

A SURVEY OF PERCEIVED SOCIAL SUPPORT AMONG PREGNANT  
WOMEN IN THE INTERMOUNTAIN REGION

by

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## ABSTRACT

Social support influences health and well-being. Research findings show that social support positively influences pregnancy outcomes. The purpose of this descriptive study was to describe and explore perceived social support of pregnant women and determine if social support is associated with degrees of rurality, i.e., urban, rural and remote rural. The sample was comprised of 60 pregnant women in their second and third trimester who resided in the Intermountain region. Perceived social support self-report surveys (PRQ85-Part 2) were distributed and completed by women at two urban clinics and one hospital located in Montana. Perceived social support scores were calculated for each participant, with a possible range from 25-175; higher scores indicated greater perceived social support. The mean perceived social support score for the sample was 152.9. Scores were highest among those who were married, Caucasian, had a higher level of education, had a higher annual income, and who indicated their primary source of support as spouse. Scores were also highest for those in their third trimester with complications of the current pregnancy. Scores were lowest for those who indicated living in a remote rural setting and highest for those from a rural setting. When stratified by degrees of rurality, findings reflected those of the entire sample except the remote rural group, which had lower scores with a higher annual income and were in their third trimester. Possible explanations for these findings are supported by Cohen's stress buffering model of social support and rural nursing theory. These results may help nurses and other healthcare providers offer a more holistic approach to meeting unique health care needs of pregnant women in rural communities. Of significance here is recognizing social support as important to health care during pregnancy, a specific period of time when health promotion and prevention are of critical importance.

## CHAPTER 1

## INTRODUCTION

Florence Nightingale, a significant figure in modern nursing, first documented the influence of environment on well-being. Social support is an integral aspect of the environment and a well-known and widely recognized concept associated with positive health practices that influence a person's physical and psychological well-being. Social support preserves health by protecting or buffering a person from ill effects of stress (Cohen & Wills, 1985; Cohen, 1988; Yarcheski & Mahon, 1989; Lakey & Cohen, 2000). Pregnancy, a major life stressor, can benefit from the potential buffering effects of social support (Holmes and Rahe, 1967). This is substantiated by nursing research findings that show that health practices, psychological well-being, and maternal and fetal outcomes were influenced by perceived social support (Kearns, Neuwelt, Hitchman, & Lennan, 1997; Ritter, Hobfoll, Lavin, Cameron, & Hulsizer, 2000; Webster et al., 2000; Rudnicki, Graham, Habboushe, & Ross, 2001). Perceived social support is support that is believed to be available in contrast to that which is actually available (Wills & Schinar, 2000). With social support acting as a buffer to the stress of pregnancy, its influence on health behaviors during the prenatal period may affect pregnancy outcomes.

Rural communities are sparsely populated areas where social support may be perceived differently because of various factors such as isolation and social integration. However, rural health is an area where nursing research is lacking. Nursing research on pregnancy in rural settings is even more unavailable. While much research focuses on

social support during pregnancy, nursing research on social support and pregnancy in rural environments is sparse.

### Problem/Purpose

The twofold purposes of this study are to explore and describe perceived social support of pregnant women and to determine if perceived social support is associated with varying degrees of rurality. It has been proposed in relevant literature that social support influences health and well-being, establishing the importance of recognition and assessment of social support in health care, including health practices and outcomes of pregnancy. While social support has been the focus of much nursing research, rural literature and research on social support in pregnancy is limited.

### Research Questions

The research questions addressed in this study are “What is the perceived social support of pregnant women?” and “Is there an association between perceived social support of pregnant women and degrees of rurality?”

### Conceptual Framework

There are two conceptual bases for this study. The first is the theoretical framework of Cohen (1988), a social psychologist who has extensively researched the relationships between social support and health. The second is the theory of rural nursing, developed by nurse researchers focusing on health care needs related to characteristics of rural communities (Lee, 1991; Long & Weinert, 1989).

### Social Support Theory

Cohen (1988) focused his research on developing concepts related to social support, stress, and health. He views social support as a broad term incorporating various aspects of an individual's network of social resources. His underlying theory is based on the idea that social support, along with other factors (i.e., socioeconomic status, mental health, stress, and personality), has a significant impact on health (Cohen & Wills, 1985; Cohen, Underwood, & Gottlieb, 2000). Cohen et al. (2000) referred to three main categories of social support often referenced in the psychological literature (i.e., emotional, informational, and tangible or instrumental support) (Schaefer, Coyne, & Lazarus, 1981; Taylor & Seeman, 1999; Cohen et al., 2000; Israel, Farquhar, Schultz, James, & Parker, 2002). Emotional support is that which gives a person a feeling of being loved and cared for, thereby enhancing feelings of self-worth. Informational support provides feedback and assistance in problem solving by offering written or verbal information. Tangible or instrumental support is direct assistance provided to a person (Schaefer et al., 1981; Cohen, 1988).

Social support is defined by Cohen et al. (2000) as the “social resources that persons perceive to be available or that are actually provided to them by nonprofessionals in the context of both formal support groups and informal helping relationships” (p. 4). Cohen references Wills and Shinar (2000), who distinguish between perceived and received social support as that which is perceived to be available versus that which is actually available. Concerning health behaviors, there is debate as to which type of support is more influential. Cohen and Wills (1985) found perceived social support to be

more significant in relation to health behaviors than actual social support. Their rationale for this is that if the resources of support are not perceived by an individual, they cannot be utilized. Cohen's theory is supported by a number of studies that found perceived social support was more influential than actual social support in health and well-being (Giblin, Polan, & Ager, 1990; Schaffer & Lia-Hoagberg, 1997; Feldman, Dunkel-Schetter, Sandman, & Wadhwa, 2000; Rudnicki et al., 2001).

Cohen and Wills (1985) conducted a theoretical meta-analysis of 40 correlational studies to gain evidence to support their hypotheses regarding social support and its effect on health and well-being. Two theories emerged from this and other studies. The first of these theories is the "main effect model." This theory is based on the idea that social support has a beneficial effect on health regardless of whether or not an individual is experiencing stress. Conversely, the second theory, the "stress buffering model," suggests that social support acts as a buffer to allow people to cope better with stressful life events, thereby improving or maintaining well-being. (Cohen et al., 2000).

Because both theories apply to the relationship between social support and pregnancy-related events (e.g., health behaviors, emotional well-being, and outcomes), the basis for this study will be the stress buffering model, postulating that pregnancy is a major life stressor (Holmes & Rahe, 1967). The stress-buffering theory explains social support in relation to well-being of those under stress by acting as a buffer from potentially threatening influences of stress on health.

### Rural Nursing Theory

Rural health theory describes a number of unique challenges of rural health providers, which differ from those encountered in urban settings. In order to better understand the health needs of rural communities, nursing researchers have developed a theoretical base for rural nursing through extensive work and research in these communities. Long and Weinert (1989) describe rural health concepts derived from qualitative and quantitative research conducted in rural settings. These concepts include “work and health beliefs,” “isolation and distance,” “self-reliance,” “lack of anonymity,” “insider/outsider,” and “newcomer/old-timer.”

A significant rural health concept is that of health beliefs related to work. Frequently reported in the conceptualization of rural health is the observation that rural dwellers define health based on one’s ability to work. “Isolation and distance” are noted as key concepts of rural health because of the effect they have on health care accessibility and health care seeking behavior. Because rural dwellers are more isolated, “self-reliance,” another concept identified by Long and Weinert (1989), also becomes highly valued. Due to the sparse population in rural areas, “anonymity” is an issue because people are known in numerous different roles, both personal and professional. While this has been noted to be beneficial at times, it is also challenging for health care providers in maintaining patient confidentiality. The concept of “insider/outsider” in relation to health care takes into account people who are familiar and trusted versus those who are unfamiliar. Many important health care behaviors and decisions are based upon trust and familiarity of a provider, even though the “outsider” may be more knowledgeable.

Similar to the concept of “insider/outsider” in rural health is the concept of “newcomer/old-timer.” “Newcomers” are often less trusted because of unfamiliarity. Health care and social relationships frequently depend on these rural health concepts based on trust (Long & Weinert, 1989).

From the development of rural nursing theory, a concept emerged that provides valuable insight in describing the rural health community. This concept is termed “rurality.” Rurality is a term referred to throughout this study. Because standard definitions of urban and rural used by the U.S. Census are broad, they do not accurately define individual communities. Rurality is a concept that serves to bridge the very wide gaps in defining “rural” and “urban.” Rurality delineates a continuum of varying populations and characteristics of communities, ranging from “very urban” to “remote rural,” focusing more on the rural perspective.

