











Interaction with Health Professionals and Change in Canadian Adolescents' Social  
Support Perceptions from the Prenatal to the Postnatal Period

by

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## Abstract

For pregnant adolescents, the availability of support from others may be important to how they simultaneously navigate the challenges presented by adolescent psychosocial development and the transition to motherhood. This support from others is generally encompassed under the construct of social support. The purpose of this cross-sectional, exploratory study was to determine if Canadian adolescents perceive adequate social support to be available in the prenatal and postpartum periods and whether or not select contact with health professionals influences perceived availability of social support over time. Specifically, the effects of adolescents' timing of initiation of prenatal care, prenatal class attendance, postpartum contact with a healthcare provider, and timing of postnatal contact with a healthcare provider were explored. Using data collected from the Canadian Maternity Experiences Survey (CMES), the sample consisted of 297 Canadian adolescent mothers, weighted to represent 2,262. Results indicated that the majority of Canadian adolescents perceived adequate social support to be available both in the prenatal and postpartum period, however, perceptions of availability of support changed for some participants from the prenatal to the postpartum period. Bivariate logistic regression analyses found that adolescents reporting postpartum contact with a healthcare provider were 5.23 times more likely to perceive a decrease in social support perceptions between the prenatal and postnatal period [ $OR = 5.23$ , 95%  $CI$  (1.6, 17.14),  $p = .006$ ], while other variables explored showed little or no effect. Implications of these results for nursing practice, education, and research are discussed.

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## **Chapter 1**

### **Introduction**

Young women who are faced with the developmental tasks of pregnancy and parenting, while also navigating through their own growth and development as an adolescent, have many additional developmental challenges (Flanagan, McGrath, Meyer, & Garcia Coll, 1995; Miller, Bayley, Christensen, Leavitt, & Coyl, 2003). Being pregnant as a teenager has the potential to complicate a developmental stage of adolescence, that of ego identity formation or developing a sense of an autonomous self (Erikson, 1963). While the vulnerability of pregnancy may create a need to be dependent, developmentally the adolescent is struggling to gain independence (Steinberg & Sheffield Morris, 2001). Adolescent pregnancy also has the potential to contribute positively to the young woman's development (Schultz, 2008). What seems to make the difference between a negative versus a positive outcome for a pregnant adolescent has much to do with relationships formed and how those relationships affect identity formation (Flum & Lavi-Yudelevitch, 2007). Thus availability of social support, i.e., support from others, which is basically concerned with relationships, may mitigate some of the difficulties associated with pregnancy in the adolescent years.

Various forms of social support, specifically perceptions of availability of this support in the prenatal and postnatal periods, may contribute to positive health outcomes for the adolescent mother and her child (Camp, Holman, & Ridgway, 1993; Condon, Donovan, & Corkindale, 2001; Quinlivan, Luehr, & Evans, 2004). While informal social support, usually understood as support provided by family and friends, is thought to be important in contributing to this positive outcome, the role of formal social support or that

support provided by health professionals is less clear (Schaffer, 2009). However, formal support through services provided by health professionals is thought to have the potential to positively affect these perceptions (Schaffer, 2009). There are specific interactions with prenatal and postnatal adolescents that are common in public health nursing practice. These interactions include prenatal care, prenatal education sessions, and postpartum care by health professionals. Public health nurses often facilitate referral to these services or offer the services themselves. Interactions with these nurses often result in adolescents being referred to services designed specifically for this adolescent population that may have a positive impact on prenatal and postnatal health outcomes. While these formal services have been shown to be beneficial to the adolescent (Carroll, Rooney, & Villar, 2001; Cox et al., 2005; Logsdon & Koniak-Griffin, 2005; Motino Bailey, Crane, & Nugent, 2008), perception of the availability of this type of social support has only rarely been an outcome of interest in the research in this area (Smith, 2004). Therefore, little is known of how these interactions with health professionals contribute to adolescents' perceptions of social support availability over the course of pregnancy and in the postpartum period.

In this study I investigated the relationships between changes in adolescents' perceptions of availability of support from the prenatal to the postnatal periods and common interactions with health professionals during these times. Data for the study came from the Canadian Maternal Experiences Survey (CMES), which is a large national representative study.

### Background

While there have been some changes to how adolescent pregnancy is viewed in society, it is often still portrayed as a problem and, as such, our society focuses attention on formulating effective prevention strategies (Miller et al., 2003). However, the well-intentioned desire to "fix" the problem does not consider the well-being of those for whom primary prevention strategies have failed. In 2005, 30,948 Canadian females under the age of 20 became pregnant (Statistics Canada, n.d.). Of these, 14,013 live births resulted. Although the overall trend since 1994 has been a decrease in the rate of pregnancy during adolescence (Dryburgh, 2007), adolescent pregnancy remains a concern because of some of the negative health and social consequences that often accompany the situation (Klein, 2005). For pregnant women of all ages, social support is required to successfully make the transition to motherhood (Cutrona, 1984; Turner, Grindstaff, & Phillips, 1990). For pregnant adolescents, social support is also needed to successfully navigate through adolescent psychosocial development, allowing for the young woman to experiment with her role identity through social interaction (Erikson, 1963; Hurlbut, Culp, Jambunathan, & Butler, 1997; Schultz, 2008). The negative values that society often attributes to adolescent pregnancy may have a negative effect on the pregnant adolescent's quest to obtain adequate social support (Whitehead, 2001). This lack of adequate support may have negative implications for both the adolescent's psychosocial development and her transition to motherhood. Increasingly, the healthcare system has attempted to address some of the concerns of pregnant adolescents by offering programs specifically targeted to this population, or adapting prenatal and postnatal programs to meet their specific needs (Klima, 2003). One such service offered through the Society for

Support to Pregnant and Parenting Teens in Grande Prairie, Alberta, provides support groups, peer support, and prenatal and postnatal teaching to teen parents (Society for Support to Pregnant & Parenting Teens, n.d.). Similarly, The Young/Single Support Network in Ottawa offers prenatal classes, smoking cessation/reduction and parenting classes specifically for teens (City of Ottawa, 2011).

### **Rationale**

Social support is a health determinant known to enhance health and well-being among those perceiving it as being available (Wilkinson & Marmot, 2003). The relationship between social support and well-being has been thoroughly researched and overall social support and health are positively related (Schaffer, 2009; Stewart, 1993; Uchino, 2004). However, there is a lack of evidence to support the effectiveness of specific interventions to increase the perception of adequate social support among childbearing adolescents throughout the course of their pregnancies and into the postpartum. While nursing or health interventions targeting a variety of outcomes for prenatal and postnatal adolescents continue to be delivered by professionals, it is unknown how some of the most routinely offered and accessed services influence adolescent perceptions of social support availability. Pregnancy-related interactions between health professionals and adolescents during the delivery of services, such as prenatal care, prenatal education sessions, and early postpartum care, may enhance social support perceptions despite having other primary purposes for infant and maternal health.

Findings from this investigation could shed light on perceived availability of social support for prenatal and postpartum adolescents in Canada that are delivered through interactions with health professionals, and how these perceptions may change

over time. Therefore, these findings could lend an understanding to how prenatal and postnatal health services that are commonly offered by public health nurses and other health professionals may influence these changes in perceptions of availability. Enhanced knowledge of how these typical interactions affect changes in adolescent social support perceptions can provide a basis from which interventions to enhance perceptions of support can be empirically tested. Perceptions of social support have been shown to have positive effects on health and well-being of individuals in a variety of contexts (Cohen & Wills, 1985; Helgeson, 1993; Wethington & Kessler, 1986; Uchino, 2004). Therefore it is important to examine the effects of health professional's involvement on perceptions of availability of social support for adolescents during pregnancy and early motherhood.

### **Research Purpose**

The purpose of this study was to determine if Canadian adolescents perceive adequate social support to be available in the prenatal and postpartum periods, especially if these perceptions change over the course of pregnancy and the postpartum, and whether or not contact with health professionals influence any changes in perceived social support availability. Particular attention was given to exploring the potential relationships between changes in perceptions of availability of support and respondents' timing of initiation of prenatal care, prenatal class attendance, and postpartum contact with a healthcare provider, and the timing of the postnatal contact.

### **Research Questions**

The following research questions were derived from a review of the literature on adolescent prenatal and postnatal social support perceptions:

1. Do Canadian adolescents perceive they have adequate social support available prenatally?
2. Do Canadian adolescents perceive they have adequate social support available postnatally?
3. How do the perceptions of availability of social support change from the prenatal to the postnatal period?
4. How does "weak social ties" (Granovetter, 1973), i.e., contact with healthcare professionals (e.g., timing of initiation of prenatal care, prenatal class attendance, postpartum contact with a healthcare provider, and timing of postnatal contact with a healthcare provider) affect adolescents' perceptions in changes in the availability of social support?

### **Research Hypotheses**

1. Canadian adolescents perceive adequate availability of social support prenatally.
2. Canadian adolescents perceive adequate availability of social support postnatally.
3. Changes in perceptions of social support occur between the prenatal and postnatal periods.
4. Contact with healthcare professionals, described as "weak social ties" (e.g., timing of initiation of prenatal care, prenatal class attendance, postpartum contact with a healthcare provider, and timing of postnatal contact with a healthcare provider) is

associated with adolescents' experiencing an increase in perceptions of adequate social support availability.

### **Conceptual Framework**

Veiel (1985) developed a conceptual framework for the assessment of dimensions of social support for individuals. The hierarchical structure contains three dimensions of social support viewed as principal concepts for the conceptualization, operationalization, and measurement of social support. Each dimension, namely support type, relational context, and assessment focus, is further categorized based on the literature. The first dimension, support type, describes the function of the relationship and includes four subtypes of social support: (a) psychological, (b) instrumental, (c) crisis, and (d) everyday. The second, relational context, describes the role relationship or source of social support. Veiel differentiates between natural sources of support (i.e., those whose primary function is not related to support provision) and institutional support sources (e.g., professionals). The third dimension of social support to be considered is the assessment focus. According to Veiel, the quantifying of social support can be either objective or subjective, the former being unbiased with a large error component and the latter more precise, but susceptible to considerable bias from confounding associated with variables, (e.g., personality and mood). Veiel further expands on subjective assessment to acknowledge measures for both the amount and adequacy of social support.

I used Veiel's (1985) framework in the study for both the dimensions of relational context and assessment focus where the social support provided by institutional sources (i.e., health professionals) to prenatal and postnatal adolescents is measured with a subjective assessment focus (i.e., perceived availability of social support). While an

adaptation of this framework provided overall guidance for this research, the relative strength of the relationship between health professionals and childbearing adolescents could not be explained by Veiel's conceptualization. The relationship that frequently develops between supportive professionals and individuals may not possess the same network characteristics (e.g., frequency of contact, duration of relations) as more intimate relationships. To further explore the role of relationship strength as it pertains to the relational context of social support, Veiel acknowledged the work of Granovetter (1973).

Granovetter (1973) conceptualized social interactions occurring in small groups to form large scale patterns, where the strength of an interpersonal tie "...is the combination of the amount of time, the emotional intensity, the intimacy... and the reciprocal services which characterize the tie" (p. 1361). Ties can vary in strength from being strong to weak, or absent. Strong ties require larger time commitments, forming dense networks where the individuals who are bound by these strong ties tend to be concentrated within the same small groups. In contrast, weak ties are responsible for the formation of less dense networks. Weak ties represent a source of enhanced opportunity for involved individuals because members of many different smaller groups are linked through the crossing of bridges. Granovetter suggested that the removal of a weak tie within an individual's social network could have more of an adverse impact on transmission of a supportive action than if a strong tie were removed. Granovetter's conceptualization of weak ties provided the additional conceptual direction needed for this study. The institutional source of social support provided by health professionals to prenatal and postpartum adolescents represents interaction through weak ties.



The conceptual framework, which guided this study, was adapted from the work of both Veiel (1985) and Granovetter (1973). The resultant model, shown in Figure 1, presents a visual representation of the weakly tied relationships between health professionals and the prenatal and postnatal adolescents with whom they interact to provide prenatal education and prenatal and postpartum care. Based on Granovetter's conceptualization of weak ties, adolescents who interact with health professionals can be expected to perceive more access to information, which may be perceived as enhanced availability of social support throughout their pregnancies and into the postnatal period.

Figure 1

The Influence of Weak Ties Between Health Professionals and Childbearing Adolescents on Perceptions of Prenatal and Postnatal Social Support Availability

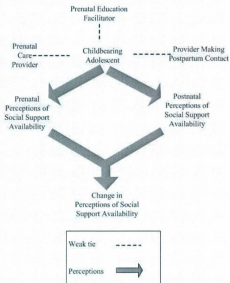


Figure 1. Conceptual model of the influence of weak ties between health professionals and prenatal and postnatal adolescents on perceptions of social support availability. Professional-adolescent interactions through prenatal care, prenatal education, and postpartum contact may result in enhanced perceptions of social support availability for childbearing adolescents through enhanced access to information. Adolescents who hold weak ties with professionals may be less likely to experience a change in their perceptions of social support availability between the prenatal and postnatal periods.

### Definition of Key Terms

To facilitate the interpretation of research findings, definitions of key concepts should be made explicit by researchers. This may be particularly important for research where social support phenomena are of interest because of the variability in definitions in the literature. As well, it is imperative that there be consistency in theoretical and operational definitions to ensure construct validity. In analysis of secondary data it is important that definitions between the primary research and secondary purposes are congruent as well. Therefore, my operational variables were those used in the CMES or constructed from those variables.

Perceived availability of social support. In this study, it is the concept of perceived availability of social support that requires consideration. The theoretical definition of perceived availability of social support was based on the belief that this type of social support is an individual's perception of the general availability of support as required by the individual whatever that support may be (Haber, Cohen, Lucas, & Baltes, 2007; Sarason, Sarason, & Pierce, 1990). Consistent with this, the operational definitions by which perceived availability of social support is accessible to measurement were derived from the Canadian Maternity Experiences Survey. There are two survey questions of interest, one intending to capture prenatal perceptions of social support and the other postnatal perceptions of social support. Prenatal perceived availability of social support was reported by the response to the question: "During your pregnancy, how often was support available when you needed it?" (Public Health Agency of Canada [PHAC], 2007b, p. 18). Postnatal perceived availability of social support was reported by the response to the question: "Since the birth of baby, how often has support been available to

you when you have needed it? Include companionship, assistance and other types of support you may have needed" (PHAC, 2007b, p. 56). The potential responses to both the prenatal and postnatal questions were (a) *none of the time*, (b) *a little bit of the time*, (c) *some of the time*, (d) *most of the time*, and (e) *all of the time* (PHAC, 2007b, p. 18, p. 56).

Adolescent mothers. Although the term adolescence is frequently defined as "the period of life beginning with puberty and ending with physical maturity" (Steadman's Medical Dictionary, 2005, p. 32) it is generally understood in terms of a range of ages usually from 12-19 years. The CMES (2009, p. 19) did not refer to adolescent mothers but used the term "Younger mothers (15-19 years)", therefore that is the age range I chose to define adolescent mothers for purposes of this study.

