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Effects of a Brief Parenting Education Program on Parenting Knowledge and Social Support in Mothers of Infants

by

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Abstract

The aim of this study was to examine the effects of a brief, community-based parenting program (Baby and You for Moms) on parenting knowledge, formal social support, and informal social support among mothers of infants. This study was part of a larger study, the Community Parenting Program Evaluation Project (CPPEP), which employed a single-group, pre-test/post-test design, to evaluate the use of common outcome measures across several parenting programs. For this study, a secondary analysis was conducted of CPPEP data from 159 mothers who participated in Baby and You between March 1, 2008 and July 31, 2008. Based on King's nursing theory and available data, parenting knowledge and social support were selected as indicators of outcomes important to mothers' personal system and interpersonal system health goal attainment. Parenting knowledge was measured by an adaptation of Reece`s Parenting Expectations survey. Formal social support and informal social support were measured by the Family Support Scale.

Parenting knowledge and formal social support scores significantly increased between pre-test and post-test. Unexpectedly, informal social support scores significantly decreased between pre-test and post-test. These results suggest that a brief parenting education program contributes to positive differences in parenting knowledge and formal social support. The unexpected decrease in informal social support may be related to the timing of measurement, which may have been too early to capture developing informal social networks associated with participation in the program. Future research is required to better understand the effects of the program on informal social support.

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Chapter One: Introduction

Aim of Study

The aim of this study was to examine the effects of a brief, community-based, parenting education program (Baby and You for Moms; hereafter referred to as Baby and You), on the following short-term outcomes: (a) parenting knowledge, (b) formal social support, and (c) informal social support in mothers of infants between 2 and 9 months old. This study was part of a larger study, the Community Parenting Program Evaluation Project (CPPEP), which employed a single-group, pre-test/post-test design, to evaluate the use of common outcome measures across several parenting programs (Benzies & Otis, 2008). For this study, a secondary analysis was conducted of CPPEP data from 159 mothers who participated in the Baby and You parenting education program between March 1, 2008 and July 31, 2008.

Parenting education programs are designed to provide parents with information, skills, and awareness of aspects of parenting (Fine, 1980). Although early parenting education programs are accepted as effective interventions to aid parents, there is a lack of empirical evidence about outcomes associated with participation in these programs (Bloomfield & Kendall, 2007; Koehn, 2002).

Background

In Canada, approximately 60% of mothers attend various types of parenting education programs (prenatal and postnatal) to learn about self-care, infant care, identify available social support resources, and gain confidence in performing their role as mothers (Ewy-Edwards, 2000; Invest in Kids, 2007; Skrypnek, 2002). The Alberta Benchmark survey reported that 12.7% of a randomly selected sample of parents (N = 85) in contact with children under the age of 14 years attended parenting education classes as resources for learning (Rikhy & Tough, 2008). Whereas

mothers are generally satisfied with parenting education programs, less is known about the outcomes associated with their participation (Invest in Kids, 2007; McLennan & Lavis, 2006). In general, outcomes are defined by Freedman, Pisani, and Purves (1978) in statistical technical terms as "*events*" (p. 211). Outcomes are suggested by Polit and Beck (2008) to be of interest within research studying the effect of an intervention. This research is designated as an "outcome analysis" (p. 760) and is a "... evaluation of what happens to outcomes of interest after implementing a program or intervention, typically using a one group before-after design" (Polit & Beck, 2008, p. 760). The outcomes measured are generally referred to as dependent variables (Polit & Beck, 2008). Nichols and Humenick (1988) defined short term outcomes as those measured immediately following a parenting education class. Short term outcomes may include changes in attitude, perception of competence, or preparedness to engage in anticipated challenges. Nichols and Humenick (1988) stated that long term outcomes are measured after the anticipated challenge has occurred. Parenting education programs lack consensus regarding outcome measures (Benzies & Otis, 2008).

The challenge exists for professionals, who provide parenting education programs, to determine whether parenting programs influence outcomes (Weiss & Jacobs, 1988). Weiss & Jacobs (1988) contend that family functioning has been explored from a problem based orientation involving families in vulnerable situations (i.e., those with a chronically ill child, or low income resources). Conway and Kutinova (2006) found that maternal need has been underrepresented because infant morbidity and mortality rates are common outcomes reported to reflect family health during the prenatal and postnatal period. Humenick (2000) recommended that parenting program outcomes required expansion from solely morbidity and mortality outcomes to inclusion of self-care, health promoting behaviours, perception of being cared for,

symptom management, and health outcomes. Potential outcome measures of early parenting programs may thus involve knowledge, skill, or behaviour of: family communication, post-partum adjustment, maternal self-esteem, healthy life-style, safety, infant feeding, child developmental, family relationships, problem solving ability, and personal coping strategies (Humenick, 2000).

Weiss and Jacobs (1988) documented that no global standardized rigorous measure for family functioning outcomes following parenting education exists. Humenick (2000) stated that evaluation of childrearing parenting education usually involves simple surveys to determine if short-term or long-term program outcome measures, based on learner and educator mutual goals, are achieved in a satisfactory manner. This study was undertaken regarding selected outcomes of parenting knowledge and sources of social support. For this study, the outcomes and measures were identified by the original CPPEP research team in collaboration with community partners. As such, the outcomes for this study were pre-determined by the CPPEP design.

Brief parenting education programs, such as Baby and You, are offered as interventions to promote the health of mothers following childbirth. Up to now, it has not been determined if mothers who attend Baby and You perceive a difference in their parenting knowledge and helpfulness of formal and informal social supports associated with participation. Baby and You was designed by health care professionals to provide parenting knowledge and social support (formal and informal) for mothers of infants between 2 and 9 months old. See Appendix A for short-term and long-term Baby and You program logic model. No indicators to determine health goal attainment are provided in the model. Baby and You was offered at no cost to participants during 2-hour, daytime sessions over four consecutive weeks in convenient locations around the city. These locations included community rooms in grocery stores, libraries, and churches. Up to

now, evaluation of Baby and You focused entirely on satisfaction surveys distributed following the fourth session and collected by the program facilitator (see Appendix B). Although the surveys provided feedback regarding participant satisfaction, no information about learning outcomes, such as parenting knowledge or social support, was collected.

Statement of Research Purpose

The purpose of this study was to examine the effects of Baby and You on (a) parenting knowledge, (b) formal social support, and (c) informal social support in mothers of infants. The intent was to contribute to knowledge about maternal perceptions of selected outcomes associated with participation in the program.

Theoretical Frameworks

For this study, three theories were relevant. King's theory of nursing care (1981) was used as the primary theory and provided a dynamic systems framework to organize the outcome variables under study. Transition theory and adult learning theory were included to complement King's theory. Transition theory provided additional depth of understanding to explain changes in maternal role during early parenting. Adult learning theory was used to explain the theoretical approach to delivery of the Baby and You program. A description of each of these theories and their interrelationships follows.

King's Theory of Nursing

King's (1981) theory of nursing care of the human being is based on systems theory and assumes that human beings exist in an environment comprised of various levels in a larger system. Human beings are regarded as open systems engaged in transactions within their environment (Frey & Sieloff, 1995). As such, the "fragmenting" (p. 21) of human beings is avoided, and a holistic view of the individual is taken.

King's (1981) theory provides the foundational concepts relevant to understanding how mothers may perceive the effects of Baby and You. A systems theory, such as King's (1981) is useful to understand the effects of parenting programs because underlying processes are complex. Many factors are involved with the provision of parenting education programs to individuals within a group setting. Specific concepts from King's (1981) theory that are relevant to this study are explained further in the next section.

The three system levels of King's (1981) theory are personal, interpersonal, and social systems. Although King (1981) artificially separated these system levels to describe them, in reality, all three exist simultaneously within the complex context of total individual experience (see Figure 1). King's (1981) theory linked personal, interpersonal, and social systems together to form a dynamic social environment where transactions involving human behaviour toward mutual goal attainment have the opportunity to occur. Mutual goal attainment toward health is described by King (1981) as involving goals, structure, functions, resources, and decision-making within human interactions. King (1981) explicated that human behaviour toward health goal attainment is based on perception, and involves reactive, purpose-based, active, and time oriented action. King (1981) defined health as a dynamic process of human beings involving continuous adjustments to internal and external stressors in the environment through use of resources that lead to goals of optimal daily living for individuals. King (1981) stated that one basic requirement for promoting health was providing educational opportunities in a timely manner and acceptable formats that are received by individuals at a personal system level. Parenting education programs provide opportunities for learning and social support of mothers at individual (personal system), group (interpersonal), and societal (social) system levels.

Relevant to this study, parenting knowledge gained through the Baby and You program is considered at the personal system level of the individual mother. The interpersonal system level is recognized as helpful interactions and transactions that mothers identify through participation in Baby and You. The social system level identified by King (1981) included societal organization, and is included in this study as the context of parenting education programs, only. There were no measures available from the CPPEP at the social systems level.