Lee (1991), a nurse researcher, posed the concept “rurality,” integrating numerous definitions from the literature. Her conceptualization of rurality includes occupational, ecological, and sociocultural characteristics. Occupational characteristics were found to be similar in comparisons of rural communities. Rural jobs often require more contact with the natural environment, work is difficult to separate from personal life, and residents often have more than one responsibility in the community. Ecological characteristics address accessibility to resources and supplies, for example, schools, health care, communication technology, and household supplies. The last characteristic of rurality, sociocultural, includes the shared ideas, values, and beliefs of the community. Rural communities are considered to be more conservative and traditional in political and

religious thinking. Lee did not elaborate on the social aspects of rural communities but did point out differing social networks and interaction in less densely populated areas. Lee suggests that social integration in rural communities is affected by the small population and is related to the shared ideals and values among residents. An important perspective of her theory is that rural communities, however similar, exhibit a wide range of diversity based on population density, validating the need to view rurality on a continuum, rather than one broad category.

### Significance

The significance of social support in relation to health and well-being has been extensively researched and well established as a positive influence. Research on social support specifically focused on pregnant women has shown it to influence outcomes of pregnancy. This knowledge may aid nurses and other health care providers in the management of care. Nurses' and health care providers' knowledge about perceived social support in pregnant women in rural settings may also contribute to enhanced health practices and outcomes of pregnancy. Given that there is little research on social support in pregnancy in rural settings, this study may create awareness of social support of pregnant women in rural areas. The possible influences of rurality on perceptions of social support may further direct health care provision to the needs of prenatal populations in rural settings.

### Definition of Terms

The following definitions are used in this study:

1. Social Support—those resources perceived to be available that provide emotional support, feelings of esteem and being loved, whether from family, partner, friends, care providers, or peers
2. Actual Support—those resources that are actually available (financial, family, medical, etc.)
3. Perceived Support—those resources that one believes are available
4. Rurality—the concept that describes a continuum of population density and community characteristics divided into three degrees: remote rural, rural, and urban
5. Remote rural—a community with less than 2,500 residents, located at least 40 miles from a community of greater than 50,000 with no hospital or medical facility available (Koehler, 1998)
6. Rural—a community of less than 10,000, located at least 15 miles from a community of greater than 50,000, with a hospital of no more than 100 beds or with a medical facility (Koehler, 1998)
7. Urban—a community with a population greater than 50,000, with at least one hospital with more than 100 beds and with at least two medical facilities (Koehler, 1998)
8. Pregnancy—women carrying intrauterine offspring between the gestational ages

9. of 16 and 42 weeks (second and third trimesters) based on estimated date of delivery

The above definitions for “urban,” “rural,” and “remote rural” were selected from Koehler (1998) because her research was conducted in the same general geographic area as this study.

## CHAPTER 2

## REVIEW OF LITERATURE

In conducting the literature research for this study, numerous electronic data bases were utilized. The literature review presented in this chapter focuses on nursing research on social support, nursing research on social support and pregnancy, and rurality.

Nursing Research on Social Support

Social support is a concept that has been extensively researched and is often linked to health and well-being. A significant amount of nursing literature confirms the idea that social support is a predictor of health-related behaviors and practices (Katapodi, Facione, Miaskowski, Dodd, & Waters, 2002; Mahat, Scoloveno, & Whalen, 2002; McDonald, Wykle, Misra, Suwonnarop, & Burant, 2002; McNicholas, 2002).

In a descriptive correlational study conducted with 65 adolescent minorities, significant findings included a positive relationship between social support and positive health practices, specifically nutrition, exercise, relaxation, safety, substance abuse, and health promotion (Mahat et al., 2002). These findings are consistent with research results in adult populations as well (Katapodi et al., 2002; McDonald et al., 2002; McNicholas, 2002). Descriptive research comparing social support and adherence to breast cancer screening guidelines found that women who reported higher rates of social support were more likely to participate in preventive screening practices for breast cancer (Katapodi et al., 2002). McNicholas (2002) attempted to identify determinants of positive health

practices based on social support in middle-aged adults. Analysis of self-report surveys identified a significant correlation between social support and positive health practices. Research results from a study of African-American diabetics suggested social support was a predictor of disease acceptance and health-promoting behaviors, such as physical activity, stress management, nutrition, and spirituality (McDonald et al., 2002).

Numerous recent studies in nursing literature, as well other health-related sources, have also recognized a correlation between social support and compliance with physical activity and exercise (Eyler et al., 1999; Allgower, Wardle, & Steptoe, 2001; Fraser & Spink, 2002; Mahat et al., 2002; McNicholas, 2002; Resnick & Nigg, 2003). Results of a survey of a random sample of adult women with differing ethnic backgrounds supported the hypothesis that participants with lower social support were more likely to be sedentary (Eyler et al., 1999). Additional research supporting the link between social support and exercise is noted in a study of adult females from a rehabilitation program designed to promote health in those with health-compromising conditions, such as diabetes, hypertension, arthritis, obesity, hyperlipidemia, chronic lung disease, and osteoporosis (Fraser and Spink, 2002). The authors found that social support was a predictor of increased attendance of the program. A nursing study designed to test conceptual models used to explain exercise behavior in older adults found that social support was a strong predictor of physical activity (Resnick & Nigg, 2003). In contrast, a study of young adult men and women ( $N=179$ ) from different countries found that less social support was independently related to physical inactivity (Allgower et al., 2001).

The review of literature consistently showed that research reports a significant influential relationship between social support and health practices and behaviors across the lifespan, regardless of race or ethnicity. Definitions of social support, as well as various aspects of its significance, were addressed, demonstrating the influence of social support on health in the general population.

### Nursing Research on Social Support and Pregnancy

A number of studies in nursing literature have explored the effect social support has on outcomes of pregnancy and maternal mental and physical health before and after the gestational period. In this review of literature on pregnancy and social support, three predominant ideas were identified. These themes are psychological well-being, health behaviors and practices, and pregnancy outcomes.

Social support in relation to depressed mood during pregnancy was frequently reported in relevant literature. Women with little social support were more likely to have symptoms of depression during and after pregnancy. Conversely, pregnant or postpartum women with symptoms of depression tended to have less social support (Collins, Dunkel-Schetter, Lobel, & Scrimshaw, 1993; Kearns et al., 1997; Ritter et al., 2000; Webster et al., 2000; Rudnicki et al., 2001). Rudnicki et al. (2001) surveyed 150 minority women in their third trimester using instruments evaluating coping, social support, and depressed mood. A bivariate regression analysis found significant correlations between depressed mood and psychosocial variables, such as socioeconomic class, perceived social support, and intent of pregnancy. Women who were less satisfied with their support systems

tended to have greater incidence of depressed mood (Rudnicki et al. 2001). In a prospective study of inner-city pregnant and postpartum women, Ritter et al. (2000) performed a battery of surveys measuring stress, social support, self-esteem, and depressive symptomatology and found, as hypothesized, that greater social support was a predictor of less depressive symptomatology.

In an exploratory, longitudinal study of 83 women from antenatal classes in New Zealand, a series of three interviews was completed in the second and third trimester and seven to nine weeks postpartum, respectively. Women who reported less social support from their partners demonstrated a higher likelihood of distressed emotional behavior (Kearns et al., 1997). The same study also found that lack of support from friends after delivery was predictive of higher levels of emotional distress.

Postpartum depression, though not the focus of this study, is of significance because it has been associated with depression in the antenatal period. In a meta-analysis of 44 studies, social support was one of eight predictive variables of postpartum depression (Beck, 1996). In a more recent meta-analysis, of the 84 studies evaluated, 27 found social support to be predictive of postpartum depression (Beck, 2001).

Health behaviors in pregnancy have also been noted in recent literature to correlate with social support. In a prospective study of prenatal women ( $N=901$ ), participants were given a prenatal survey at their first visit and a follow-up survey at 16 weeks postpartum. Results showed poor prenatal health, late entry to prenatal care, and less frequent health care seeking behaviors with less social support (Webster et al., 2000).

A study of rural women by Chandler (2002) found a relationship between little social support from family and friends and late entry to prenatal care.