## **Chapter 2**

### **Review of the Literature**

The literature of interest to this study focused broadly on social support as it relates to health, and more specifically on the relationship between adolescents' prenatal and postnatal perceptions of availability of social support and formal support from health professionals, also described as weak social ties (Granovetter, 1973) during the prenatal and postnatal periods. To gain an understanding of what is known on these topics, a literature search of several databases was conducted. MEDLINE, CINAHL and PsychINFO were searched using the key terms *social support, support, psychosocial support, postpartum period, pregnancy in adolescence, teenage pregnancy, perceptions, pregnant women, postnatal period, expectant mothers, pregnancy, prenatal care, health personnel, gestational age, postnatal care, health education as topic, patient education, patient acceptance of healthcare, patient centred care, patient satisfaction, and pregnant women*. Abstracts were read and relevant articles were selected for thorough review, with particular emphasis on those with a subjective (i.e., perceived) focus.

### **Social Support Research**

To provide a background on social support as it relates to health, in the first section of this chapter I review the origin of social support concepts in the literature from a health-related context. Various social support subtypes and different methods of measuring social support are also discussed. Finally, selected theories on how social support influences health and the aspects of social support that are accessible to measurement are addressed, with a focus on perceived social support.

### **Social Support and Related Concepts**

The first evidence supporting the importance of the social context for health is reported to have come from Durkheim's classic 1897 study of suicide (Bloom, 1990; Orr, 2004). Durkheim found that individuals with strong social ties, a form of social support, had lower suicide rates than those who were socially isolated and individualistic (Macionis & Gerber, 1999). Two seminal papers, one by Cassel and another by Cobb in the 1970s drew researchers' attention to the importance of social support as having a moderating effect on an individual's health in the presence of disease or other stressors (Uchino, 2004). Since that time, there have been a multitude of research studies investigating the impact of social support on health outcomes. In the 1970s, Cassel used the concept of social support as a means of capturing some of the social contexts that affect health (Schaffer, 2009). The work of Cobb focused on understanding the nature of support received from others. However, the term social support has become very broad, really more of a construct embracing a wide array of concepts, and is now often used to include a number of more specific terms or concepts. Durkheim, for instance, referred to social networks and integration into these networks as providing suicide protection (Bloom, 1990). Social networks are only one of the forms of social support that have been identified. Several researchers have attempted to lend structure to the distinct concepts, which are encompassed by the term "social support" (Barrera, 1986; Berkman, Glass, Brissette, & Seeman, 2000; House, Umberson, & Landis, 1988).

According to House et al. (1988), social support, social networks, social integration, social relationships, social ties, and social activity are terms that are often used interchangeably in the literature, despite having different meanings. The

inconsistency and lack of consensus in definitions complicate a review of the literature (Barrera, 1986; Dunkel-Schetter, Sagrestano, Feldman, & Killingsworth, 1996). Clearly defined terminology discriminating between these various terms is required to organize and interpret research findings accurately. There is consensus in the literature that the term social support is insufficient for describing the phenomena being measured in most research (Barrera, 1986).

Berkman et al. (2000) introduced a comprehensive framework to organize social support phenomena and pathways that are thought to influence health either negatively or positively. Influenced by a Durkheimian orientation to social context, the authors developed an upstream, multi-layered conceptual model. They presented macro level sociocultural conditions (e.g., cultural norms, political culture) as influencing the condition of mezzo level social networks (e.g., network structure characteristics), which in turn shape psychosocial mechanisms at a micro level. These micro level mechanisms include the commonly referred to forms of social support (i.e., instrumental and financial, informational, appraisal, and emotional). Moving further downstream, the micro level psychosocial mechanisms either positively or negatively affect health through physiologic, psychological, and behavioural pathways. Therefore, Berkman et al. conceptualized social support as a unique social phenomena influenced by various network characteristics and the broader sociocultural context within which an individual exists.

A review by Schaffer (2009) drew attention to the various theoretical definitions of social support, capturing the multidimensional nature of the concept. The authors who Schaffer included in the review organized their social support definitions by a variety of

components, such as types of social support, attributes, and taxonomies, leading to the development of differing theoretical definitions. Schaffer concluded that these differences highlighted the lack of consensus among the various theorists and presented challenges for those engaged in research in the area of social support. Hupcey (1998b) also believed that the concept of social support is only partially developed. In order to be considered a mature concept, social support definitions would need to demonstrate consistency, be abstract enough to encompass all instances in which the concept occurred, and have clear conceptual boundaries in relation to allied concepts, such as social networks (Hupcey, 1998b).

### **Types of Social Support**

The inconsistencies in terminology extend beyond the broad conceptualization of social support phenomena, and persist with the subtypes of social support. Berkman et al. (2000) recognized instrumental/financial, informational, appraisal, and emotional support as four distinct categories of social support. These categories were originally proposed by Weiss (1974), whereby instrumental support consisted of assistance with tangible needs, such as transportation and money; informational support involved provision of needed information or advice; appraisal support consisted of help in making decisions and giving feedback; and emotional support related to the amount of caring and esteem available from others. House (1981) also used these categories as the defining attributes of social support. Others use broader conceptualizations of social support, such as Orr (2004), who divided social support into the categories of emotional and instrumental support with emotional support subsuming informational support.



Further delineation of social support can be based on the assessment focus, i.e., the subjective or objective measurement of the phenomena (Veiel, 1985). Subjective measurement is important because "how" the person perceives the support is as critical as, or perhaps more important than, the type and amount of actual support given. Intention to gain an objective measure of supportive acts, for instance, is accomplished through measuring received, or enacted, social support (Helgeson, 1993). Researchers attempting to explore availability or adequacy of social support are interested in subjective means to measure perceived social support. According to Haber et al. (2007), perceived social support is an individual's perception of the general availability of support, including satisfaction with the support perceived to have been provided. Typically, received support is measured by direct observation or through self-report of specific supportive acts. Perceived support is assessed through self-report of support believed available or based on self reports of the adequacy of supportive ties (Helgeson, 1993). Perceived social support measures do not quantify the number of supports or amount of contact (Barrera, 1986). When received support is measured by self-report, the captured data can better be described as a measure of "perceived-received" support (Barrera, 1986).

### **Informal and Formal Social Support**

Other researchers have tried to define and distinguish social support by identifying a source of support. A dichotomous conceptualization or categorization of support sources exists in the literature, where sources of support are divided into informal and formal sources. The exception to this dichotomy is a definition by Stewart (1993) who did not make a distinction between family and friends and health professionals as long as they

offered some of the same mechanisms to the recipient that are usually included under support.

According to Hupcey and Morse (1997), informal support sources consist of members of an individual's "natural" network which includes family, and friends. Informal sources of support have personal relationships with the support-recipient, providing almost any type of assistance that will be of benefit to the individual (Hupcey & Morse, 1997). In contrast, formal support sources are professionals who carry out supportive interventions that are central to their role in their respective jobs. The supportive acts offered by formal support sources take the form of teaching, role modeling, encouragement, counseling, and problem-solving (Hupcey & Morse, 1997).

Most social support definitions do not specify the relationship between the support recipient and provider (Hupcey, 1998b). An exception to this is the work of Granovetter (1973). Rather than using the terms formal and informal when it came to the source of the support, Granovetter as mentioned above in the section on the conceptual model for this study, focused more on the strength of the relationship. He conceptualized strong ties as those that occurred on a voluntary basis, had greater intimacy, and came into effect across a number of different situations. These ties would characterize those of family and close friends and are thought to promote health. In contrast, weak ties are formed with those we have less on-going relationships with and relationships with those who fit into this category may only come into play when there is a specific need. Nevertheless, these weak ties or as Granovetter termed it "the strength of weak ties" may be crucial for certain types of support such as particular informational needs, i.e., health information. Formal

support may not produce strong ties in terms of relationships, yet might meet very important support needs.

Where there is some consensus in the literature on informal and formal support is that researchers agree that the two differ (Hupcey, 1998b; Logsdon, Birkimer, Ratterman, Cahill, & Cahill, 2002). There is however controversy as to whether or not professionals can provide social support (Schaffer, 2009). It has been argued that when informal sources are not available or are unable to meet the support needs of an individual, formal sources offer needed social support (Norbeck, 1988; Schaffer, 2009).

### **Social Support and Health**

Since Durkheim, researchers have attempted to determine the precise elements and pathways through which social support has an impact on health and well-being. Some researchers argue that social support has a direct effect on health (House et al., 1988) or that an indirect or buffering effect mediates the relationship (Cassel, 1976; Cobb, 1976; Cohen & Wills, 1985). Still others argue that both the buffering and main effects of social support on health are due to other factors, which determine both health and social support (Gore, 1981; Thoits, 1982). Personality traits such as sociability and extraversion, as well as demographic variables including social class may represent concepts of interest to further build evidence in support of theories for the linkage between social support and health (Cohen & Willis).

Researchers use different measurement tools (i.e., perceived vs. received) to capture data on various social support subtypes. Generally, when the measure of social support used assesses the perceived availability of social support during a stressful event, the buffering theory is supported (Cohen & Wills, 1985). Evidence for a main effect is

found when support measures assess a person's social network integration (Cohen & Wills, 1985). If findings from studies supporting the different theories are organized using the upstream-downstream model of social processes proposed by Berkman et al. (2000), both direct and indirect pathways yield evidence of health effects. Therefore, in terms of examining the role of social support, not mezzo level social networks, perceived social support is a variable of great research importance.

Haber et al. (2007) noted that perceived social support has consistently been linked with health. Studies that show evidence for received support can arguably be measuring respondent perceptions as well. For example, when measuring social support using self-report instruments, received support is often capturing the subjective perceptions of support. Specifically, Wethington and Kessler (1986) raised the possibility that any influence of received support on health may be mediated by perceptions of available future support. Helgeson (1993) examined the effects of received and perceived social support on adjustment to a first cardiac event among 64 married men and 9 married women. Perceived support had a greater positive impact on adjustment than received support. Therefore, although it is received support that the researcher is purportedly measuring, it is in effect the support recipient's perception of support that benefits his or her health.

Evidence collected by Maisel and Gable (2009) indicated the importance of matching the support offered with the needs as determined by the recipient. They asked 77 cohabitating couples to report on the support they provided and received from their partner over a two-week period. Results indicated that both visible support (i.e., perceived by recipient and reported by provider) and invisible support (i.e., not perceived by

recipient, but reported by provider) were associated with less sadness and anxiety. While the overall findings suggested that partner support reduced negative emotions, these effects were only present when support was responsive to the specific situation. When the support offered was deemed unwanted by the recipient partner, there was no reduction in negative emotions reported. Therefore, recipient perceptions of social support may not accurately capture the support that is available or what has been provided (Hupcey, 1998a; Sarason et al., 1990), and it may be the recipient's perception of support that is responsible for the health outcomes seen. There is clearly more research to be done in the area of social support and health.

#### **Research on Social Support and Adolescent Mothers**

Several categories of research emerged as relevant to my focus on perceptions of social support among prenatal and postnatal adolescents. First, one cannot engage in a discussion about social support without also addressing the presence as noted in the adolescent childbearing literature on perceived stigma of adolescent pregnancy, which if felt by the adolescent may contribute to her withdrawing socially, distancing her from sources of support (Whitehead, 2001), or not perceiving others as providing support to her. Second, there is some valuable data available on prenatal and postnatal social support perceptions in this population that is highlighted. Third, the influence of health professionals on adolescent social support perceptions is discussed. Lastly, there are critical gaps and challenges noted in the social support literature unique to this population.

### **Adolescent Childbearing: Social Support or Social Stigma?**

Since the industrialization period, adolescent parenting has been increasingly viewed, almost universally, as a nonnormative life course with negative long-term consequences (Smithbattle & Wynn Leonard, 1998), especially within the North American context (Miller et al., 2003). Some research though has challenged some of the common beliefs about the long term effects of adolescent pregnancy (Schultz, 2008). However, certain research studies from the last two decades place doubt on the long-held belief that teen pregnancy causes low educational attainment, poverty, and low self-esteem (Klima, 2003). Rather, these factors are the antecedents leading to pregnancy for many girls. Similarly, any complications of pregnancy and childbirth attributed to teenage childbearing and physical immaturity may be caused by social and economic factors (Irvine, Bradley, Cupples, & Boohan, 1997). The negative public attitude directed toward pregnant and parenting teens is often attributed to their lack of preparation for motherhood and reliance on welfare supports (Hanna, 2001). Interestingly, Smithbattle (2000) reported that women who become mothers as teenagers initially earn less, but then often earn more over their lifetimes than later childbearers of similar backgrounds. Therefore, economic disadvantage is correlated with, but not necessarily a consequence of early childbearing (Bissell, 2000).

When projected onto the adolescent, the negative values associated with adolescent childbearing can contribute to social isolation, minimizing the likelihood of the adolescent obtaining adequate social support (Whitehead, 2001). For any pregnant woman, coping with the transition to motherhood is influenced by the extent of the support she receives (Cutrona, 1984). The health and well-being of teenage mothers and

their children may largely be determined by this social stigmatization (Irvine et al., 1997). Common societal attitudes can have profound effects on the individuals who are subjected to these attitudes. This issue is germane to the topic of pregnant adolescents and perceived support. If a pregnant adolescent experiences stigma as the dominant attitude towards her during pregnancy and then motherhood, she might be less likely to perceive that others in society are supportive towards her during these times.

Lawlor and Shaw (2002) drew attention to the trend of delaying childbearing until a woman's 30s and 40s. Later childbearing is not deemed to be deviant. Labeling adolescent pregnancy as a problem is a reflection of social, cultural, and economic processes, which are macro level phenomena. Often young mothers themselves do not hold the dominant social view that their lives have been thrown permanently off course or their futures have been limited by becoming mothers (Smithbattle, 1995; Schultz, 2008). Many believe motherhood to be a positive, yet challenging experience (Kelly, 1997), providing motivation to change their life direction (Seamark & Lings, 2004). It is the adolescent's perception of stigma that influences the extent of psychosocial trauma she experiences (Whitehead, 2001). In a large study by Wiemann, Rickert, Berenson, and Volk (2005), 39.1% of the adolescents interviewed reported feeling stigmatized by their pregnancy. Factors associated with feeling stigmatized included (a) white race/ethnicity, (b) lack of partner, (c) feeling socially isolated, (d) having aspirations to complete college, and (e) experiencing verbal abuse.

Pregnancy is a developmental stage and, as such, it is accompanied by stress for many women, regardless of whether the pregnancy was planned (Ladewig, London, Moberly, & Olds, 2002). Social support has the potential to reduce the amount of stress

reported during the prenatal period (Norbeck & Anderson, 1989). Specifically, the perception of support is more valuable than the support received in predicting adjustment to stressful life events (Wethington & Kessler, 1986). It is not surprising then that adolescents perceiving social stigma would report experiencing social isolation, and perhaps even differ in their prenatal and postnatal perceptions of social support availability.