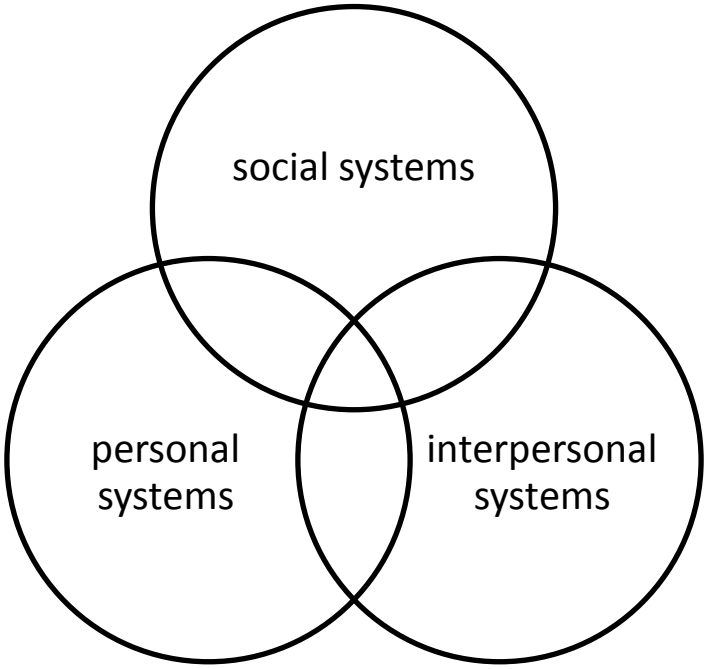

Figure 1. King (1981) Conceptual Framework for Nursing: Dynamic Interacting Systems.

Personal systems-Parenting knowledge. At the personal systems level, a mother is viewed as an individual who participated in Baby and You. King (1981) identified personal system concepts of perception, self, body image, growth and development, time, and space. These concepts are addressed through Baby and You program goals and curriculum (see

Appendix C; Bullick, 2005; Calgary Health Region, 2007). Personal system concepts are further delineated to reflect mothers' individual understanding of: growth and development needs of herself and her infant, perception of needs, learning style, body image, self involvement within groups, group interactions, perception of formal and informal social supports, anticipatory learning, and influence of environmental factors within the context of the Baby and You program (social, physical, spiritual, emotional, economical, cultural, and political).

Perception is a key concept to human beings that King (1981) explained in her theory. King (1981) defined perception as a process involving the transformation of information to meaning of experience and behaviour. The concept of perception is noted by King (1981) as universal, subjective, action oriented to the present, and reflected in transactions. Perception is recognized by King (1981) as a foundational concept at the personal systems level, impacting individual meaning of reality. King's ontological view of "the relationships among human action, interaction, and change are based on individual perception and interpretation" (Fitzpatrick & Whall, 1996, p. 229). King (1981) stated that nursing is a process of human interactions between nurse and client whereby each perceives the other and the situation; it is through purposeful communication whereby the means to goal attainment is shared. Perception is relevant to this study as outcomes of the Baby and You program are measured in this study through self-report and reflect maternal perception. Behavioural outcomes resulting from perception are not a component of this study. Understanding of the concepts interactions, transactions, and perceptions are thus integral for nurses who practice within the environment of parenting education programs. These three concepts have implications at all three system levels and the interpersonal and social system levels implications are conceptually explored to gain greater theoretical understanding within the context of Baby and You.

Interpersonal systems and social systems – Social support. King's theory depicts the person as an open system interacting with the environment, where the environment is composed of human and nonhuman elements (Leddy & Pepper, 1993). Individuals thus engage in interactions. Dyad and group interactions were labelled by King (1981) as interpersonal systems. Within interpersonal systems, individuals exchange personal knowledge, needs, goals, expectations, and perceptions with organized boundaries. Organized boundaries include roles, behaviours, and practices necessary to maintain values and beliefs as individuals interact and are labelled social systems (King, 1981). Past and current experiences influence formation of socially acceptable norms, attitudes, values, beliefs, and health behaviours. King (1981) stated that role, status, ethnicity, and social class impact perceptions and interactions. King (1981) further explicated that culture is a way of being that results from interactions between generations and is amenable to change over time. These impacts are not included in this study.

King (1981) identified the following major concepts within interpersonal and social systems: interaction, communication, organizations (formal and informal), decision making, transaction, role, and stress. Human interactions are described by King (1981) as the actions between two or more people within a context. Interactions involve relationships where individuals reveal feelings, thoughts, perceptions, and expectations through various modes of communication. Interactions may further develop into transactions. That is transactions are interactions that exist for the purpose of communicating to achieve goals that are valued. King (1981) advocated that interactions and transactions established between individuals are often based on social roles involving communication and motivated by stress. Stress is noted by King (1981) as a dynamic state stimulated by an individual interacting to maintain a balance of human growth, development, and performance – that is to attain health. Mutual goal setting through

interactions and transactions are suggested by King (1981) as a means to increase attainment of health. King (1981) was particularly interested in collaborative processes involving nurses and individuals. This study is based on the outcomes resulting from interactions and transactions within the open boundaries of the Baby and You program.

Important to this study is understanding that interactions and transactions explain formal and informal sources of social support that exist to maintain social organization (Dunst, Trivette, & Deal, 1988; King, 1981). Formal sources of social support in King's definition may be categorized as either interactions or transactions depending on the intent of the relationship. Formal social support may be recognized as the transaction between education facilitator and mothers participating in Baby and You to promote maternal health. Typically, formal transactions are non-reciprocal involving perceptions and communication toward health goal attainment. Informal social supports are interactions that are reciprocal human relationships involving perceptions and communication where behaviour results in the meeting of individual and group needs not met by formal transactions. The family is recognized as the first informal social support interaction to which an individual belongs (Dunst et al., 1988; King, 1981). This study is based on the collection of data regarding mother's perception of helpful formal and informal social supports over the past three to six months. Perception, interaction, and transaction are key concepts of King's (1981) system levels framework used to understand the multiple factors involved in addressing mothers' perception of parenting knowledge and social support following participation in a brief parenting education program.

Critique of King's Theory for Nursing

Theory provides a means for identification and expression of key ideas regarding the "essence of practice" (Walker & Avant, 2005, p. 3). Theories are internally consistent groups of

relational statements which are useful for describing, explaining, predicting, and prescribing a phenomenon of interest (Walker & Avant, 2005). Concepts are the foundation of theory in that they structure the organization of environmental experiences that allow meaningful communication about those experiences. Thus, theory is necessary to provide a credible, trusted, useable workable framework which is congruent with reality. The credibility of King's theory is discussed here.

King's theory is critiqued by Meleis (1997) as "parsimonious" (p. 340), which attests to the simplicity of foundational concepts explicated. Fitzpatrick and Whall (1996) summarized King's theory as a post-positivist perspective that demonstrates highly respectful attention to subjectivity, perceptions, self-definition, value, and human dignity. Conceptual consistency of King's 1981 theory has been demonstrated over time (Fitzpatrick & Whall, 1996). However, adequacy of King's theory to all nursing situations has been challenged, especially where the individual is unable to fully engage at a personal system level (Meleis, 1997). However, Brookfield (2005) challenged the idea that any theory should be expected to explain all situations. He states that theory is "... nothing more (or less) than a set of explanatory understandings that help us make sense of some aspect of the world" (Brookfield, 2005, p. 3). King's (1981) theory has limitations related to applicability to all nursing situations. As a theoretical framework, it is well-suited to applications which involve sentient individuals in personal, interpersonal, and social situations.

King's theory is applicable to diverse populations and human experiences involving health care issues (Frey & Sieloff, 1995). In their article, Frey, Rooke, Sieloff, Messmer, and Kameoka (1995) noted the attention that King's theory has generated among international nursing scholars over the past 25 years. King's theory has been: a framework for nursing

university students and faculty in curriculum design, hospital-based patient care practice, family theory development, childhood chronic illness theory development, research studies, group therapy practice, and other nurse-patient experiences (Fitzpatrick & Whall, 1996; Frey & Sieloff, 1995). Sink (2009) used King's theory as a framework for research regarding postpartum mothers help seeking information needs and behaviours.

King's (1981) theory is used in this study as a framework to understand concepts that are applicable to the dynamic personal, interpersonal, and social system influences involved in parenting education regarding knowledge and formal and informal social support among mothers of infants. That is, this theory is applicable to understanding how to promote the health of individual mothers within a group setting. Key concepts applicable to this study are: mothers' self-reported perceptions; and interactions and transactions occurring as informal social support and formal social support associated with participate in Baby and You. The Baby and You program is provided during mothers' transition to motherhood when she is recovering from the prenatal period, and adjusting to the postpartum period. This time period is marked by King's (1981) concepts of perception, interactions, transactions, growth and development, stress, self, body image, and role. This is a time period that may be neglected in care of mothers (Conway & Kutinova, 2006; Walker & Wilging, 2000). Thus, transition theory is also implicated in this study and discussed further.

Transition Theory

The recognition that the first year following childbirth entails transition to the role of motherhood is important to mothers (Mercer, 1981; Rubin, 1967). Wandersman, Wandersman, and Kahn (1980) stated that transition periods occur from disequilibrium in life changes and require change in roles. Harrison, Neufeld, and Kushner (1995) explicated that although the

transition to motherhood is normative, challenges exist. Meleis, Sawyer, Im, Messias, and Schumacher's (2000) middle range theory of transition identified transition as a process – a dynamic passage during change in health, role, expectations, or abilities capable of producing a personal time of vulnerability.

