the caring and concern that the provider invests in the relationship signals the recipient's joint commitment to the support

process. The support recipient must enable the support process to proceed by opening the way for the support provider to contact her, by engaging in communication, and by sharing responsibility for her health. The assessment of the support relationship was defined, for this study, as each participant's subjective appraisal of the degree of engagement in relationship within the interpersonal dyad, as evidenced in contact, communication, and the giving or receiving of help.

Participation in the Support Relationship

With the development of a positive support relationship, the support provider essentially becomes a member of the recipient's social support network, within the specified time and purpose limits of the intervention (Thompson, 1990). The support network is the structural dimension of social support, referring to the web of connections between an individual and significant others in her environment (Berkman, 1984; Mercer & Ferketich, 1988). Social networks operate under distinctive cultural blueprints which dictate their norms related to helping, including their patterns of help-seeking and the meanings that support takes on within their context (Gottlieb, 1988). Indigenous helpers such as those in the intervention under study, by virtue of their similar life experiences and personal characteristics, are especially suited to become meaningful sources of support to persons within their natural social networks (Gottlieb).

Measureable features of support networks include size, composition (kin or nonkin), density (patterns of interconnectedness), accessibility, frequency of contact, and durability over time (Berkman, 1984; Cronenwett, 1985; Cutrona, 1986; Sarason et al., 1990; Unger & Wandersman, 1985). Frequency of contact between network members is an index of

accessibility within their relationship (Cutrona, 1986), signaling their degree of openness to each other. Participation in the support relationship was defined, for this study, as engagement in the relationship through contact between support provider and support recipient. Although there is nothing in contact itself which would indicate the quality of the contact, contact is essential to the process of relationship formation and development.

Psychosocial Characteristics

The interactional view of social support presented by Sarason et al. (1990) holds that “social support reflects the needs, responses, and perceptions of relationship participants and their mutual influence” (p. 5). That is to say, the personal characteristics of both relationship participants, as well as their environmental situation, influence their ability to engage in interaction that is supportive (Shumaker & Brownell, 1984). For this secondary analysis, measures of three selected psychosocial characteristics of the support recipient were examined for their association to relationship assessment: perceived social support, perceived stress, and depression.

Perceived Social Support. Perceived social support is the dimension of social support that has been most consistently related to health outcomes (Kessler & McLeod, 1985; Mercer & Ferketich, 1988; Wethington & Kessler, 1986). It is referred to by Gottlieb (1988) as “a psychological sense of support” (p. 36). Social support researchers have identified and measured two distinct dimensions of perceived support: a person’s sense (perception) that help will be available if and when it is needed, and a person’s subjective appraisal of adequacy of and satisfaction with available support (Barrera, 1986; Cutrona, 1986; Jacobson & Frye, 1991; Sarason et al., 1990; Schaefer, Coyne, & Lazarus, 1981).

Perceived social support, for this study, was conceptualized as the extent to which an individual feels that her needs for help from significant others are and will continue to be satisfied. The social support that is *perceived* to be available has been shown to be more important than *received* support in mitigating the negative effects of life event stressors (Wethington & Kessler, 1986), through its effect on the appraisal of stressful situations.

Perceived Stress. Stress is commonly defined as an imbalance between demands or stressors and available coping resources (Cohen, Kamarck, & Mermelstein, 1983; Wilcox & Vernberg, 1985). The majority of studies of stress use objective major life event measures to indicate level of stress (Cohen & Wills, 1985), although daily hassles, the chronic, distressing demands of everyday life, have been more strongly associated with stress-related symptomatology (Hall, 1990; Kanner, Coyne, Schaefer, & Lazarus, 1981). Neither major life events nor chronic daily hassles, however, cause stress in and of themselves (Cohen & Williamson, 1988). Stress is proposed to result, rather, from an individual's perception of events or situations as being harmful, challenging, or threatening, coupled with her appraisal that her ability to control and cope with the event is compromised (Lazarus, DeLongis, Folkman, & Gruen, 1985; Walker, 1989). Cohen & Williamson defined perceived stress as "the perceived degree to which environmental demands exceed abilities to cope" (p. 37). As a global perception of recent stressors, perceived stress should reflect the combined effects of major life events and chronic daily stressors, as well as the assessment of availability of support and coping resources (Cohen et al., 1983). For this study, perceived stress was defined as the subjective appraisal of the

degree to which life is out of control or overloaded by stressors, such that coping is compromised (Wadhwa et al., 1993).

Depression. Depressive symptoms during pregnancy have been associated with high levels of life event stress (Zuckerman et al., 1989), chronic stress, and inadequate social support (Seguin et al., 1995). In studies of pregnant women of low socioeconomic status, rates of self-reported depressive symptomatology as high as 47% have been reported (Seguin et al.). Depressive symptomatology refers to symptoms of current depressed mood, including feelings of helplessness, hopelessness, and guilt, loss of appetite, and sleep disturbance, as reported by the person experiencing the symptoms on a self-report measure (Radloff, 1977; Zuckerman et al.). Although these same symptoms are reported in clinically depressed persons, the diagnosis of clinical depression requires a structured psychiatric interview. Studies have shown only limited agreement between self-report measures of depressive symptomatology and the actual clinical diagnosis of depression (Affonso et al., 1991; Holcomb, Stone, Lustman, Gavard, & Mostello, 1996). For this study, depression was defined as the self-reported assessment of the prevalence of depressive symptoms being experienced within the past week (Comstock & Helsing, 1976), and is an indicator of risk for clinical depression.

Adequacy of Prenatal Care

Adequacy of prenatal care is a realistic therapeutic goal for all pregnant women. Adequate prenatal care has been associated with significant improvement in infant birth weight and gestational age distributions (Alexander & Cornely, 1987; Alexander & Korenbrot, 1995; Kotelchuck, 1994b; Murray & Bernfield, 1988). Empirical measures of

the adequacy of prenatal care are most often quantitative indices based on month of pregnancy in which care is initiated and total number of prenatal visits, adjusted for length of gestation (Alexander & Cornely, 1987; Kotelchuck, 1994a).

Many factors influence the adequacy of the prenatal care a pregnant woman receives. The significant factor for this study was the support recipient's participation in prenatal care, which was conceptualized as a positive health behavior on her part, reflecting her belief in the benefits of such care for herself and her unborn child and her motivation to seek that care (Alexander & Cornely, 1987; Balcazar, Aoyama, & Cai, 1991). The recipient's participation in care is represented by two components of adequacy of prenatal care indices, the month in which she begins care and the total number of visits she makes. An index which differentiates these two dimensions of participation in care is Kotelchuck's (1994a) Adequacy of Prenatal Care Utilization (APNCU) Index. For this study, adequacy of prenatal care was defined as the support recipient's participation in prenatal care both by making an initial prenatal care visit and by presenting herself regularly for subsequent prenatal care appointments. It is important to note that this definition of adequacy of prenatal care does not account for barriers that may prevent the support recipient from seeking care or from continuing in care. Furthermore, the qualitative aspects of the prenatal care she receives, including its content, clinical adequacy, and cultural appropriateness, are not addressed by this measure of adequacy and may have a significant influence both on her participation in care and on pregnancy outcomes (Korenbrodt, Simpson, & Phibbs, 1994). Adequacy of prenatal care, by this definition, simply indicates the support recipient's exposure to prenatal care by her own initiative.

To provide an overview linking the concepts presented here, both support provider and support recipient form an assessment of their relationship. These assessments are based upon the helping behaviors of the support provider and the response of the support recipient, through her participation in the support relationship by way of contact and communication. The assessments reflect both participants' degree of engagement in the relationship. The assessments may be influenced by the psychosocial characteristics of perceived social support, perceived stress, and depression in the support recipient. Furthermore, the degree of engagement in the support relationship may have an effect on adequacy of prenatal care for the support recipient. The conceptual definitions for the study variables provide the foundation for the theoretical framework.

Theoretical Framework

The conceptual framework underlying the present study is King's (1981) framework of dynamic interacting systems, which provides "a way of understanding human beings as individuals interacting with other individuals within a variety of environments and influenced by perceptions, roles, past experiences, and concrete situations" (p. viii). King presents each human being as a unique open system (personal system) in continuous interaction both with other unique human beings (interpersonal systems) and with larger organized groups, communities, and systems within the total environment (social systems). These open systems (Figure 1) have permeable boundaries, permitting a reciprocal interchange of information, energy, and substance through interaction. Interaction is defined as a dynamic interpersonal process between personal systems, with each system influencing and being influenced by the other (Daubenmire & King, 1973). Each

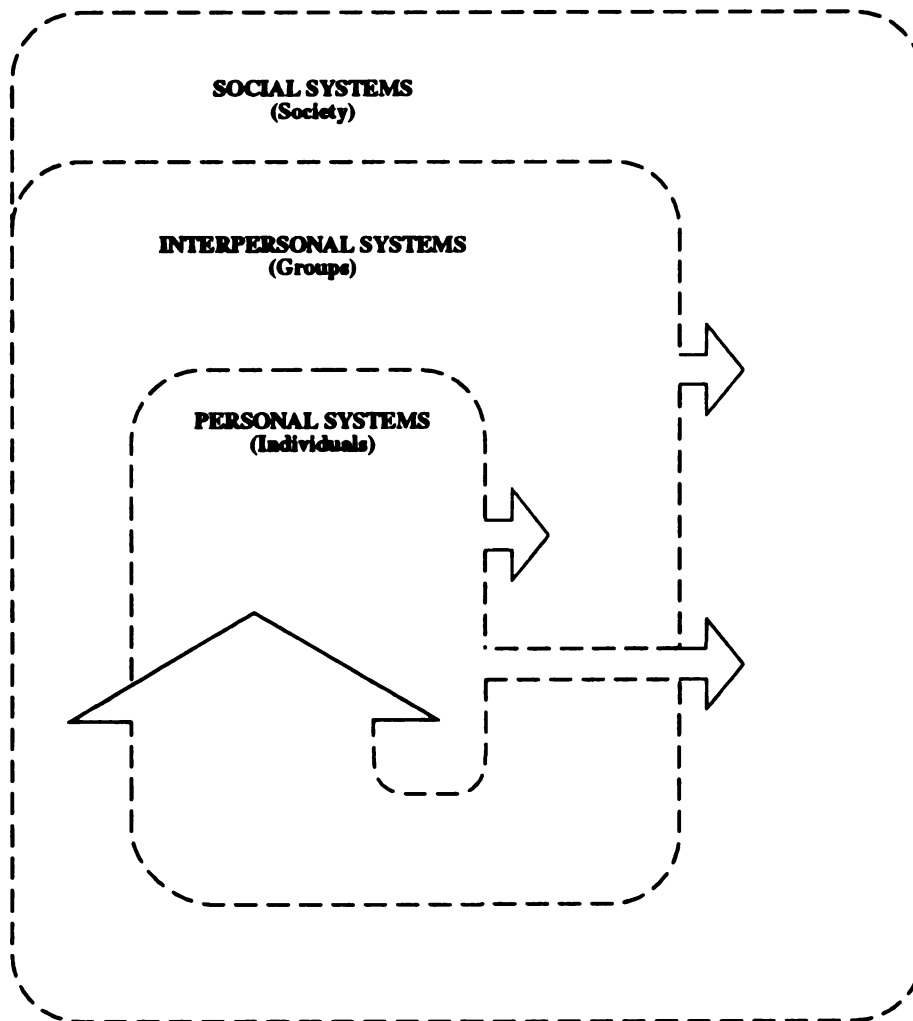


Figure 1. King's conceptual framework: dynamic interacting systems.

From Toward a theory for nursing (p. 20) by I.M. King, 1971, New York: John Wiley & Sons. Copyright 1971 by John Wiley & Sons.

interpersonal interaction is shaped by a complex set of variables: by the personal characteristics and perceptions of each participant, as well as by environmental, situational, and social system variables (King, 1992). Through interpersonal interactions, individuals establish relationship with one another (Frey, 1989).