### **Prenatal and Postnatal Social Support Perceptions among Adolescents**

In the literature, perceptions of social support are reported as ratings of satisfaction or adequacy, as well as in some instances, the availability of the support (Veiel, 1985). The issue is that many studies do not explicitly state which aspect (i.e., satisfaction, adequacy, or availability) of social support perceptions they are examining (Uchino, 2004). One must have some knowledge of the various instruments used in the research in order to determine what aspect of support the researcher is capturing or to decipher which aspect is captured, in cases where none is identified.

Satisfaction with social support received is perhaps the simplest to separate from other reported aspects. Using open-ended questions to determine rates of satisfaction with the help they had received during pregnancy, May (1992) found 94% of the low-income prenatal adolescent participants expressed high satisfaction. In a quantitative design, Macleod and Weaver (2003) investigated satisfaction with social support among an American sample of inner-city prenatal adolescents using the short version of the Social Support Questionnaire (Sarason, Sarason, Shearin, & Pierce, 1987). For comparison, the group was separated by age into two categories: ages 14-16 and ages 17-18. Results revealed no differences between the age groups as both reported high levels of



satisfaction with available support. These studies did not address expectations of the amount or type of social support needed. Therefore if factors such as stigma contributed to low expectations of support among the aforementioned study's participants, an adequate level of satisfaction may have been easy to attain.

In a study by McVeigh and Smith (2000), satisfaction with *partner* and *other's* postnatal social support, as measured by the short version of Brown's Support Behaviour Index (Brown, 1986), decreased significantly between six weeks and six months postpartum for both adolescent and adult mothers. Teenage mothers remained more satisfied than adult mothers with the support they perceived from their partner and from others at both measurement times. Researchers in a recent Swedish study matched 97 adolescent mothers to the same number of adult mothers and, using the Maternity Social Support Scale (MSSS), found 80% of teen mothers and 95% of adults had social support scores that were indicative of satisfaction (Hertfelt Wahn & Nissen, 2008). While comparison of adolescent mothers with adult mothers on reports of satisfaction with support may produce varying results, adolescent mothers have consistently been shown to report adequate levels of satisfaction.

Both prenatal satisfaction and postnatal satisfaction with social support are fairly high among adolescents (Hertfelt Wahn & Nissen, 2008; Macleod & Weaver, 2003; May, 1992; McVeigh & Smith, 2000). One might interpret the high levels of satisfaction with support to be indicative of adolescents having either adequate perceptions of support or low expectations for social support, which are met easily.

Studies using the Postpartum Support Questionnaire (PSQ; Logsdon, 2002) offer a unique perspective of social support perceptions. The tool can be used to predict the type

of support a pregnant woman perceives will be important to her and what support she predicts will actually be received in the postpartum. Postnatally, the PSQ captures what support actually was important to the woman and what support was perceived as being received. Using the PSQ, Logsdon, Cross, Williams, and Simpson (2004) conducted a descriptive pilot study of 26 pregnant adolescents. The teens expected to receive postnatal support that would be different from what they thought would be important to them on 27 of 40 items. When applied in a repeated-measures design, the PSQ can compare prenatal expectations of postnatal support with postnatal expectations of support received. In one such study, adolescents completed the PSQ in their third trimester of pregnancy and again at six weeks postpartum (Logsdon, Birkimer, Simpson, & Looney, 2005). During the third trimester, the adolescents expected to receive more postpartum support than they thought was important. At six weeks postpartum, the adolescents reported that they received significantly less support than they had expected prenatally. While findings from both of these studies contribute to a better understanding of social support perceptions among adolescents, the results are not generalizable as the sample sizes were small ( $n = 26$  and  $n = 128$  respectively), all of the participants were students, and the majority lived with their own parents. The latter condition would no doubt influence support.

Availability of social support is yet another element of perceptions which lends itself to measurement. The Maternal Social Support Index (MMSI; Cox, Holden, & Sagovsky, 1987) consists of a two part questionnaire inquiring into the expected levels of support in times of crisis and in relation to specific tasks, including newborn care. It also elicits data on perceptions of availability of people with whom the mother could engage regularly. Quinlivan et al. (2004) interviewed 124 high-risk adolescents prenatally and

again at six months postpartum using the MMSI. They found a tendency for adolescents to overestimate their support networks prenatally when compared to reports of support they received at six months postpartum. The support they expected to be available to them did not materialize according to the teen mothers.

Qualitative studies contribute rich data, revealing prenatal expectations of postnatal support availability. Logsdon, Gagne, Hughes, Patterson, and Rakestraw (2004) conducted focus groups with a small sample of pregnant adolescents attending an alternative school in the United States (US). Their perceived postnatal social support needs and availability of supports differed by age. The younger participants, who were 13-14 years old, expected their own parents to offer support for their needs as children. The middle adolescents, who were 15-16 years old, expressed an expected need for support in acquiring employment and were ambivalent regarding the postnatal availability of the baby's father. The older teens, 17-18 years old, desired support that would assist them in applying for college or securing employment.

A literature review was located on the relationship between social support and outcomes of pregnancy (Orr, 2004). While Orr's (2004) review was not limited to adolescent mothers many of the studies she had in her review included this cohort. She divided the research she used in her review into observational and intervention studies, with the former limited to family and friends as sources of support, and the latter mainly on health professionals or trained lay women involved with a treatment group. Orr concluded that the observational studies demonstrated a positive relationship between social support and good pregnancy outcomes while the results from the intervention

studies showed less clear results. Her review supports the importance of informal social support and uncertainty of formal support mechanisms as sources of social support.

### **The Influence of Health Professionals on Adolescent Social Support Perceptions**

There are limited research studies investigating the impact of interaction with health professionals directly on social support perceptions. There are some data examining the impact of specific interventions delivered by professionals on childbearing adolescents (Barnet, Arroyo, Devoe, & Duggan, 2004; Bensussen-Walls & Saewyc, 2001; Brage Hudson, Elek, Westfall, Grabau, & Fleck, 1999; Coren & Barlow, 2007; Koniak-Griffin et al., 2002; Nielson, Grittelsohn, Anliker, & O'Brien, 2006; Olds, Henderson, Phelps, Kitzman, & Hanks, 1993; Quinlivan, Box, & Evans, 2003; Smith, 2004), however social support was not an outcome of interest to most and there are inconsistencies in findings among those studies that examine support phenomena. Letourneau, Stewart, and Barnfather (2004) conducted a literature review on support interventions for teen mothers. They concluded that individual study results were difficult to compare as each had different intervention contexts, intensities, modes, levels, agents, and targets. Even in cases where the details of the intervention are described, the specific component responsible for statistically significant outcomes cannot be identified (Koniak-Griffin et al., 2002). Therefore, it is difficult to say exactly what component of the intervention made the difference to the adolescent perception of social support.

No published study was located that examined the relationship of interactions with health professionals through prenatal care, prenatal classes, and postpartum contact that predicted or influenced changes in adolescents' social support perceptions from the prenatal to the postnatal period. There is some evidence supporting an association

between enhanced adolescent support perceptions and the provision of teen-centred care (Grady & Bloom, 2004; Klima, 2003). However, research studies recommending teen-centredness do not stem from researchers seeking adolescents' perceptions of support through interactions with health professionals, but from evaluation research where reasons for program noncompliance are inferred (Alpers, 1998; Cartwright et al., 1993). Group prenatal education using a teen-centred approach called *Centering Pregnancy* has been shown to enhance participants' perceptions of social support (Grady & Bloom, 2004; Klima, 2003). While the teens identify the source of support as the peer group, the interaction with the health professional facilitating the sessions may influence these perceptions. Similarly, adolescents attending teen-centred clinics for prenatal care miss fewer appointments and are more likely to present for postpartum follow-up than adolescents attending traditional obstetric clinics (Bensussen-Walls & Saewyc, 2001). Increased satisfaction with teen-centred versus adult-oriented obstetric services is also associated with adolescents' satisfaction with their relationships with their healthcare providers (Michels, 2000). When the adolescent perceives individualized support and respect from health professionals, she perceives herself to be in a partnership and the negative influence of the stigma of teenage pregnancy is lessened (Michels, 2000).

### **Research Gaps and Challenges**

The lack of consistency in outcomes measured, use of numerous instruments to capture social support data, and the lack of consistency in defining social support and related terms contribute to difficulty in interpreting research findings (Logsdon et al., 2002; Uchino, 2004). In addition to the conceptual and measurement complexities of studying social support, focusing on the adolescent childbearing population presents

unique challenges. Logsdon et al. (2002) drew attention to the characteristically small sample sizes due to recruitment difficulties and subsequent self-selection bias and large attrition rates. As well, there is a potential for within-sample variability because of the developmental differences by age of teen. This variability is not consistently considered by researchers when interpreting findings (Logsdon et al., 2002). Also adolescent samples are often drawn from formalized services in which the teens are already engaged, such as alternative school settings (Connelly, 1998; Logsdon et al., 2005; Logsdon, Cross, et al., 2004; Logsdon, Gagne, et al., 2004) or high-risk medical clinics (Secco et al., 2007). These easily accessible teens may not accurately represent typical prenatal and postnatal adolescents on measures of social support perceptions, as they are already receiving some baseline supports.

Many of the studies reviewed were American and, as such, recruited adolescent samples with a secondary objective of exploring the role of African American or Hispanic ethnicity and culture on social support perceptions. The findings therefore may not be generalizable to Canada's adolescent population because of the differences in ethnic and cultural composition. In addition, the broad criteria used to define samples as "high-risk" or "at-risk" may also hinder efforts to generalize the findings (Dunkel-Schetter et al., 1996).

### **Summary of the Literature**

In summary, specific terms describing the type of social support being measured should be substituted for the broad label of social support. It is increasingly being recognized that labeling the support provided by professionals as social support is not consistent with most conceptual definitions of the term, and therefore inappropriate.

There is also a need for researchers to differentiate between instruments that collect subjective and objective data on the support phenomena of interest, explicitly stating that the captured variable represents perceived or received social support. This may lend evidence to further support theories of the relationships between specific supportive phenomena and health. Lack of consistency in defining social support variables and the use of interchangeable terms complicate a review of the social support literature and the elucidation of the specific pathways influencing health.

Studies measuring adolescents' prenatal and postnatal social support perceptions and level of adequacy focus on reports of satisfaction and availability of social support. Examination of changes in social support over time has been limited to investigating changes at two time periods during the postpartum (McVeigh & Smith, 2000). When investigated in separate research studies, adolescents report fairly high levels of satisfaction both prenatally and postpartum. When compared to adult women, the rates of adolescents' satisfaction with support are inconsistent, with adolescents' satisfaction higher than adult mothers in one study and lower in another. However, adolescents consistently express high levels of satisfaction. Reports of the perceived availability of social support demonstrate consistency in the literature. Prenatally, adolescents are not usually accurate when they predict postnatal support availability. When reported postnatally, adolescents receive less support than expected prenatally. The prenatal overestimating of postnatal support availability differs by age of the adolescent (i.e., early, middle, and late). Other individual characteristics of the support recipient may also influence social support perceptions, including cultural affiliation (Dunkel-Schetter et al., 1996; Uchida, Kitayama, Mesquita, Reyes, & Morling, 2008), socioeconomic status

(Connelly, 1998; Logsdon, Gagne, et al., 2004; Quinlivan et al., 2004), specific age of the adolescent (Logsdon, Gagne et al., 2004), and self-esteem (Brage Hudson, Elek, & Campbell-Grossman, 2000; Bunting & McAuley, 2004; Logsdon & Usui, 2001; McVeigh & Smith, 2000).

There is a lack of research addressing the changes in the perceptions of prenatal and postnatal social support availability among Canadian adolescents. While the provision of teen-centred prenatal care and some models of group prenatal education are associated with positive adolescent perceptions of satisfaction and support, respectively; the influence of interactions with health professionals during the prenatal and postpartum periods on any change in adolescent support perceptions remains largely unexplored.



## **Chapter 3**

### **Methods**

Since I was studying adolescents' perceptions of availability of social support in the prenatal and postnatal periods, how these perceptions changed between these periods, and how interactions with health professionals at these times affected the perceptions of change, I designed a cross-sectional, exploratory study performing a secondary analysis on data collected from a national survey on Canadian Maternity Experiences (CMES). The CMES was conducted in 2006 by the PHAC and Statistics Canada and offers a valuable resource for further explorations. The potential for empirical designs based on subsets of variables contained within the CMES is substantial. For the purposes of this study, the variables of interest were contained within the CMES or could be derived from the survey data.

In this chapter, I will present a description of the CMES population and sampling methods, a background of the CMES, and the procedure for the secondary analysis and the data analysis. In addition, I will discuss my study's reliability and validity as well as outline important ethical considerations.

#### **Description of Population and Sample**

In planning for CMES sampling, initially six different sampling frames were considered (Chalmers, Dzakpasu, Heaman, Kaczorowski, & Molner Szakacs, 2007). Application of a Kepner-Tregoe decision and potential problem analysis resulted in the use of Statistics Canada's 2006 Canadian Census of Population data as the optimal method. As census participation was then mandatory, all recently born babies in Canada at the time of the 2006 Canadian Census of Population would be reliably identified.

Permission was obtained from the Chief Statistician of Canada to conduct the CMES as a post-censal survey (Chalmers et al., 2007). The sampling frame consisted of 58,972 mother-infant pairs from the Census data (Dzakpasu et al., 2008). These pairs were then subjected to stratified simple random sampling, without replacement. Young mothers (i.e., aged 15-19 years) were oversampled to attempt to account for their less than desired participation rate from the first pilot study (Dzakpasu et al., 2008). A final sample of 6,421 Canadian mothers, weighted to represent 76,508 women, served as the sample for the CMES (Dzakpasu et al., 2008).

The inclusion criteria for the CMES were birth mothers who: (a) were 15 years of age and older at the time of the index birth; (b) had live, singleton deliveries in Canada during the three months preceding the 2006 Census; and (c) lived with their infants at the time of the survey (PHAC, 2009). Three subpopulations, namely, young mothers (i.e., younger than 20 years of age), recent immigrant mothers (i.e., living in Canada for less than five years), and Aboriginal mothers (i.e., self-identified First Nations, Inuit, or Métis), were of special interest because of increased risk of adverse pregnancy outcomes (Dzakpasu et al., 2008). My inclusion criteria were in keeping with the above but restricted to the women aged 15-19 years.