Walker and Wilging (2000) suggested that attention to health and psychosocial transitional issues for mothers of infants are critical to promote maternal health. Nelson's (2003) meta-synthesis ($N = 9$) was undertaken to aid nurses in understanding the transition to motherhood from a qualitative perspective. Findings suggested that maternal engagement (that is active, committed, and open presence) was linked to maternal growth and transformation into the role of mother. Further, Nelson (2003) explained that with the arrival of an infant, mothers experience a greater awareness of responsibility for infant care. It is necessary for mothers to adjust to new responsibility within their former paradigm of relationships and roles. Mothers seek others (formal and informal social supports) in efforts to adjust (Nelson, 2003). Nurses may be involved as resources of formal social support (including information) to aid mothers' adjustment (Sink, 2009).

Mercer (1981, 2004) and Rubin (1984) provided nurses with documentation of the process mothers undergo as they attain maternal role identity following childbirth which has become a classic in the study of women and mothers. Mercer (2004) identified the following maternal transition concepts that influenced attainment of maternal role identity: maternal age, social support, maternal personality characteristics, social economical status, role strain, maternal and infant health status, self-concept, perception of infant and infant characteristics. Rubin (1967) used the terms perception and self-system (including body image, self-image, and ideal image) to describe the processes involved in the goal of maternal role attainment. Rubin (1984)

and Mercer (1981) described the process of becoming a mother as an adaptive process beginning during pregnancy and continuing until self-identity as mother is formed. Mercer (2004) noted that competent maternal role behaviours peaked at 4 months postpartum and were then followed by decreased levels of maternal competence during 8 to 12 months postpartum, This disequilibrium, she suggested, was related to maternal and infant "clash" (p. 227) of greater needs for both mother and infant surrounding growth and development, role, stress, self, and body image demands (Mercer, 2004). Deave, Johnson, and Ingram (2008) qualitative study of postpartum mothers (N = 24) regarding maternal care, education and support needs suggested that participants felt surprised by, and under prepared for, the realities of motherhood. Participants support needs were met primarily by family and postnatal groups following the birth of their infants. The transition to motherhood is an adaptive process requiring support and information that lessens potential vulnerability and strengthens mothers' engagement in their new role as mother.

Theoretical knowledge is used by nurses to support mothers' during maternal transition. King's (1981) concepts of perception, interactions, and transactions are connected to the concepts used in understanding maternal transition following childbirth. As well, there are implications for nurses to understand King's (1981) concepts of time, space, growth and development, role, self, body image, and stress for mothers within the context of providing care through the Baby and You program which is offered during the time of maternal transition to motherhood. Recognition of this normative life process for the population is relevant to nurses involved in parenting education programs that seek to promote maternal health following childbirth. This secondary analysis does not measure maternal transition nor the concepts implicated in the process. The focus of this study is to assess the maternal perception of

parenting knowledge, formal social support, and informal social support among participants in the Baby and You program. Thus, the learning experience of the mother is considered as the focal point. With this in mind, adult learning theory principles are relevant to the foundations of this study.

Adult Learning Theory

This time of normative life change creates an opportunity to enhance maternal health through interactions and transactions that are focused on the needs of mothers. The population of mothers for this study is a group of adult learners who have self-registered in Baby and You. Cranton (2000) noted that adults become involved in learning situations through personal choice. Nichols and Humenick (1988) explained prenatal and postnatal mothers are motivated to learn how to best care for themselves and their infants. In Canada, Birnbaum, Russell, and Clyne (2007) found that parents of infants and toddlers desired to participate in education programs that offered age specific, flexible, unstructured opportunities where choices and options were shared. Through summaries of their research studies (Birnbaum et al., 2007), parenting education program participants reported preference for interactional programs based on mutual respect, support, listening, and validation. Parenting education programs are offered to groups of adult learners, that is mothers of infants between 2 and 9 months of age.

Theoretically, Knowles (1980) assumed adult learners were orientated toward learning based on growth and development and social role experiences. Knowles (1980) emphasized that learner self- concept and self-directive capability promoted learning as an active process involving the learner as the central focus. MacKeracher (2004) also called for learning to shift paradigms and become learning-centered. That is, learning primarily focused on the learning process and characteristics of the learner. She advocated for abandonment of focus on content

(knowledge or skills), strategies, learning behaviour, technological aids, and facilitator characteristics. Rather, MacKeracher (2004) claimed that "... learning is something done *by* the learner rather than something done *to* or *for* the learner" (p. 5). This study is based on the self-reported perspective of the learner for the dependent variables of parenting knowledge and social support. Further adult learning theory principles are applicable to a learner-centered focus of mothers who attended Baby and You.

Knowles, Holton, and Swanson (2005) adult learning theory principles are informative to understand learning opportunities within parenting education programs, such as Baby and You and expanded on here. Adult learning principles request respect for the adult as an independent and self-directed learner. These principles outline that adults' learn best when concepts build on past experiences, and are influenced by current life situation roles and tasks. Adult learning principles assume that the learner is motivated to apply learning to current immediate needs and desires to use learning to problem-solve (Knowles et al., 2005). Further to these principles, the process of learning for adults requires attention to the climate of the learning environment; participation of participants in planning; assessment of participant learning needs; inclusion of participant in formation of objectives; appropriate design of learning activities for adult; implementation based on learning principles; and ongoing evaluation of the learning process (Frederick, 2000). Adult learning principles are identified in the training manual for Baby and You (Calgary Health Region, 2007). In this study, mothers who participate in the Baby and You program are considered the learners.

As perception is considered key to learning (Brookfield, 1988), it is the perception of mothers' learning which is measured in this study. Cranton (1994) contended that perception, or the meaning given to reality, is a personal construct resulting from validation through

interactions with others. As Cranton (1994) stated, “We interpret our experiences and the things we encounter in our own way: what we make of the world is a result of our perceptions of our experiences” (p. 26). Mezirow (1991) recognized that when adults were challenged to interpret new meanings arising from new experiences, learning occurred in discourse with other individuals. Conditions, which were noted by him to promote learning, included: having factual and complete information; being able to process information without coercion, being able to participate in debate, being encouraged to think critically, allowed time to process information, and being able to participate openly as a respected adult. Mezirow (1991) further explained that individuals generate meaning from three primary sources: knowledge experiences, social and language experiences, and human nature. Thus, learning has been proposed to be a construct of the personal system (including perception) which is validated through the process of interactions and transactions in interpersonal and social systems.

The link of adult learning theory concepts to King’s theoretical concepts (1981) is noted conceptually. The concepts of perception and interactions are thus theoretically relevant to this study. These concepts are not tested within this study, but are noted to be the basis for providing mothers with the opportunity to learn through participation in the Baby and You program. In this study, maternal perceptions of parenting knowledge, and formal and informal social support were measured. King’s (1981) theory, transition theory, and adult learning theory all contribute to understanding the impact of this learning experience on mothers of infants 2 to 9 months old.

Chapter Two: Literature Review

Search Concepts

A review of literature was conducted regarding current parenting program offerings for mothers of infants and insights into parenting knowledge and social support as program outcomes. Concepts used to search the literature for articles relevant to this study are presented in Table 1. The search dates included articles published in the last 10 years (2000 to 2010). The search concepts were related to the independent (parenting education programs) and dependent (parenting knowledge, formal social support, and informal social support) variables. The search yielded 126 articles, of which 27 were relevant to the study.

Table 1

Concept Search Terms

Criteria	Details	Comments
Date of publication	2000 – 2010	To provide current review
Language	English	Focus search on articles written in English
Keywords to search concept A: Parenting Knowledge	Parent* knowledge Mother* knowledge Child rearing knowledge*	
Keywords to search concept B: Family social support (formal and informal)	Social support Family support Social network Interpersonal relations* Interpersonal support Psychosocial support	
Key words to search concept C: Mother	Mother* Maternal	

Note. *Terms truncation: Database will retrieve all variant endings of this root word.

Parenting Education Programs

Early parenting education programs are intended to provide knowledge, skills, and support for parents of infants and young children (El-Mohandes, Katz El-Khorazaty, McNeely-Johnson, Jarrett, & Rose, 2003; McKellar et al., 2006; Neuhauser, Constantine, Constantine, Sokal-Guiterrez, Obarski, & Clayton, 2007; Ngai, Chan, & Ip, 2009). In western cultures, which

are the focus of this literature review, various early pregnancy and postpartum education opportunities are typical offerings to assist mothers' in navigating the dynamic, multifaceted demands experienced during this period of time (Nichols & Humenick, 1988). The literature that was reviewed provided information about (a) program designs, (b) delivery formats, and (c) outcome indicators for programs provided in Canada, Australia, United States, Sweden, Finland, Italy, United Kingdom, The Netherlands, Republic of Ireland, and China. The following discussion is organized according to these topics.

Program Designs

It has been assumed by various program developers that effective parenting education programs include the components of caring relationships, non-conflicting information, opportunities for informal and formal social support, cost effectiveness, and easy-to-use interactive resources (Salonen, Kaunonen, Astedt-Kurki, Jarvenpaa, & Tarkka, 2008; Weiss & Lokken, 2009; Wilkerson, 2000). Further, Neuhauser et al. (2007) stated that parenting education programs should be designed with consideration of self-identified needs of the participants, assessment of social context of the participants, inclusion of participants in selection of interactive and learning style approaches for content delivery, and connection of participants to local and accessible community resources. These recommendations were in-line with participant-focused intervention as opposed to educator-focused intervention. It was assumed by Neuhauser et al. (2007) that attention to program design increased program effectiveness. Some education programs were designed to meet the needs of specific target populations (McIntosh & Shute, 2006), whereas others were designed to meet the needs of the general population (Fabian, Radestad, & Waldenstrom, 2005; Neuhauser et al., 2007).