For this study, the support recipient, a pregnant woman participating in the MOMS program, was the central personal system (See Figure 2). The interpersonal system is conceptualized as the social support network for the support recipient. The support provider, a trained veteran mother, is shown in the model as a distinct personal system within the social support network. The interpersonal interaction between support recipient and support provider, conceptualized as the support relationship, was the focus of the study. Their interaction required “mutual presence” (King, 1981, p. 85), which is evidenced as contact and communication. Communication, the exchange and interpretation of information within an interaction, is essential to the interaction process (King, 1968). “The way in which each person perceives the communication will determine the response to the other person” (King, 1981, p. 84).

Perception is a primary concept in King’s (1981) framework. Perception exists within the personal system and is “each human being’s representation of reality...related to past experiences, to concept of self, to biological inheritance, to educational background, and to socioeconomic groups” (p.20). The information that an individual takes in from the environment through the senses is organized and interpreted, based on past experiences and present needs and values, and then transformed into that person’s unique perception. Both support provider and support recipient in this study bring to their relationship

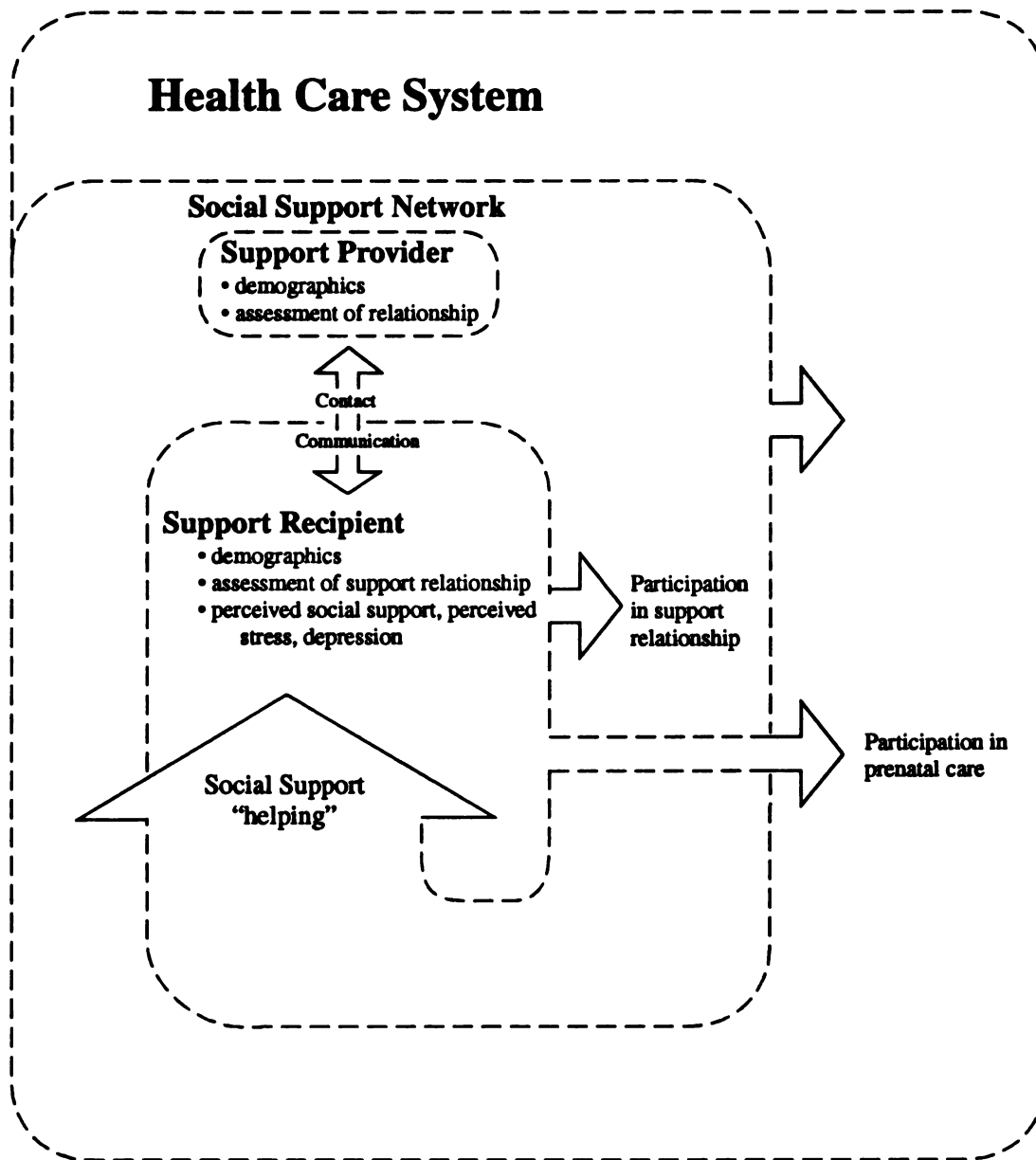


Figure 2. Conceptualization of the support relationship within King's interacting systems framework. Adapted from Figure 1.



unique perspectives or world views (King, 1968), which are their perceptions as shaped by such personal demographic characteristics as age, ethnic background, education, and socioeconomic status, shown in Figure 2 within their personal systems. The fact that they are paired for the intervention on the basis of similar life experiences and cultural backgrounds makes it more likely that their fundamental perceptions will be congruent. As they interact, and based on their individual processing of what is communicated within their interaction, each forms a unique perception of their relationship. This perception is conceptualized as the assessment of the support relationship within their personal systems (Figure 2).

Perception influences human interaction through its effect on a person's actions (King, 1981). "Behavior is an expression of an individual's perception" (King, 1968, p. 28), and, as such, behavior conveys a message. For this study, participation in the support relationship and participation in prenatal care were identified as desirable behaviors on the part of the support recipient. Arrows proceeding from the recipient's personal system in Figure 2 indicate participation in the support relationship within the interpersonal system and participation in prenatal care within the social system. The recipient's assessment of the support relationship will, theoretically, influence her willingness to continue her participation in that relationship. It is hypothesized that that assessment will also influence her participation in prenatal care as the social system extension of the support relationship. Participation in prenatal care is a factor in attaining adequacy of prenatal care. These behaviors on the part of the support recipient convey information to the support provider, communicating the recipient's degree of engagement in the support relationship.

The support provider, similarly, has behaviors that flow from her perceptions. The goal of the support relationship is the provision of social support to the support recipient. Social support, conceptualized in this study as helping, is shown in Figure 2 as the arrow proceeding from the interpersonal system into the personal system of the support recipient. The provider's assessment of the support relationship will, theoretically, influence her provision of helping behaviors, which will in turn influence the recipient's perception of being helped (Dunkel-Schetter et al., 1992).

Perception may be altered by intense emotional states that are capable of distorting an individual's intake and processing of information (King, 1981). King views stress as inherent in the interaction of individuals with their environment. Events (stressors) that occur in a person's life are perceived as positive or negative, beneficial or harmful, and that perception determines the person's response to them. An individual perceiving a disproportionate amount of stress may close in, making personal system boundaries less permeable and thus limiting interaction (King). Perceived social support, perceived stress, and depression are psychosocial characteristics of the support recipient (Figure 2) that have the potential to affect the support relationship through their effect on the perception and interactive behavior of the support recipient. The support recipient who feels unsupported, stressed, and/or depressed may be either more or less receptive to support that is available, and may also, based on her level of responsiveness, affect the probability that others will behave in supportive ways toward her (Cutrona, 1986). These characteristics of the support recipient will therefore, theoretically, influence

communication, relationship formation, and the assessment of the support relationship by both provider and recipient.

Review of Literature

A review was undertaken of empirical studies that included as variables the key concepts for this study. Findings from those studies having relevance to the research questions for this study will be reported under the following headings: (a) lay health worker social support interventions during pregnancy, (b) evaluation of support relationships by relationship participants, (c) social support as related to adequacy of prenatal care, and (d) psychosocial characteristics of individuals as related to interaction. Critique and implications of the findings for this study will be presented at the end of each section.

Lay Health Worker Social Support Interventions during Pregnancy

The purpose of this part of the review was to examine what has been studied thus far in relation to lay social support interventions during pregnancy. Four studies were found in the literature that evaluated the impact of programs in which social support was offered to pregnant women by lay support providers (Heins et al., 1987; Julnes et al., 1994; Poland et al., 1992; Spencer et al., 1989). In all four studies, the support intervention was targeted to women at risk for poor pregnancy outcome, specifically adolescents (Heins et al.; Julnes et al.), minorities (Julnes et al.; Poland et al.), low income women (Heins et al.; Julnes et al.; Poland et al.; Spencer et al.), and women with a history of poor pregnancy outcome (Spencer et al.). The support providers were women with cultural and economic backgrounds similar to the women they helped, who lived in the target community and

received special training to implement the intervention, with the exception that Spencer et al. described the support providers as “employed on the basis of personality and general life experience”, with “no formal qualifications in the health or social services” (p. 282). For each study, a comparison group which did not receive the intervention was utilized; however, only Spencer et al. employed a prospective randomized controlled trial.

The primary focus of each of the reviewed studies was to show evidence of an effect of the support intervention on birth outcomes: birth weight and/or gestational age of the infant. The results, however, were nondefinitive. Spencer et al. (1989), with outcome data available for 1227 women, found no significant influence of the intervention on mean birth weight, on the proportion of low birth weight infants, or on gestational age in the comparison groups. Heins et al. (1987) found significantly fewer low birth weight infants among adolescent primigravidas who comprised the intervention group; and Poland et al. (1992) found a significantly higher mean birth weight for the intervention group, as compared to the matched comparison group. Julnes et al. (1994) obtained comparable infant birth weights for pregnant women receiving social support from a resource mother and those receiving prenatal care from a multidisciplinary clinic-based program. Roghmann (1985) cautions that to look at these objective health indicators as the only legitimate outcomes for the evaluation of one-to-one care-giving relationships may be misdirected, particularly in light of the complex psychosocial and socioeconomic factors operative in these high-risk populations.

Heins et al. (1987), Poland et al. (1992), and Julnes et al. (1994) also looked at the effects of the social support intervention on the mothers’ participation in prenatal care. All

three studies found improved participation in prenatal care in the intervention group, as evidenced by significantly earlier entry into care (Julnes et al.), a significant increase in the number of prenatal visits (Poland et al.), and significantly fewer women with inadequate prenatal care, based on broad public health indices (Heins et al.). Poland et al. noted a direct positive association between the number of kept prenatal appointments and the intensity of contact within the support intervention.

Study design was a significant limitation in the four studies reviewed. Although Spencer et al. (1989) used a prospective randomized controlled trial, only 271 of the 655 women randomized to the support intervention group accepted the family worker's support. Outcome data for the intervention group, however, were based on infant birth weight and gestational age for all women who received the offer of a family worker, not just those who accepted the offer. The designs for the other three studies were: (1) retrospective case/control, with matching based on Vital Records and Health Statistics data (Heins et al., 1987); (2) case comparison, with random assignment to the intervention group and retrospective selection of a matched comparison group (Poland et al., 1992); and (3) non-experimental, with analysis based on data for all women involved in the two comparison programs who gave birth within a given 12-month period (Julnes et al.). All four studies were affected by selection bias, as receipt of the intervention was dependent upon willingness of the pregnant woman to receive support from a lay provider, even with randomization. Participation in the intervention could then be interpreted as an indication of pre-existing motivational advantage in the pregnant woman, which is particularly of consequence in looking at participation in prenatal care as an outcome.

Evaluation of Support Relationships by Relationship Participants

As the primary purpose of the present study was to describe the lay support provider's assessment of the support relationship, it was important to review other studies that have undertaken an evaluation of support relationships by relationship participants. In none of the studies of lay support provision reviewed in the previous section (Heins et al., 1987; Julnes et al., 1994; Poland et al., 1992; Spencer et al., 1989) was any reference made to the process of relationship formation between lay support provider and the pregnant woman who was being helped or to evaluation of this relationship. The value of indigenouness and cultural identification was highlighted (Heins et al., 1987; Julnes et al., 1994; Poland et al., 1992), but not empirically tested. The only concrete operationalization of the support intervention occurred in Poland et al., with intervention defined as a minimum of three contacts (face-to-face or by phone) between support provider and recipient.