### **Study Sample**

The study I conducted was concerned with the adolescent mothers who participated in the CMES. However, mothers less than 15 years of age at the time of giving birth and those living on reserves or in institutions at the time of the survey were excluded from the sampling frame for operational reasons (PHAC, 2009). Younger mothers were less likely than their older counterparts to participate in the CMES

(Dzakpasu et al., 2008). Therefore, weighting adjustments were applied to shift the respondent distribution to be representative of the CMES population for all census characteristics investigated. Of the weighted CMES population of 76,508 women, young mothers represent 2,262. Initially, 496 young mothers were included in the sample, with 462 of these meeting the inclusion criteria (Dzakpasu et al., 2008). A response rate of 64% ( $n = 297$ ) was obtained for this subpopulation, compared to a 78% response rate overall. While oversampling of young mothers was done to attempt to offset an expected low response rate, the initial sample was not inflated enough to account for the actual difference between the expected and obtained number of nonrespondents (Dzakpasu et al., 2008). My sample for this secondary analysis thus consisted of 297 young Canadian mothers, aged 15 to 19 years at the time of giving birth.

### **The Canadian Maternity Experiences Survey (CMES)**

The Canadian Perinatal Surveillance System of the Maternal and Infant Health Section of the PHAC monitors perinatal health indicators at the national level using available databases and surveys. The CMES project was undertaken as a joint collaboration between the Canadian Perinatal Surveillance System and Statistics Canada in 2006. The survey's goals were to describe Canadian women's experiences, perceptions, knowledge, and practices pre-pregnancy, prenatally, during labour and birth, and in the early postpartum months (PHAC, 2009).

A pilot study conducted in 2002/2003 resulted in the omission of several CMES questions and the addition of some others (Dzakpasu & Chalmers, 2005). The time for survey completion was reduced from 90 minutes to 45 minutes and the use of a computer-assisted telephone interview instead of face-to-face data collection was successfully

achieved in a second pilot study conducted in 2005 (Dzakpasu et al., 2008). The final survey version contained more than 300 questions, including topics such as demographic and socioeconomic factors, reproductive history, smoking status, alcohol and street drug use, stress and support, physical and sexual abuse, interventions during pregnancy, labour and delivery, postpartum health, and infant feeding practices (PHAC, 2009).

The broad purpose of the CMES fit with the purpose for this study in that the CMES collected information on the variables of interest. As well, all variables of interest to this study were contained in or could be derived from the CMES. These factors contribute to a good conceptual fit between the data collection instrument (i.e., the CMES) and this secondary analysis of the data resulting from this instrument. However, when conducting a secondary analysis the researcher does not have the ability to influence data collection and instrument design, necessitating specific considerations for study reliability and validity.

#### **Procedure for the Secondary Analysis**

Since I did not have access to the data file and was not in close proximity to a centre where these data are available, I was required to request that specific statistical analyses be applied to the variables of interest through the Public Health Agency of Canada. I first identified the independent, dependant, and descriptive variables of interest to my study and the required statistical tests to be performed to answer my research questions. With the guidance of a research statistician, datafiles containing syntax for the statistical analyses were created using PASW Statistics for Windows Version 18, Bootvare software, the CMES weight file, and a CMES dummy data set. These files were then exported to the epidemiologist of the Maternal and Infant Health Section of the

PHAC for execution of the statistics with the CMES data. Once complete, output files were forwarded to me for interpretation. The complexity of the coding used for variables, as well as the need to include syntax congruent with bootstrap programming necessitated that I resubmit several revisions of syntax to PHAC prior to receiving the desired data. There was no cost incurred for statistics execution and output file access. Confidentiality was strictly maintained, as access to the CMES raw data files did not occur.

The two variables of perceptions of prenatal and perceptions of postpartum social support availability were derived directly from the CMES questionnaire. Table A1 (see Appendix A) presents these variables and their corresponding CMES questions as they appear in the CMES questionnaire. I created a dependent variable, "change in perceived social support," representing each respondent's direction of change, if any, in her rating of social support availability between the prenatal and postnatal periods. This trichotomized variable classified the adolescents' changes in perception as increased, decreased, or unchanged between the prenatal and postnatal periods.

The independent variables explored included gestational age at the time of prenatal care initiation, prenatal class attendance, contact with a healthcare provider in the postpartum period, and the timing of the contact postpartum. Table A2 (see Appendix A) outlines the CMES questions and possible responses corresponding to the independent variables. The sociodemographic and obstetric variables used to describe the sample are reported in Table A3 (see Appendix A).

### **Data Analysis**

Hypotheses were tested at the .05 two-tailed significance level. Demographic data were analyzed using descriptive statistics. The first three research questions, concerning

whether or not the adolescents perceive adequate social support availability in the prenatal and in the postnatal periods and whether or not perceptions of social support availability are stable from the prenatal to the postnatal period, were answered using descriptive statistics. The fourth research question required logistic regression to determine if the gestational age at the time of initiation of prenatal care, prenatal class attendance, postpartum contact with a healthcare provider, and the timing of postpartum contact with a healthcare provider affect perceptions of change in availability of support from the prenatal to the postnatal period.

### **Reliability and Validity**

Data collection methods and instrument design by the PHAC and Statistics Canada have implications for this study. Specifically, the CMES questions regarding prenatal and postnatal social support perceptions may have been threatened by virtue of their placement in the questionnaire. Because people may respond differently to a question, or a similarly posed question, the second time it is asked, reports of postnatal perceptions of social support may not have been answered accurately. The postnatal social support question is modeled after the prenatal question and could be viewed as repetitive by respondents leading to less than accurate reporting. Alternatively, the first response may have been influenced by how much support the women felt they had in the postnatal period. In addition, the reliability of self-report questionnaires is partly a function of their length (Clarke & Cossette, 2000). The CMES required approximately 45 minutes to answer over 300 questions (PHAC, 2009). This could have been overwhelming for some respondents, impacting the reliability of answers to questions posed later in the survey, such as the question concerning postnatal social support

perceptions. Another slight difference noted was that the question about availability of support in the postnatal period, i.e., since the birth of the baby, (MH\_Q26) varied slightly from that asked in the prenatal period, i.e., during pregnancy, (SI\_Q11) in that the former contained the following prompt "Include companionship, assistance and other types of support you may have needed". The prompt may have elicited a slightly different response than not having the prompt when the question was first asked.

The study's reliability is strengthened by the extensive training of the female Statistics Canada interviewers which included: (a) an overview of the CMES objectives and methods, (b) a review of the questionnaire, (c) a review of pronunciation and definitions of survey terms, and (d) guidance on how to approach sensitive topics and difficult situations that could arise during the interview (PHAC, 2009). Errors and inconsistencies were identified in less than 5% of the records in the dataset (Dzakpasu et al., 2008). According to the PHAC (2009), the low level of nonresponse resulted in missing data being excluded from analysis with minimal impact on data quality. In addition, Statistics Canada used advanced statistical methods to correct for errors and inconsistencies, replacing erroneous values with missing values when certainty about variable error existed (Dzakpasu et al., 2008).

The external validity for this investigation has the potential to be strong because of the large dataset and complex sampling methods employed by Statistics Canada and the PHAC. Therefore, the results stemming from a secondary analysis of the CMES data should be considered generalizable to childbearing Canadians. While some categories of mothers were ineligible and excluded from the sampling frame, as described above, the survey's inclusion criteria were broad. When demographic characteristics of respondents

were compared to those of nonrespondents, younger mothers, mothers reporting a first language other than English or French, mothers living in Toronto, and single mothers were less likely to participate in the survey. A comparison of the weighted respondent distribution to the sampling frame shows a close approximation on all characteristics. This provides evidence that the CMES sample is representative of the CMES population (PHAC, 2009).

### **Ethical Considerations**

As required by any research conducted through Memorial University, ethical approval was sought through the Interdisciplinary Committee on Ethics in Human Research (ICEHR) of Memorial University of Newfoundland. According to ICEHR (see Appendix B), this study did not require formal ethics clearance because of the nature of the secondary analysis (i.e., no access to raw data or respondent identifiers). A letter from the data holder (i.e., PHAC) was requested by and sent to ICEHR for their records (see Appendix B). In addition, PHAC representatives reviewed and approved the finalized proposal outlining this research prior to statistical analyses being run.



## **Chapter 4**

### **Findings**

This chapter is a presentation of the findings from the data analysis conducted for this study. First, the sample of adolescent CMES participants is described in relation to sociodemographic, obstetric, and healthcare provider interaction variables. Secondly, the adequacy of the adolescents' prenatal and postnatal social support perceptions, as well as the change in perceived support between periods is reported. Thirdly, the results of hypothesis testing for an influence of select interactions with healthcare providers on adolescents' change in support perceptions are presented. Finally, the influence of four sociodemographic variables, chosen based upon the review of the literature, are tested for influence on adolescents' change in perceptions.

#### **Sample Description**

Of 462 eligible adolescents, 297 (64.3%) participated in the CMES (Dzakpasu et al., 2008). Table 4.1 summarizes the sociodemographic characteristics of the adolescent respondents. The maternal age of respondents was categorized as middle adolescent (i.e., aged 15-16) and older adolescent (i.e., aged 17-19), based upon descriptions in previous literature and materials produced by Statistics Canada. Middle adolescents were a small percentage of the adolescent participants, as they comprised only 9.1% of the sample and older adolescents made-up 90.9%. The mean age of the adolescents in the survey was 18.10 years old,  $SD = 1.04$ , 95%  $CI [17.98, 18.22]$ . There was a large variation in the annual household income; however, almost half of the adolescent sample came from households of less than \$20,000, and 65.3% had annual household incomes below \$30,000. Not surprising given the age group of interest, over half of the adolescents had

less than high school as the highest level of education completed. Few of the adolescents were married and fewer separated with the bulk falling into categories single, never married, or living common law. Over half of the sample had a partner, which is an important indicator of potential social support, though it does not guarantee that support is available. In terms of ethnicity, almost two thirds identified themselves in the "other" category followed by Canadian and English. A low percentage self-identified as Aboriginal, which included Inuit, Metis, and First Nations.

*Table 4.1*

*Sociodemographic Characteristics of Adolescent Respondents*

Characteristic	N	%
Maternal age at time of birth ( <i>n</i> = 297)		
15-16	27	9.1
17-19	270	90.9
Annual household income (\$) ( <i>n</i> = 216)		
Less than \$10,000	39	18.1
\$10,000 to less than \$20,000	62	28.7
\$20,000 to less than \$40,000	68	31.5
\$40,000 to less than \$60,000	28	13.0
\$60,000 to less than \$80,000	10	4.6
\$80,000 to less than \$100,000	4	1.9
\$100,000 to less than \$150,000	5	2.3
Maternal education ( <i>n</i> = 291)		
Less than high school	165	56.7
High school graduate	82	28.2
Some post-secondary education	26	8.9
Trades certificate or diploma	7	2.4
Community college	10	3.4
Bachelor's degree	1	0.3

Characteristic	N	%
Marital status ( <i>n</i> = 291)		
Married	26	8.9
Living common law	121	41.6
Separated	11	3.8
Single, never married	133	45.7
First reported ethnic/ cultural identity ( <i>n</i> = 265)		
Canadian <sup>a</sup>	39	14.7
English <sup>b</sup>	32	12.1
Eskimo <sup>c</sup>	18	6.8
Scottish <sup>d</sup>	14	5.3
Other	162	61.1
Aboriginal self-identification ( <i>n</i> = 277)		
Yes	61	22.0
No	216	78.0

Note. Totals of percentages are not 100 for every characteristic because of rounding.

<sup>a</sup>Canadian, Canadien(ne). <sup>b</sup>Anglaise, English, Anglophone. <sup>c</sup>Eskimo, Inuit, Aleut, Aleutian Islander, Dorset, Inuk, Inuktitut, Inupik, Inuvialuit, Inuvunjvic, Thule, Yupik. <sup>d</sup>Écossais(e), Scottish, Argyle, Highlander, Orkney Islander, Pict.

As indicated in Table 4.2, the adolescents' average number of pregnancies, including the index child, was 1.46, *SD* = 0.81, 95% *CI* [1.37, 1.55] and their mean number of live births was 1.40, *SD* = 0.54, 95% *CI* [1.34, 1.46]. The respondents' ratings of self-perceived stress indicated that similar proportions of adolescents felt that the 12 months prior to the index birth were not stressful or somewhat stressful. Only 12% felt that this time period was very stressful. All of the adolescents accessed prenatal care and more than two thirds accessed care as early in their pregnancies as they had wanted.

Table 4.2

*Select Obstetric and Prenatal Characteristics of Adolescent Respondents*

Characteristic	<i>n</i>	%
Number of pregnancies ( <i>n</i> = 295)		
1	199	67.5
2	69	23.4
3	19	6.4
More than 3	8	2.7
Number of live births ( <i>n</i> = 295)		
1	210	71.2
2	53	18.0
3	30	10.2
4	2	0.7
Perceived stress 12 months prior to birth ( <i>n</i> = 296)		
Not stressful	127	42.9
Somewhat stressful	133	44.9
Very stressful	36	12.2
Initial prenatal care received as early as wanted ( <i>n</i> = 296)		
Yes	249	84.1
No	47	15.9

*Note.* Totals of percentages are not 100 for every characteristic because of rounding.

Table 4.3 presents a profile of the participants' interactions with health professionals. Over two thirds of the sample received their initial prenatal care within the first trimester of pregnancy, the remainder initiated care in the second trimester. The mean gestational age at initiation of care was 9.23 weeks, *SD* = 4.83, 95% *CI* [8.66, 9.80]. Despite the fact that two thirds of the adolescents were pregnant for the first time, only half attended prenatal classes. The other half did not participate in any formal prenatal education sessions. After the birth of their babies, 5% of the adolescents did not have postpartum contact with a healthcare provider. Among those having provider contact, the

mean infant age at the time of contact was 9.99 days,  $SD = 10.15$ , 95%  $CI [8.77, 11.21]$ , where one third of participants reported having had contact within four days of the birth, one third within 5-8 days, and another third not until 9-12 days or more.

Table 4.3

*Profile of Adolescents' Interaction with Healthcare Providers*

Interaction Variable	N	%
Gestational age at initiation of care (weeks) ( $n = 286$ )		
Less than 14	241	84.3
14 to 27	45	15.7
Attendance at prenatal classes ( $n = 295$ )		
Yes	150	50.8
No	145	49.2
Postpartum contact with a healthcare provider ( $n = 296$ )		
Yes	281	94.9
No	15	5.1
Age of baby when contacted by provider (days) ( $n = 270$ )		
0-4	86	31.9
5-8	90	33.3
9-12	13	4.8
More than 12	81	30.0

Note. Totals of percentages are not 100 because of rounding.

### **Adequacy of Prenatal and Postnatal Social Support Perceptions**

The adequacy of prenatal and postnatal social support perceptions was measured by examining adolescent's responses to specific CMES questions. Responses to the questions regarding perceptions of social support availability are presented in Table 4.4. The majority of adolescents perceived support to be available most or all of the time both prenatally and in the postpartum. For both time periods, less than 2% felt that support was available none of the time. When combined, the categories of none of the time, a little bit

of the time, and some of the time demonstrate that inadequate support availability was perceived among 13.2% of adolescents prenatally and 18% postnatally.