There is numerous health research done concerning relationships between social support and pregnancy outcomes. In the literature, variables studied included: birth weight, apgar scores, length of labor, and prematurity (Collins et al., 1993; Rini, Dunkel-Schetter, Sandman, & Wadhwa, 1999; Feldman et al., 2000). Significant positive correlations between greater social support and higher birth weight have been noted (Collins et al., 1993; Norbeck, DeJoseph & Smith, 1996; Feldman et al., 2000).

A study of 319 African-American women participated in a social support intervention that resulted in a significant reduction in the rate of low birth weight infants (9.1%) compared to the control group (22.4%) (Norbeck et al., 1996). A prospective study of 129 pregnant women examined the influences of social support on birth outcomes and reported that women with a large social support network had higher birth weight babies, better labor progress, less postpartum depression, and higher apgar scores (Collins et al., 1993). Another study investigating the psychosocial predictors of birth weight and length of gestation also found that women with more social resources had higher birth weight babies and those with more stress had more premature deliveries. Feldman et al. (2000) also studied social support in relation to intrauterine fetal growth and birth weight within a sample of 247 women. Social support was found to be a predictor of fetal growth, thus affecting birth weight.

### Rurality

Montana is a predominately rural state with a population of approximately 902,000 and a population density of 6.2 persons per square mile (U.S. Census Bureau, n.d.). The percentage of rural residents, based on the census definition, is estimated to be 46%. This section focuses on the literature using the term “rurality.” The most common reference to “rural” in research is in the U.S. Census Bureau definition, which identifies categories of “urbanized area,” “urban cluster,” and “rural.” An urbanized area is described as having a population density of 500 people per square mile with a total population of 50,000 people or greater. An urban cluster is defined as a population density of 500 people per square mile with a total population between 2,500 and 50,000 (U.S. Census Bureau, n.d.). Rural is designated as all areas not included in the urban definitions. Weinert and Boik (1998) assert that definitions provided by the Census Bureau fail to appreciate the concept of rurality by assigning distinct boundaries to rural and urban, failing to recognize individual community differences in population density. In a concept analysis, Lee (1991) describes rurality as a continuum of population density.

Among published research, there is some consistency in defining rurality in terms of population density, driving distances, and accessibility to health care. Other influential components of the concept of rurality noted in these studies include demographic, economic, and geographic factors (Lee, 1991; Greenley & Dottl, 1997; Ricketts et al., 1998; Goins & Mitchell, 1999; Barnett, Roderick, Martin, & Diamond, 2001; Hooper, 2001).

### Social Support and Degrees of Rurality

Little research focuses on social support associated with the population of community of residence. Rural nursing theory suggests there are unique characteristics of social systems of rural residents (Long and Weinert, 1989; Lee, 1991). This is supported by a number of related studies. Isolation was found to significantly impact social support and health due to limited access to social and health care resources (Johnson, 1998; Smith & Weinert, 2000; Letvak, 2002). A study of low-income urban women found that instrumental support was a stronger predictor of health and depressive symptoms than emotional support (Isreal et al., 2002). On the other hand, rural residents were more likely to be negatively affected by emotional stressors, such as loneliness from loss or isolation from friends and loved ones (Johnson, 1998). There was no research comparing characteristics of social support between rural and urban areas. The limited literature in this area studied dissimilar populations, making it difficult to draw any conclusions about the variations in social support associated with degree of rurality.

As noted in the introduction, the research on social support and pregnancy in rural areas is, at best, sparse. One study was found regarding health behaviors in pregnancy in a rural area (Chandler, 2002). Chandler studied determinants of late entry to prenatal care in 176 pregnant women and found that lack of social support was a positive predictor of late entry to health care in pregnancy.

The review of literature presented in this chapter supports the idea that social support influences health, psychological well-being, health practices, and behaviors in the general population and in those who are pregnant. The research on social support in

pregnancy has been well-established; however, there is little literature pertaining to rural populations. This review presented studies that demonstrate the influence of social support on health behaviors and practices in general populations. Literature on social support and its influence on pregnant populations was also addressed. Three predominant areas influenced by social support were identified among this research: psychological well-being, health behaviors and practices, and pregnancy outcomes. Rurality was discussed in terms of common definitions and characteristics from current literature. A brief review of the limited literature on social support and rurality concluded this chapter.

## CHAPTER 3

### METHODS

The following chapter addresses the research methodology utilized in conducting this study. The research design and sample are described, followed by instrumentation, data collection and data analysis.

#### Design

A descriptive, exploratory design was used in this study. Given that little research is available about social support and pregnant woman with varying degrees of rurality, this design was chosen to learn more about the topic and explore possible directions for further research. A self-report survey was distributed to collect data.

#### Sample

A convenience sample of 60 participants was used for this study. The inclusion criteria were as follows: 1) women 18 years and older; 2) gestational age between 16 and 42 weeks (second and third trimester); 3) literate/fluent in reading and writing English; 4) voluntary participation; 5) currently receiving care at designated prenatal clinics and hospitals in Montana. The urban area from which the sample was taken provides obstetric services to eastern and central Montana, and northern Wyoming.

### Protection of Human Subjects

The study was approved by the Institutional Review Board at Montana State University, as well as at the Billings Institutional Review Board. Confidentiality of the participants was protected by no identification of participants on survey forms. Access to the surveys was restricted to the primary researcher, clinic and hospital staff participating in data collection, and the data entry assistant.

### Data Collection Procedures

Data collection occurred in March and April of 2004. The office staff at three health care clinics located in an urban community in Montana offered their clients the survey along with the participant's letter explaining the study and inviting their participation. The surveys were returned to the staff and sealed in an envelope until collected by the researcher. This written information included the name and contact information of the investigator, purpose of the study, and the voluntary nature of participation (see Appendix A). A written two-part, three-page self-report survey was administered to willing participants. The survey required 5-15 minutes to complete. The first part of this survey was background information, including questions concerning rurality, and the second was a standardized social support questionnaire.

### Instruments

Two written self-report instruments were used for this study. The first was the Background Survey, and the second was the Personal Resource Questionnaire 85-Part 2

(PRQ85-Part 2) (see Appendix D). The Background Survey (see Appendix C) included questions related to demographics and obstetrical data, source of support, and rurality. While social support instruments vary in content and methods, most include aspects of both perceived and received social support. The PRQ85-Part 2, originally created by Brandt and Weinert (1981), measures only perceived social support. It was chosen for this study for its ease of use, clarity, and proven reliability and validity in measuring perceived social support. Written consent to use the PRQ85-Part 2 was obtained from Dr. Weinert (see Appendix B). While the PRQ85 is a two-part survey, for the purposes of this study, only Part 2 was utilized.

The PRQ85-Part 2 is based on the theoretical concepts of Weiss (1974), incorporating aspects of social support such as intimacy, nurturance, social integration, assistance, and worth. It consists of 25 questions answered on a 7-point Likert scale, ranging from 7, rated as *strongly agree* to 1 rated as *strongly disagree*. Total scores range from 25 to 175; the higher the total score, the greater perceived social support as reported by the individual. In 1985, the tool was revised and is currently referred to as the Personal Resource Questionnaire 85 (PRQ85). Five questions on the survey were worded negatively to reduce response bias.

Validity and reliability of the PRQ85 was tested in the original research and development of the tool, published by Brandt and Weinert (1981). Construct validity was tested with the Self-Help Ideology Scale. Revisions were made by the authors in 1985. Weinert (1987) reported a Cronbach's alpha reliability of 0.89. Internal consistency was evident by subscale reliabilities ranging from 0.61 to 0.77. Reliability and validity for the

Personal Resource Questionnaire were reported by Weinert (1987) as evidenced by five years of psychometric testing. Other nursing studies using the PRQ85-Part 2 reported reliability coefficients ranging from 0.74 to 0.92 (Aaronson, 1989; Walker, Cooney, & Riggs, 1999; Mahat et al., 2002; McNicholas, 2002).

Numerous studies have been conducted using only PRQ85-Part 2, which assesses perceived social support. The PRQ85-Part 2 has been used in nursing research because of its convenience and ease of use with subjects of differing age groups and ethnicities. Prior to data collection in one study, Mahat and colleagues (2002) presented the PRQ85-Part 2 to adolescents, who reported it to be understandable and easy to complete.