Targeted programs. Some parenting education programs were designed to meet characteristics of a specific target population. Frequently, these programs were targeted to vulnerable populations, such as low income, adolescent, or lone-parent mothers as it had been suggested that helping vulnerable mothers positively influenced mother health and secondarily benefited infant development (Armstrong, Fraser, Dadds, & Morris, 2000; Asscher, Dekovic, Prinzie, & Hermanns, 2008; Coyl, Roggman, & Newland, 2002; Johnson, Molloy, Scallan, Fitzpatrick, Rooney, Keegan, & Byrne 2000). Some targeted parenting programs were aimed at modifying risk factors, such as domestic abuse, drug abuse, and social isolation, which influenced the health of mothers and infants (Armstrong et al., 2000; McIntosh & Shute, 2006).

Research about the effects of targeted parenting education programs has been influential in new program design and implementation. For example, Early Head Start in the United States was created to specifically tackle the nationally identified "quiet crisis" (p. 1) facing families with infants and toddlers who live in vulnerable family situations (Raikes & Love, 2002). Early Head Start programs offered home-based, center-based, or a combination of parenting education opportunities to provide preventative, high quality, comprehensive, transitional, and positive relationship-based health care services to pregnant women and families with children less than 3 years old (Roggman, Boyce, & Cook., 2009). These programs continue to be offered and evaluated, but whether the U. S. national "quiet crisis" facing families is being positively affected through the program remains unknown.

Universal programs. Universal parenting education programs were designed to affect maternal information and support needs during the early years of parenting in the general population. It is interesting to note that in Sweden general parenting education programs did not attract participants who were young and single, with low level of education. Rather, participants

were more likely married, middle class, primiparous women (Fabian et al., 2005). General parenting programs were designed to provide knowledge regarding life with a newborn, infant nutrition, and relationships acquired through participation in parenting education programs positively influenced parental confidence (Fabian et al., 2005). Other studies indicated that parenting programs designed to match specific learning information needs of the particular group of parents were necessary for parents to feel better prepared during the transition to parenthood (Deave et al., 2008; Walker & Wilging, 2000). Conversely, Ngai et al. (2009) found that parenting education programs that employed universal program topics based on information for new mothers made no difference to maternal role competence. Despite these attempts to design programs that provide mothers with knowledge and support to meet the demands of mothering, there is limited evidence in the literature of the effects of these programs on difference in parenting knowledge following participation in such programs (Koehn, 2002).

Delivery Formats

In attempts to improve opportunities for access, parenting education programs described in the literature were offered through various delivery formats throughout western cultures represented in this literature review. These formats included single or multiple home visits (Armstrong et al., 2000; Barlow, Davis, McIntosh, Jarrett, Mockford, & Stewart-Brown, 2007; Zadoroznyi, 2006), internet based education (Salone et al., 2008), video-feedback (Kalinauskiene, Cekuoliene, Van IJzendoorn, Barkersmans-Kranenburg, Juffer, & Kusakovskaja, 2009), information kit distributions (Barr, Barr, Fujiwara, Conway, Catherine, & Brant, 2009; Neuhauser et al., 2007), group settings (Bloomfied & Kendall, 2007; Haggman-Laitila & Pietila, 2007), parenting support programs (Asscher et al., 2008), postpartum telephone calls (Sink, 2009), postpartum hospital education (Weiss & Lokken, 2009), infant play groups

(Jarrett, Diamond & El-Mohandes, 2000), and combinations of home visits, parent-infant developmental play groups, parent support specialist support calls (El-Mohandes et al., 2003). While these various delivery formats were designed to increase accessibility, there is no evidence to suggest that one delivery format is superior to any of the others to target maternal health needs during the adjustment to motherhood.

Some early parenting education program delivery formats were influenced by current medical practices. For example, reduction in maternal hospital length of stay post-delivery created opportunity for new program delivery formats to prepare mothers for postpartum and infant care needs (McKellar et al., 2006). These program delivery formats included offering breastfeeding and baby care sessions in face-to-face hospital teaching (Weiss & Lokken, 2009), public health nurse home visits (Armstrong et al, 2000; Barlow et al., 2007), community centers for childbearing (DeVries & DeVries, 2007), and public health nurse telephone access (Sink, 2009). These delivery formats provided resource access to mothers based on current societal health trends. What remains unknown is the benefit to mothers of infants for gaining knowledge and social support.

Outcome Indicators

A wide range of outcome indicators of parenting education programs were identified in the literature. For example, Armstrong et al. (2000) measured the effectiveness of home visits in promoting parent-infant interaction and maternal health based on postpartum depression, parenting stress, home environment, parent satisfaction, child immunization, feeding behaviour, parental smoking, and use of medical services outcomes. Other studies measured outcomes such as self-efficacy (Bloomfield & Kendall, 2007; McIntosh & Shute, 2006), maternal depression (Ammaniti, Speranza, Tambelli, Muscetta, Lucarelli, Vismara, Odorisio, & Cimino, 2006),

mother-infant attachment (Kalinauskiene et al., 2009), and maternal decision making (McKellar et al., 2006). It is unknown which of these studies based outcomes on identification of learners' goals. Although these outcomes are interesting and relevant to mothers of infants, less is known about the effects of parenting education programs on parenting knowledge, formal social support, and informal social support, which in this study are derived from collaboration between parents and providers. Based on the literature reviewed, what is known regarding each of the dependent variables is discussed.

Parenting Knowledge

Mothers attended parenting education programs for accurate and relevant parenting knowledge acquisition (Haggman-Laitila & Pietila, 2007). Bowman (2005), in her review of 18 studies published between 1963 and 2000, reported learning needs of postpartum mothers. These reported needs included parenting knowledge about infant feeding, infant illness, and maternal weight loss. Sink (2009) summarized eight categories for which postpartum mothers (N = 89) sought parenting knowledge. Four of these categories were relevant to infant (i.e., feeding, general infant care, skin care, and gastrointestinal tract issues), and four to mother (i.e., postpartum care, family changes, lifestyle changes, and birth experience). Study results from Neuhauser et al. (2007) indicated that a parenting information kit improved maternal knowledge regarding parenting knowledge of child safety, infant development, feeding, smoking, health care, and childcare at 14 months post intervention. Similarly, Early Head Start programs enhanced parenting practices for low-income families of infants and toddlers through exposure to knowledge of infant growth and development and parenting attachment practices (Roggman et al., 2009).

Although parenting knowledge is based on maternal and infant need, it is difficult to provide standardized programs as the needs of specific participants are unique (Nichols & Humenick, 1988). Therefore, some parenting education programs included parenting knowledge targeted to the specific needs of a particular population. For example, Pride in Parenting program curriculum was designed for African-American mothers (N = 286) of infants in Washington DC to target reduction of infant mortality (Jarrett et al., 2000). Mothers included in this study had experienced less than five prenatal visits, were mostly unmarried (no statistical value reported), on Medicaid (63.7%), and 15.9% had no insurance. The intent of providing parenting knowledge was to improve maternal and infant healthcare service utilization in efforts to reduce mortality rates. Content for this particular program was based on the needs of the target population after review of existing programs such as Systematic Training for Effective Parenting, Black Parenting Education Program, and Parentmaking were deemed unsuitable by program designers. Relevant parenting knowledge topics provided to this population of mothers with infants included adjusting to parenting, infant crying, maternal self-esteem, infant health care, women's nutrition, infant nutrition, smoking, drugs and alcohol, coping and stress, postpartum depression, budgeting, relationships, women's exercise, relationships, limit setting, and role transition (Jarrett et al., 2000). Similarly, El-Mohandes et al.'s (2003) study of low-income minority mothers from the USA, home visitors followed a curriculum that aligned with current infant growth and development milestones, provided family health information, and facilitated community resources access. Evaluations of these programs demonstrated that parenting knowledge and beliefs regarding health-related issues and life skills were associated with improved maternal use of available infant health care resources (El-Mohandes et al., 2003;

Jarrett et al., 2000). Each of these programs was designed to target specific population needs, that is, learner-focused parenting knowledge was presented.

Limitations of Previous Studies of Parenting Knowledge

Parenting knowledge outcomes were measured primarily though instruments designed to address specific program content. For example, Neuhauser et al. (2007) developed a self-report instrument to measure maternal parenting knowledge following distribution of a materials-based parenting kit. The instrument captured knowledge of sleep, safety, infant feeding and nutrition, early infant learning, resources for childcare, low-cost medical infant care, and smoking cessation. Results suggested that the parenting kit increased knowledge of these topics for mothers who received the kit (n = 402) compared to mothers who did not receive the kit (n = 1011), $p < .001$, $d = .48$. However, Cronbach's alpha for the instrument was .49. Given that an acceptable Cronbach's alpha for a new scale is .70 (Kazdin, 2003), the results from this study need to be treated with extreme caution. Interestingly, these results were influential in actions to translate the educational materials in the parenting kit into other languages (e.g., Spanish), and to implement this population-based intervention in five USA states.