Table 4.4

*Responses to Survey Questions: "During your pregnancy how often was support available when you needed it?" and "Since the birth of baby, how often has support been available to you when you have needed it?"*

Response	Prenatal (n = 296)		Postnatal (n = 295)	
	n	%	n	%
None of the time	4	1.4	5	1.7
A little bit of the time	11	3.7	15	5.1
Some of the time	24	8.1	33	11.2
Most of the time	64	21.6	72	24.4
All of the time	193	65.2	170	57.6

Some adolescents experienced changes in perceived social support as noted in Table 4.5, however, perceptions of social support availability were fairly stable between the prenatal and postnatal periods as almost two thirds of the adolescents perceived no change in available support. However, the proportion of adolescents experiencing a reduction in support perceptions was higher than for those perceiving an increase between periods.

Table 4.5

*Change in Adolescent Social Support Perceptions from the Prenatal to Postnatal Period (n = 294)*

Change in perceived support	n	%
Increase	41	13.9
Decrease	68	23.1
No change	185	62.9

*Note.* Totals of percentages are not 100 because of rounding.

### **The Influence of Interaction with Health Professionals**

Logistic regression was used to assess the ability of four health professional interaction variables to predict a change in perceptions of social support availability between the prenatal and postnatal periods. The interaction variables of interest, namely timing of initiation of prenatal care, prenatal class attendance, postpartum contact with a healthcare provider, and timing of postnatal contact with a healthcare provider, were analyzed as separate bivariate models. The dependent variable of difference in perceptions of social support between time periods was trichotomized based on the direction of change (i.e. increase, decrease, no change). Therefore, three separate bivariate models were run for each independent variable.

Examination of the results revealed only one variable of statistical significance. As shown in Table 4.6, adolescents who reported contact with a healthcare provider during the postnatal period were 5.23 times more likely to perceive a reduction in social support availability from the prenatal to the postpartum period compared to adolescents receiving no postpartum contact, OR = 5.23, 95% CI [1.60, 17.14]. The results of bivariate logistic regression analyses for the independent variables predicting an increase or no change in perceptions of social support availability were not significant and are presented in Tables C1 and C2 respectively (see Appendix C). The execution of multivariate logistic regression models was not indicated based upon the lack of significant contributors in bivariate analyses.

Table 4.6

*Summary of Bivariate Logistic Regression Analyses Predicting a Decrease in Perceptions of Social Support Availability*

Variable	<i>B</i>	<i>SE</i>	<i>OR</i>	95% <i>CI</i>	Wald statistic	<i>p</i>
Timing of prenatal care initiation	-0.05	0.43	0.95	[0.41, 2.22]	0.01	.910
Prenatal class attendance	0.16	0.30	1.17	[0.65, 2.12]	0.28	.597
Postpartum contact with a HCP	1.66	0.61	5.23	[1.60, 17.14]	7.48	.006
Timing of HCP contact	-0.16	0.32	0.86	[0.45, 1.61]	0.23	.630

*Note.* *B* = beta coefficient; *SE* = standard error; *OR* = odds ratio; *CI* = confidence interval; HCP = healthcare provider.

### The Influence of Select Sociodemographic Variables

When bivariate logistic regression was applied to select sociodemographic variables, including marital status, household income, Aboriginal status, and maternal age, two models approached but did not reach statistical significance (i.e.,  $p < .1$ ). Firstly, adolescents living in households where members had combined annual incomes of \$50,000 or more appeared 2.29 times more likely not to perceive a change in social support availability than those living in households with incomes less than \$50,000, [ $OR = 2.29$ , 95%  $CI$  (0.87, 6.01), Wald = 2.82,  $p = .093$ ]. Secondly, older adolescents (i.e., aged 17-19 years) appeared 4.3 times more likely than younger adolescents (i.e., aged 15-16 years) to perceive a decrease in social support perceptions, [ $OR = 4.3$ , 95%  $CI$  (0.79, 23.47), Wald = 2.84,  $p = .092$ ].

### Summary of Results

Results of descriptive analyses indicated that Canadian adolescent mothers perceived adequate social support to be available prenatally and postnatally. A notable proportion of participating adolescents perceived support to be available *some of the time*,



*a little bit of the time, or none of the time* both prenatally and in the postpartum. None of the health professional interactions examined contributed to stability or to an increase in social support perceptions over time. Interestingly, receiving postpartum contact by a healthcare provider was associated with a reduction in perceived social support availability between time periods. Both annual household income and age of the adolescent showed trends toward, but did not reach statistical significance, as variables associated with stability and change in perceptions of social support availability.

## **Chapter 5**

### **Discussion**

In this chapter I present a detailed discussion of the results from this study. I discuss the adequacy of Canadian adolescents' prenatal and postnatal social support perceptions as well as the change in these perceptions. The results of regression analyses investigating the influence of health professional interaction with adolescents on the change in perceptions of support availability is outlined and placed within the context of existing research. Particular attention is given to discussing the statistically significant associations relating to health professional interactions with adolescents and influence on change in support perceptions, as well as the sociodemographic variables that showed trends toward statistical significance as influencing a change in perceptions. Finally, the conceptual framework which guided this study is reviewed in light of my findings.

#### **Adolescents' Prenatal and Postnatal Perceptions of Social Support**

The majority of the adolescents participating in the CMES perceived adequate social support both prenatally and postpartum. This finding is fairly consistent with the findings from the CMES as a whole in that almost 60% of all respondents reported having support all the time in the prenatal period and just over 50% reported the same in the postnatal period. The adolescent ratings were slightly higher than those for the general population of women surveyed. Regional variations in perceived support for Canadian mothers were also found. Prenatally, mothers in the Yukon had the highest support ratings and those in Nunavut had the lowest. In the postpartum period, Nova Scotian mothers had the highest ratings and those in Nunavut had the lowest. Regional differences in adolescent support perceptions were not sought, as the number of teens surveyed in

some of the individual provinces and territories was quite small and I would not be able to obtain the data needed for the comparison.

My findings of adolescents' high perceived social support at both periods is consistent with the findings from previous studies examining adequacy of social support perceptions among childbearing adolescents. Research studies have shown that adolescents are satisfied with available social support both prenatally (Macleod & Weaver, 2003; May, 1992), and in the postpartum period (Hertfelt Wahn & Nissen, 2008; McVeigh & Smith, 2000). The confirmation that the majority of Canadian adolescents perceive social support to be adequate during both their pregnancy and in the postpartum is valuable, serving as baseline data with which to compare future Canadian findings. The implementation of various public policies and programs either nationwide or by individual provinces and territories may inadvertently have an impact on the unknown processes that contribute to the adequacy of support perceptions for adolescent childbearers. Having some baseline data available may be an incentive for Canadian researchers and program evaluators to include social support perceptions as an outcome worth measuring.

These findings must be considered with caution when drawing conclusions about certain groups of mothers as some groups of mothers were underrepresented. Specifically, younger mothers, mothers reporting a first language other than English or French, mothers living in Toronto, and single mothers were less likely to participate in the survey (PHAC, 2009). Therefore, despite a complex sampling frame and the oversampling of young mothers, there were differences in the characteristics of respondents compared to nonrespondents (Dzakpasu et al., 2008). Having a language other than English or French

could also be a proxy for "ethnicity" and other researchers have suggested that perceptions of social support vary by ethnicity (Gee & Rhodes, 2008). In addition, only 12% of the participating adolescents felt that the 12 months prior to the birth of their child was very stressful. Therefore most of the CMES teens did not identify themselves as experiencing high amounts of stress prenatally, a noteworthy finding as low levels of perceived stress may reflect, or be reflected by, high levels of perceived social support prenatally. Findings of adequate prenatal, and subsequent postnatal social support perceptions may have differed among adolescent nonrespondents. It is possible that higher degrees of life stress played a role in adolescents' lower than expected survey participation.

Even though the majority of prenatal and postnatal adolescents in Canada who responded to this survey perceive that social support is available when they need it all of the time or most of the time, the finding that a number of adolescents have this availability some, a little bit, or none of the time is of concern given that the question was tied to need. These teens represent a subcategory of high-risk mother-infant pairs within the already vulnerable population of adolescent childbearers. Identification of those at-risk for a lack of perceived support is of paramount importance for maternal and infant health. A lack of perceived support during the postpartum period has been linked with depressive symptomatology among adolescent mothers (Quinlivan et al., 2004). Mothers with unresolved postpartum depression may not be able to respond to their infant's cues, endangering the attachment relationship and development of their newborn (Reid & Meadows-Oliver, 2007).

### **Changes in Social Support Perceptions from the Prenatal to the Postnatal Period**

There is a lack of research examining the changes in adolescents' social support perceptions during the transition to motherhood. In this study I found that perceptions of social support availability declined between the prenatal and postpartum period among almost one quarter of Canadian adolescents. Similar to the finding that some of the teens perceived inadequate support availability, (i.e., none of the time, a little bit of the time, or some of the time) at the individual time periods, the finding that some teens experienced a reduction in support from the prenatal to the postnatal period when they felt they needed that support cannot be ignored.

Previous research is consistent with my finding that some teens perceived less social support available postnatally than prenatally. Quinlivan et al. (2004) conducted interviews with adolescents prenatally and again at six months postpartum to elicit prenatal perceptions of postpartum support availability. Prenatal expectations revealed that the adolescents significantly overestimated the amount of help they would receive with daily tasks associated with motherhood. They were also less satisfied with communication with their partners and other adults in their social networks during the postpartum period. Similarly, Logsdon et al. (2005) found that adolescents reported that the postpartum support they received was less than they had expected prenatally. This discrepancy between expectations of available social support and the materializing of actual support produces negative effects on parenting for young mothers (Lee, 2009). High expectations for social support have been linked with an increased risk for physical aggression and spanking among adolescent mothers (Lee, 2009). Further to this decline between time periods, McVeigh and Smith (2000) investigated changes in satisfaction

with support at two times in the postpartum period, finding that adolescent mothers had reductions in satisfaction from six weeks to six months postpartum. Therefore, support perceptions in either time period should not be viewed as static.

Previous research hypothesized that this decline in perceived postpartum support may be associated with postpartum demystifying the realities of motherhood (Quinlivan et al., 2004). Overestimating and idealizing the positive aspects of childbearing has been recognized as a common construct among pregnant adolescents (Condon et al., 2001). The postpartum reality of parenthood may lead to the discrediting of these prenatal expectations and lead to the reassessment of assets, including social support and self-esteem, from a less romanticized perspective (Condon et al., 2001).

Herrmann, Van Cleve, and Levisen (1998) studied 56 teenage mothers using a descriptive approach and found that a decrease in self-esteem occurred between delivery and six months postpartum and in social support between six and 18 months postpartum. The reality of the postpartum period may result in reduced feelings of self-worth as expectations surrounding the role of motherhood are not perceived as being met. As well, the reality of true available social supports becomes apparent during postpartum, particularly as the novelty of the newborn stage passes, network members shift focus back to their own lives, and stressors associated with parenthood present (Herrmann et al., 1998).

### **The Influence of Health Professionals on Changes in Perceptions of Support**

In this study, there was little evidence of certain health professional interactions influencing changes in perceptions of social support among childbearing adolescents from the prenatal to the postnatal period. Specifically, the health professional interactions of

timing of initiation of prenatal care, prenatal education, and timing of postpartum contact did not contribute to a change in perceptions of social support availability among adolescents participating in the CMES. However, postpartum contact with a healthcare provider was significantly associated with an increased likelihood of reporting a decrease in perceptions of social support availability between the prenatal and postnatal periods.

#### **Timing of Initiation of Prenatal Care**

All of the CMES respondents reported receiving some prenatal care. Inadequate prenatal care, defined as having four or less visits, was reported by less than 2% of the total CMES sample (PHAC, 2009). In general, adolescents initiated prenatal care slightly later than all mothers, with the majority initiating in the first trimester and none delaying care until the third trimester of pregnancy. However, almost 16% of adolescents postponed prenatal care initiation until the second trimester of pregnancy. It would be important to know the reason especially if tied to a particular region of the country. This finding is of clinical significance as the fetal development that occurs during the first trimester is the most vulnerable to teratogenic damage (Hepper, 2007). If care initiation is postponed, the opportunity to provide valuable health teaching regarding the potentially damaging effects of risky behaviour such as smoking, drinking, and substance use may be missed when fetal development is most susceptible to harm from these and other influences.

If an adolescent were to establish a relationship with a healthcare provider early in pregnancy this might influence the perception of social support availability. Timing of initiation of prenatal care did not account for any significant change or stability in perceptions of social support availability among the Canadian adolescents in this study.

The lack of variability in adolescents' gestational age at the time of initiation of prenatal care could be partly responsible for the lack of significance, as comparison of change in social support perceptions with adolescents receiving no prenatal care, and associated healthcare provider interaction, was not possible since all of the CMES adolescents received this service.

Age itself has not been shown to be independently associated with late entry into care (Wiemann, Berenson, Garcia-del Pino, & McCombs, 1997). However, some US studies do show differences between early, middle, and late adolescents' entry into prenatal care (Haeri, Guichard, & Saddlemire, 2009; Hueston, Geesey, & Diaz, 2008). Therefore, inclusion of younger adolescents in the CMES sample may have produced different findings.

Possible reasons for adolescents' decisions to initiate care at a particular stage of pregnancy have been explored in the literature. Hughes Lee and Grubbs (1995) studied teen's reasons for seeking or delaying first trimester prenatal care. Those adolescents entering care in their first trimester perceived prenatal care as accessible. The Canadian public healthcare system may broadly be perceived as accessible to pregnant adolescents, contributing to early initiation of prenatal care. A perception of accessible prenatal services by adolescents may also be enhanced by service approaches that are teen-focused, or teen-centred. Services which contain teen-focused elements are valued by adolescents prenatally and postnatally (Cox et al., 2005), and may encourage adherence to the recommended schedule for prenatal and postnatal visits (Grady & Bloom, 2004). Those without access to teen-centred services face added challenges in attempts to navigate a complex, adult-oriented healthcare system (Klima, 2003). Therefore, the



results of this study may have differed considerably if a control group receiving no prenatal care had been included.

### **Prenatal Class Attendance**

Since prenatal classes are more likely than some other antenatal services to be delivered in such a way that an attendee may consistently see the same healthcare provider, this variable was included in the study. Among all CMES participants, 32.7% reported attending prenatal education during their pregnancies with the index child (PHAC, 2009). Adolescent participants reported a much higher rate of attendance than the other age groups. This is an interesting finding as a US cross-sectional study did not find age associated with childbirth class attendance (Lu et al., 2003). Other studies reported a lack of adolescent attendance, where those who had not attended any classes were significantly more likely to be under age 25 (Lumley & Brown, 1993). Sturrock and Johnson (1990) also reported class attenders as older than nonattenders, with a mean age of 23.2 years versus 21.6 years.