In this study, the questionnaire was utilized to address the hypothesis of a positive relationship between social support and positive health practices. The coefficient alpha for the survey in this study was 0.74. McNicholas (2002) also studied the relationship between positive health practices and social support in a multi-ethnic, middle-aged adult population using the PRQ85-Part 2, yielding a coefficient alpha of 0.90. The PRQ85-Part 2 has been used with pregnant women as well. A number of researchers found a positive relationship between social support and health behaviors during pregnancy with reliability coefficients of 0.88 and 0.92 (Aaronson, 1989; Walker et al., 1999).

### Data Analysis

All data were analyzed using Epi Info, Version 3.2. The data entry was conducted by the primary investigator and a research assistant. A private consultant was utilized for the guidance on statistical analysis. Access to the data during the analysis process was

limited to the primary researcher, the research assistant, and the statistical consultant.

First, descriptive statistics were calculated to describe the sample, including frequency distributions. Perceived social support scores were calculated from the PRQ85-Part 2. Scores for the entire sample were cross-tabulated with selected sample characteristics relating to social support and then stratified into groups based on rurality. ANOVA, Bartlett's chi square, and Mann-Whitney/Wilcoxon Two-Sample Test were calculated for statistical significance. Only the p-values for ANOVA were reported in this study. Frequency, mean, range, and standard deviations were also reported.

## CHAPTER 4

## RESULTS

The intent of this study was to explore and describe perceived social support of pregnant women and to determine if perceived social support is associated with varying degrees of rurality. Results of 60 respondents' perceived social support scores based on analysis of the Personal Resource Questionnaire 85-Part 2 are reported in this chapter. A description of the total sample is provided. Results of perceived social support and perceived social support according to degree of rurality are reported. Hereafter, perceived social support is often referred to as social support.

Description of the Sample

The sample was comprised of 60 pregnant adult women who received care at three prenatal clinics and one hospital. The response rate on background information items ranged from 95% to 100%. A description follows of the sample's demographic characteristics, obstetric characteristics, source of primary support, and rurality.

Demographic characteristics included age, marital status, ethnicity, educational level, and annual income. The age of respondents ranged from 18 to 45 years, with a mean age of 28.3 years. The majority of respondents were married ( $n=44$ , 73.3 %), and approximately one-fourth of the sample were single ( $n=14$ , 23.3 %). One respondent was divorced and another was separated. Caucasians comprised 91.5% of the sample ( $n=54$ ), followed by Native Americans at 6.7% ( $n=4$ ) and Hispanics at 1.7% ( $n=1$ ). Forty percent

( $n=23$ ) of all respondents had some high school education. Approximately one-half ( $n=29$ ) had one to four years of college education. The remaining eight had more than four years of college (see Table 1). Fifty-seven participants indicated their estimated annual income. The income categories were consolidated. Approximately 40% ( $n=23$ ) reported an annual income of \$20,000 to \$40,000 (see Table 2).

Table 1. Education Level by Number and Percent.

Education	<i>n</i>	%
High school	23	38.3
1-4 years college	29	48.3
> 4 years college	8	13.3
Total	60	100

Table 2. Annual Income by Number and Percent.

Annual income	<i>n</i>	%
< \$20,000	19	33.3
\$20,000-\$40,000	23	40.4
>\$40,000	15	26.3
Total	57	100

Obstetric characteristics of the sample included trimester, number of pregnancies, number of children, and complications with the current pregnancy. Estimated weeks of gestation ranged from 16 weeks to 40 weeks. Of the respondents, about 42% were in their second trimester (16-28 weeks) and 58% were in their third trimester (29-40 weeks). The current pregnancy was the first for approximately one-fourth of the respondents; for another one-fourth, this was their second pregnancy. Approximately 50% of respondents reported three or more pregnancies. Thirty four percent indicated they had “no children,” 25% had “one child,” 27% had “two children,” and the remaining 14% had “more than

three children.” About one-half of the sample reported complications with the current pregnancy. The most commonly reported complication was preterm labor ( $n=10$ , 16.9%), followed by high blood pressure ( $n=5$ , 8.5%) (see Table 3).

Table 3. Complications of Current Pregnancy by Number and Percent.

Complications	<i>n</i>	%
None	32	54.2
Preterm Labor	10	16.9
High Blood Pressure	5	8.5
Other	4	6.8
Abnormalities with Placenta	3	5.1
Premature Rupture of Membranes	2	3.4
Incompetent Cervix	2	3.4
Multiple	1	1.7
Total	59	100

The source of primary support for the majority (72%) of responses was “spouse.” The second most reported response was “significant other” (16%). “Parent” was reported by approximately 9% of respondents (see Table 4).

Table 4. Source of Primary Support by Number and Percent.

Primary Support	<i>n</i>	%
Spouse	42	72.4
Significant Other	9	15.5
Parent	5	8.6
Friend	1	1.7
Relative	1	1.7
Total	58	100

Rurality was based on responses to the item “description of community of residence,” which was then related to “urban,” “rural” and “remote rural” as defined for this study. All 60 participants identified descriptions of their community of residence in

terms of population and access to medical services. The majority of respondents ( $n=36$ , 61%) identified their residence as an urban population greater than 50,000, with at least one hospital greater than 100 beds and at least two medical facilities. Approximately 40% ( $n=24$ ) indicated 'rural' or 'remote rural' (see Table 5).

Table 5. Degree of Rurality by Number and Percent.

Population of Residence	<i>n</i>	%
Urban > 50,000	36	61.0
Rural <10,000	13	21.7
Remote Rural <2,500	11	18.6
Total	60	100

### Results of Study

Social support scores were analyzed according to frequency, mean, range, and standard deviation based on responses ( $N=60$ ) to the Personal Resource Questionnaire 85-Part 2 (PRQ85-Part 2). There were 5 negative statements that were scored in a reverse manner to reflect the positive direction of the other 20 questions. Scores were then cross-tabulated with sample characteristics for the entire sample. Next, scores were cross-tabulated with sample characteristic and stratified into degrees of rurality.

#### Perceived Social Support Scores

Possible scores for the PRQ85-Part 2 ranged from 25-175, with higher scores representing higher levels of perceived social support. The mean perceived social support scores for this sample ranged from 105-175, with a mean score of 152.6 and a standard deviation of 15.1 ( $p=0.05$ ). In order to analyze the data further, the social support scores

were calculated according to sample characteristics that included demographic characteristics (marital status, ethnicity, education level, and annual income), obstetric characteristics (trimester, number of pregnancies, number of children, and complications with current pregnancy), source of primary support, and rurality (urban, rural, remote rural).

The demographic characteristics were analyzed in terms of social support and can be found in Table 6. Significant findings include the mean social scores associated with marital status. Those who indicated “married” had a higher mean score. Though not statistically significant, findings suggest that those in the 25-34 year age range had higher social support scores. Caucasians also had a higher mean score, followed by Native Americans; however, the number responding in this group was only four. Lastly, social support scores were higher for those with more education and more annual income.

Table 6. Perceived Social Support Scores Associated with Demographic Characteristics by Number, Mean, Range, and Standard Deviation. Table 6 Continued.

Demographic Characteristic	<i>n</i>	Mean Score	Range	<i>SD</i>
Age ( $p = 0.09$ )				
18-24 yrs	22	149.2	127-175	12.8
25-34 yrs	24	157.6	126-175	11.5
35 + yrs	13	148.3	105-175	21.9
Ethnicity ( $p = 0.82$ )				
Caucasian	54	153.1	105-175	15.0
Native American	4	149.2	126-163	17.7
Hispanic	1	159	0	0
Marital Status ( $p < 0.01$ )				
Married	44	155.7	126-175	12.1
Single	14	148.4	126-175	15.9
Separated	1	122	0	0
Divorced	1	105	0	0

Demographic Characteristic	<i>n</i>	Mean Score	Range	<i>SD</i>
Education ( $p = 0.14$ )				
High School	23	147.7	126-175	14.6
1-4 yrs college	29	155.5	105-175	15.5
> 4 yrs college	8	156.3	140-170	12.3
Annual Income ( $p = 0.75$ )				
< 20,000	19	150.6	127-175	14.7
20,000-40,000	23	152.5	105-175	17.1
>40,000	15	154.7	126-174	12.9

Obstetric characteristics were also analyzed in terms of social support. The mean social support score increases with complications of pregnancy and in the third trimester of the current pregnancy. No significant difference in social support was noted to be associated with the number of children or number of pregnancies (see Table 7).