Another use of an instrument specific to parenting knowledge was found in the randomized controlled trial by Barr et al. (2009) of mothers' (N = 1,833) use of educational materials from the Period of PURPLE Crying program. The study compared change in maternal knowledge and behaviour related to infant shaking in response to infant crying bouts. The treatment group mothers of infants (n = 649) received PURPLE Crying program educational material through the public health nurse home visit at 2 weeks postpartum. Control group mothers (n = 630) received injury prevention material at the 2 week postpartum public health nurse home visit. Both groups were asked to complete a behaviour diary beginning at 5 weeks

postpartum. At 8 weeks, all participants were telephoned and completed a 20 minute outcome questionnaire designed to measure outcomes specific to this study. The questionnaire measured maternal knowledge of crying and shaking, responses to crying, talking to others about responses to crying, and information sharing regarding the danger of shaking. Difference scores for knowledge of infant crying were greater in mothers who received the educational intervention (63.8 points) versus mothers who received injury prevention materials (58.4 points, 95% CI 4.1, 6.5, $p < .001$). The findings of this study do not imply a reduction in shaken baby syndrome as a result of participation in the education intervention, but rather that knowledge surrounding infant crying may be amenable to change when relevant parenting education is provided in the postpartum period.

A qualitative exit-interview was used as an instrument by Jarrett et al. (2000) to evaluate outcomes for at risk African American mothers ($n = 62$) who participated in a developmental play group and mother support group intervention, Pride in Parenting. Positive findings reported by mothers in this study were related to gaining information regarding infant growth and development (33.9%), and general parenting information (30.4%). These findings were based on participants' self-reports regarding specific program goals identified in the interview instrument.

In summary, the majority of the studies reviewed on parenting education programs had an impact on helping mothers gain maternal knowledge relevant to specific program content. However, in the majority of studies parenting knowledge was measured with instruments designed specifically for each study with little or no evidence of their reliability and validity. Thus, the evidence of the effectiveness of parenting education programs on parenting knowledge must be treated with caution.

Social Support

The broad concept of social support is identified in the literature as essential for maternal health (Mercer, 2004; Rubin, 1984). Yet there is a lack of consensus about the conceptualization and measurement of social support (Haggman-Laitila & Pietila, 2007; McIntosh & Shute, 2006). Dunst et al. (1988) defined social support as the emotional, physical, informational, instrumental, and material aid necessary to maintain health, promote adaptation to life transitions, and foster healthy development. Social support has a positive influence on parent health, family functioning, parenting style, and child development and behaviour (Dunst et al., 1988). Formal and informal social supports exist within interactions and transactions, and are essential during mothers' transition to parenthood (Harrison et al., 1995; King, 1981). Formal social support resources include professionals and agencies within formal organizations providing aid and assistance such as public health nurses or physicians. Informal social support resources include individuals and social groups accessible to the individual as a part of daily living. Examples of informal social support resources are parents, friends, or church members (Dunst et al., 1988).

Social support is embedded in the concept of interactions and transactions (Jarrett et al, 2000). For example, mothers identified information, advice, assistance, or treatment as helpful social support (May & Hu, 2000). In, Sink's (2009) study of postpartum mothers (*N*= 89) information seeking formal social support was defined according to King (1981) as transactions between professional and mother. Informal social support was defined as transactions between mother and family and friends (King, 1981). Results indicated that through formal and informal transactions helpful information regarding coping, resource utilization, and encouragement toward health goal attainment was communicated (King, 1981; Sink, 2009). The provision of information (or knowledge) within transactions aligns with the definition of social support provided by Dunst et al. (1988) and indicates the dynamic systems involved.

Examining Social Support

Social support has historically been examined in multiple ways (Brownell & Shumaker, 1984; Callaghan & Morrissey, 1993; Lakey, McCabe, Fisicaro, & Drew, 1996). In the literature review presented here, social support was examined based on the types, sources, and various delivery formats.

Types of social support. In a seminal book on the topic, House (1981) described functional components of social support as informational, instrumental, emotional, and appraisal. Warren (2005) focused on this typology of social support for first-time mothers (N = 135) to gather information regarding social support networks, experiences of social support, and perceived level of confidence in caring for an infant. A 23-itemLikert-scale was used to measure the elements of social support. Examples of descriptive sentences found on the questionnaire were “I relied on professionals for information on feeding my baby (informational)”, “My husband/partner has taken turns with me in bathing my baby (instrumental)”, “I had someone with whom I share the excitement of my baby (emotional)”, and “I received positive feedback from professionals about the care I gave my baby (appraisal)” (p. 482). Cronbach’s alpha for each subscale demonstrated respectable internal consistency reliability for a new scale (Kazdin, 2003). Results from this study indicated that appraisal and informational support were positively correlated with maternal confidence in infant care (measured with a visual analogue scale). Both participants’ own mothers and public health nurses were identified by 77% of participants as providing informational support. Husbands/partners (77%) and participants’ own mothers (70%) were identified as appraisal sources of social support. These descriptions of social support contributed to nursing knowledge by suggesting that different types of social support are helpful for mothers of infants.

Sources of social support. Specific helpful sources of social support were also examined. For example, Warren (2005) found that different sources of social support were sought for different parenting knowledge concepts by mothers (N = 135) in the Republic of Ireland. Informal social supports were sought more often for information regarding settling of infant (48%) than formal social supports (31%). Formal social supports were sought more often for information regarding infant feeding (63%) than informal social supports (53%: Warren, 2005). Through the use of a questionnaire designed specifically for the Australian study, McKellar et al. (2006) found that 87.5% of first-time Australian mothers (N = 52) used personal research of books, magazines, and computer resources to prepare themselves for transitioning to parenthood; and 62.4 % accessed husband/partner help in parenthood adjustment. Midwives and books were described as equally important sources of information support by 72% of mothers. Formal social support through telephone professional resources was accessed by over half of mothers (53.8%), and 25% of these mothers were engaged in a parent support group at 6 weeks postpartum. Similar findings are documented by Sink (2009) through the use of self-report questionnaires. Sink (2009) identified the most common sources of formal support accessed by U.S. postpartum mothers (N = 89) as the infant's doctor (38.7%), hospital nurses (18.6%), and home visiting public health nurses (n = 23, 10.2%). Informal social support resources accessed by postpartum women were most commonly their husband/partner (35.1%), their mother (21.9%), and their friends (16.8%). Interestingly, as McKellar et al. (2006) identified, individual efforts to acquire information through available reading materials was identified as the largest form of informal social support (90.8%). Although populations varied in studies of social supports, formal social support (i.e., from professionals) and informal social support (i.e., husband, family members,

friends, or literature) were recognized consistently in the literature as sources of social support for mothers of infants.

Delivery Formats for Social Support

Delivery formats for social support, both formal and informal, included small groups, face-to-face, and telephone interactions in the literature review. Group settings were common parenting education formats that provided both formal and informal social support opportunities (Jarrett et al., 2000). Haggman-Laitila and Pietila (2007) conducted qualitative interviews to capture experiences and identify health benefits of small support groups for new mothers (*N* = 63). They found that mothers, who participated in seven 1.5-hour small group sessions discussing parenthood topics, gained parenting knowledge, information seeking behaviour, awareness of personal resources, confidence in facing role transition challenges, a sense of refreshment, and social networks. The small groups provided mothers with two sources of social support: (a) formal social support of the facilitator, and (b) informal social support of other mothers. The authors stated that the positive results of this program were linked to the openness, cohesion, and confidentiality of the interactions within the group. The authors noted that reciprocity was evident, with mothers eager to receive acceptance as group members and to give acceptance to other members. The implications of these findings suggest that programs designed to provide social support in a group setting required great facilitator skill. In addition, it was suggested that such programs provided time savings and cost savings as mothers sought information from within informal social support networks.

Jarrett et al. (2000) used exit-interviews to explore how mothers (*n* = 62) benefited from a 4-month weekly group social support service. Outcome measures for this study were statements regarding satisfaction with information provided, opportunities to enhance infant care, and

interactions with mothers and the group facilitator. The program was unique in that it included individual home visits by the group facilitator prior to the start of the program. The philosophy of this multi-component intervention was based on the belief that the group facilitator, as a source of formal social support, enhanced health care for mothers by providing evidence based information, influenced formation of caring attitudes, and prepared participants for positive group experience through this initial individual attention. Results indicated the mothers found formal social supports (16.1%) and informal social supports (19.6%) within the program to be valuable in their role as a mother. Of these mothers, 62% stated that an effective parenting program should contain both formal (i.e., home visits and group facilitation) and informal (i.e., developmental play groups) social support opportunities to enhance transitions to motherhood.

Formal social support through face-to-face public health nurse home visits were identified as effective delivery formats to meet maternal needs (Armstrong et al., 2000; Barlow et al., 2007; McIntosh & Shute, 2006; Zadoroznyj, 2006). Armstrong et al. (2000) evaluated a 6-week early home visiting program with 160 families. Compared to social work home visits (n = 80), public health nurse visits (n = 80) to families were found to improve family functioning, maternal-infant attachment, parenting role, maternal mood stability, sense of competence, and satisfaction with community health services at 4-months. Benefits of an early home visiting program for postpartum maternal well-being were also found by Zadoroznyj (2006) in Australia. Data about the impact of home visits were collected through face-to-face or telephone interviews (n = 63) and through secondary analysis of client satisfaction surveys (n = 163). Results from this study found formal social support positively benefitted the mother during her transition to parenthood by providing physical, social, and emotional health care. Similarly, McIntosh and Shute (2006) examined the impact of home visiting in Scotland and found that mothers (N = 59)

who perceived formal support positively had increased confidence in the role of mother, increased knowledge of parenting practices, and experienced less isolation in their parenting experience.