According to the literature, characteristics associated with non-attendance at prenatal classes in primiparous mothers are unemployment, smoking during pregnancy, having considered abortion, and having had fewer than eight prenatal appointments (Fabian, Rådestad, & Waldenström, 2004). Among multiparous mothers, non-attendance was associated with age older than 35, low level of education, and unplanned but welcomed pregnancy (Fabian et al., 2004). Comparable findings have been repeatedly reported where high maternal and paternal education levels and high household incomes result in greater likelihood of attendance among both primiparous (Lumley & Brown, 1993; Nichols, 1995; Sturrock & Johnson, 1990) and multiparous women (Lu et al.,

2003). In contrast, the CMES participants living in households at or below the low income cut off were more likely to attend classes than those above (PHAC, 2009). Research studies also indicate a greater likelihood of attending childbirth education sessions among primiparous women (Fabian et al., 2004). This was true for primiparous women participating in the CMES (PHAC, 2009). However, the CMES adolescent participants did not have a high educational status nor were they comprised solely of primiparous women. Over half of the adolescents had less than a high school diploma and one third were not pregnant for the first time. This suggests that the comparably high rate of Canadian adolescents accessing prenatal education may not actually be as high as should be expected. Considering that two thirds of the CMES adolescents were pregnant with their first child and only half attended classes, one must wonder what barriers existed for accessing prenatal education among teens. It is possible that some of the adolescents received prenatal education through professional intervention other than traditional prenatal classes, leading to their reporting non-attendance. For instance, some adolescents may have received individual, as opposed to group, prenatal education and thus may have identified themselves as nonattenders in response to the CMES question pertaining to attendance at "prenatal or childbirth education classes."

This study did not show that prenatal class attendance contributed to a significant change or to significant stability of perceptions of social support availability among Canadian adolescents. The large variability in the intervention itself may partly contribute to the lack of significant findings. On a nationwide scale, prenatal education may not be comparable because of the diversity in facilitator background, class objectives, content, cost, duration, and settings. Some rural Canadian communities require participants to

travel to attend classes, as not all communities have the resources that allow hosting the sessions. For instance, some communities offer hospital-based, nurse-led sessions for a fee, while others may be offered free of charge and public-health led by a variety of facilitators including public health nurses, public health dietitians, and lactation consultants. Some sessions may be narrow in scope and aim only to prepare women for labour and birth; others may incorporate general health promotion, breastfeeding basics, early parenting, and newborn care. Results for this study may have differed if prenatal classes were more uniformly delivered throughout the country.

Depending upon the objectives of antenatal sessions, one might expect an increased likelihood of stable or improved support perceptions among adolescents attending classes. Particularly when sessions incorporate material on postpartum needs of the newborn, it would be plausible to assume that women in attendance would gain a realistic perspective of their support needs for the postpartum period and a clearer understanding of the demands of motherhood. However, research to support such a theory of class attendance resulting in realistic expectations of postpartum demands is lacking (Gagnon & Sandall, 2007).

#### **Postpartum Contact with a Healthcare Provider**

Among all CMES participants, over 90% reported being contacted by a healthcare provider at home following the birth of the index child (PHAC, 2009). On average, contact occurred within a week of the infant's birth. Similarly, for adolescent CMES participants, contact was reported by over 90% with an average infant age of 10 days. The age of the baby provides a rough estimate of the time since mothers would have had contact with healthcare providers during their hospital stay. For example, the average

length of hospital stay for mothers delivering their babies vaginally was 2.1 days and by cesarean section was 3.8 days (PHAC, 2009). Younger mothers were less likely to have a short length of hospital stay than older mothers, staying in hospital two or more days following a vaginal birth and four or more days post-cesarean section (PHAC, 2009). This may have contributed to the adolescent mothers' later average infant age at the time of postpartum contact compared to older mothers. The age of the infant at the time of postnatal contact by a provider can be used to roughly extrapolate the number of days since hospital discharge at the time of contact. Therefore, it may be that one third of the adolescents had contact with a healthcare provider within two days of discharge from hospital following a vaginal delivery, i.e., baby aged 0-4 days. Another third had contact within five to eight days of baby's birth. This may have included those adolescents who received timely postpartum contact following a longer hospital stay, such as those who underwent a cesarean section. The final third of adolescents did not report healthcare provider contact until nine to twelve days postpartum (4.8%) or more than twelve days postpartum (30%). It is likely that some of these adolescents received timely postpartum contact following a lengthy hospital stay due to medical complications in either their babies or themselves; however, it is probable that the majority of those not reporting contact with a provider until twelve or more days postpartum were not reached in a timely manner, certainly not within several days of discharge from hospital. However, this too may be a very rough measure for time until postpartum contact with a provider, as not all mothers and babies are discharged from hospital at the same time (PHAC, 2009). Considering the heightened vulnerability of adolescent mother-infant pairs, ideally adolescent mothers would receive postpartum contact earlier than, or at least at a time

equal to that of older mothers. While the CMES did include individual questions regarding the mother's length of hospital stay following their baby's birth, as well as if they were discharged from hospital together, this study did not include these variables in the requests to PHAC. It was necessary to limit the variables to those thought to be important to this study.

In this study, the timing of postpartum contact, measured by age of infant, did not contribute to a change or to stability in social support perceptions between the prenatal and postnatal periods for Canadian adolescents. However, I found that a decrease in perceptions of social support was more likely among adolescents who reported healthcare provider contact than among those who did not report contact. While this conflicts with some previous research that finds postpartum healthcare provider interactions to be supportive to mothers (Sword, Watt, & Krueger, 2004), an alternative explanation may be that perhaps the drop in perceived support from family and friends led the adolescents to contact the healthcare provider. It may also be that adolescents did not consider the contact with health professionals to be availability of social support when they responded to the question.

According to Bennett and Tandy (1998) postpartum hospital discharge of mothers and infants occur at a time when the mother is entering a stage of readiness for teaching and receipt of social support. Postpartum contact after hospital discharge can detect problems early, allowing for prompt intervention potentially reducing morbidity and mortality (Bennett & Tandy, 1998). In one large-scale study, mothers of all ages receiving postpartum public health nursing contact in the form of telephone calls reported benefits including reassurance, advice, and/or support and having their questions answered (Sword

et al., 2004). Similarly, the perceived benefits of public health nursing home visits were reassurance, advice, and/or support and having questions answered (Sword et al., 2004).

While many postpartum families receive telephone contact by a healthcare provider, not all are offered or accept a home visit. In a large Ontario-based study conducted during the provincial Hospital Stay and Postpartum Home Visiting Program, the acceptance of a home visit varied greatly across the five geographically distinct sites involved (Sword et al., 2004). Between 40.8% and 76.2% of participants accepted a public health home visit with the infant's average age varying from 5.1 to 14.2 days old across sites. According to the researchers, site specific differences in participant characteristics may have accounted for the variation in uptake. Predictors of home visit acceptance included first live birth, lower social support, lower maternal self-reported health, probable postpartum depression, lower maternal ratings of services on the postpartum unit, and breastfeeding initiation (Sword, Krueger, & Watt, 2006). The finding that those accepting home visits have more health concerns than non-visited mothers has been found previously (Barkauskas, 1983). Interestingly, Sword et al. (2006) identified a social support phenomenon, *low confident support* (i.e., "a confident relationship where important matters in life are discussed and shared" [Broadhead, Gehlbach, de Gruy, & Kaplan, 1988, p. 715]), as a predictor of home visiting acceptance. When confident support is absent in informal support networks, the health professional may represent someone with whom postpartum concerns can be shared (Sword et al., 2006).

It has also been suggested that teen mothers accepting home visits may do so because they have been encouraged to by public health nurses who perceive a heightened

risk among these families (Sword et al., 2006). This may have played a role in the high rates of contact for adolescent CMES participants. Postpartum contact may not have been sought out or voluntarily accepted by the teens, but insisted upon by the healthcare provider without giving the opportunity to decline the service. This forced provision of professional services could have been interpreted as judgemental and stigmatizing from the perception of the adolescent. Adolescent mothers may feel these effects from health professionals and attempt to avoid the use of services, particularly if they perceive nurses and other professionals as authoritative and bossy (Hanna, 2001). The perceived costs associated with accepting provider contact in the postpartum period, including consequences such as reduced self-esteem and loss of independence may also play a role (Hupcey, 1998a). Rook (1987) suggested that non-reciprocated support is a form of negative support and as such can be damaging to the well-being of the recipient. Postnatal contact by healthcare providers is, by nature of the professional relationship, non-reciprocal (Hupcey, 1998b).

Since the overwhelming majority of adolescents in this study reported postpartum healthcare provider contact, comparison with those who did not report contact is not possible. Perhaps the degree of the decline in positive perceptions postpartum would have been more pronounced without healthcare provider contact. It is also possible that healthcare provider contact does not influence social support perceptions in such a way as to protect against a decline in the postpartum period. This may be especially true in cases where contact is forced upon adolescents and perceived as negative support.

### **The Influence of Sociodemographic Variables of Interest**

The influence of select sociodemographic variables on change in perceptions of social support availability between the prenatal and postnatal periods were also explored in this study. Of note, two variables approached, but did not reach statistical significance as contributors to change in social support perceptions.

First, adolescents living in households with annual incomes of \$50,000 and over were more likely not to perceive a change in perceptions of social support compared to those in households with lower incomes. While not significant, this trend leads to questioning whether the postpartum realities of motherhood may be buffered by higher incomes and associated resources. Adolescents with higher household incomes may have been those living with their own parents or a partner with a reliable source of income. If this were the case, the lack of concern for financial support and the stability in support networks could contribute to stable perceptions of support availability. Higher household incomes could also serve to provide greater access to supports such as childcare, allowing these adolescents to continue to more fully engage in services supporting their own developmental needs, such as school. Stevenson, Maton, and Teti (1998) found that pregnant adolescents who had lower family incomes were less likely to currently be attending school than those of higher income families. If childbearing adolescents of higher income households continue to engage in formalized support services, less fluctuation in their support perceptions would be expected.

Second, older adolescents (i.e., aged 17-19) appeared more likely than younger adolescents (i.e., aged 15, 16) to perceive a decrease in social support perceptions; however, this result was not statistically significant. Adolescents recruited for the CMES



ranged in age from 15 to 19 years old, with an average age of 18. In fact, less than 10% of the sample was comprised of adolescents under age 17. In addition, younger mothers were less likely to respond to requests to participate in the CMES than their older counterparts. Therefore, the observed trend toward reduced postpartum social support perceptions for older adolescents may have reached significance if there had been greater maternal age variability of the sample. Alternatively, older adolescents may differ from their younger counterparts in ways which contribute to decreased social support perceptions in the postpartum.

Older adolescents may be more likely than younger adolescents to live with a partner or on their own, as opposed to with their own parents, translating to a greater likelihood of having lower household incomes and less in-home support with parenting tasks. Adolescents who live with their own mothers while parenting may experience less disruption in attainment of their own developmental tasks. Apart from assisting with childcare, the mother of a parenting adolescent may also parent the teen, expecting her to continue to be a typical teenager (Spieker & Bensley, 1994). Older adolescents are more developmentally mature than their younger counterparts. They have a strong sense of self and are capable of transitioning to the role of mother similarly to adult mothers (Drake, 1996). By virtue of their developmental maturity, older teens may perceive social expectations to cope more independently with the responsibilities of motherhood compared to younger teens whose childbearing may violate social norms to a greater extent and warrant the offering and acceptance of supports. Older adolescents may not actively seek support for parenting, and thus not be presented with opportunities for assistance. Logsdon and Gagne et al. (2004) found that older adolescents (i.e., aged 17-

18), expressed a desire for support that would assist them in educational and employment pursuits. Having strained financial resources and living on their own, some older adolescents could struggle to secure the childcare necessary as a precursor to obtaining employment or going to school. The older adolescents in this study may have had support available; however, if the support offered was not perceived to be responsive to their particular needs, it may not have been perceived as available.

#### **Weak Ties Between Health Professionals and Childbearing Adolescents**

Based on Granovetter's (1973) conceptualization of the strength of weak ties, prenatal and postpartum adolescents who interact with health professionals are expected to perceive more access to information, which could be perceived as enhanced availability of social support. This was not consistent with the findings from this study.

Granovetter (1973) theorized that the strength of a tie is the result of numerous factors, including the amount of time individuals spend together, the emotional intensity of their interactions, and the mutual confiding which takes place between the individuals. Although the interaction variables of prenatal care and prenatal education were not significantly associated with enhanced social support perceptions, it is equally important to note that these interactions did not contribute to significant declines in perceptions. The weak ties between healthcare providers conducting postpartum contact and adolescents would differ in strength from the other healthcare provider-adolescent interactions of interest to this study. For instance, providers interacting with childbearing adolescents to deliver prenatal care and education services would most commonly do so through numerous, perhaps frequent, face-to-face interactions; while, healthcare providers conducting postpartum follow-up with adolescents may be more likely to have fewer

interactions that are less personal, and commonly telephone-based. In instances where initial postpartum contact is conducted face-to-face, the presence of the newborn may not allow for the healthcare provider to focus on the psychosocial well-being of the mother, or alternatively for the mother to initiate discussion of her own psychosocial needs. Therefore, healthcare provider-adolescent interactions for the purposes of providing prenatal care and education would more readily be classified as weak ties than the interactions surrounding postpartum contact. These postpartum interactions may be of a weaker strength than those between providers and adolescents that are on-going. In some situations, postpartum interactions occurring between providers and adolescents would more appropriately be classified as absent ties. According to Granovetter, absent ties are not restricted to those in which individuals have a lack of interaction, but also include those that lack significance.

None of the healthcare provider interactions explored in this study contributed to an increase in perceptions of social support availability between the prenatal and postnatal periods. The ties between adolescents and healthcare providers may not be positive and symmetric, but rather negative and/or asymmetric in character. The professional interactions between a healthcare provider and a client, such as an adolescent, could fit these criteria. Particularly because in most such relationships, interactions would centre on the needs of the client and not involve significant personal disclosure on the part of the professional; hence, characterizing these contacts as largely unreciprocal and lacking intimacy. Qualitative work, which supports the characterization of some interactions with professionals as negative support, found that professionals can cause harm through

critical and judgmental treatment of mothers (Keating-Lefler, Brage Hudson, Campbell-Grossman, Fleck, & Westfall, 2004).

In actuality, professionals are rarely cited as social support sources by pregnant women (MacLeod & Weaver, 2003; Schaffer & Lia-Hoagberg, 1997). Even among prenatal adolescents receiving care through a nurse-governed clinic, nurses were seldom identified as a support with whom to share concerns (Smith, 2004). In general social support recipients cite support sources as spouses, children, family and close friends (Hupcey & Morse, 1997). If recipients are given a choice of support sources that includes professionals, they place professionals at the bottom of the list (Hupcey & Morse, 1997).