Table 7. Perceived Social Support Scores Associated with Obstetric Characteristics by Number, Mean, Range, and Standard Deviation.

Obstetric Characteristic	<i>n</i>	Mean Score	Range	<i>SD</i>
Gestation ( $p = 0.43$ )				
Second Trimester	24	150.8	126-175	14.2
Third Trimester	35	154.0	105-175	15.9
Number of pregnancies ( $p = 1.0$ )				
One	17	152.5	105-170	16.0
Two	14	152.6	122-175	15.2
Three	29	152.7	126-175	15.0
Number of children ( $p = 1.0$ )				
None	20	153.6	105-170	15.2
One	15	153.3	127-172	12.3
Two	16	152.3	126-175	15.7
Three or more	8	153.5	126-175	18.0
Complications ( $p = 0.90$ )				
None	32	150.8	105-175	17.0
Preterm Labor	10	152.8	134-175	12.8
High Blood Pressure	5	156.2	146-175	11.1
Abnormalities with placenta	3	155.7	140-174	17.2

The mean score of respondents ( $n=58$ ) who reported their “spouse” as their primary support was 138. Those who reported a “significant other” as primary support had a mean score of 131. Five respondents listed “parent” as primary support, and the mean score for this group was 146.6. There were insufficient numbers in other categories to calculate descriptive statistics (see Table 8).

Table 8. Social Support Scores Associated with Source of Primary Support by Number, Mean, Range, and Standard Deviation.

Primary Support	<i>n</i>	Mean Score	Range	<i>SD</i>
Spouse	42	155.5	126-175	12.2
Significant Other	9	145.9	122-163	15.6
Parent	5	146.6	127-170	19.5
Friend	1	105	0	0
Relative	1	175	0	0

$p < 0.01$

#### Perceived Social Support According to Degree of Rurality

All respondents ( $N=60$ ) indicated their community of residence. The mean social support score for those residing in communities with an urban population greater than 50,000 was 135 ( $SD=11.0$ ). The mean score of those from a rural community of less than 10,000, at least 15 miles from an urban community, was 141 ( $SD=9.8$ ). For those who responded to living in a remote rural community of less than 2,500, at least 40 miles from an urban community, the mean score was 134 ( $SD=13.0$ ). This analysis was statistically significant according to the ANOVA p-value (see Table 9).

Table 9. Perceived Social Support Scores Associated with Degree of Rurality by Number, Mean, Range, and Standard Deviation.

Degree of rurality	<i>n</i>	Mean Score	Range	<i>SD</i>
Urban > 50,000	36	152.4	122-175	15.2
Rural < 10,000	12	159.4	143-175	10.3
Remote Rural < 2,500	11	144.4	105-162	16.2

$p = 0.05$

Further analysis of data was conducted. The social support scores were cross-tabulated for each demographic characteristic (including age, marital status, ethnicity, education level, and annual income), each obstetric characteristic (trimester, number of children, number of pregnancies, and complications with current pregnancy), and source of primary support, and the scores were stratified by degree of rurality.

Mean social support scores cross-tabulated with demographic characteristics yielded the following results for degrees of rurality, none of which was statistically significant according to p-values (see Table 10): The highest social support scores for age were consistently in the 25-34 year age category in each degree of rurality. Mean scores also increased with more education in each degree of rurality. A difference was noted in annual income and social support scores among the degrees of rurality. Those living in a remote rural community had a decrease in mean social support score with an increase in annual income. The opposite observation is noted in urban settings, where mean scores were higher with higher income. Those with an annual income of \$20,000-\$40,000 living in a rural community had higher mean scores.

Table 10. Mean Social Support Scores for Demographic Characteristics by Degree of Rurality.

Demographic Characteristic	Mean Score		
	Urban	Rural	Remote rural
<b>Age</b>			
18-24 yrs	148.0 ( <i>n</i> = 13)	153.5 ( <i>n</i> = 6)	146.0 ( <i>n</i> = 3)
25-34 yrs	159.2 ( <i>n</i> = 13)	163.5 ( <i>n</i> = 4)	148.3 ( <i>n</i> = 6)
35 + yrs	149.4 ( <i>n</i> = 10)	175.0 ( <i>n</i> = 1)	130.0 ( <i>n</i> = 2)
	( <i>p</i> = 0.12)	( <i>p</i> = 0.09)	( <i>p</i> = 0.42)
<b>Marital Status</b>			
Married	155.2 ( <i>n</i> =26)	160.7 ( <i>n</i> = 9)	150.5 ( <i>n</i> = 8)
Single	148.0 ( <i>n</i> =9)	155.7 ( <i>n</i> = 3)	139.5 ( <i>n</i> = 2)
Separated	122.0 ( <i>n</i> =1)	0 ( <i>n</i> = 0)	0 ( <i>n</i> = 0)
Divorced	0 ( <i>n</i> =0)	0 ( <i>n</i> = 0)	105 ( <i>n</i> = 1)
	( <i>p</i> = 0.06)	( <i>p</i> = 0.49)	( <i>p</i> = 0.01)
<b>Education</b>			
High School	145.4 ( <i>n</i> = 13)	155.8 ( <i>n</i> = 6)	143.0 ( <i>n</i> = 4)
1-4 yrs college	156.8 ( <i>n</i> = 17)	163.0 ( <i>n</i> = 6)	144.3 ( <i>n</i> = 6)
>4 yrs college	155.3 ( <i>n</i> = 6)	0 ( <i>n</i> = 0)	150.0 ( <i>n</i> = 1)
	( <i>p</i> = 0.11)	( <i>p</i> = 0.25)	( <i>p</i> = 0.94)
<b>Annual Income</b>			
<20,000	146.6 ( <i>n</i> = 9)	156.9 ( <i>n</i> = 7)	148.3 ( <i>n</i> = 3)
20,000-40,000	153.8 ( <i>n</i> = 13)	166.0 ( <i>n</i> = 3)	144.3 ( <i>n</i> = 6)
>40,000	154.6 ( <i>n</i> = 11)	158.5 ( <i>n</i> = 2)	140.2 ( <i>n</i> = 2)
	( <i>p</i> = 0.45)	( <i>p</i> = 0.48)	( <i>p</i> = 0.68)

Mean social support scores were then cross-tabulated with obstetric characteristics according to degree of rurality (see Table 9). No results were found to be statistically significant based on *p*-values. It was found that mean scores were higher in women in their third trimester of the current pregnancy for both urban and rural communities. Results showed that pregnant women in remote rural communities had a lower mean score in their third trimester. The results showed an increase in mean social support scores when complications of the current pregnancy were indicated, except in the

rural category. Scores for rural residents were higher without complications of pregnancy. The complications most frequently reported are listed in Table 11. Results based on number of pregnancies and number of children were not significant.

Table 11. Mean Social Support Scores for Obstetric Characteristics by Degree of Rurality.

Obstetric Characteristic	Mean Score		
	Urban	Rural	Remote Rural
<b>Trimester</b>			
Second	146.6 ( <i>n</i> = 13)	160.0 ( <i>n</i> = 7)	148.3 ( <i>n</i> = 4)
Third	155.7 ( <i>n</i> = 23)	158.6 ( <i>n</i> = 5)	141.3 ( <i>n</i> = 6)
	( <i>p</i> = 0.08)	( <i>p</i> = 0.82)	( <i>p</i> = 0.56)
<b>Number of Pregnancies</b>			
One	154.4 ( <i>n</i> = 12)	167.0 ( <i>n</i> = 1)	134.7 ( <i>n</i> = 3)
Two	150.4 ( <i>n</i> = 9)	158.0 ( <i>n</i> = 4)	150.0 ( <i>n</i> = 1)
Three or more	152.1 ( <i>n</i> = 15)	159.1 ( <i>n</i> = 7)	147.7 ( <i>n</i> = 7)
	( <i>p</i> = 0.84)	( <i>p</i> = 0.77)	( <i>p</i> = 0.52)
<b>Number of Children</b>			
None	154.3 ( <i>n</i> = 11)	162.0 ( <i>n</i> = 4)	139.5 ( <i>n</i> = 4)
One	150.1 ( <i>n</i> = 9)	159.8 ( <i>n</i> = 4)	152.5 ( <i>n</i> = 2)
Two	155.3 ( <i>n</i> = 10)	158.0 ( <i>n</i> = 1)	145.0 ( <i>n</i> = 5)
Three or more	152.0 ( <i>n</i> = 5)	156.0 ( <i>n</i> = 3)	0 ( <i>n</i> = 0)
	( <i>p</i> = 0.91)	( <i>p</i> = 0.92)	( <i>p</i> = 0.69)
<b>Complications</b>			
None	150.8 ( <i>n</i> = 24)	161.0 ( <i>n</i> = 5)	134.0 ( <i>n</i> = 3)
Preterm Labor	157.3 ( <i>n</i> = 3)	152.5 ( <i>n</i> = 4)	148.7 ( <i>n</i> = 3)
High Blood Pressure	151.3 ( <i>n</i> = 3)	175.0 ( <i>n</i> = 1)	152.0 ( <i>n</i> = 1)
Placental Abnormalities	155.7 ( <i>n</i> = 3)	0 ( <i>n</i> = 0)	0 ( <i>n</i> = 0)
	( <i>p</i> = 0.68)	( <i>p</i> = 0.38)	( <i>p</i> = 0.75)

Mean social support scores were highest in all three degrees of rurality for those participants who indicated “spouse” as a source of primary support (see Table 12). The responses to “relative” and “friend” were statistically insignificant.