Other forms of parenting education were discussed in attempts to provide easy and affordable access to formal and informal social support among mothers of infants. Sink (2009) conducted a study of U.S. postpartum mothers (N = 89) and found telephone contact was the most commonly used form of formal social support for mothers seeking information to aid in the early transition to parenthood. This form of social support was noted by Sink (2009) to provide a cost-effective method to provide mother education. In recognizing dynamic needs of mothers and continual socio-economical pressures, DeVries and DeVries (2007) proposed abandoning the 1960s-inspired model of childbirth education to create community centers where mothers and growing families would have access to formal and informal social supports throughout their childbearing and childrearing experience. The 1960s model for education classes which focus on pregnancy, labour and delivery in educator directed styles were becoming less well attended by parents, who were demanding changes to programs to better meet their needs (DeVries & DeVries, 2007; Wilkerson, 2000). Through community centers where information, formal social support, and informal social support simultaneously exist, these authors hypothesized that mothers, infants, families, and communities would increasingly benefit in physical, emotional, and social well-being. The authors challenged parenting education providers to (a) change parenting education class structure, (b) update language used in transactions with mothers, and (c) develop deeper mother-provider relationships in efforts to keep pace with dynamic needs. These authors recognized formal and informal social support as important resources for mothers.

Parenting education professionals face challenges in offering effective, attractive, and accessible social support provision for mothers of infants.

Measurement of Social Support

Researcher-designed questionnaires theoretically linked to outcome instruments (i.e., those examining maternal depression or parental confidence), specific program outcome goals, and parental behaviour linked outcomes (i.e., infant immunization schedule adherence) have been discussed as measures to capture formal social support and informal social support in this literature review. Researchers' definitions of social support also guide choices of measurement instruments. For example, Raikes and Thompson (2005) defined social support as basic survival resources existing within the home. Therefore, they used the Family Resource Scale (FRS; Dunst & Leet, 1987) to measure whether adequate basic resources exist (i.e., food, transportation, someone to talk to) to support health and well-being of low-income mothers (N = 65) enrolled in an Early Head Start program in the U.S. This instrument does not measure perceived helpfulness of specific formal and informal sources of social support. Through application of this instrument, as well as instruments to measure family risk, family income, self-efficacy, and parenting stress outcomes, these authors found that social support was not associated with lowering general mother parenting stress levels or affecting mothers' stress associated with low-income challenges. This unexpected finding was explicated by Raikes and Thompson (2005) with the following suggestions: (a) not all social support is perceived as helpful, and (b) all mothers were living in poverty and small adjustments to income may not significantly influence parenting stress. The FRS instrument was designed to measure the existence of independent resources for meeting basic needs (such as food, shelter and material goods) and not to measure helpfulness of formal social supports and informal social support for mothers of infants. In addition,

Cronbach`s alpha for the FRS was only 0.67, which suggests challenges with measurement of social support in this study (Kazdin, 2003).

In summary, formal and informal social support are complex and dynamic interactions and transactions that are especially important during the transition to motherhood. Over the years, a variety of instruments have been developed to measure social support (Stewart, 1993; Weiss & Jacobs, 1988). Yet only one social support scale (FRS; Dunst & Leet, 1987) was mentioned in the literature review of parenting education program for mothers of infants. More commonly, study-specific, researcher designed instruments with little or no evidence of reliability and validity were used to measure specific aspects of social support within parenting education programs. Despite the variations in social support definitions and measurement instruments, there is consensus that formal and informal social supports are important outcome indicators for parenting education programs for mothers of infants (Jarrett et al., 2000).

Identification of Gaps in Literature

A review of the literature has demonstrated that parenting knowledge and social support are important outcomes associated with the health of the mother during the transition to motherhood. Parenting education programs have been noted to be effective when they target specific populations of mothers, allow opportunities for social networking, and provide various methods to present factual and relevant information related to growth and development, self, perception of body image, and transaction needs in mothers of infants (Nichols & Humenick, 1988).

Parenting education programs are intended to provide opportunities for mothers to learn. Parenting knowledge, formal social support, and informal social support were commonly mentioned in the literature as expectations of mothers following childbirth. However,

measurement of these indicators within parenting education programs was based primarily on program-specific designed instruments. These instruments rarely met acceptable measurement standards for internal consistency reliability and leave questions about the validity of research findings. While many outcomes have been examined in attempts to provide evidence of the effects of parenting education programs, few studies have simultaneously examined parenting knowledge, formal social support, and informal social support in brief, parenting education programs for mothers of infants. This study addressed a gap in knowledge of outcomes for mothers of infants 2 to 9 months old. As learning is focused on the learner, measurement of these outcomes is based on mothers' perceptions of differences in parenting knowledge, formal social support, and informal social support following participation in the brief parenting education program.

Chapter Three: Method

Study Design

This study employed a single group, pre-test and post-test design. Pre-test and post-test design allows assessment of an intervention through the detection of differences in outcomes between two points in time; that is, before the intervention and after the intervention. Given that this research is aimed at studying whether there is a difference in mothers' scores on parenting knowledge, formal social support, and informal social support between the first session and fourth session, this type of design is acceptable. However, the design is not ideal because there is no comparison/contrast group of mothers who did not receive the intervention. That is, the results of studies using a single group, pre-test and post-test design may be influenced by several threats to internal validity. These threats are discussed later as limitations of this study. Regardless, the costs associated with this design are minimal, and the design is easy to implement. In addition, when there is some evidence of the effectiveness of early parenting education programs (Benzies & Otis, 2008) it may be unethical to assign mothers to a control group that receives no intervention, or to a wait list control group.

This study employed a secondary analysis of an existing data set to answer new questions. Secondary analysis reduces respondent burden and costs associated with conducting another study. However, challenges associated with secondary analysis may be related to the data available from the original research study and the inability to answer research questions posed for the secondary analysis (Clarke & Cossette, 2000). That is, measures selected for the CPPEP may not completely align with the desired measures required to answer the research questions posed for the secondary. This secondary analysis focused on three of the indicators

from the original CPPEP study: (a) parenting knowledge, (b) formal social support and (c) informal social support.

Sample

Mothers were recruited in a large Canadian city with 16,341 live births reported in 2006 (Alberta Reproductive, 2007). A convenience sample of 159 mothers with infants between 2 and 9 months old who participated in Baby and You sessions offered between March 1, 2008 to July 31, 2008 were included in this study. The response rate was unknown because the CPPEP study did not track non-responders. The age of infants was not collected in the CPPEP.

Inclusion Criteria

Inclusion criteria were mother (a) who participated in the Baby and You program, (b) over 18-years old for consent, (c) responsible for the care of an infant between 2 and 9 months old, (d) self-registered in Baby and You, (e) literate in English, and (f) attended at least 3 out of 4 weekly Baby and You sessions.

Exclusion Criteria

Mothers were excluded if they did not complete the pre-test prior to the second Baby and You session.

Demographic Characteristics of Participants

On average, mothers in this study were 31 years old (M = 30.8, SD = 4.9). See Table 2. Mothers ranged in age from 18 to 44 years old (n = 152). Most mothers (88.7 %) were married, 94.3 % were first-time mothers, and 52% (n = 157) reported a household income of $100,000 or more. The highest level of education completed was a university degree (48%), and 76.7% were on parental leave at the time of the study.

Table 2

Demographic Characteristics of Participants (N = 159)

Variable	*M*	*SD*	*n*	%
Age (years)[a]	30.8	4.9		
Marital Status				
Single			2	1.3
Married			141	88.7
Partnered			15	9.4
Divorced			1	0.6
Number of children in household				
1			150	94.3
2			8	5.0
3			1	0.6
Household income[b]				
Less than $20,000			3	1.9
$20,000 to $ 39,999			4	2.5
$40,000 to $59,999			8	5.1
$60,000 to $79,999			17	10.8
$80,000 to $99,999			23	14.6
$100,000 or more			83	52.8
I prefer not to answer this question			19	12.1
Education level				
Grade School			1	0.6
High School			15	9.4
College or Technical School			40	25.2
University Degree			77	48.4
Post Graduate Degree			26	16.4
Main Activity				
Working for pay or profit			6	3.8
Caring for family			28	17.6
Looking for work			3	1.9
On parental leave			122	76.7

Note: [a]$n = 152$. [b]$n = 157$.

In comparison to Calgary women (Government of Alberta, 2009; Statistics Canada, 2006), the sample of mothers included in this study differed on marital status, household income, and education levels (see Table 3). On average, participants in this study were more likely to be married, had higher household incomes, and more education than Calgary women.