Two studies were found in which participants in a helping relationship involving nurses evaluated their experience in the relationship, one coming from the perspective of the nurse, the other from the perspective of the person being helped. Chalmers (1992), in a qualitative study of the work of experienced health visitors (British nurses with particular training in community health), used a grounded theory design to ascertain how the health visitors conceptualized their practice and evaluated their interventions. Findings from the study were that health visiting involves mutual interaction to which both health visitor and client bring their own needs or goals. The interaction is a complex process in which each party both gives and receives. Both the degree to which the health visitor identifies the

client's needs and gives the appropriate support, and the degree to which the client receives that support and participates in further interaction determine the effectiveness of the intervention.

A study in which social support was provided by nurse midwives to women with a previous history of delivering a low birthweight infant (Oakley et al., 1990) used a mailed post-partum questionnaire to obtain the mothers' evaluation of the midwives' support. Individual questionnaire items were not reported. The authors reported only that the most important aspect of helping identified was "listening" and that the majority of the respondents (94%) considered the midwife support either very or quite helpful.

A gap exists in the social support literature relative to assessment of support relationships by relationship participants. The Chalmers (1992) study contributes empirical support to the theoretical framework presented for the current study. But much remains to be learned about volunteer helping relationships from the people who are involved in them. The aim of the present study was to address that gap.

Social Support related to Adequacy of Prenatal Care

Lia-Hoagberg et al. (1990) found evidence that support or encouragement from others, specifically partner, family, friends, and/or professional caregivers, was a motivator to obtaining prenatal care among low-income women in a multi-ethnic sample. Other studies have pointed to a positive association between social support and (1) health-promoting self-care behaviors in adult populations (Muhlenkamp & Sayles, 1986) and (2) obtaining adequate prenatal care among pregnant women (Higgins, Murray, & Williams, 1994). A study by Pascoe, Milburn, and Haynes (1990) identified informal word of mouth referral

to care, referred to by the authors as informal network support, as a factor in first trimester initiation of prenatal care among unmarried women enrolling for care at a public health prenatal clinic; however, a scale measure of social support in that same study was not significantly related to early entry into care. A study of prenatal care use by women delivering at an inner-city university hospital (Passannante, Espenshade, & Weiss, 1994) obtained a significant relationship between receipt of adequate prenatal care and participation in a special program providing support and education during pregnancy.

These findings, in addition to the findings cited earlier in which three social support interventions were related to improved participation in prenatal care (Heins et al., 1987; Julnes et al., 1994; Poland et al., 1992), would support the hypothesis that a positive support relationship in this present study would be associated with improved participation in prenatal care on the part of the support recipient. It is important to note, however, that none of the reviewed studies constituted a rigorous experimental design to test this association. All of the women included in the studies had presented for prenatal care, which assumes some degree of self-motivation on their part. Furthermore, comparability of studies is limited by diversity of conceptualization and measurement of social support and of adequacy of prenatal care indices.

Psychosocial Characteristics of Individuals related to Interaction

If psychosocial characteristics of relationship participants have the potential to affect the relationship through their effect on participants' perceptions and interactive behavior, as the theoretical model proposes, it is important to look for research evidence of this effect. Exploration of the relationship between depression and interpersonal interaction has

been fairly extensive. Most studies have involved contrived situations: 1) subjects talking by phone with targets with high self-rated depressive symptomatology drawn from a mental health outpatient population (Coyne, 1976; King & Heller, 1984); 2) subjects talking with depressed targets, again by self-rating, face-to-face (Strack & Coyne, 1983); or 3) subjects talking face-to-face with a confederate enacting the depressed role (Notarius & Herrick, 1988; Stephens, Hokanson, & Welker, 1987). Following the conversation, subjects responded to questionnaires measuring their reactions. The results of Coyne's (1976) classic study, cast for participants as a study of the acquaintance process, indicated that subjects who had interacted by telephone with depressed outpatients were significantly more depressed, hostile, and anxious following the conversation than those who had talked to either nondepressed outpatients or to nondepressed controls. In addition, these subjects were significantly less willing to interact with the depressed individuals again. These findings were confirmed in the study by Strack and Coyne, but not in the replication of Coyne's study by King and Heller. However, the rejection of further interaction effect was confirmed by the findings in 9 of 10 studies of depression and social interaction reviewed by Gurtman (1986); the induction of depressed, hostile, or anxious mood in the subject was confirmed by 5 of 7 studies in Gurtman's review.

A recent study by Nezlek, Imbrie, and Shean (1994) focused on the naturally occurring social interactions of a nonclinical population deemed at risk for depression based on scores above the critical threshold score of 16 on the Center for Epidemiological Studies Depression Scale (CES-D) (Radloff, 1977). Measurement of social interaction was based

on standardized interaction diary recordings describing the everyday social interactions of depressed and nondepressed subjects, with entries made at least once daily for 17 days. The results indicated that the social interactions of people classified as at risk for depression were less rewarding in quality as compared with the interactions of persons scoring below 16 on the CES-D. These results, in conjunction with the findings of previous research, led the authors to suggest that "...disturbed interpersonal relationships are hallmarks of depression" (Nezlek et al., p. 1109).

Two studies looked at interaction with a depressed target from the perspective of a subject in a helping role (Notarius & Herrick, 1988; Stephens et al., 1987). Notarius and Herrick found that subjects who used supportive listening in interacting with a confederate enacting a depressed role, as compared with those who tried to give advice or cheer up the person, displayed significantly less negative mood induction and were less rejecting of the depressed target. In the Stephens et al. study, although "helper" subjects who interacted with depressed, as compared with normal, confederates did have a more negative view of their target and were more rejecting of him or her, no significant induction of negative mood in the helper was demonstrated.

Some of the researchers obtained post-interaction questionnaire data from both subjects and targets (Coyne, 1976; Strack & Coyne, 1983; King & Heller, [partial data], 1984). The studies employing confederate methodology, of course, presented the reactions of subjects only (Notarius & Herrick, 1988; Stephens et al., 1987), as did Nezlek et al. (1994), using the interaction diary. In an interactional model, investigating both perspectives of the same interaction improves validity, for "within a given situation,

rejection is a product of the source, target, and the interplay between them” (Gurtman, 1986, p. 100). In keeping with an interactional model, the present study compared the relationship assessments of both participants in the support relationship.

The implications of these interaction studies in relation to the development of an interpersonal relationship with a depressed person are important for this study.

Nevertheless, it is notable that none of the reviewed studies examined the response to depressed targets in the context of an ongoing relationship; rather, with the exception of the Nezlek et al. (1994) study, they studied brief interactions between strangers. Empirical studies relating perceived stress and perceived social support to interaction were not found by this author. The present study was an attempt to fill this gap by demonstrating a relationship between these psychosocial characteristics and the support provider’s assessment of the relationship.

In summary, the literature related to social support interventions during pregnancy involving lay volunteers has focused on measurable outcomes such as low birth weight, preterm delivery, and participation in prenatal care, but studies have not been rigorous in design and results have not been definitive. Qualities of the volunteer support relationship and its meaning and value to the participants have not been researched. There is also limited empirical evidence on the role that psychosocial characteristics of the participants play in the ability to form and maintain these helping relationships. This study contributes to the knowledge base by describing the lay support provider’s assessment of the support relationship, by looking at contact between provider and recipient as a measure of engagement in the relationship, and by relating the relationship assessment to psychosocial

characteristics of perceived support, perceived stress, and depression in the support recipient.

Methods

The primary data from which this study derived were generated from an exploratory study (primary study) of the pilot of the MOMS Program, a social support intervention for at-risk pregnant women initiated by a large metropolitan health system in the Midwest, in collaboration with a state university, in April, 1993 (Roman et al., 1997). The sample for the primary study consisted of 179 MOMS Program participants who delivered before January 1, 1995 (Roman et al.). There was no randomization or comparison group for the primary study. Women were enrolled in the program at the time of their first prenatal care contact, which occurred anywhere from the first to into the third trimester of pregnancy. The women received maternal and infant support services from enrollment through their infant's first year of life.

Support services were provided through a case management model by a nurse-managed community health advisor team consisting of a registered nurse, paid paraprofessional health advocates, and volunteer veteran mothers (support providers). Veteran mothers were recruited from the target communities through advertisements in neighborhood and ethnic newspapers, flyers in local grocery stores and laundromats, and presentations to church and school groups. Eligibility criteria included: (a) having had a positive parenting experience, per self-report of the mother during a personal interview with the program coordinator; (b) a negative criminal history check; and (c) age of at least 21. Volunteers younger than 21 were included only if they showed evidence of exceptional

personal maturity. Preference was given to volunteers who had personally experienced a high-risk pregnancy. Volunteers participated in twenty hours of intensive training in preparation for their role as support providers, with additional monthly inservices provided throughout their time of service. They were paired with enrollees on the basis of geographic proximity, family size, life experience, interests, and ethnicity, where possible, to provide one-to-one social support through a caring relationship. Child care and transportation costs were provided for the volunteers, to facilitate the participation of economically disadvantaged mothers.

The support provided to the at-risk pregnant women was of three types: emotional support, (provided through listening and the development of a caring relationship, focusing on the strengths of the support recipient); instrumental support, (which consisted of giving tangible assistance with such needs as transportation and child care); and informational support, (involving the sharing of accurate information about pregnancy, birth, and community resources, and modeling positive parenting) (Roman et al., 1997). The nature and degree of the intervention varied with the needs of the support recipient, which could range from needing help with child care or information on labor and delivery to dealing with substance abuse or domestic violence. The goal for the support providers was to make contact with their recipient mother at least weekly during the prenatal period.

All contacts with support recipients were documented with reference to type (face-to-face or phone) and purpose (needs identified, referrals made, and type of support given) on monthly activity reports by the volunteer support providers. No documented validation of these reports was available. Nurse team coordinators and team paraprofessionals,

however, also had contact with each support recipient and were responsible for overseeing and supporting the volunteers in their work. Team paraprofessionals collected data from MOMS Program enrollees at the time of their enrollment in the study and again at 34 to 36 weeks' gestation.

Study Design

The current study was a descriptive correlational secondary analysis of data. The intent of the study was to describe the support provider's assessment of the support relationship and to explore associations between this assessment and three psychosocial characteristics of the support recipient, perceived social support, perceived stress, and depression, as well as its relationship to the support recipient's participation in the support relationship and in prenatal care. The relationship assessments of provider and recipient were also correlated, for the limited sample available.

Sample

The sample consisted of 64 dyads composed of MOMS Program participants (support recipients) with their paired support providers. A dyad was included in the sample under the condition that an Assessment of the Support Relationship had been completed by the support provider early (at approximately one month) in the relationship. The 54 support providers, 13 of whom provided support to more than one program participant, had been recruited from target communities and active in the MOMS Program between April, 1993, and December, 1994. MOMS Program participants had been drawn from among pregnant women presenting for care at one of four prenatal clinics in a Midwest metropolitan area. These clinics were located in inner city neighborhoods and served predominantly low

socioeconomic and minority populations. Program participation was open to all on the basis of their voluntary consent, but was limited by the number of support providers available for matching. Some women were specifically referred to the program by clinic social workers, but enrollment remained voluntary.

Instruments

Assessment of the Support Relationship Scale. An assessment measure was developed by Roman (see Appendix A), an investigator for the primary study, to document perceptions of the support relationship by both support providers and support recipients. The measure has two comparable versions, one adapted for use by the support provider, one by the support recipient. Four items from the 9-item assessment tool were selected to comprise an Assessment of the Support Relationship summated rating scale for this study (see Appendix A). The selected items included a global assessment of the relationship, items on ease of making contact and ease of communicating within the relationship, and an item assessing whether help was being provided within the relationship. The items not selected for inclusion in the assessment of relationship scale for this study included three items in which respondents were asked to indicate an explanation when they perceived that there was difficulty in the relationship, an item assessing whether the relationship participants like each other, and an open response item regarding what help was needed from the program. Selection of items was based on the conceptual and theoretical formulation of the assessment of the support relationship concept for this study. The four items selected for use in the Assessment of the Support Relationship scale were scored on a 5-point Likert scale ranging from 1 (poor, difficult, or never) to 5 (great, easy, or all of

the time). There has been no previous reliability or validity testing for this instrument. A Cronbach's alpha of .84 was obtained for the present study. The relationship assessment scale has not been used in any other setting.