Table 12. Mean Social Support Scores for Source of Primary Support by Degree of Rurality.

Source of Primary Support	Mean Score		
	Urban	Rural	Remote Rural
Spouse	154.8 ( <i>n</i> = 25)	165.0 ( <i>n</i> = 8)	150.5 ( <i>n</i> = 8)
Significant Other	141.8 ( <i>n</i> = 4)	155.7 ( <i>n</i> = 3)	139.5 ( <i>n</i> = 2)
Parent	142.0 ( <i>n</i> = 4)	165.0 ( <i>n</i> = 1)	0 ( <i>n</i> = 0)
	( <i>p</i> = 0.08)	( <i>p</i> = 0.74)	( <i>p</i> < 0.01)

This chapter reported results of 60 respondents' social support scores based on analysis of the Personal Resource Questionnaire 85-Part 2. A description of the total respondents was provided, including demographic characteristics, obstetric characteristics, source of primary support, and rurality. Results of perceived social support and perceived social support according to degree of rurality were reported. These results were also associated with various sample characteristics.

In summary, the results that yielded statistical significance were the mean scores based on marital status, primary source of support, and community of residence. Within these groups, higher social support scores were found for those who were married, those who indicated their spouse as primary support, and those living in a rural community. Social support scores for the sample as a whole were found to be higher for Caucasians, those with more education, and those with higher annual income. The scores were also noted to be higher among respondents in their third trimester and those who indicated complications with the pregnancy. When the mean social support scores were stratified into degrees of rurality, findings for the three groups reflected the sample as a whole except for two areas: the mean social support scores in the remote rural group were lower

with higher annual income and lower in the third trimester of pregnancy. These results are discussed in the next chapter.

## CHAPTER 5

### DISCUSSION

The intent of this study was to explore and describe perceived social support of pregnant women and to determine if perceived social support is associated with varying degrees of rurality. A descriptive design was used with a convenience sample of 60 pregnant women in their second and third trimesters (16-28 weeks). This chapter contains a discussion of the findings of the study in relation to the research questions and conceptual framework. Strengths and limitations of the study related to relevant literature and strengths and weaknesses of the instrument are also discussed. Implications for nursing practice and education as well as recommendations for future research will conclude this chapter.

#### Discussion of Findings

The first research question addressed in this study was “What is the perceived social support of pregnant women?” The results show a mean perceived social support score for the entire sample of 152.6. The PRQ85–Part 2 was used in a number of studies involving pregnant women; however, no means were reported (Aaronson, 1989; Walker et al., 1999). Compared with mean scores of other studies using the PRQ85-Part 2, the mean score in this study was higher. One recent study of 202 middle-aged adults had a mean social support score of 145.2 (McNicholas, 2002). Another study of 65 minority adolescents had a mean score of 129.1 (Mahat et al., 2002). A study of rural women

( $N=30$ ) with diabetes reported mean scores for two subgroups of the sample, which were 121.8 and 128.5. These findings may serve to support the stress buffering model in that pregnant women may actually have or perceive to have higher levels of social support as a buffer to the increased stress pregnancy may bring (Cohen, 1988).

When perceived social support scores of pregnant women were analyzed according to demographic characteristics, obstetric characteristics, and source of primary support, some interesting findings emerged. Social support scores were highest among those who were married and those between the ages of 25 and 34 years. These research findings reflect those in other studies involving social support and pregnancy (Johnson, 1998; Rini et al., 1999; Feldman et al., 2000; Ritter et al., 2000; Webster et al, 2000). No other studies reported similar findings regarding age, but some found lower social support scores for pregnant women 20 years old and younger (Ritter et al., 2000; Webster et al, 2000). Mean social support scores increased with more education, as well as with higher estimated annual income. These findings were also reported in some literature (Collins et al., 1993; Kearns et al, 1997; Feldman et al., 2000; Ritter et al., 2000; Rudnicki et al., 2001).

When social support scores were analyzed in association with obstetric characteristics, two findings were prominent. The first of these was an increase in mean social support scores in the third trimester. The second was an increase in mean social support scores when complications of the pregnancy were present. These findings may also be explained by the “stress buffering hypothesis.” As the pregnancy comes to an end, levels of stress can increase due to the hormonal changes, anticipation of labor and

childbirth, altered body image, and general discomforts of advanced gestation (Youngkin & Davis, 2004). The third trimester is also a time of an increasing number of possible complications of pregnancy (Youngkin & Davis, 2004). According to the stress buffering hypothesis, this increase in stress would contribute to an increase in perceived or actual social support acting as a buffer to negative consequences of stress on health.

The most frequently reported sources of primary support were “spouse” and “significant other.” This is consistent with the other literature involving social support in an obstetric context (Logsdon, Birkimer, & Barbee, 1997; McVeigh, 2000). Social support was found to be less for those who identified the source of primary support as “significant other” and even less so for those who indicated “parent.”

The second research question addressed in this study was “Is there an association between perceived social support of pregnant women and degrees of rurality?” The results of this study indicate that rurality may have some association with perceived social support. It was found that participants from rural communities had higher levels of perceived social support ( $m=159.4$ ), whereas the remote rural participants ( $m=144.4$ ) had the lowest mean social support scores. This may perhaps be explained by concepts of rural nursing theory, such as isolation (Long & Weinert, 1989) and rural social integration (Lee, 1991). Isolation in remote rural communities may contribute to a feeling of less perceived support because health services are not readily accessible and supportive people may be further away. Support groups and group activities are likely not frequently utilized because of distance.

Additional analysis of data showed that most results of demographic and obstetric characteristics, when stratified into urban, rural, and remote rural, reflected the same findings as the entire sample, except for annual income. Specifically, among the three degrees of rurality, mean social support scores were highest for those who were married, those age 25-34 years, and those with more education. There was a variation in the findings of mean social support scores associated with annual income. In the urban group, mean scores increased with more annual income. In the rural group, the mean social support score was highest among those who indicated an annual income between \$20,000 and \$40,000. For the remote rural group, the social support scores were found to be lower among those with higher annual income. Another notable finding is that in the remote rural population, social support decreased when annual income increased, which is the inverse of the results of the sample as a whole. Perhaps this is because remote rural residents who have higher incomes are even more isolated due to their economic status and may not socially integrate because of the difference in economic status. Social support was higher in the rural category with an annual income of \$20,000-\$40,000. A possible explanation for this is that most rural incomes fall into this category, resulting in more social integration among these people. Another speculation is that having tangible (financial) support might not be perceived by rural residents as contributing to more social support. Perhaps this suggests that social support can be based more on emotional support rather than tangible support. This warrants further investigation.

When mean social support scores were associated with obstetric characteristics and degrees of rurality, the only notable difference between the groups was the decrease

in mean social support score for remote rural residents in the third trimester of their current pregnancy. The remainder of the results reflected the findings of the entire sample. Nursing research involving social support and rurality in obstetric populations is sparse; consequently, no other studies are available for comparison.

### Strengths and Limitations

In this section several strengths and limitations of the study are discussed. Also included here is a critique of the strengths and weakness of the conceptual frameworks utilized.