Table 3

Comparison of Baby and You Participants to Calgary Women

	Participants	Calgary Women
Demographic information	*M* (*SD*) or %	Range, *Mdn* or %
Age (years)	30.8(4.9)	Range 30 to 34[a]
Marital Status		
Single	1.3%	31%[b]
Married	88.7%	50%[b]
Divorced	0.6%	9%[b]
Household income (≥$100,000)	52%	*Mdn* $77,923[b]
Education level		
High School	9.4%	27%[b]
College or Technical School	25.2%	31%[b]
University Degree or higher	64.8%	23%[b]

Note. [a]From *Alberta Reproductive Health: Pregnancies & Births, Surveillance Report 2009* by Government of Alberta, 2009, Edmonton, AB: Government of Alberta. Copyright 2009 by Government of Alberta. [b]From *2006 Census: Community Profiles: Calgary* by Statistics Canada, 2006

Procedure

The Baby and You Program- The Intervention

The Baby and You program was developed by administrators to provide population-based, preventative health care interventions for mothers of infants (Bullick, 2005). It was designed to meet parenting knowledge and social support needs for mothers of infants between 2 and 9 months old. During 2006, this program was offered 114 times in the year to approximately 1,166 self-registered mothers. Baby and You is offered in a group setting, which provides opportunities for mothers to discuss relevant mother and infant topics, access evidenced-based knowledge, learn of potential informal and formal social support resources, and interact with other mothers with infants. These program details are outlined as influential components in designing effective parenting programs (Berlin, O'Neal, & Brooks-Gunn, 1998; McIntosh & Shute, 2006).

Baby and You parenting educators facilitate 2-hour sessions once per week over a period of 4 weeks. Sessions are designed around the following topics: community resources, child development, child health, positive mother parenting practices, social supports, and environmental factors that influence family health, and quality child care. Baby and You parenting educators follow adult learning principles. These principles include: involving participants in planning and implementing the learning experience, providing a climate that encourages and supports learning, recognizing that adults are self-directed, realizing learning draws on learner`s experiences and knowledge, helping adults seek content that is meaningful to them and relevant to their current experiences, enhancing the learning experience through adult participate in the process, and encouraging participants to share ideas, experiences, and resources to maximize group process (Caffarella, 2002; Calgary Health, 2007; Knowles et al., 2005). See Appendix C for Baby and You curriculum for facilitator session guidelines.

A typical Baby and You group size is 10 to 13 mothers and babies. Depending on the site, mothers and infants may sit on mats on the floor, or mothers may sit on chairs and infants on mats, in car seats, or strollers. Opportunities for informal socialization are not structured specifically in the curriculum. Yet interactions among mothers are typical during the sessions, and mothers are encouraged to stay in contact with others in the group following the session. Each session is offered with participant interaction as an important component of sessions. Transactions in a trusting and respectful manner between Baby and You facilitators and mothers, both individually and in a group, are typical, and group process is a part of facilitator training (Calgary Health Region, 2007). Thus, Baby and You sessions are opportunities for formal and informal social support to occur through interactions and transactions.

The Community Parenting Program Evaluation Project (CPPEP)-Original Research Study

Baby and You was one of four programs evaluated in the larger Community Parenting Program Evaluation Project (CPPEP). CPPEP was designed to test the feasibility of using common outcome measures in community parenting programs to increase program evaluation capacity in the community. CPPEP was a collaborative partnership involving parents, parenting program leaders, and researchers who shared a common desire to understand whether parenting programs can improve outcomes. The partnership involved the Parenting Action Group of Calgary Children's Initiative of the United Way of Calgary and Area, 3 Cheers for the Early Years, and Alberta Children's Services. Through focus groups, consensus was achieved on common high-level, indicators believed to reflect the impact of most community-based parenting programs for parents of young children. These indicators were: parenting knowledge, formal and informal social support, parenting morale, and satisfaction in the parenting role. Once indicators were identified, measures were selected. Selection of measures for CPPEP was based on the following criteria: limited respondent burden, positive language tone and reading level, and ease of administration and scoring. The Family Support Scale (FSS; Dunst, Jenkins, & Trivette, 1984) was selected as the measure of social support because unlike the Family Resource Scale (Dunst & Leet, 1987), the FSS captured both formal and informal social support. No measure of parenting knowledge that aligned with the Baby and You program goals was found in the literature. Thus, an existing measure parenting knowledge was adapted to reflect the Baby and You program goals and curriculum in the larger CPPEP study.

Measures

Parenting Knowledge Scale (PKS). The Parenting Knowledge Scale (PKS) is a 7-item self-report, scale designed by Baby and You program managers through an adaptation of the Parent Expectations Survey (Reece, 1992). Respondents were asked to rate items on a 5-point

Likert scale ranging from 1 (*a little*) to 5 (*a lot*). The seven items are: when baby is ready for solids, pace and process of infant development for the first year, when to seek medical attention for the infant, how parenting style influences child development, postnatal sexuality and change in intimacy, resources and programs for new parents, and understanding and coping with infant's crying. The scale is scored by summing the items; higher scores indicated greater levels of parenting knowledge (see Appendix D: Part C; and Appendix E: Part C).

For this study, Cronbach's alpha was .83. A Cronbach's alpha of .80 is acceptable for a mature scale (Kazdin, 2003).

Family Support Scale (FSS). The FSS (Dunst et al., 1984) is a 20-item self-report questionnaire designed to measure social support on two subscales: formal support and informal support. Respondents are asked to rate social support on a 5-point Likert scale range from 1 (*not helpful*) to 5 (e*xtremely helpful*). Each item includes an option to respond *not available.* Two open-ended items are included for participant-initiated identification of other social supports not listed on the questionnaire. Only four participants provided responses to open-ended items in the original study. The FSS is scored by summing items on each subscale: higher scores indicated greater social support (see Appendix D: Part A; and Appendix E: Part A).

Dunst et al. (1988) reported a Cronbach's alpha of .77 in a study of 139 parents of preschool mentally and developmentally challenged children. This is less than acceptable internal consistency reliability for a mature scale (Kazdin, 2003). Dunst et al. (1988) reported that the FSS total scale score was consistently found to be a potent mediator of personal well-being, family integrity, and parent-child outcomes ($r = .40$, $p < .001$). Cronbach's alpha could not be calculated for the Baby and You sample because there was zero variability on item 14 '*My*

family or child's physician'. That is, all mothers reported that their family or child's physician was an extremely helpful source of social support.

Demographic information. Demographic information was collected through a study designed questionnaire to describe participant characteristics and identify potential covariates for inferential statistics. Demographic information collected included: maternal age, marital status, number of children residing in the household, household income, maternal education level, and maternal main activity (see Appendix D: Part E).

Data Collection

Data were collected at all Baby and You program sites between March 1, 2008 to July 31, 2008. Prior to the first session, a cover letter, consent form, and numbered questionnaire were mailed to each mother registered in Baby and You through the Baby and You registration office. If the mother was interested in participating in the study, the cover letter instructed her to read the consent, complete the questionnaire, and bring it to the first session. Consents were signed and witnessed at the Baby and You program site. Additional numbered questionnaires were available at the first session for mothers who did not receive the mail out, did not bring it, or lost it. Completed numbered questionnaires and consents were gathered by a research assistant and Master of Nursing student (SH) during the first 10 minutes of the first session as the group was settling in. Names and corresponding numbers were recorded in a separate linking database and stored in a sealed envelope until the fourth session. Post-test questionnaires with the corresponding research identification number were distributed to participants by a research assistant and Master of Nursing student, according to the record-linking database at the end of the fourth session. Completed post-test numbered questionnaires were collected by the research assistant and Master of Nursing student and transported to the university in a sealed and signed

envelope. Post-test questionnaires with the corresponding research identification number and a self-addressed stamped envelope were mailed out by the research assistant and Master of Nursing student to participants who met the inclusion criteria, but did not attend the fourth session. The record-linking database was destroyed immediately following the fourth session so that participant confidentially was strictly upheld.

Ethical Considerations

CPPEP received ethical approval from the Conjoint Health Research Ethics Board in February 2008 (see Appendix F). A research assistant or Master of Nursing student explained the study at the first session. All mothers had opportunity to read the consent form and have questions answered prior to signing (see Appendix G). Participation in the study was voluntary. Mothers who declined to participate continued to receive the parenting education provided in the Baby and You program. There were no penalties for non-participation. Potential benefits included knowing that participation might improve parenting programs for other parents. No potential risks of participating in the study were identified. Confidentiality was maintained through the use of research identification numbers on questionnaires. Pre-test and post-test questionnaires were linked using participants' names. The linking database was destroyed once all pre-test and post-test questionnaires were matched. Collected questionnaires were sealed in an envelope with the research assistant's or Master of Nursing student`s signature over the seal. Hard copies of questionnaires were transported to the university by the research assistant or Master of Nursing student and stored in a locked filing cabinet in a locked office in the University of Calgary, Nursing Research Office (PF2250B). Data were coded, entered, and cleaned by Master of Nursing student and research assistants for the study. Electronic data files were stored on a password protected computer with timed lockout. Paper and electronic copies of

the data will be shredded after 7 years. Mothers who indicated they would like to receive a copy of the results of the study supplied their contact information separately from the research numbered questionnaires and received a copy of results once the study was completed in 2008.

Data Analysis

The data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 17.0.2. Prior to analysis, data were examined for assumptions of parametric statistical test scales. Cases with missing values for 10% or more of the items on a scale were excluded from the study. Four cases were excluded due to missing values. Imputation of missing values was conducted through mean substitution. Descriptive statistics (means, standard deviations, frequencies, and percentages) for demographic characteristics and scale scores were computed. Pearson's product-moment correlation coefficients were calculated to determine the relationship between demographic variables and scale scores. Dependent *t*-tests were used to determine differences in parenting knowledge scores, formal social support, and informal social support based on the following rationale: (a) single group pre-test post-test design, (b) one independent variable examined for three dependent outcomes, (c) parametric assumptions met, and (d) no statistically significant correlations between demographic variables and dependent variables. Ninety-five percent confidence intervals were calculated for each of the three outcomes. Effect size and power calculations were computed. See Appendix H for data analysis strategy.