Measure of Perceived Support (MPS). Perceived social support was measured using an adaptation of a scale developed by McMillan (unpublished data, 1976), and used by Wandersman, Wandersman, and Kahn (1980). The original 4-item scale measured a person's perception of having sufficient close friends to provide help and act as confidante. Mercer and Ferketich (1988) adapted the original scale, creating the 6-item MPS used in the primary study for this data set (see Appendix A). Examples of scale items include "I feel loved" and "There are people who I can count on to help if I need them". The items are rated on a 5-point scale ranging from 1 (never true) to 5 (almost always true). The one negative item (#3) is reverse scored. Mercer and Ferketich (1988) reported alpha reliabilities of .71 to .80 for the four groups in their study, a sample consisting of predominantly white, married, middle and upper socioeconomic class pregnant women and their mates, one group of which was hospitalized for a high-risk pregnancy-related condition. Cronbach's alpha of .71 was obtained for the current sample.

Perceived Stress Scale (PSS). The PSS is a 14-item measure designed to assess the degree to which respondents perceived their total life circumstances in the last month to be stressful, as in uncontrollable, unpredictable, or overloading (Cohen et al., 1983, p. 387) (see Appendix A). Responses to scale items range on a 5-point scale from 1 (never) to 5 (very often). Sample questions include "How often have you been upset because of something that happened unexpectedly?" and "How often have you felt that things were

going your way?” The 7 positive items (#4, 5, 6, 7, 9, 10, 13) are reverse scored. Cohen et al. reported coefficient alpha reliabilities of .84 to .86 in samples of college students and adult participants in a community smoking cessation program. They reported test-retest reliabilities of .85 at 2 days and .55 at 6 weeks. Internal consistency of .86 was reported in a study sample of predominantly white, married, college-educated mothers of infants (Walker, 1989). The scale has been shown to have a small to moderate correlation with life event measures of stress (Cohen et al.), to be highly correlated with a measure of daily hassles (Wadhwa et al., 1993), and to be substantially correlated with measures of physical symptomatology (Cohen et al; Cohen & Williamson, 1988). Although this scale was highly correlated with the CES-D in two samples of college students (.65 and .76), Cohen et al. demonstrated that the two scales independently predicted physical symptomatology and concluded that the PSS was measuring a different construct. Cronbach’s alpha of .72 was obtained for the present study.

Center for Epidemiological Studies-Depression Scale. Depressive symptomatology was measured using the Center for Epidemiological Studies-Depression Scale (CES-D) (Radloff, 1977). This 20-item self-report measure asks subjects to indicate on a 4-point scale how often they felt or behaved as described during the past week, from 0 (some or none of the time) to 3 (most or all of the time), measuring current levels of depressed mood. The four positive items (#4, 8, 12, 16) are reverse scored. Internal consistency of the scale has been consistently high among all population groups, with reported Cronbach’s alphas of .85 to .90 (Hall, 1990; Hall et al., 1991; Radloff). Validity of the CES-D is based on moderate correlations of the measure with other self-report depression

scales and on the consistently high CES-D scores among those with diagnosed clinical depression (Radloff). The CES-D has been shown to be a valid measure of depressed mood during pregnancy, in spite of the overlap of the somatic items on the scale with common symptoms of pregnancy (Zuckerman et al., 1989), and has been used to measure depressive symptomatology among populations of low-income mothers (Hall et al., 1991; Orr & James, 1984; Zuckerman et al., 1989). A standard cut-off score of 16 or greater has been used to identify persons at risk for depression (Radloff). Cronbach's alpha of .79 was obtained for the present study.

Operational Definitions of Variables

Assessment of the Support Relationship. The assessment of the support relationship between a MOMS Program participant and her matched support provider was based on subjective responses by relationship participants to the four items comprising the Assessment of the Support Relationship scale. The provider's assessment was obtained early in the relationship, approximately one month after initiation. This early assessment had the advantage of providing a prospective view of the relationship, with potentially more predictive power. The recipient's assessment was obtained at 34 to 36 weeks' gestation. The summated score for the four items was used as the measure of the assessment. Possible scores ranged from 4 to 20, with a higher score indicating a more positive assessment of the relationship.

Participation in the Support Relationship. Participation in the support relationship was operationalized as the total number of face-to-face visits plus phone contacts between the support provider and the support recipient from the initiation of the relationship to the

time of delivery. This number was based on records of these visits and phone contacts as entered by the support provider on monthly activity reports.

Adequacy of Prenatal Care. For this study, adequacy of prenatal care was defined quantitatively based on Kotelchuck's (1994a) Adequacy of Prenatal Care Utilization (APNCU) Index, which differentiates two dimensions of prenatal care utilization: (a) adequacy of initiation of prenatal care, and (b) adequacy of care utilization after enrollment or adequacy of received services, based on American College of Obstetricians and Gynecologists standards (ACOG, 1989), and adjusted for gestational age at both initiation of care and at delivery. These two dimensions are then combined to create a single summary index. The resulting summary categories of prenatal care utilization as employed for this study are: (a) inadequate, defined as initiation of care after the 4th month or less than 50% of recommended visits; (b) intermediate, defined as initiation of care by the 4th month and 50-79% of recommended visits; (c) adequate, defined as initiation of care by the 4th month and 80-109% of recommended visits; and (d) adequate plus, defined as initiation of care by the 4th month and 110% of recommended visits (Kotelchuck, 1994a). Month of initiation of prenatal care was based on the month of gestation at the time of the support recipient's first visit to the prenatal clinic, as recorded on the MOMS Program enrollment form. Number of prenatal visits was obtained from the participant's prenatal clinic records and included only the visits which had been scheduled for the purpose of routine prenatal assessment by a primary care provider. Gestational age at birth was defined as the number of completed weeks of pregnancy, based on the date of

the woman's last menstrual period, and was obtained in the primary study from the woman's hospital obstetric record.

Psychosocial Characteristics of the Support Recipient. The three psychosocial characteristics of the support recipient considered in this study were perceived social support, perceived stress, and depression. These characteristics were measured using instruments completed by the support recipient at the time of enrollment in the MOMS Program. Perceived social support was measured using the MPS, as adapted by Mercer and Ferketich (1988). Possible scores ranged from 6 to 30. Perceived social support was treated as a continuous variable with lower scores indicating lower perceived support. Perceived stress was measured using the PSS (Cohen et al., 1983), and was also treated as a continuous variable, with high scores indicating higher levels of perceived stress, with a possible score range of 14 to 70. The CES-D scale was used as the measure of depression, with summary scores ranging from 0 to 60 (Radloff, 1977). A score of 16 or greater was interpreted as indicating a high level of depressive symptoms, based on general population samples in which at least 80% of respondents have scored below 16 (Comstock & Helsing, 1976; Radloff). For this study, depression was treated as a dichotomous variable, as recommended by Nezlek et al. (1994). Those support recipients scoring 16 or more on the CES-D were classified as having high depressive symptomatology; those scoring below 16 were classified as having low depressive symptoms.

Procedures

Variables of relevance to this study were provided in coded form on a disk by the investigators for the primary study. (See Appendix B for Procedures for Primary Study).

Data Analysis

Descriptive statistics were calculated for all study variables, including frequencies, means, and standard deviations, where appropriate, on both total scores and specific scale components. For all analyses, the alpha level of significance was set at .05.

Demographics. Descriptive statistics were computed for the demographic characteristics of support providers and support recipients, including age, ethnicity, marital status, educational level, employment status, and insurance status, and were reported by percentages, means, and standard deviations as appropriate.

Research Question 1. Descriptive statistics were used to describe the support provider's assessment of the support relationship by Assessment of the Support Relationship scale items: global assessment, contacting, communicating, and helping. The Assessment of the Support Relationship scale score was computed through summation of the four items, with mean and standard deviation reported.

Research Question 2. Pearson product-moment correlation was utilized to designate the magnitude of the relationship between Assessment of the Support Relationship scale scores for the provider and the recipient within each dyad.

Research Question 3. Stepwise linear regression was used for this analysis, with provider Assessment of the Support Relationship score as the predictor variable and participation in the relationship as the criterion variable. Length of the support relationship (computed as weeks from date of enrollment in the MOMS Program to date of delivery) was entered first in the regression analysis to control for the effect on the number of contacts occurring between support provider and support recipient. The sample included

only dyads for whom length of relationship was at least 4 weeks, based on the understanding that support providers made their relationship assessments approximately one month after initiation of the relationship (Roman, personal communication).

Research Question 4. Analysis was done using one-way ANOVA, with the four APNCU Index categories of adequacy of prenatal care as the categorical variables and provider's assessment of the support relationship score as the dependent variable.

Research Question 5. Pearson correlations were used to examine the associations between the provider's assessment of the support relationship score and both the perceived social support and perceived stress scale scores of the recipient. Depression scale scores were dichotomized and examined using ANOVA, with depression as the categorical variable and provider assessment of the support relationship score as the dependent variable.

Assumptions

The accuracy of the data contained in the primary data set, including collection, recording, and coding, were assumed for this secondary analysis. The accuracy of the information on methods and procedures for data collection that were provided was also assumed. Although no attempt was made in the present study to objectify or quantify the supportive skills of the support providers, there was the underlying assumption that they had the capability to provide social support, based on their indigenusness and their training.

Limitations

The present study was a descriptive, correlational secondary analysis of data. For the primary study, there was no random assignment to the support intervention, and no control group was used for comparison purposes. Participants enrolled in the MOMS Program through a self-selection process and thus could be said to have possessed preexisting differences in motivation and need, which may have influenced the variables under study. These limitations were inherent from the primary study and preclude the suggestion of any causal relationships between the variables under study or generalizability of the findings of the present study to other populations.

The sample for the present study was limited by a low rate of return on relationship assessments by support providers, with only 64 of 179 potential assessments available for analysis. Absence of assessments for the other 115 dyads leaves a substantial gap in the data. The return rate by support recipients was even lower, with only 11 of 179 program participants completing relationship assessments. These missing assessments placed a great limitation on what could be learned from the study.

The Assessment of the Support Relationship scale, the focal measure for this study, was an untested instrument, without previous use or established reliability and validity. The limitations of using an untested instrument include the potential that the scale is not a true or comprehensive measure of relationship assessment. The fact that the scale is comprised of only 4 items adds substance to that possibility; however, the four items are relevant to relationship assessment as presented in the theoretical model for this study and therefore, the scale was considered a beginning measure of the concept. A further

limitation of using an untested instrument is that it is not appropriate for the population being studied. Response bias is another limitation inherent in a scale of this design. In reference to the scale item on helping in the relationship, it is important to note that no attempt was made in the present study to identify the content of the help being provided, that is, the support provider's meaning of helping or the support recipient's meaning of being helped.

There are additional psychosocial characteristics of the support recipient that could potentially influence relationship formation. The selection of perceived social support, perceived stress, and depression for this study was based on the conceptual and theoretical formulations presented here, as well as the review of the literature. It is important to note in reference to depression that the CES-D is a measure of depressive symptomatology only and is not to be interpreted as a clinically diagnostic measure.

There was also a limitation inherent in determining the correlation between assessment of the support relationship scores obtained at different times in the relationship, at one month for the support provider and at 34 to 36 weeks' gestation for the support recipient, as this places the provider's assessment in a more predictive rather than comparative role.