Theoretical definitions of social support have been criticized for ignoring the relationship between the supporter and the recipient and the goal of providing support, allowing for any interaction to be classified as social support by one definition or another (Hupcey, 1998b). Derived from the theoretical and applied definitions of social support present in the literature, Hupcey and Morse (1997) identify six core characteristics of social support: (a) type of services obtained, (b) duration of the relationship, (c) trust, (d) obligation, (e) expectations of the relationship, and (f) reciprocal action. For each of these traits, professional support does not qualify as a form of social support. Specifically, the role of the professional is such that it is bound by policy and standards. While emotional or informational support may be provided, the provision of the support is directly related to the professional's role (Hupcey & Morse, 1997). Professional relationships may be formed quickly, enabling support to be provided immediately and are not necessarily long-term. Provision of informal social support may often be motivated by social obligation, such as in the case of receipt of support from a family member. In contrast,

professionals are often obligated to provide support and are usually compensated through payment for their services. Based on the differences in the character of the relationship, social support researchers largely agree that professional support should be differentiated from social support by definition and measurement (Hupcey & Morse, 1997; Logsdon et al., 2002).

In instances where trust becomes shared and reciprocity is expected, the professional is no longer offering professional support but social support. According to Norbeck (1988), professionals can provide surrogate support when informal sources within the recipient's network are inadequate or unavailable. Therefore professionals may better be described as supportive resources rather than sources of social support themselves. Traits that adolescents identify as important in emotionally-supportive relationships include trust, comfort, dependability, confidentiality, listening, understanding, and caring (Smith, 2004). Hopefully, these traits are represented in some form or another in most professionals' relations with their clients. Nurses use these traits skillfully to form therapeutic relationships (Registered Nurses Association of Ontario, 2006). Access to empathetic and expert health professionals may contribute to adolescents' acceptance of their pregnancy and facilitate identity construction (Seibold, 2004), as well as enhance coping and reduce stress in the postpartum period (Logsdon & Davis, 2003).

Through interventions such as enhancing an adolescent's knowledge of available resources, nursing interactions can change how support is sought and or perceived (Schaffer, 2009; Schaffer & Lia-Hoagberg, 1997). The professional's role should include assisting adolescents to identify their specific support needs and work with them toward

their own goals, recognizing the adolescent as the expert of her own life (Limmer, 2005). The most researched nursing intervention for pregnant and parenting adolescents is home visitation. Longitudinal studies of mothers, including adolescents, receiving nurse home visits find greater reports of informal and formal support among those mothers receiving visits compared to those not involved in visitation (Olds et al., 1999; Olds, Henderson, Tatelbaum, & Chamberlin, 1986).

Adolescents may avoid nursing services if they perceive these interactions as a potential source of confrontation with authoritative nurses, or if they think they may encounter older mothers accessing the same service who they perceive as holding patronizing attitudes toward teen mothers (Hanna, 2001). Unfortunately, those who are lacking in supportive relationships may often purposely avoid negative and overwhelming social involvements (Coyne & DeLongis, 1986). Therefore, those adolescents who lack the most support may face the greatest obstacles to receiving supportive interventions (Coyne & DeLongis, 1986).

### **Summary**

The social support perceptions of adolescents participating in the CMES were reported to be adequate both prenatally and in the postpartum period and the majority experienced stability in their perceptions of social support between time periods. The change or stability in perceptions of social support was largely unaffected by adolescents' interactions with health professionals. Of significance, adolescents having postpartum contact with healthcare providers were more likely to experience a decrease in social support perceptions. Sociodemographic characteristics did not significantly contribute to a change in perceptions; however other research and trends in the data suggest further

research should include differences in age of adolescent and socioeconomic status as variables to be investigated. Overall, the findings from this study suggest that some of the relationships, i.e., ties, between health professionals and prenatal and postnatal adolescents may be better classified as absent or negative, rather than weak as noted in the conceptual model (see Figure 1). The characteristics that contribute to the relative strength of a weak tie between individuals may not be perceived as present in the relationship between healthcare providers and prenatal and postnatal adolescents, thus reducing the likelihood that these interactions would enhance support perceptions. Furthermore, professionals may not in a position to offer social support, but consider themselves as supportive agents that can enhance preexisting informal support networks and increase adolescents' awareness of available community resources.

## **Chapter 6**

### **Study Limitations and Nursing Implications**

The findings from this study show that the majority of Canadian adolescents perceive adequate social support to be available both prenatally and in the postpartum period; however, this is not the case for all pregnant or adolescent new mothers. Furthermore, for almost one quarter of the adolescents, their perceptions of social support availability decreased after the birth of their infant. There is little evidence that health professional interactions, or at least those examined in the CMES, contribute to sustaining perceptions of perceived support over time. Of the variables explored in this study, postpartum healthcare provider contact was associated with a decrease in perceptions of social support available when needed from the prenatal to the postpartum period. While the CMES was a representative population-based survey, study limitations, such as those associated with secondary analyses as well as with cross-sectional surveys, should be considered prior to generalizing the findings. A discussion of these limitations, as well as the application of the study's findings to nursing practice, education, and research follows.

### **Study Strengths and Limitations**

In comparison to other samples used for social support research, the CMES sample was unique in that its post-censal design captured a large, representative group of Canadian mothers. This was further strengthened by the oversampling of adolescents based on the recruitment lessons learned through the pilot studies that preceded the CMES (Dzakpasu & Chalmers, 2005; Dzakpasu et al., 2008). Other studies have been small and have lacked sample diversity, focusing on low-income (May, 1992), or inner-



city adolescents (Macleod & Weaver, 2003). Researcher accessibility to adolescent samples has more often relied on specific settings such as alternate schools (Connelly, 1998; Logsdon et al., 2005; Logsdon, Gagne, et al., 2004), or high-risk medical centres (Secco et al., 2007) rather than obtaining population-based and representative samples. Of particular importance, the CMES is the first such survey to be conducted with a Canadian population.

There are limitations with secondary data analysis. Firstly, the researcher does not have the ability to influence data collection and instrument design, which can result in a conceptual mismatch between the primary data and the secondary research question (Magee, Lee, Giuliano, & Munro, 2006). Because the broad purpose of the CMES encompassed the purpose for this study and the variables of interest were contained within or derived from the CMES, a good conceptual fit was assured between the primary data collection tool and this secondary analysis. Despite acceptable conceptual fit, a notable limitation of the CMES having implications for this study is the exclusion of adolescents under 15 years old as well as the very low participation of adolescents aged 15-16, thus failing to capture the experiences and perceptions of younger and middle adolescents and limiting variability of age. The documented differences between the social support needs and perceptions of young, middle, and older adolescents (Logsdon, Gagne et al., 2004) were not possible to explore in this study potentially limiting the likelihood of analyses reaching statistical significance. A second limitation given the nature of the current study was that the original study did not distinguish between the formal (health care professionals) and informal (family and friends) sources of support.

In addition to ensuring a good conceptual fit, researchers conducting secondary analyses need to take care in selecting variables of interest to their study questions, ensuring that those included in their queries are capable of comprehensively explaining the phenomenon of focus. For example, this study ought to have included the data on additional CMES questions for the independent variable of infant age at the time of postpartum contact by a healthcare provider. The CMES question pertaining to the length of the mother's stay in hospital following the birth of her baby, as well as the question of whether mothers were discharged from hospital with their babies, would have been helpful in interpreting the significance of the age of the infant at the time of postpartum contact by a healthcare provider.

Secondly, limitations specific to cross-sectional surveys apply to this study. In particular, the time lapse between the index birth and the interviews ranged from five to 14 months (PHAC, 2009). It is possible that recall bias and perception of events in question could have been influenced by the timing of the interview, as women's memories of childbirth and related events may change over time (Waldenström, 2003). The perceptions of prenatal and postnatal social support availability were measured at the same time. In addition availability of support does not address the quality of the support, which may be the more important dimension. Fluctuations in adolescents' postpartum satisfaction with support have been documented (McVeigh & Smith, 2000). The variability in lapses of time since the birth of the index child and the interview could have resulted in some mothers being interviewed at a time of peak perceptions of adequate social support and others responding during times of low perceived support. Future

analyses may wish to control for the time lapse between the index birth and data collection.

Lastly, limitations of the particular CMES questions corresponding to the variables of interest in this study should be considered prior to generalizing the findings. The wide variability between provinces and territories, and individual communities in the delivery of prenatal and postnatal services should not be ignored. Questions in the CMES were intended to gauge service utilization (PHAC, 2009). The survey was not designed to measure content or quality of services. Timing of initiation of prenatal care, for instance, was based upon responses to a question eliciting gestational age when prenatal care was first sought. For some women this initial visit may have only included the confirmation of their pregnancy, with routine prenatal visits beginning at a later date. Similar concerns apply to the questions used to obtain data on prenatal class attendance and timing of postpartum contact with a healthcare provider. For instance, respondents simply indicated whether or not they had attended prenatal education sessions. Data on the number of classes offered and attended, designation of session facilitator(s), and content of sessions, among other factors, were not captured and therefore not controlled for in the analyses. Furthermore, respondents may have participated in professional-facilitated prenatal groups, or received individual prenatal education that took the place of formalized classes. Postpartum contact with a healthcare provider was also based on self-report and did not measure the context of the contact (i.e., telephone or face-to-face in the office or home), content of the interaction, type of professional involved in the interaction, or whether single or multiple contacts were made. A large nationwide survey cannot easily capture the variability in these services.

Of note, the CMES question measuring postpartum support perceptions contained a prompt not present the first time of questioning. This prompt could have altered participant responses by leading mothers toward a particular meaning for the term "support". Specifically, the question prompts participants to "...include companionship, [and] assistance..." in considering the degree of support available to them in the postpartum period (PHAC, 2007b, p. 56). This prompt may direct participants to reflect solely on emotional and instrumental, or financial social support believed as available; whereas, the initial question posed evaluating prenatal support availability left the term "support" open to respondent interpretation.

While as noted there were some limitations, the findings from this study are largely generalizable to prenatal and postnatal Canadian adolescents, particularly older adolescents, i.e., aged 17-19. The conceptual fit between the primary data collection instrument (i.e., the CMES) and the research questions posed by the secondary analysis, as well as the cohort-based sampling methods and advanced statistical methods of data treatment applied by the PHAC and Statistics Canada, allow for generalization of this study's findings to Canadian prenatal and postnatal adolescents.

### **Nursing Implications**

Although primary data collection occurred between October 2006 and January 2007, and this secondary analysis took place four years later in January 2011, the findings are of current relevance to professionals engaging in work with childbearing adolescents in Canada. Professionals, especially nurses, have the skills and opportunities, which could allow for application of these findings to enhance their work with pregnant adolescents.

In particular, findings from the study have implications for nursing practice, education, and research.

### **Nursing Practice**

Findings from this study have implications for nurses in all practice settings where childbearing adolescents may present as clients. Nurses need to think about incorporating screening questions for social support perceptions into their interactions with prenatal and postnatal adolescents and re-screen frequently, as these perceptions may not be stable over time. Nurses also need to be aware of and advocate for appropriate referral sources should the adolescent not have the support needed. Referral to services where perception of particular subtypes of social support may be enhanced through interaction with peers (e.g., prenatal classes) or with professionals (e.g., Canada Prenatal Nutrition Program [PHAC, 2007a]) could be made when inadequate availability of support needed are first identified, and reoffered if initially declined.

Practicing nurses must also recognize the unique challenges that this vulnerable population faces in negotiating successful psychosocial development. This recognition is evident through the provision of age-appropriate resources and maintenance of a teen-centred approach, as well as advocating for workplaces to do the same. Incorporating incentives and reducing barriers, such as the need for scheduled appointments, may enhance participation and serve to engage this childbearing population (Hanna, 2001). Adaptation of services, for example offering prenatal care and education using the teen-focused *Centering Pregnancy* model, may enhance pregnant adolescents' participation in these services which also serve as opportunities to connect with peers and expand adolescents' social networks (Klima, 2003).

Working with adolescents to identify their supports and facilitate communication that leads to relationship building skills will help the prenatal and postnatal adolescents to mobilize network members to offer support that is best matched to their individual needs (Hanna, 2001). Practicing nurses need to remain cognizant that the supportive services and interventions offered to adolescent childbearers by them may not be thought of as a form of social support by the teens themselves. Nurses should focus their work to assist adolescents to build and engage their natural support networks. When informal supports are unavailable or deemed insufficient by the teen, only then should the professional choose to provide social support (Norbeck, 1988). Nurses need to carefully reflect on their interactions with these clients to ensure boundaries have not been crossed and the teens' perceived needs are being met.

### **Nursing Education**

Curriculum for nursing education currently includes models of development, including Erikson's (1963) theory of psychosocial development. However, apart from acknowledging milestones for psychosocial development at various stages of life, basic nursing education does not uniformly teach students to apply Erikson's theory to tangible examples such as the altered developmental course of pregnant and parenting adolescents nor how this stage of development may vary depending on the circumstances of the adolescent (Schultz, 2008). The feelings of isolation that can be related to identity confusion (Protinsky et al., 1982) may contribute to low levels of perceived social support availability, particularly in the postpartum period when time with peers is limited by the responsibilities of motherhood. Framing teenage pregnancy as a developmental challenge and the complexity that may result would benefit students and the future adolescents they

care for, by assisting with the selection of support interventions appropriate to the individual adolescent's cognitive and psychosocial level (Drake, 1996). An adolescent mother's conceptualization of her maternal role is related to her own psychosocial and cognitive development (Flanagan et al., 1995). Nursing diagnoses and corresponding interventions for an adolescent experiencing delayed psychosocial development in the form of identity confusion are available for integration into students' nursing care plans (Oldaker, 1985).

It is also important in nursing education to examine some of the dominant discourses that are used when discussing adolescent pregnancy. Our thinking is sometimes constrained by these discussions and how adolescent pregnancy is often portrayed in the media (Schultz, 2008). Not examining these discourses may lead nurses to perpetuate some of the negative stereotyping that pregnant adolescents experience. As Schultz indicated any discourse can be translated into "knowledge" and some forms of knowledge "has been suppressed and controlled to perpetuate limited understandings of the role that pregnancy plays in the lives of school-aged youth" (p. 117). In studying appropriate interventions aimed to enhance support for prenatal and postnatal adolescents, nursing students need to also understand their role as a supportive resource, as opposed to a provider of social support. Nursing curriculum should incorporate the differences between informal and formal support sources in discussions on social support theory and the social determinants of health. Emphasizing the six core characteristics of social support identified by Hupey and Morse (1997) will help students recognize the distinct differences between social support and professional support. The Canadian Community Health Nursing Standards of Practice (Community Health Nurses of Canada, 2008) could

also be used as a classroom tool to assist students to understand the differences between professional and social relationships, as well as to provide guidance on how to maintain professional boundaries as a novice nurse.