The research design used was exploratory/descriptive. Because of the limited research related to social support, pregnancy, and rurality, the design was appropriate. While the sample size was relatively small, the respondents spanned a large geographic area in central and eastern Montana, as well as northern and central Wyoming. Although the sample is not generalizable, the demographic characteristics were closely matched to those of the region from which they were sampled (U.S. Census, 2000). A key strength of this study was the instrument used. The PRQ85-Part 2 (Brandt and Weinert, 1985) measures perceived social support, which was the focus of the research questions in this study. Since this instrument is designed for self-reported data, this seemed like a relevant way to estimate perceived social support. The instrument has well-established reliability and validity, which are discussed in Chapter 3. Moreover, it has been used in previous studies. It was designed for the general population, not specifically for pregnancy;

however, it has been used in a number of studies with pregnant women. The collection and management of the data protected the anonymity of participants.

Limitations of this study included recruitment of participants, generalizability, small subgroup size, and aspects of the background study. Participants were recruited from clinics located in a city with a population of approximately 100,000, which may serve more of an urban population. Perhaps participants could have been recruited from clinics located in rural areas. On the other hand, much obstetric care is provided in urban areas because of the lack of available medical expertise in rural areas. Since the sample size was small, findings are not generalizable and not adequate for more in-depth statistical analysis. Another limitation is the stratification of data into degrees of rurality, creating very small subgroups for analysis of statistical significance.

Limitations in the clarity of the background information survey were noted during data analysis. Specifically, the responses to some of the questions were not all-inclusive, which would ideally give the participants a possible answer for most all circumstances. Examples of this were in the items “primary support” and “community of residence,” neither of which had an “other” option. Another illustration of this was with the item “complications with this pregnancy,” which did not include an option for “none.” In data analysis, “no complications of pregnancy” was assumed if the item was unanswered. In completing the Background Survey, participants may have felt they had to respond to one of the options presented, create their own category, or not respond to the question.

### Critique of Conceptual Frameworks

Two conceptual models formed the framework for this study. One was the social support theory of Cohen (1988). The other was Rural Nursing Theory, including the concept of rurality, developed by nurse researchers in Montana. (Lee, 1991; Long & Weinert 1989).

Cohen's (1988) social support theory describes linkages between social support and health. In his theory, social support is defined as both actual and perceived support. This study focused on perceived social support because it has been hypothesized to be more influential on health (Cohen & Wills, 1985). Social support theory suggests that higher perceived social support has more positive influences on health behaviors and practices (Cohen & Wills, 1985; Cohen et al., 2000). Because pregnancy is a critical time period during which positive health practices are needed and influenced by social support, this theory seemed to suit the study best. The "stress buffering model" provides one explanation of how health may be impacted by social support (Cohen et al., 2000). This model asserts that social support acts as a buffer to stress, which is a negative influence on health. As identified by Holmes and Rahe (1967), pregnancy is considered to be a major life stressor, which, in accordance to Cohen's model, can be buffered by social support.

Though this study was not designed to identify or explain stress buffering effects of social support on pregnancy, this facet of Cohen's (1988) theory provides some explanation for significant findings (higher overall mean social support score compared to other studies, higher mean social support score in the third trimester, and higher mean

social support score with complications of the pregnancy), making it a relevant theory for this research. While Cohen's social support theory was appropriate for this research, a weakness is that the instrument used for this study was not based on Cohen's theory. The Personal Resource Questionnaire 85- Part 2 was developed from the concepts of Weiss (1974) (e.g. self-worth, social integration, nurturance, and assistance), which are comparable with Cohen's theory (Weiss, 1974; Cohen, 1988). Use of an instrument based on Cohen's theory would have made the study more congruent with and supported by the conceptual framework.

The second conceptual framework used in this research was based on rural nursing theory. Rural communities have unique characteristics that have a direct affect on health care access and utilization. Some of these include isolation, social integration, lack of anonymity, and self-reliance (Long & Weinert, 1989). Findings in this study can be explained by a number of these concepts; however, further research in rural communities is necessary to gain a more comprehensive understanding of health care related to social support. Rural nursing theory was not well supported by the results of this study. The concept of rurality is one of a rural-urban continuum, rather than a distinct categorization of rural and urban, as frequently defined (Lee, 1991). Based on this idea, there are innumerable degrees of rurality, each having unique characteristics related to health care. This study only looked at three degrees of rurality within a small sample. A larger sample separated into more degrees of rurality would have provided a deeper understanding of social support associated with greater differences in populations and community characteristics, and yielded a basis for obtaining more statistically significant results.

### Implications for Nursing Practice

It is apparent in nursing research that there is a connection between social support and health. Nurses have a vital role in health promotion, making it essential to incorporate all aspects of an individual's health into care. While social support is an aspect of taking a patient's history into a clinical setting, it has been noted to often be overlooked. Awareness of the potential for positive effects on health, specifically positive effects on health in pregnancy, can aid nurses in more comprehensive care. Rural healthcare is unique; therefore rural health care professionals are obligated to be aware of characteristics of rural communities to better cater to community needs. An example based on the findings of this study is a nurse knowing there is an increase in stress in the last part of pregnancy, who, when complications are present, can ensure that adequate support systems are in place and assess the perceptions of social support.

Knowledge and awareness is an initial step; applying knowledge to practice is the challenge. Nurses and nurse practitioners are in a unique position to offer information or emotional support to pregnant women. They also aid these women in finding social support, which may improve perceptions of social support and ultimately improve health behaviors and outcomes. Helping pregnant women connect with support groups or other social groups that may provide social support is one option for nurses and other health care providers to better care for social needs during pregnancy.

### Suggestions for Future Research

Rural research has ample room for expansion. Recognition of the lack of research in the area of social support in pregnancy and rurality supported the need for this study. This study provided some beginning insight into perceived social support among communities of differing populations and characteristics; however, more research is needed to gain more comprehensive knowledge in this area. It would be beneficial to repeat this study with a larger sample. Considering the established reliability and validity and its ease of use, the PRQ85-Part 2 would serve this research well. It may be useful to take the study a step further and compare differing types of social support between urban and rural areas to determine if perceptions are different based on types of social support present.

An assessment of social support related to health practices of pregnant women in rural areas would be interesting. This may involve data about health-related behaviors, such as smoking, substance abuse, exercise, and nutrition. It would also be interesting to further investigate Cohen's stress buffering model in relation to protection from the potentially harmful effects of stress on health in pregnancy. Another suggestion for future research would be to assess the differences in birth outcomes between urban and rural communities in relation to social support. Research suggests a connection between social support and outcomes of pregnancy (Collins et al., 1993; Rini et al., 1999; Feldman et al., 2000). Knowledge gained from investigating social support and health behaviors in relation to pregnancy outcomes might serve to assist in the reduction of infant morbidity and mortality in rural areas by earlier entry into prenatal care.

As stated in the introduction to this study, Florence Nightingale first noted the effects of environment on health. She once stated, “nursing has less to do with nursing disease than with removing factors that interfere with maintaining health” (1890). While Nightingale’s definition of environment was limited at that time to primarily the physical surroundings, this idea is relevant today. Literature supports the idea that social support influences health. Likewise, it is well understood that social support is a part of one’s environment. As health care expands its view of health beyond the physical into the social realm, health care providers and nurses must incorporate these ideas into practice to provide more effective care.

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APPENDICES

APPENDIX A

LETTER TO PARTICIPANTS

February 1, 2003

Dear Expectant Mother:

You are being invited to participate in a study of social support systems of pregnant women. This research is being conducted to help health care providers gain a better understanding of the needs of pregnant women in Montana and also to fulfill academic requirements of the Family Nurse Practitioner Program at Montana State University.

Participation will involve completing the attached 3-page questionnaire. The approximate time needed to complete this survey is 15 minutes. Participation in this research is voluntary. In completing this survey it will be assumed that you are consenting to participate, with the understanding that all answers given will be kept confidential and your name is not required on the survey. The surveys will be coded by number. You are free to withdraw from the study at anytime. There are no risks or benefits involved with completing this survey. No financial or other compensation will be awarded for participation in this study.

If you would like information on the research once it has been completed, please include your name and address on a separate sheet of paper information will be mailed directly to you. If you would like to contact the researcher at anytime during or after the survey for more information or clarification, please contact Carol Roth at (406) 670-9323.

If you have any questions or concerns relating to the study, you may call Dr. Mark Quinn, Chair, Institutional Review Board for the Protection of Human Subjects at Montana State University in Bozeman at (406)994-5721. Thank you for your time.