Protection of Human Subjects

Approval to proceed with this study was obtained from the University Committee on Research Involving Human Subjects (UCRIHS) prior to accessing any of the data (see Appendix C). Approval for the primary study was obtained from UCRIHS and the appropriate hospital Human Subjects Review Board (Roman, personal communication). Written approval to access the primary data set for this secondary analysis was obtained

from the primary investigators for the primary study (see Appendix D). Aggregate data were reported in coded form, identifying support providers and recipients by identification number only. Exceptions to this involved demographic data on support providers and the support recipients' assessments of the support relationship. These data were entered by the investigator for the present study from original self-report Volunteer Profile forms and recipient assessment of relationship forms, respectively; however support providers and recipients were again identified by number only.

Results

Sample Description

Sixty-four support provider/support recipient dyads comprised the sample for the present study. The 64 support recipients were the subset of the 179 women enrolled in the primary study for whom an Assessment of the Support Relationship was completed by their respective support provider at approximately one month into the relationship. Thus, only dyads for whom the length of the support relationship was at least 4 weeks were included in the sample. Providing support to these 64 support recipients were a total of 54 support providers, 13 of whom worked with more than one program participant.

Demographic data for support recipients were obtained from an enrollment form completed by participants upon entry into the MOMS Program. Demographic data were available from Volunteer Profile forms for 42 of the 54 support providers. Demographics for both support recipients and support providers are reported in Table 1. In general, support providers were older than support recipients, with the age of support recipients ranging from 15 to 36 ($M = 22.2$; $SD = 4.6$) and that of support providers ranging from

Table 1

Frequency and Percent of Demographic Characteristics of Support Recipients and Support Providers.

Characteristics	Support Recipients <u>n</u> = 64 Number (%)	Support Providers <u>n</u> = 42 Number (%)
Race/ethnicity		
White	30 (46.9)	18 (45.0)
African American	23 (35.9)	15 (37.5)
Hispanic	9 (14.1)	6 (15.0)
Native American	2 (3.1)	1 (2.5)
Marital Status		
Never married	50 (78.1)	--
Single	--	16 (40.0)
Married	6 (9.4)	16 (40.0)
Separated	2 (3.1)	4 (10.0)
Divorced	5 (7.8)	4 (10.0)
Educational Level (years)		
Less than 12	28 (43.8)	5 (12.2)
12 or more	33 (51.6)	36 (87.8)
Insurance Status		
Medicaid/pending	54 (84.4)	--
Private	5 (7.8)	--
Employment Status		
Presently Employed	22 (34.4)	23 (54.7)
Not Employed	37 (57.8)	13 (31.0)
Seeking Employment	5 (7.8)	--
Student	--	6 (14.3)

Note. Dashes indicate that comparative data was not available.

18 to 58 ($M = 31.7$; $SD = 8.1$). Support providers were also more likely than support recipients to be married, to have a higher level of education, and to be employed. A demographic comparison of the 64 support recipients in this study to the 179 enrollees in the primary study, using t-test and Chi-square statistics, showed no significant differences; with respect to employment, however, the difference approached significance ($p = .052$), with more of the support recipients in this smaller sample being employed.

Results Related to Research Questions

Research Question 1: What is the support provider's assessment of the support relationship, globally and specifically in terms of contacting, communicating with, and helping the recipient mother?

Descriptive statistics for the support provider's assessment of the support relationship are outlined by item in Table 2. The Assessment of the Support Relationship scale, a summated score of the 4 items in Table 2, had scores ranging from 4 to 20, with a mean score of 15.0 ($SD = 3.8$), indicating positive relationship assessment.

Research Question 2: Is there a positive correlation between the provider's assessment and the recipient's assessment of the support relationship?

There were only 11 dyads in the study sample for which an assessment of the support relationship was available both from the support provider at approximately one month into the relationship and from the support recipient at 34 to 36 weeks' gestation. The mean Assessment of the Support Relationship scale score for these 11 support recipients was 15.0 ($SD = 4.4$). The mean relationship assessment score for their 11 support providers was 15.4 ($SD = 4.3$). The significant positive correlation between provider and recipient

assessments ($r = .89$, $df = 9$, $p < .001$) indicates a high level of agreement within the dyad relative to the relationship assessment.

Table 2

Support Provider's Assessment of the Support Relationship (N = 64)

Assessment Score	1 (poor, difficult, never) n (%)	2 n (%)	3 n (%)	4 n (%)	5 (great, easy all the time) n (%)
Global Assessment	3 (4.7)	5 (7.8)	5 (7.8)	34 (53.1)	17 (26.6)
Contacting	8 (12.5)	12 (18.8)	7 (10.9)	15 (23.4)	22 (34.4)
Communicating	2 (3.1)	8 (12.5)	2 (3.1)	18 (28.1)	34 (53.1)
Helping	2 (3.1)	4 (6.3)	22 (34.4)	31 (48.4)	5 (7.8)

Research Question 3: Does the provider's assessment of the support relationship predict the recipient's participation in the support relationship?

This question was analyzed for 49 dyads. One study dyad with a relationship length of 59 weeks was eliminated on the basis of being greater than the 40 week duration of a normal pregnancy. Data to calculate length of relationship were missing for an additional 13 cases. The length of the support relationship for the 49 dyads ranged from 4.6 to 33.9 weeks, with a mean of 20.7 weeks ($SD = 8.6$).

Participation in the support relationship, operationalized as the total number of contacts between support provider and support recipient over the length of the relationship, ranged from 1 to 70; however, the dyad with 70 contacts was eliminated from the analysis as an outlier. For 49 dyads, a mean of 13.8 contacts ($\underline{SD} = 12.4$) was computed. For 51% of the dyads, the total number of contacts was 10 or less. The majority of contacts occurred by phone, the mean number of phone contacts being 8.9 ($\underline{SD} = 9.6$). The mean number of home visits was 3.4 ($\underline{SD} = 3.8$) with 22% of the sample reporting one home visit and 16% reporting none.

Stepwise linear regression analysis of provider's assessment of the support relationship as predictor variable to participation in the relationship, with length of the relationship entered on step one as the control variable, revealed that length of the relationship accounted for 10.1% of the variance in participation in the relationship, $\underline{R}^2 = .10$, $\underline{F} (1, 47) = 5.3$, $p = .03$. When provider's assessment of the relationship was added to the equation, 18.1% of the variance was accounted for, $\underline{R}^2 = .18$, $\underline{F} (2, 46) = 5.08$, $p = .010$. Thus the provider's assessment explained 7.9% of the variation in participation in the relationship, making a small but significant contribution beyond what was explained by length of the relationship alone (see Table 3).

Research Question 4: Is adequacy of prenatal care for the recipient mother associated with the provider's assessment of the support relationship?

Descriptive statistics on adequacy of prenatal care for support recipients are reported by APNCU Index categories (Kotelchuck, 1994a) in Table E1 (Appendix E).

Approximately one-third of the study dyads could not be assigned an APNCU Index

Table 3

Summary of Stepwise Regression Analysis for VariablesPredicting Participation in the Relationship (n = 49)

Variable	<u>B</u>	<u>SE B</u>	<u>Beta</u>
Provider's Assessment	0.96	0.46	0.28*
Length of Relationship	0.43	0.19	0.30*

* $p < .05$.

category because the necessary information for computing the APNCU category was not available, specifically, the month of entry into prenatal care. Kotelchuck (1994a) used birth certificate data for his analysis, but month of initiation of prenatal care for this study was obtained from the MOMS Program enrollment form by self-report of the support recipient, verified by the team paraprofessional.

Recipients entered prenatal care at a mean of 2.9 months ($SD = 1.8$) and had an average of 10.1 prenatal visits ($SD = 5.4$). Mean provider assessment of relationship scores by APNCU category are reported in Table 4. One-way ANOVA showed no significant main effects between the four APNCU categories with respect to the provider's assessment of the support relationship, $F(3, 36) = .88$, $p = .46$.

Research Question 5: Is there an association between the recipient mother's psychosocial characteristics of perceived social support, perceived stress, and depression and the provider's assessment of the support relationship?

Descriptive statistics on psychosocial characteristics of support recipients, including perceived stress, perceived social support, and depression, are reported in Table 5. There

Table 4

Mean Provider's Assessment of Relationship Scores by APNCU Category (n = 40)

Summary Adequacy of Prenatal Care Utilization Category	n (%)	<u>Assessment Score</u>	
		<u>M</u>	<u>(SD)</u>
Inadequate	9 (22.5)	13.3	(4.8)
Intermediate	9 (22.5)	15.4	(4.8)
Adequate	16 (40.0)	15.5	(2.9)
Adequate Plus	6 (15.0)	16.3	(3.8)

were no significant differences in means for these variables between the current study sample and the sample for the larger primary study. Correlations between the provider's assessment of the relationship and psychosocial characteristics of the support recipient were not significant: perceived social support ($r = -.16$; $df = 57$; $p = .22$); perceived stress ($r = .01$; $df = 60$; $p = .92$); and depression ($r = -.11$; $df = 59$; $p = .39$).

Table 5

Descriptive Statistics for Psychosocial Characteristics of Support Recipients (n = 64)

Psychosocial Characteristic	<u>M</u>	<u>SD</u>	Range
Perceived Social Support	14.9	5.0	7 to 28
Perceived Stress	28.5	6.3	15 to 43
Depression	22.1	10.1	4 to 48

Dichotimization of CES-D scores showed that 15 (23.4%) of the support recipients had CES-D scores of 15 or less, indicating low depressive symptomatology, while 46 (71.9%) had scores of 16 or greater, indicative of a high level of depressive symptomatology. The mean provider assessment of the relationship score for support recipients with low CES-D scores was 16.1 ($SD = 3.4$), while the mean assessment score for recipients with CES-D scores of 16 or greater was 14.6 ($SD = 3.9$). One-way ANOVA of level of depressive symptomatology by provider's assessment of the support relationship showed no significant effects, $F(1, 59) = 1.78$, $p = .19$.

Discussion

The purpose of this study was to add to the knowledge base pertaining to social support interventions during pregnancy involving lay support providers. The study described the support provider's assessment of the support relationship and investigated associations between that assessment and key psychosocial variables and behaviors of the support recipient. The fact that the provider's assessment of the support relationship was completed for only 64 of 179 subjects in the primary study greatly limited the sample size for the current study. This low rate of completion (36%) could be attributed to a low priority placed on obtaining this assessment by the primary investigators, as it was not a key variable in the primary study. It may also be explained as a common concern in working with volunteers, the problem of ensuring compliance in record-keeping and documentation of work (Poland et al., 1992). This problem was also evidenced in the 78% completion rate on demographic profiles by the 54 volunteer support providers in this study sample.

Support Recipients

Demographics. The 64 support recipients in the study sample were comparable to those in the primary study sample with respect to demographics and psychosocial characteristics. These support recipients were also similar to those in other studies involving at-risk pregnant women in urban settings with respect to age and the high percentage on public insurance, with an educational level of less than 12 years, and not employed (Hobfoll et al., 1995; Holcomb et al., 1996; McLaughlin et al., 1992; Poland et al., 1992; Zuckerman et al., 1989). Although data were difficult to compare with respect to marital status because of variation in categories of measurement for this variable across studies, it would appear that fewer of the support recipients in the current study were married (9.4%, as opposed to 16 % in Poland et al. and 37% in Holcomb et al.); however, the group of never married subjects ($n = 50$; 78%) was not subdivided according to percentage living without a partner, as in other studies (37% in Hobfoll et al., $N = 192$; 38% in Poland et al., $N = 111$).

Psychosocial Characteristics. It was also important to compare the support recipients in this study to other study samples with respect to the psychosocial characteristics of perceived social support, perceived stress, and depression. The Measure of Perceived Support (MPS) used in the primary study for this secondary analysis has not been widely used, so little comparative data was available. On a possible score range of 6 to 30, with lower scores indicating lower perceived support, the mean score for the present study sample was 14.9 ($SD = 5.0$). Mercer and Ferketich (1988) obtained mean MPS scores of 24.3 ($SD = 3.8$) and 23.6 ($SD = 4.0$) for pregnant women of high and low obstetric risk,

respectively, but the women in their sample were predominantly married, well-educated, and of higher economic status than the women in the current study. Warren (1997) also reported high levels of perceived social support, studying a sample of middle class African American women demographically similar to those in the Mercer and Ferketich study, but employing a different measure of perceived support, the Personal Resource Questionnaire Part II (Brandt & Weinert, 1981). Zachariah (1994), studying a very small sample of low-income mothers in a parenting program ($n = 7$), reported mean MPS scores of 14.9 (pre-intervention) and 18.4 (post-intervention; SDs not reported). Comparison of scores suggests that lower levels of perceived support may exist among women who are not married, have less formal education, and are of low socioeconomic status.