### **Nursing Research**

While this particular study did not show evidence of common healthcare professional interactions with prenatal and postnatal adolescents as enhancing social support perceptions, this does not mean that health professionals lack the ability to influence social support perceptions for this population. Further research needs to be conducted to test hypotheses on the influence of health professional interactions on adolescent childbearers' social support perceptions. Controlling for the variability in adolescent ages by adjusting sampling methods and including those under the age of 15 could lead to significant findings in a replication study. A survey conducted on a smaller scale could control for variability in the content of interactions with health professionals by targeting a specific geographic region where services are uniformly administered. For instance, the Healthy Babies Healthy Children program in Ontario mandates postpartum contact with new mothers within two days of hospital discharge (Early Years and Child Development Branch, Integrated Services for Children Division, Ministry of Health and Long-Term Care, and the Ministry of Community, Family, and Children's Services, 2003). Smaller, focused studies have the potential to control for content and quality variability not measured by large-scale surveys, such as the CMES. Geographically-confined studies could also answer questions regarding the potential differences of perceptions between those living in rural versus urban settings. While urban settings are likely to have a large variety of services targeting childbearing adolescents, rural settings



would be more likely to have a limited number of healthcare staff, increasing the likelihood that the same health professional would provide multiple services, possibly contributing to greater perceptions of client-centredness through continuity of care.

It is also important that future researchers recognize the differences between social support and professional support, as well as the low likelihood that respondents include professionals as support sources when answering board survey questions. Using separate survey questions to assess perceptions of the availability of support from formal and informal sources would yield rich data, perhaps building upon evidence that suggests professionals can be viewed as support sources when informal supports are lacking.

Other areas requiring further research include enhancement of nursing knowledge of which intervention services and interactions influence perceptions of social support among childbearing adolescents, as well as which may enhance perceptions among those perceiving low support. Research to uncover the elements of interactions that constitute a teen-centred approach for childbearing adolescents should also be further developed to better inform workplaces serving this clientele.

The findings from this study could be expanded and researchers could examine the role of romanticized pre-parenthood ideals among adolescents. This role could be examined in conjunction with the developmental stage of the adolescent. If expectations of maternal roles, including the social support believed to accompany the role, are not fulfilled, childbearing adolescents may be at risk of perceiving inadequate social support availability and development of postpartum depression. Specifically, qualitative studies exploring the role of pre-motherhood expectations and the perceived postnatal realities would yield rich data with which to base focused quantitative works. Similarly, research

is indicated for the area of adolescent childbearing and stigma. A greater understanding of the relationship, or lack thereof, between perceptions of stigma associated with teen childbearing and adolescents' perceptions of available support, may be promising in identifying those adolescents at risk for perceiving inadequate or reduced support.

As recommended previously by past social support research, there continues to be a noticeable gap in the literature in the area of impact, particularly the potential negative impact, of social interactions provided by both informal and formal support sources (Hupcey, 1998a). Of relevance to this study, if professional support can be perceived as negative support by the intended recipient, explication of the pathways responsible for doing harm need to be made clear. Research investigating the indirect methods by which professional support can enhance adolescents' support perceptions and how professionals may act to buffer a potential change in perceptions during pregnancy and the postpartum is also of importance to add credence to the interactions between professionals and these young women.

### **Conclusion**

Findings from this study indicated that perceptions of the availability of social support for the majority of Canadian adolescents are adequate prenatally and following the transition to motherhood in the postpartum period; however, these perceptions of the availability of social support needed change between these two time periods. While the majority of teens experience stability in the availability of social support needed, nearly a quarter of Canadian adolescents who perceived a decrease in availability of support in the postpartum is of great clinical significance. Health professionals, specifically those who interact with adolescents to provide prenatal care, prenatal education, and postpartum

care, may have the opportunity to influence perceptions of social support availability. Some provider-adolescent interactions, such as those between an adolescent and a healthcare provider in the postpartum period, may be associated with a reduction in perceived social support availability. However, from the adolescent's perspective, professional support is not equivalent to social support, nor is the provision of support a primary role of the health professional. Regardless, professionals need to acknowledge the potential influence of these encounters on social support availability perceptions among childbearing adolescents. Health professionals, such as nurses, act as supportive agents, aiming to assist adolescents to fully engage and mobilize their natural support networks. Incorporating teen-centred approaches for service delivery may better develop professional-adolescent relationships, leading to enhanced opportunities to strengthen adolescents' skills for building informal support networks and increase the likelihood of enhancing low perceptions of social support availability.

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## Appendix A

## Variables of Interest and Corresponding CMES Questions

Table A1

## Perception Variables

Variable	CMES question	Possible CMES responses
Perceived prenatal social support availability	"During you pregnancy, how often was support available when you needed it?"	1- None of the time
		2- A little bit of the time
		3- Some of the time
		4- Most of the time
	PHAC, 2007b, p. 18, SI_Q11	5- All of the time
		DK- Do not know
		RF- Refuse to answer
Perceived postnatal social support availability	"Since the birth of ^baby^, how often has support been available to you when you have needed it? Include companionship, assistance and other types of support you may have needed."	1- None of the time
		2- A little bit of the time
		3- Some of the time
		4- Most of the time
		5- All of the time
	PHAC, 2007b, p. 56, MH_Q26	DK- Do not know
		RF- Refuse to answer

*Note.* The dependent variable of change, or difference, in perceptions of social support availability was created from the CMES data. The variable was trichotomized as "increase", "decrease", or "no change" in social support perceptions from the prenatal to the postpartum period.

Table A2

*Independent Variables*

Variable	CMES question	Possible CMES responses
Timing of initiation of prenatal care	<p>"How many weeks pregnant with ^baby's name were you when you had your first visit for prenatal care? This includes the first time your pregnancy was confirmed by a healthcare provider."</p> <p>PHAC, 2007b, p. 3, PC_Q01</p>	<p>1-94 weeks</p> <p>Entered as 94 if no prenatal care obtained.</p>
Prenatal class attendance	<p>"During your pregnancy with ^baby's name, did you attend prenatal or childbirth education classes?"</p> <p>PHAC, 2007b, p. 6, PC_Q07A</p>	<p>1- Yes</p> <p>2- No</p> <p>DK- Do not know</p> <p>RF- Refuse to answer</p>
Postpartum contact with a healthcare provider	<p>"Following the birth, were you contacted at home by a healthcare provider, such as a public health nurse or midwife, to see how you and ^baby's name were doing?"</p> <p>PHAC, 2007b, p. 48, MH_Q01</p>	<p>1- Yes</p> <p>2- No</p> <p>DK- Do not know</p> <p>RF- Refuse to answer</p>
Timing of postpartum contact with a healthcare provider	<p>"How old, in days, was ^baby's name when a healthcare provider first contacted you at home?"</p> <p>PHAC, 2007b, p. 49, MH_Q02</p>	<p>0-394</p> <p>DK- Do not know</p> <p>RF- Refuse to answer</p>

Table A3

*Descriptive Variables*

Variable	CMES question	Possible CMES responses
Maternal age at time of birth	From PHAC via Census	15-19 years old 20 years or older
Annual household income	"What is your best estimate of the total income, before taxes and deductions, of all household members from all sources in the past 12 months?"  PHAC, 2007b, p. 84, WA_Q09	01- Less than \$10,000 02- \$10000 to less than \$15000 03- \$15000 to less than \$20000 04- \$20000 to less than \$30000 05- \$30000 to less than \$40000 06- \$40000 to less than \$50000 07- \$50000 to less than \$60000 08- \$60000 to less than \$80000 09- \$80000 to less than \$100000 10- \$100000 to less than \$150000 11- \$150000 to less than \$200000 12- \$200,000 or more DK- Do not know RF- Refuse to answer
Aboriginal status	"Are you an Aboriginal person, that is, First Nations, Métis or Inuit?"  PHAC, 2007b, p. 76, SD_Q06	1- Yes 2- No DK- Do not know RF- Refuse to answer

Variable	CMES question	Possible CMES responses
Marital status	"What is your marital status? Are you...?"  PHAC, 2007b, p. 80, SD_Q16	01- Married
		02- Living common law
		03- Widowed
		04- Separated
		05- Divorced
		06- Single, never married
		DK- Do not know
		RF- Refuse to answer
Gravida	"Including your pregnancy with ^baby's name, how many times have you been pregnant? This includes pregnancies ending in a miscarriage, abortion, ectopic pregnancy, stillbirth and live birth."  PHAC, 2007b, p. 66, RH_Q02	1-30
		DK- Do not know
		RF- Refuse to answer
Number of live births	"Including the birth of ^baby's name, how many times have you given birth to a live baby?"  PHAC, 2007b, p. 67, RH_Q04	1-30
		DK- Do not know
		RF- Refuse to answer



Variable	CMES question	Possible CMES responses
Completed education	<p>"How many years of formal education have you completed starting with grade one and not counting repeated years at the same level?"</p> <p>PHAC, 2007b, p. 79, SD_Q15</p>	<p>0-30</p> <p>DK- Do not know</p> <p>RF- Refuse to answer</p>
Ethnic or cultural identity	<p>"What is your ethnic or cultural identity?"</p> <p>PHAC, 2007b, p. 77, SD_Q08</p>	<p>Maximum of four groups selected from a list.</p> <p>DK- Do not know</p> <p>RF- Refuse to answer</p>
Perceived stress 12 months prior to birth	<p>"Thinking about the amount of stress in your life during the 12 months before 'baby's name was born, would you say that most days were...?"</p> <p>PHAC, 2007b, p. 12, SE_Q01</p>	<p>1- Not stressful</p> <p>2- Somewhat stressful</p> <p>3- Very stressful</p> <p>DK- Do not know</p> <p>RF- Refuse to answer</p>

Variable	CMES question	Possible CMES responses
Satisfaction with	"Did you receive prenatal	1- Yes
timing of initial	care as early as you	2- No
prenatal care	wanted?"	DK- Do not know
	PHAC, 2007b, p. 4,	RF- Refuse to answer
	PC_Q02	

*Note.* Maternal age at the time of the index birth was not collected as part of the questionnaire, but used as part of the sampling frame and available through the PHAC.

## Appendix B

### Documentation of Ethical and Public Health Agency of Canada Approval

Ethical approval Interdisciplinary Committee on Ethics in Human Research

June 22, 201

**ICEHR No. 2009/10-157-NU**

Ms. Natalie Jones  
School of Nursing Memorial University of Newfoundland

Dear Ms. Jones:

Thank you for your submission to the Interdisciplinary Committee on Ethics in Human Research (ICEHR) entitled "*The relationship between Canadian adolescents' interaction with healthcare professionals and their prenatal and postnatal social support perceptions*". The ICEHR is appreciative of the efforts of researchers in attending to ethics in research. The Committee has reviewed the proposal and we agree that under the guidelines of the *Tri-Council Policy Statement on Ethical Conduct for Research Involving Humans* (TCPS), the proposed research does not require ethics clearance as it involves secondary uses of data which is provided without any identifier or group of identifiers. Although ethics clearance has been granted, the Committee would like to request a copy of the letter from the data holder (Public Health Agency of Canada) giving permission to conduct secondary analysis with their CMES data.

Should you require further clarification, do not hesitate to contact Mrs. Brenda Lye, at [blye@mun.ca](mailto:blye@mun.ca) or by telephone at (709) 737-2861. We wish you success with your research.

Yours sincerely,  
Lawrence F. Felt, Ph.D. Chair,  
Interdisciplinary Committee on Ethics in Human Research LF/bl

cc: Supervisor – Dr. Shirley Solberg, School of Nursing Co-supervisor – Dr. Cindy Murray,  
School of Nursing

**Public Health Agency of Canada**

Forwarded message from Juan Andres Leon <[juan.andres.leon@phac-aspc.gc.ca](mailto:juan.andres.leon@phac-aspc.gc.ca)>  
Date: Thu, 23 Dec 2010 12:44:01 -0500  
From: Juan Andres Leon <[juan.andres.leon@phac-aspc.gc.ca](mailto:juan.andres.leon@phac-aspc.gc.ca)>  
Reply-To: Juan Andres Leon <[juan.andres.leon@phac-aspc.gc.ca](mailto:juan.andres.leon@phac-aspc.gc.ca)>  
Subject: Authorization to use MES data for thesis work  
To: [natalie.jones@mun.ca](mailto:natalie.jones@mun.ca)

To whom it may concern,

This is to grant permission to Ms. Natalie Jones, Master of Nursing student with Memorial University of Newfoundland, to conduct secondary analyses using data from the Public Health Agency of Canada's Maternity Experiences Survey (MES) for the purpose of completing her thesis work entitled "The Relationship Between Canadian Adolescents' Interactions with Health Professional and Their Prenatal and Postnatal Social Support Perceptions."<sup>1</sup> Notice that the publication of results from the MES data requires adherence to Statistics Canada's guidelines to protect confidentiality.

Please do not hesitate to contact me if you have any questions regarding the above.

Sincerely

Juan Andrés León

Chief / Chef

Maternal and Infant Health Section / Section de la santé maternelle et infantile

Public Health Agency of Canada / Agence de la santé publique du Canada

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<sup>1</sup> Note Slight change in title to Interaction with Health Professionals and Change in Canadian Adolescents' Social Support Perceptions from the Prenatal to the Postnatal Period

## Appendix C

## Summary of Non-Significant Bivariate Logistic Regression Analyses

Table C1

*Summary of Bivariate Logistic Regression Analyses Predicting an Increase in Perceptions of Social Support Availability*

Variable	<i>B</i>	<i>SE</i>	<i>OR</i>	95% <i>CI</i>	Wald statistic	<i>p</i>
Timing of prenatal care initiation	0.04	0.52	1.04	[0.36, 2.87]	0.01	.942
Prenatal class attendance	-0.46	0.37	0.63	[0.31, 1.30]	1.57	.210
Postpartum contact with a HCP	0.35	1.03	1.41	[0.19, 10.73]	0.11	.737
Timing of HCP contact	-0.09	0.38	0.91	[0.43, 1.93]	0.06	.810

*Note.* *B* = beta coefficient; *SE* = standard error; *OR* = odds ratio; *CI* = confidence interval.

Table C2

*Summary of Bivariate Logistic Regression Analyses Predicting No Change in Perceptions of Social Support Availability*

Variable	<i>B</i>	<i>SE</i>	<i>OR</i>	95% <i>CI</i>	Wald statistic	<i>p</i>
Timing of prenatal care initiation	0.01	0.37	1.01	[0.49, 2.08]	0	.971
Prenatal class attendance	0.14	0.27	1.16	[0.68, 1.97]	0.28	.595
Postpartum contact with a HCP	-1.09	0.73	0.34	[0.08, 1.41]	2.22	.136
Timing of HCP contact	0.16	0.26	1.18	[0.70, 1.98]	0.39	.533

*Note.* *B* = beta coefficient; *SE* = standard error; *OR* = odds ratio; *CI* = confidence interval.