Sincerely,

Carol Roth  
Graduate Student  
MSU College of Nursing

APPENDIX B

PERMISSION TO USE PRQ85

Sept 25, 2003

Carol Roth  
348 Sahara Dr  
Billings, Mt 59105

Dear Carol Roth,

Thank you for requesting the PRQ. Any changes to question stems or answer sets must be approved in advance. Translation of the PRQ into other languages is acceptable and encouraged. A copy of the translated version of the PRQ should be sent to us.

If you have not already done so, please send us a brief abstract of your proposed study, the population that you plan to sample in your research, and which version of the PRQ you intend to use. We will include this information in our database. If you are a student please send us the name of your university and the name of your advisor. If you do, in fact, use the PRQ for data collection in your study, we ask that you send us an abstract of your findings, PRQ results, and conclusions whenever they are available.

Should you have any questions or need clarification, kindly write or e-mail [cweinert@montana.edu](mailto:cweinert@montana.edu). We will try to respond in a timely manner. Our web site is [www.montana.edu/cweinert](http://www.montana.edu/cweinert).

Thank you for your interest in the PRQ. We hope that this tool will help you in your research.

Sincerely,



Clarann Weinert, SC, PhD, RN, FAAN  
Professor & Director of the Center for Research on Chronic Health Conditions in Rural Dwellers

***PERMISSION TO USE THE PERSONAL RESOURCE  
QUESTIONNAIRE***

**PERMISSION TO USE THE PRQ85 and PRQ2000**

**IS GRANTED TO: Carol Roth**

**THE PRQ85 IS A TWO PART INSTRUMENT . EITHER PART -1 OR PART -2 OR BOTH PARTS MAY BE ADMINISTERED. HOWEVER, NO PART OF PRQ85 OR PRQ2000 MAY BE MODIFIED WITHOUT CONSULTATION WITH THE AUTHORS.**



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Clarann Weinert, SC,PhD,RN,FAAN

2003

DATE: Sept 25,

APPENDIX C

BACKGROUND INFORMATION SURVEY

**Background Information**

Please check one answer for each question, unless otherwise specified.

**Age:** \_\_\_\_\_

**Marital status:** Married\_\_\_ Single\_\_\_ Separated\_\_\_ Divorced\_\_\_ Widowed\_\_\_

**Ethnicity/Race:** African American\_\_\_ Native American\_\_\_ Caucasian\_\_\_ Asian\_\_\_ Hispanic\_\_\_

Other(please specify)\_\_\_\_\_

**City and state of residence**\_\_\_\_\_

**Estimated date of delivery:**\_\_\_\_\_ **Weeks gestation**\_\_\_\_\_

**Number of Children:**

- \_\_\_ none
- \_\_\_ one
- \_\_\_ two
- \_\_\_ three or more

**Number of Pregnancies:**

- \_\_\_ none
- \_\_\_ one
- \_\_\_ two
- \_\_\_ three or more

**Complications with this**

**Pregnancy:**

- \_\_\_ Preterm labor
- \_\_\_ High Blood Pressure
- \_\_\_ Abnormalities with Placenta
- \_\_\_ Gestational Diabetes
- \_\_\_ Incompetent cervix
- \_\_\_ Premature rupture of membranes
- \_\_\_ Other (please specify)

**Number of years education:**

- \_\_\_ less than 6
- \_\_\_ 7-8
- \_\_\_ 9-10
- \_\_\_ 10-12
- \_\_\_ 1-2 years college
- \_\_\_ 2-4 years college
- \_\_\_ more than 4 years college

**Estimated annual income:**

- \_\_\_ <10,000
- \_\_\_ 10,000-20,000
- \_\_\_ 20,000-30,000
- \_\_\_ 30,000-40,000
- \_\_\_ 40,000-50,000
- \_\_\_ 50,000-60,000
- \_\_\_ >60,000

**Distance to prenatal care provider:**

- \_\_\_ <5 miles
- \_\_\_ 6-15 miles
- \_\_\_ 15-30 miles
- \_\_\_ >30 miles

**Primary Support:**

- \_\_\_ Spouse
- \_\_\_ Significant Other
- \_\_\_ Parent
- \_\_\_ Friend
- \_\_\_ Relative

**Source of Emergency Care:**

- \_\_\_ Doctor's Office/Clinic
- \_\_\_ Hospital
- \_\_\_ Community Health Center
- \_\_\_ Other (please specify)

**Do you see your prenatal care provider on a regular basis?** Yes\_\_\_ No\_\_\_

**If not, is travel distance a factor?** Yes\_\_\_ No\_\_\_

**Time/Distance to prenatal care:**

\_\_\_\_\_ number of miles (one way)

\_\_\_\_\_ approximate travel time (one way)  
way)

**Time/Distance to emergency medical care:**

\_\_\_\_\_ number of miles (one way)

\_\_\_\_\_ approximate travel time (one way)

**I would describe myself as living in a community with:**

\_\_\_\_\_ Population less than 2,500, located at least 40 miles from a city greater than 50,000 with no hospital or medical facility

\_\_\_\_\_ Population less than 10,000, located at least 15 miles from a city greater than 50,000 with a hospital less than 100 beds or a medical facility

\_\_\_\_\_ Population greater than 50,000, with at least 1 hospital greater than 100 beds and at least 2 medical facilities

APPENDIX D

PERSONAL RESOURCE QUESTIONNAIRE 85- PART 2

Personal Resource Questionnaire 85- Part 2

Q-11. Below are some statements with which some people agree and others disagree. Please read each statement and CIRCLE the response most appropriate for you. There is no right or wrong answer.

- 1 = STRONGLY DISAGREE
- 2 = DISAGREE
- 3 = SOMEWHAT DISAGREE
- 4 = NEUTRAL
- 5 = SOMEWHAT AGREE
- 6 = AGREE
- 7 = STRONGLY AGREE

STATEMENTS

---

- |    |  |   |   |   |   |   |   |   |
|----|--|---|---|---|---|---|---|---|
| a. | There is someone I feel close to who makes me feel secure. . . . .                           | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| b. | I belong to a group in which I feel important . . . . .                                      | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| c. | People let me know that I do well at my work (job, homemaking) . . . . .                     | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| d. | I can't count on my relatives and friends to help me with problems. . . . .                  | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| e. | I have enough contact with the person who makes me feel special. . . . .                     | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| f. | I spend time with others who have the same interests that I do. . . . .                      | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| g. | There is little opportunity in my life to be giving and caring to another person. . . . .    | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| h. | Others let me know that they enjoy working with me (jobs, committees, projects). . . . .     | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| i. | There are people who are available if I needed help over an extended period of time. . . . . | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| j. | There is no one to talk to about how I am feeling. . . . .                                   | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| k. | Among my group of friends we do favors for each other. . . . .                               | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| l. | I have the opportunity to encourage others to develop their interests and skills. . . . .    | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

1 = STRONGLY DISAGREE  
 2 = DISAGREE  
 3 = SOMEWHAT DISAGREE  
 4 = NEUTRAL  
 5 = SOMEWHAT AGREE  
 6 = AGREE  
 7 = STRONGLY AGREE

STATEMENTS

---

m.	My family lets me know that I am important for keeping the family running. . . . .	1	2	3	4	5	6	7
n.	I have relatives or friends that will help me out even if I can't pay them back. . . . .	1	2	3	4	5	6	7
o.	When I am upset there is someone I can be with who lets me be myself. . . . .	1	2	3	4	5	6	7
p.	I feel no one has the same problems as I. . . . .	1	2	3	4	5	6	7
q.	I enjoy doing little "extra" things that make another person's life more pleasant. . . . .	1	2	3	4	5	6	7
r.	I know that others appreciate me as a person. . . . .	1	2	3	4	5	6	7
s.	There is someone who loves and cares about me. . . . .	1	2	3	4	5	6	7
t.	I have people to share social events and fun activities with. . . . .	1	2	3	4	5	6	7
u.	I am responsible for helping provide for another person's needs. . . . .	1	2	3	4	5	6	7
v.	If I need advice there is someone who would assist me to work out a plan for dealing with a situation. . . . .	1	2	3	4	5	6	7
w.	I have a sense of being needed by another person. . . . .	1	2	3	4	5	6	7
x.	People think that I'm not as good a friend as I should be. . . . .	1	2	3	4	5	6	7
y.	If I got sick, there is someone to give me advice about caring for myself. . . . .	1	2	3	4	5	6	7