A review of studies that employed the Perceived Stress Scale (PSS) used in the present study showed mean scores of 23.2 (SD = 7.3) and 23.7 (SD = 7.8) in samples of college students (Cohen et al., 1983), 25.0 (SD = 8.0) in a smoking-cessation group sample (Cohen et al.), 19.6 (SD = 7.5) in a large Harris survey sample (Cohen & Williamson, 1988), and 25.0 (SD = 8.0) in a sample of predominantly white, married, well-educated mothers of young children (Walker, 1989). The mean of 28.5 (SD = 6.3) in the present study is indicative of higher levels of perceived stress among these support recipients. These higher levels are consistent with the findings of Cohen and Williamson (1988) that showed significantly higher levels of perceived stress among female respondents of younger age, lower household income, less education, and single/never married status. In contrast, Lobel and Dunkel-Schetter (1990) reported low levels of perceived stress, a mean of 5.0 (SD = 3.0) on a scale range of 0 to 20 using a 5-item version of the PSS, in a

sample of socioeconomically disadvantaged pregnant women who were predominantly Spanish and living with a partner. They attributed this low perceived stress to habituation and lowered expectations in the face of chronic exposure to difficult conditions. The preponderance of evidence, however, points to a substantial link between low social status, difficult life circumstances, the experience of chronic stress, and high perceived stress, which has been associated with poor mental health in the lives of low-income women such as those who were support recipients in this study (Makosky, 1982; Belle, 1990; Turner et al., 1995).

High rates of depression are consistently reported for samples of low income pregnant women. Hobfoll et al. (1995) reported a prenatal incidence of major or minor clinical depression of 41.7% in their sample, based on Research Diagnostic Criteria. Seguin et al. (1995), using the Beck Depression Inventory (BDI), a self-report measure of depressive symptomatology that is widely used in pregnancy (Beck, 1996), with a standard cut-off score of 10 to indicate significant levels of depressive symptoms, reported an incidence of depressive symptomatology of 46.9%. Holcomb et al. (1996), using both the BDI and diagnostic interview criteria to screen for depression in pregnancy, obtained an 11% prevalence of diagnosed clinical depression, with 43% of the sample scoring 10 or greater on the BDI. Zuckerman et al. (1989) used the CES-D as the measure of depressive symptomatology, as used in the present study, and reported a mean score of 18.6 ($SD = 10.8$). The sample in Zuckerman et al. had a higher percentage of Black subjects than in the current study, but was otherwise comparable. Scores on the CES-D in studies of low-income mothers of young children showed means of 17.8 ($SD = 11.7$) (Hall, Williams, &

Greenberg, 1985); 19.2 ($SD = 10.3$) (Hall et al., 1991); and 12.7 ($SD = 9.8$) (Hall, 1990); with 48%, 60%, and 49% of subjects scoring sixteen or greater, respectively, indicative of high depressive symptomatology (Radloff, 1977). The mean CES-D score of 22.1 ($SD = 10.1$) for the current study is considerably higher than in the cited comparison studies, as is the percentage (75%) scoring 16 or greater.

Caution must be used in interpreting CES-D scores, particularly during pregnancy, as the scale contains items relating to common physical and emotional symptoms of pregnancy such as fatigue, lack of energy, nausea, disturbed sleep patterns, and crying spells (Huffman, Lamour, Bryan, & Pederson, 1990). Some researchers recommended omitting these items from the scale to avoid confounding of the assessment (Hobfoll et al., 1995; Hoffman & Hatch, 1996), while others suggested that higher cut-off values for significant depressive symptoms need to be established for the pregnant population (Holcomb et al., 1996). Zich, Attkisson, and Greenfield (1990) found that, even within a non-pregnant primary care population sample, a higher or “stringent” cut-off score of 27 was accurate in identifying 100% of those with diagnosable depression, while eliminating a significant number of false positives. For this study, 16 of the support recipients (26%) scored at or above the more stringent cut-off of 27. In any event, self-report scales are not diagnostic for depression, but rather alert the practitioner to an elevated risk for depression within a given population and are useful as a screening tool (Holcomb et al.; Radloff, 1977). The high CES-D scores in this study sample, in comparison to other studies of low income pregnant women and young mothers, are such an alert and provide a rationale for intervention, including further diagnostic evaluation and treatment

according to clinical practice guidelines. The social support intervention under study here could serve as an adjunct in treatment.

Providers' Relationship Assessments

The providers' assessments of the support relationship, the focus of this study, tended to be highly positive. Although the assessment form was one which could lend itself to response bias, the occurrence of negative assessments gives support to the conclusion that respondents felt free to be honest in their assessments. It is conceivable that the care which was taken in the pilot study to pair support provider and recipient with respect to such characteristics as ethnicity, life experience, number of children, and interests may have contributed to greater compatibility and thus higher relationship assessments. It is noteworthy that age was not a basis for pairing. Support providers ranged in age from 18 to 58. Depending upon their age with respect to that of the support recipient, some support providers would be viewed as peer supporters, while the older ones may have been experienced more in the category of motherly or grandmotherly supporters. This study does not account for these potentially disparate perspectives in interpreting the assessments of the relationship, but that would be an important factor for consideration in future studies.

Ninety percent of the support providers responded positively to an item assessing whether they "liked" their support recipient, while 84% were highly positive that the support recipient liked them. A premise of this study was that lay workers will relate well to the targets of their support by virtue of their cultural and experiential similarities and understanding of each other (Brooks-Gunn et al., 1989). The high nonresponse rate in

completing the assessment form, however, on the part of both providers and recipients, is a severe limitation of the study, as nonresponse is typically not a random process and may have significantly biased the results (Polit & Hungler, 1995). The richness in the data may lie in what is missing.

In a study of volunteer helping relationships among the elderly (Morrow-Howell, Lott, & Ozawa, 1990), 60% of the volunteers rated their helpfulness to their clients at “a lot” or “a great deal”, as did 56% of the volunteer support providers in the current study. Only 9% of the support providers indicated that they never or not often felt they were helping their support recipients. This sense of helping, the provision of social support, is important in the theoretical model. A support provider who does not feel she is helping her support recipient is likely, according to the model, to have a more negative assessment of the support relationship and helping behavior will be reduced, in a circular pattern. The provider’s positive sense that she is helping is influenced by the recipient’s participation in the relationship. The participation in the relationship data should, therefore, be consistent with the positive relationship assessments of the support providers.

The highest number of negative assessments ($n = 20$, 31%), notably, were given in reference to ease of contacting the recipient mother. Although the mean length of the support relationship in weeks was 20.7 ($SD = 8.6$), the mean number of contacts was 13.8 ($SD = 12.4$), considerably less than the intervention goal of one contact per week. Explanations for difficulty in making contact included, in descending order of frequency, no phone, does not return my calls, and never home, consistent with patterns of frequent moves, lack of phone access, and absence of consistency in schedules for this population

(Barnard et al., 1988). However, as the theoretical framework postulates, contact is an essential component of relationship formation, and, for this study, contact between support provider and recipient, either by phone or face-to-face through home or clinic visit, served as the operationalization of participation in the support relationship.

Communication, the other essential component of relationship formation, was evaluated only through response on the assessment form with respect to how easy it was to talk with the support recipient, and, for this item, 81% of the assessments were positive, compared to 58% positive assessments on the contacting item. Again, it is important to keep in mind that these percentages are based on a sample that is only 36% of the 179 participants in the primary study.

Participation in the Support Relationship

The record of contacts between support provider and recipient was an instance in which the availability of data was dependent on record-keeping accuracy and diligence on the part of the volunteer support provider, over which there was random surveillance by team paraprofessionals and the nurse team coordinator. Low rates of completion of demographic and assessment of relationship forms, as already discussed, attest to the potential for inexactitude of data here. Based on the intervention goal of at least one contact per week, participation in the relationship, divided by number of weeks in the relationship, was low for the dyads in this study at a mean of 0.78 visits per week (SD = .64). However, it was not low in comparison to patterns suggested by other studies. Poland et al. (1992) set a minimum of 3 contacts to define that intervention had occurred, and reported a mean for *weighted* contacts of 14.7 (SD = 12.8), with face-to-face contacts

scored as 3 and phone contacts scored as 2. Thus the non-weighted mean number of contacts of 13.8 ($SD = 12.4$) in the present study was considerably higher. Heins et al. (1987) and Spencer et al. (1989) reported intervention goals of monthly visits and 1 to 2 visits per week, respectively, but did not provide data on actual completed visits. In a study by Villar et al. (1992), 83% of the support providers made the expected 4 to 6 prenatal home visits. The support intervention in the Villar et al. study was a planned sequence of home visits by trained professional nurses and social workers. Olds, Henderson, Tatelbaum, and Chamberlin (1986) initiated a randomized controlled trial to study a comprehensive program of nurse home visitation in which an average of 9 prenatal home visits were made by professional nurses. For the present study the median number of contacts was comparatively higher at 10, but more than 50% of the support providers recorded fewer than 3 home visits. The effectiveness of home versus phone contacts has not been established, however, and the potential benefits of having indigenous volunteers working with high-risk pregnant women must be weighed against the resultant informality of the intervention, with associated difficulties in assuring that prescribed contact and documentation expectations are met. Indeed, indigenous volunteers may be contending with distressing life circumstances of their own which may interfere with performance expectations, but which may enhance their ability to relate to their support recipient. Although only 7.9% of the variance in participation in the relationship was explained by the provider's assessment, the assessment was a significant predictor of participation, lending support to the theoretical model.

Participation in Prenatal Care

The extent of participation in prenatal care for the support recipients in this study, with 48.5% ($n = 31$) entering prenatal care by the third month and 47% ($n = 30$) having 10 or more prenatal visits, resulting in only 34.4% ($n = 22$) having adequate or adequate plus prenatal care utilization according to the Kotelchuck categorization (Kotelchuck, 1994a), is less adequate than reports of prenatal care utilization in the existing literature.

Passannante et al. (1994), studying a comparable sample of low-income inner-city pregnant women, reported that 57% of the women in their sample received adequate prenatal care, based on a modified Kessner index (Peoples, Grimson, & Daughtry, 1984) and using birth certificate data, and 66% initiated care in the first trimester. Alexander and Korenbrot (1995), citing data from over 3,500,000 live births in the U.S. to women of all economic levels, reported 56% of the mothers having adequate prenatal care, with less than 7% having inadequate or no prenatal care, again based on a modified Kessner index (Alexander & Cornely, 1987). For the present study, 14.1% ($n = 9$) of the support recipients received inadequate care; however, the significant percentage ($n = 24$; 37.5%) of the study sample for whom insufficient information to calculate adequacy of care was available should not be overlooked in interpreting these findings. Davids (1993), who studied race and adequacy of prenatal care in low income women, reported low percentages of the study sample having adequate or intensive care (18% for African American and 39% for Caucasian women), again using the adapted Kessner (Alexander & Cornely), with only 19% of African American and 26% of Caucasian women initiating care in the first trimester. The use of different indices of prenatal care utilization makes

cross-study comparison difficult; however, both the present study and Passannante et al. (1994) showed a higher percentage of women initiating care early than Davids found, indicative of a higher motivation to seek and participate in care on their part.

Any influence of the social support intervention in this study on support recipients' participation in prenatal care would occur through adequacy of received services, since there was not an outreach component of the program to effect earlier entry into prenatal care, unless it was word of mouth referral from other support recipients. In this regard, the advantage of the Kotelchuck APNCU Index is that adequacy of initiation of prenatal care and adequacy of received services are considered separately. Only 4 (6.3%) of the support recipients had inadequate received services or expected visits after initiation of care. Kreiger, Connell, and LoGerfo (1992), however, also reported low percentages of women with inadequate expected visits, using the received services portion of the Kotelchuck index, from 4.5% to 13.3% in 6 different Medicaid plans not having a specific intervention component. Passannante et al. (1994) note that this population may attain the recommended number of prenatal visits despite later onset of care because of more frequent visits toward the end of pregnancy associated with their high risk status, thus skewing the results toward greater adequacy than is actually present.

Although no significant association between levels of participation in prenatal care and the provider's assessment of the relationship was demonstrated, mean provider assessment scores by APNCU category were in the expected direction, with support recipients with more adequate participation in prenatal care having higher mean assessment scores. The small number of subjects for each APNCU category may have been a factor in the failure

to demonstrate statistical significance. Prenatal care was definitely one of the areas that support providers addressed in their contacts with their support recipients, as verified by entries in their contact records. It cannot be concluded from the data and analysis presented here that the intervention did not contribute positively to this behavioral outcome on the part of the pregnant woman. That effect could better be studied by comparing participation in prenatal care for women receiving versus those not receiving the intervention, as in Heins et al. (1987), Julnes et al. (1994), and Poland et al. (1992). Kitzman et al. (1997), however, in a randomized controlled trial of nurse home visitation in a sample of pregnant women comparable to the one in this study, found no effect of the intervention on participation in prenatal care.

Relationship between Psychosocial Characteristics and Assessment

Based on the research evidence on depression and interaction presented in the review of the literature for this study, it could be hypothesized that the high levels of depression (with concomitant high levels of perceived stress and low levels of perceived social support) among the support recipients in this study would have hindered the development and progression of their support relationships, resulting in less positive relationship assessments. The effects of negative stress in decreasing personal system boundary permeability, according to King's theoretical framework, would further support that expectation. A significant association between support recipients' psychosocial characteristics and relationship assessment was not obtained, however. Furthermore, assessment scores were not significantly different between support recipients in the high and low depressive symptomatology groups, although the difference was at least in the

expected direction. More positive relationship assessments were made for women scoring less than 16 on the CES-D than for those scoring 16 or greater. It could be postulated that the depressive symptomatology within this sample contributed to the support providers' sense of helping their support recipients, thus fostering the support relationship irrespective of the recipients' psychological state. Furthermore, the symptomatology of the support recipients may have contributed to their care-seeking behavior and to heightened receptivity on their part. An association between CES-D scores of 16 or greater and increased use of health services has been reported in the literature (Callahan, Hui, Nienaber, Musick, & Tierney, 1994). Zuckerman et al. (1989), on the other hand, found no association between trimester of first prenatal visit and mean CES-D score. The fact that assessments for 64% of pilot study dyads are missing does not permit a definitive statement on this question.

Although not specifically related to the study questions, the associations between the psychosocial characteristics of the support recipients deserve comment here. As others have noted, perception of both stress and social support is likely to be influenced by a depressed frame of mind (Hoffman & Hatch, 1996; Paarlberg et al., 1996; Seguin et al., 1995). Conversely, high levels of stress and low levels of social support could contribute to depressive symptoms (Hall, 1990). The high correlation between CES-D and perceived stress in the present study ($r = .68, p < .001$) is consistent with the literature (Cohen et al., 1983; Hall, Kotch, Browne, & Rayens, 1996; Seguin et al.), but suggests the possibility that these instruments are measuring similar rather than independent constructs. High levels of depressive symptomatology and perceived stress have been shown to be

associated with low levels of perceived social support, however, in an inverse relationship (Hall et al., 1991; Paarlberg et al.). For the present study, that inverse relationship to perceived support was not found (CES-D: $r = .49$, $p < .001$; perceived stress: $r = .55$, $p < .001$). A possible explanation is that the social support that was available to these support recipients was not positive, but served to bring even more stress into their lives, as discussed by Belle (1982).

Implications for the Advanced Practice Nurse in Primary Care

The major findings of this study were that lay support providers in the MOMS Program who made an assessment of their social support relationship with an at-risk pregnant woman were highly positive in their assessment, and that their assessment of the relationship was significant in predicting the support recipient's participation in that relationship. Furthermore, for a very limited sample, there was high congruence in relationship assessments within the provider- recipient dyad. An association between providers' relationship assessments and levels of perceived stress, perceived social support, and depression in the support recipients was not demonstrated.

Several implications can be suggested on the basis of these findings for the APN as primary health care provider. Studies have shown that key social support providers for a pregnant woman are her partner (Hobfoll et al., 1995; Norbeck & Anderson, 1989) and her mother (Norbeck & Anderson). A high percentage of women in the low socioeconomic population, however, are not married (78% in the present study), or may be involved in less than positive relationships (Belle, 1982). They may also be living away from close relatives or extended family. The APN's thorough assessment of the pregnant

client should include assessment of her existing social support resources. The low perceived social support scores of the support recipients in this sample should serve as an alert to this action. Because life circumstances of at-risk pregnant clients tend to be unstable, this assessment of social support resources should be on-going, up-dated at each prenatal visit, and should be given priority equal to that placed on the assessment of physical parameters in the pregnant client.

The preponderance of evidence for the potential beneficial effects of social support in pregnancy should lead the APN to attempt to augment this resource when support resources are low (Collins et al., 1993; Heins et al., 1987; Norbeck & Anderson, 1989; Nuckolls et al., 1972; Oakley et al., 1990; Poland et al., 1992; Rothberg & Lits, 1991; Unger & Wandersman, 1985). The findings from the present study suggest that social support provision by lay volunteers has the potential for positive relationship formation and is a viable option for the APN to consider in formulating a plan for social support augmentation. While the number of relationship assessments completed was disappointingly low and unsubmitted assessments may have been more negative, in 80% of completed assessments, support providers were positive in their global rating of the relationship. These volunteers had a positive perception of the helping relationships in which they were involved, which, in turn, according to the theoretical model, would be communicated to the support recipients through their interaction. The high correlation between provider and recipient assessments serves as additional evidence in support of this interaction model. This kind of positive interaction in the lives of both of these women is what could make a difference for their futures.

The APN in primary care should be aware of existing lay support provider resources in the community and be open to working collaboratively with these lay providers in delivering comprehensive care to pregnant women. The APN should be able to recognize and appreciate their unique contribution as members of the health care team. Using leadership skills, the APN could be instrumental in the development of social support interventions of this type by facilitating networking between existing lay support provider programs in other communities and key agencies within the target community.

The high levels of perceived stress and depression among the support recipients in this study are again an alert to the APN to assess these psychosocial characteristics of the pregnant women in their practice, and to continue to monitor them over the course of the pregnancy. The APN is trained to empower clients in stress management, through identifying stressors and their effects and the client's typical coping mechanisms, and then working with the client to develop a plan for stress management. For those clients reporting high levels of depressive symptomatology, further screening to rule out a clinical diagnosis of depression would be indicated, with initiation of appropriate treatment for depressed clients following clinical practice guidelines.

In this study, a significant association between the provider's relationship assessment and these psychosocial characteristics of the support recipient was not demonstrated, suggesting that positive support relationships can develop in spite of high levels of perceived stress and depression in the support recipient. This finding suggests that use of lay volunteers for social support intervention should not have to be limited based on the psychosocial characteristics of the recipient. In fact, the pregnant women who are often

the most difficult for health care providers to reach may be the ones who could most benefit from a relationship with a lay support provider. The fact that lay providers are part of the natural social support network, rather than an arm of the health care establishment, may foster trust and openness in the support relationship that cannot be attained by the health care provider.

A social support intervention of this nature requires ongoing evaluation by the APN who is responsible for case management of the care of the pregnant support recipient. The finding that a positive relationship assessment by the support provider was predictive of the support recipient's participation in the relationship has implications for evaluation. The provider's relationship assessment for this study was obtained approximately one month into the relationship and predicted the amount of contact occurring between provider and recipient throughout the prenatal period. If the lay support provider has a positive assessment of the relationship, this study supports the assumption that contact between provider and recipient will be maintained over the length of the relationship. Only through this contact between provider and recipient, that is, through participation in the relationship, can emotional, informational, and tangible social support be enacted. Therefore, if the provider's relationship assessment is negative, the findings here would lead the APN to further evaluate that relationship and possibly recommend that another lay support provider be substituted or look for another way to provide support to that particular client. The evaluation component is critical, and the APN is well-equipped to conduct it.

Peoples-Sheps, Efirid, and Miller (1989) surveyed experts in prenatal care and found that these experts indicated that the most effective strategy for modifying prenatal care behaviors among socially disadvantaged women was the use of peer home counselors, but that this was also the least-used strategy in actual practice. Although the research evidence presented here does not show a significant relationship between a positive relationship assessment and improved participation in prenatal care, the trend of the results in the expected direction holds forth promise in the face of the dismayingly low levels of participation in prenatal care among this population. The APN should seriously consider this type of social support intervention in evaluating strategies to address prenatal care issues for the at-risk pregnant population.

Implications for Future Research

The present study had significant limitations and leaves many unanswered questions about the support relationship between a lay support provider and an at-risk pregnant woman. Any attempt to replicate or expand upon this study should address the issues and concerns raised in the following paragraphs. First, the development of a valid, reliable, more comprehensive instrument for measuring relationship assessments by the relationship participants requires more groundwork. A qualitative study using grounded theory design (Chalmers, 1992), with personal interviews of both support providers and support recipients, either individually or in focus groups, would be valuable in uncovering key factors that relationship participants consider in forming their perception of this helping relationship. How important is intensity of contact, and do certain avenues of contact (home visit versus phone) have greater impact or influence in framing their perception of

the relationship than others? What are objective elements of their experience of communication that could be measured? What is their meaning of “helping”, and how much does this contribute to the experience and perception of relationship? What, for them, constitutes a relationship that “works”? The value of indigenouness to relationship formation should also be explored. A qualitative study such as this would provide a research basis for a more inclusive and valid instrument for relationship assessment, which could then be tested in a variety of settings.

A carefully developed and tested instrument would provide valuable information for program assessment. Priority would have to be placed on assuring assessment completion both by support providers and support recipients, rectifying the problem of low return rates which limited the present study. The use of incentives could be considered, to facilitate compliance. Obtaining relationship assessments from both provider and recipient at key times, that is, early in the relationship and again at weeks 34 to 36 of the pregnancy, prior to delivery, would be critical. Having two relationship assessments, made at different times in the relationship, would provide important information on relationship development and change over time.

The pregnant women who were support recipients in this study had high levels of perceived stress and depressive symptomatology and low levels of perceived support. Thus the needs of this population of women are great, and their environmental circumstances are not easily altered. Support providers, drawn from the target communities and with similar life circumstances, have potentially similar psychosocial needs. Should scores on these psychosocial indices be considered in establishing eligibility

criteria for both support providers and support recipients? At what level of depressive symptomatology is clinical intervention indicated? Should pregnant women who are clinically depressed be considered eligible for a lay support intervention at all? How intensive should provided services be, and how intensive can they realistically be under managed care? Can lay support be as effective for these at-risk women as professional counseling would have been, or could lay and professional interventions potentially work synergistically? Does the intervention have “sufficient” effectiveness? Further study should follow the psychological indices of support recipients over the course of the intervention, with measurements taken at regular intervals, to provide quantitative data relative to any effects of the intervention on the psychological well-being of the support recipient. A randomized controlled study of lay social support provision both with and without professional counseling intervention versus no support augmentation could provide valuable information with which to address the above questions.

Another critical area for future research has to do with participation in the support relationship. Documentation in this regard has not been rigorous, for this study as well as in other studies of this type of intervention (Heins et al., 1987; Julnes et al., 1994; Poland et al., 1992; Spencer et al., 1989). Is there a critical threshold for number of contacts that signals relationship formation or determines a successful intervention? Halpern and Lerner (1987) emphasized the value of home visiting for meeting clients on their own turf, presumably a less threatening environment than a clinic or health center, and one affording an opportunity for demonstration and modeling. Is there an optimal goal for number of prenatal home visits? Should the intervention follow a prescribed regimen, defining what is

to be addressed at each visit? At what point would such definition detract from the indigenous component, making the volunteers just one more system? Can number of contacts be tied to measurable outcomes, such as participation in prenatal care or gestational age at delivery or infant birth weight?

The whole area of prenatal care utilization as related to lay social support provision was left in question by this study. Did some of these women enter prenatal care early because of their high levels of stress and depressive symptomatology? Was it the informational support of the lay volunteers or their intensity of need that kept them in care? These questions could better be addressed by a randomized controlled trial of this social support intervention, which the investigators for the primary study of the MOMS Program are currently undertaking. More rigorous studies are needed to provide research evidence upon which the APN can base a plan of care to augment social support and to address the problems of high stress and depressive symptomatology and inadequate prenatal care in this high-risk population.

Summary

This study described lay volunteers' assessments of their social support relationships with at-risk pregnant women and investigated associations between their assessments and psychosocial characteristics and behaviors of the support recipients. The positive mean relationship assessment scores from support providers in the present study suggest that positive helping relationships between lay support providers and at-risk pregnant women can develop. These positive relationship assessments occurred irrespective of high levels

of perceived stress and depression and low levels of perceived social support in the support recipients.

The Assessment of the Support Relationship Scale used for the present study was an untested instrument and can be considered only a preliminary measure of relationship assessment. The study was further limited by low return rates on relationship assessments by both support providers and support recipients and by the fact that relationship assessments were not obtained from support recipients early in the relationship. A comparison control group without social support intervention was not constituted for the primary study. These issues should be addressed by future research on social support relationships in the indigenous volunteer model.

The theoretical model for the study, based on King's interacting systems, was supported in that the provider's relationship assessment was predictive of participation in the relationship. Support relationships were sustained through on-going contact between lay provider and support recipient over the prenatal period, providing opportunity for the provision of emotional, informational, and tangible support by the indigenous volunteer. This type of social support intervention warrants recognition by APN primary care providers as a viable option for support augmentation for their at-risk pregnant clients. The high levels of perceived stress and depression and low levels of social support evidenced in the support recipients in this study should alert APNs to conduct ongoing assessment of these psychosocial parameters in all pregnant clients.

APPENDICES

APPENDIX A

MOMS ID # -
 DATE - -

VOL ID# -
 PPA ID# -

**PARENT-TO-PARENT PROGRAM
 VOLUNTEERS ASSESSMENT OF THE SUPPORT RELATIONSHIP**

*1. For me, this support relationship is:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Poor (1)	Fair (2)	Average (3)	Good (4)	Great (5)

2. If you marked 1,2, or 3, please indicate why you think this is so (check all that apply).

<input type="checkbox"/> (1) Mother moved	<input type="checkbox"/> (6) I'm too stressed/busy
<input type="checkbox"/> (2) Mother hard to talk to	<input type="checkbox"/> (7) Mother's problems are too much for me to handle
<input type="checkbox"/> (3) Mother's family/friends are uncomfortable with our relationship	
<input type="checkbox"/> (4) Mother has too many family problems to participate	

*3. Contacting your mom is:

☐ (1) Difficult
☐ (2) Somewhat difficult
☐ (3) Neither difficult or easy
☐ (4) Somewhat easy
☐ (5) Easy

4. If you marked 1,2, or 3, indicate why you think this is so.

☐ (1) No phone
☐ (2) Never home
☐ (3) Messages not received
☐ (4) Does not return my calls
☐ (5) Other _____

*5. Talking with your mom is:

☐ (1) Difficult
☐ (2) Somewhat difficult
☐ (3) Neither difficult or easy
☐ (4) Somewhat easy
☐ (5) Easy

6. If you marked 1,2, or 3, indicate why you think this is so.

☐ (1) She's real quiet
☐ (2) She's never alone
☐ (3) Other people talk for her
☐ (4) She seems angry
☐ (5) She seems depressed
☐ (6) Other _____

*7. Do you feel you are helping this mom?

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Never (1)	Not Often (2)	Sometimes (3)	Most of the time (4)	All of the time (5)

8. Do you like this mom? ☐ (1) Not sure ☐ (2) Sometimes ☐ (3) Usually ☐ (4) Always
 Do you think she likes you? ☐ (1) Not sure ☐ (2) Sometimes ☐ (3) Usually ☐ (4) Always

9. What do you need from the program to help you in your role as a volunteer?

MOMS ID# - VOL. ID# - DATE: - - PPA ID# -

**PARENT-TO-PARENT PROGRAM
PARTICIPANT'S ASSESSMENT OF THE SUPPORT RELATIONSHIP**

- * 1. For me, this support relationship is:
- ☐ (1) Poor
- ☐ (2) Fair
- ☐ (3) Average
- ☐ (4) Good
- ☐ (5) Great
2. If you marked 1,2, or 3, indicate why you think this is so (check all that apply)
- ☐ (1) Volunteer moved
- ☐ (2) Volunteer is too stressed/busy
- ☐ (3) Volunteer hard to talk to
- ☐ (4) My problems are too much for volunteer
- ☐ (5) Volunteer uncomfortable with relationship
- * 3. Contacting your volunteer is:
- ☐ (1) Difficult
- ☐ (2) Somewhat difficult
- ☐ (3) Neither difficult or easy
- ☐ (4) Somewhat easy
- ☐ (5) Easy
4. If you marked 1,2, or 3, indicate why you think this is so.
- ☐ (1) No phone
- ☐ (2) Never home
- ☐ (3) Messages not received
- ☐ (4) Does not return my calls
- ☐ (5) Other _____
- * 5. Talking with your volunteer is:
- ☐ (1) Difficult
- ☐ (2) Somewhat difficult
- ☐ (3) Neither difficult or easy
- ☐ (4) Somewhat easy
- ☐ (5) Easy
6. If you marked 1,2, or 3, indicate why you think this is so.
- ☐ (1) She's real quiet
- ☐ (2) Doesn't understand my problems
- ☐ (3) She doesn't listen
- ☐ (4) She doesn't seem interested
- ☐ (5) Other _____
7. Do you like this volunteer?
- ☐ (1) Not sure
- ☐ (2) Sometimes
- ☐ (3) Usually
- ☐ (4) Always
- Do you think she likes you?
- ☐ (1) Not sure
- ☐ (2) Sometimes
- ☐ (3) Usually
- ☐ (4) Always
- * 8. Do you feel your volunteer is helping you?
- ☐ (1) Never
- ☐ (2) Not often
- ☐ (3) Sometimes
- ☐ (4) Most of the time
- ☐ (5) All of the time
9. What do you need from the program to help you? _____
-

MOMS ID# - WAVE ID#

**PARENT-TO-PARENT PROGRAM
MEASURE OF PERCEIVED SUPPORT**

		Almost Always True	Often True	Sometimes True	Seldom True	Never True
1.	I feel loved.					
2.	I am satisfied with the number of close friends I have.					
3.	I wish that there were more people around with whom I might share personal things.					
4.	There are people who I can count on to help if I need them.					
5.	My friends are helpful.					
6.	I am satisfied with the help I get.					

MOMS ID# - WAVE ID#

**PARENT-TO-PARENT PROGRAM
PERCEIVED STRESS**

The questions in this scale ask you about your feelings and thoughts during the last month. In each case, you will be asked to indicate *how often in the last month* you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer each question fairly quickly.

IN THE LAST MONTH	Never (1)	Almost never (2)	Some- times (3)	Fairly often (4)	Very often (5)
1. How often have you been upset because of something that happened unexpectedly?					
2. How often have you felt that you were unable to control the important things in your life?					
3. How often have you felt nervous and "stressed"?					
4. How often have you dealt successfully with irritating life hassles?					
5. How often have you felt that you were effectively coping with important changes that were occurring in your life?					
6. How often have you felt confident about your ability to handle your personal problems?					
7. How often have you felt that things were going your way?					
8. How often have you found that you could not cope with all the things that you had to do?					
9. How often have you been able to control irritations in your life?					
10. How often have you felt that you were on top of things?					
11. How often have you been angered because of things that happened that were outside of your control?					
12. How often have you found yourself thinking about things that you have to accomplish?					
13. How often have you been able to control the way you spend your time?					
14. How often have you felt difficulties were piling up so high that you could not overcome them?					

APPENDIX B

APPENDIX B

Procedures for Primary Study

Pregnant women desiring to participate in the MOMS Program signed a consent form explaining the support intervention, its duration, and the voluntary nature of their participation, assuring confidentiality, and authorizing use of their own and their infant's medical records for information relating to program evaluation. Enrollment data from participants, including the psychosocial characteristics measures of relevance to this study, were obtained by a team paraprofessional at the time of the enrollee's consent to participate in the program. All instruments were self-administered, with assistance provided by the paraprofessional as needed. Assessment of the support relationship forms were distributed to support providers one month after the initiation of the relationship and to both providers and support recipients at approximately 34 to 36 weeks' gestation. The support providers understood that their reports would be used for program evaluation purposes.

APPENDIX C

APPENDIX C

UCRIHS Approval

MICHIGAN STATE
UNIVERSITY

March 20, 1997

TO: Rachel F. Schiffman
A230 Life Sciences

RE: IRB#: 97-176
TITLE: SOCIAL SUPPORT PROVISION IN AT-RISK PREGNANCY BY
LAY COMMUNITY VOLUNTEERS: ASSESSMENT OF THE
SUPPORT RELATIONSHIP
REVISION REQUESTED: N/A
CATEGORY: 1-E
APPROVAL DATE: 03/17/97

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.



OFFICE OF
**RESEARCH
AND
GRADUATE
STUDIES**

**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.

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

Sincerely,

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

DEW:bed

cc: Carol Powers

The Michigan State University
IDEA is Institutional Diversity
Excellence in Action

MSU is an affirmative action,
equal opportunity institution

APPENDIX D

APPENDIX D

Permission to Access Data

**Prevention Outreach Services**

Parent to Parent Program
 Butterworth Hospital
 100 Michigan, NE - MC-94
 Grand Rapids, MI 49503

 May 7, 1996

Carol Powers
 15861 Buchanan
 West Olive, MI 49460

Dear Carol:

We have received your proposed research questions and request to use our MOMS data set to conduct a secondary analysis for your masters thesis. We understand that you want to explore perceptions of the volunteer's and participant's assessment of supportive relationship with client demographic and psychosocial characteristics, client program participation and participation in prenatal care.

Guidelines for authorship will be developed between the student and the project co-principal investigators. Any manuscript or presentation resulting from this thesis must be reviewed by the co-principal investigators prior to submission.

Marcia Gebben, our research coordinator, has indicated that she has discussed with you the availability of demographic data on the volunteer sample and whether the data needed to assess adequacy of prenatal care is in the data set. Marcia can get this information for you in a more timely manner. As you finalize the variables you need in the data set, we will make this data set available to you on disc so that you can proceed with the analysis.

We are excited about your study and look forward to working with you, Carol.

Sincerely,

Judith Lindsay, BSN, MPA
 Program Director
 Prevention Outreach

Lee Anne Roman, PhD.
 Research Director
 Prevention Outreach

Joseph S. Moore, MD
 Medical Director
 Prevention Outreach

APPENDIX E

APPENDIX E

Table E1

Summary of Adequacy of Prenatal Care Utilization data (N = 64)

APNCU Category	Adequacy of Initiation of PNC No. (%)	Adequacy of Received PNC Services No. (%)	Adequacy of PNC Utilization No. (%)
Inadequate	3 (4.7)	4 (6.3)	9 (14.1)
Intermediate	4 (6.3)	11 (17.2)	9 (14.1)
Adequate	14 (21.9)	17 (26.6)	16 (25.0)
Adequate Plus	23 (35.9)	8 (12.5)	6 (9.4)
Missing information	20 (31.3)	24 (37.5)	24 (37.5)

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