Chapter Four: Results

Descriptive Analysis

Pearson's *r* product-moment correlation coefficients between dependent variables and demographics are presented in Table 4. There were no statistically significant relationships between participant demographic characteristics and dependent variables (parenting knowledge, formal social support, and informal social support). Therefore, there was no need to control for any demographic characteristics in the analyses. Parenting knowledge was positively correlated to informal social support and to formal social support. Informal social support was positively correlated with formal social support. Means and standard deviations for dependent variables are shown in Table 5.

Statistical Analysis

Compared to pre-test parenting knowledge scores (M = 22.52, SD = 4.95), post-test parenting knowledge scores were significantly increased (M = 27.99, SD = 3.51), t (158) = 13.57, p = .001 (two-tailed), d = 1.08. Compared to pre-test formal social support scores (M = 7.97, SD = 4.38), post-test formal social support scores were significantly increased (M = 10.14, SD = 5.51), t (158) = 5.94, p = .001 (two-tailed), d = .47. Compared to pre-test informal social support scores (M = 23.56, SD = 7.81), post-test informal social support scores were significantly decreased (M = 22.56, SD = 7.63), t (158) = -2.41, p = .02 (two-tailed), d = .19. See Table 5.

Table 4

Pearson's r Product-Moment Correlation Coefficients Between Demographic Information and Pre-test Scores for Parenting Knowledge, Informal Social Support, and Formal Social Support

Variables	2	3	4	5	6	7	8	9
1. Parenting Knowledge	.33***	.19*	-.11	-.14	-.05	-.04	-.10	.10
2. Informal Social Support	—	.21**	.04	-.13	.05	.23	.02	.14
3. Formal Social Support		—	-.11	-.11	-.07	.04	.04	.12
4. Age			—	-.07	.22**	.31***	.39***	-.03
5. Marital Status				—	.27**	.00	-.20*	-.09
6. Number of children					—	-.02	-.03	.02
7. Household income						—	.13	.08
8. Education level							—	-.07
9. Main activity								—

Note. *$p < .05$. **$p < .01$. ***$p < .001$.

Table 5

Means, Standard Deviations, and Dependent t-Tests for Scores on Parenting Knowledge, Formal Social Support, and Informal Social Support (N = 159)

Variable	Pre-test *M*(*SD*)	Post-test *M*(*SD*)	*p*	95% CI
Parenting Knowledge	22.52(4.95)	27.99(3.51)	.001	4.7, 6.3
Formal Social Support	7.97(4.38)	10.14(5.51)	.001	1.45, 2.9
Informal Social Support	23.56(7.81)	22.56(7.63)	.02	1.8, 0.18

Confidence Intervals

Confidence intervals (interval estimates) for all dependent measures indicate that in 95% of samples, the mean difference between pre-test and post-test scores do not include zero. For example, the mean difference for the parenting knowledge score (observed point estimate) for this sample was 5.47, which falls within the 95% confidence interval of 4.7 and 6.3 estimated for the population. These results support the inferential statistics and provide additional evidence that the scores between pre-test and post-test are statistically significant. Confidence intervals are presented in Table 5.

Effect Size Calculations

Calculation of effect size (*d*) is based on "the difference between two population means divided by the population standard deviation" (Polit & Beck, 2008, p. 603). The effect sizes for parenting knowledge and formal social support are medium to large according to Cohen's (1969) standards (see Tables 6 and 7); the effect size informal social support is small (see Table 8).

Power Calculations

A power calculation was conducted to determine whether the sample (*N* = 159) provided sufficient power given the effect sizes calculated for this study. This was because this study

employed a secondary analysis of data that were collected for a different purpose and the sample size was predetermined. Thus, a power calculation was appropriate.

Using $\propto$ = .05,two-tailed tests, and effect sizes calculated for this study, power according to Brant (n.d.), was adequate ($\geq$ .80) for pre-test and post-test dependent comparisons for parenting knowledge and formal social support (see Tables 6 and 7). There was inadequate power for the pre-test and post-test dependent comparison for informal social support (see Table 8).

Table 6

Calculated Effect Size, Calculated Power, and Sample Sizes for Parenting Knowledge

Mean Difference (SD_{pooled})	*d*	Calculated Power	Actual Sample Size	Required Sample Size
5.47(5.09)	1.08	1.00	159	7

Table 7

Calculated Effect Size, Calculated Power, and Sample Sizes for Formal Social Support

Mean Difference (SD_{pooled})	*d*	Calculated Power	Actual Sample Size	Required Sample Size
2.18(4.62)	.47	1.00	159	83

Table 8

Calculated Effect Size, Calculated Power, and Sample Sizes for Informal Social Support

Mean Difference (SD_{pooled})	*d*	Calculated Power	Actual Sample Size	Required Sample Size
1.0(5.29)	.19	.67	159	216

Chapter Five: Discussion

Overview

This study contributes to nursing knowledge by providing results to suggest that a brief parenting education program for mothers of infants has a positive effect on parenting knowledge and formal social support. Unexpectedly, these results demonstrated a decrease in informal social support. These findings for each dependent variable are discussed in more detail within King's concepts of interactions, transactions, roles, stress, communication, and perception interwoven into the discussion.

Parenting Knowledge

The major finding of this study is positive change in mothers' reported perception of parenting knowledge following the Baby and You program. That is, mothers reported greater parenting knowledge at the end of the brief parenting education program. There was evidence of increased homogeneity in knowledge of participants following the Baby and You program, as shown by the decreased variability in knowledge scores at the end of the program. Adequate power, a large effect size, and 95% CI which did not include a zero value, suggest that the Baby and You program has an effect on maternal reported perception of parenting knowledge statistically, yet clinical implications are unknown. The results from this study provide suggest positive parenting knowledge outcomes following Baby and You program.

Parenting knowledge has been recognized as an important factor in helping mothers transition to parenthood (Jarrett et al., 2000; Nelson, 2003) Mothers seek information in their process of determining a personal sense of identity following the birth of an infant (Mercer, 2004). Multiple factors are associated in assisting mothers during the transition to motherhood of which transactions and perceptions are two important concepts in this process (King, 1981;

Moore, 2004). The perceptions made through transactions and the processing of information at the personal system level, impact personal self-identity and behaviour (King, 1981). Policy makers and stakeholders are aware of the key contribution of mothers to the family (Conway & Kutinova, 2006) and recognize parenting education as an intervention to create positive impacts on mothers' parenting knowledge (Frankish, Moulton, Quantz, Carson, Casebeer, Eyles, Labonte, & Evoy, 2007). This study suggests additional positive findings for supporting the existence of parenting education programs for mothers of infants.

The positive difference in knowledge scores and the decreased variability in scores suggest increased knowledge levels for this target group of mothers. However, no conclusion about which specific aspects of the Baby and You program effect this positive change can be made. Further research of mothers` personal perceptions, needs, and program components would serve to influence program design and implementation. This coupled with ongoing evaluation of outcomes, such as parenting knowledge, would serve to strengthen the argument to fund the provision parenting education programs for mothers of infants (Raikes & Love, 2002).

Formal Social Support

In this study, mothers reported that their perceptions of formal social support increased over the duration of the Baby and You program. These findings support that formal social support was positively impacted after the brief parenting program, but clinical significance is unknown.

Results of positive changes in this study are in-line with previous results that formal social supports are identified as helpful by mothers of infants (May & Hu, 2000; Sink, 2009; Wandersman et al., 1980). Lack of variability reported by Baby and You participants regarding their physicians as important sources of formal social support is in-line with other authors who

reported that physicians were important sources of formal social support (McKellar et al., 2006; Pridham, Chang, & Chiu, 1994). Besides being considered a typical source of social support, formal social support transactions have little expectation of reciprocity and as such, may be considered easily accessible for mothers of infants (Shumaker & Brownell, 1984). This study provides a first step in exploring parenting education as an intervention directed toward positive formal social support outcomes.

Although positive change in scores was found, the change did not indicate which components of the Baby and You program contributed to this change. From King`s (1981) theory, it is acknowledged that concepts beyond the focus of this study were likely influential in contributing to mothers' identification of helpful resources in the transitional period of adjustment from pregnancy to motherhood. The concepts of interactions, transactions, communication, role and stress in interpersonal systems are suspected as relevant, but relationships and measures of these concepts are unknown. Dunst et al. (1988) stated that it is incorrect to assume that a single intervention accounts for a major percentage of variance in social systems. Similarly, Humenick (2000) recommended that researcher interpretation of outcomes from educational interventions require recognition of multiple influences, such as transactions, communication, and perceptions. Further research regarding formal social support details such as mothers perceptions of availability, accessibility, awareness of resources, and evaluation of helpfulness would complement Baby and You findings (Haber, Cohen, Lucas, & Baltes, 2007). Further research to understand effective parenting program design to enhance formal social support for mothers of infants is also necessary (Walker & Wilging, 2000).

Informal Social Support

Mothers reported decreased informal social support over the duration of the Baby and You program. This finding was unexpected given that in another study mothers attended parenting education with the primary purpose of expanding informal social networks (Fabian et al., 2005). Speculation regarding the decrease in mothers' informal social supports during the 4-week period of the program is provided here.

Historically it is noted that social support theory and measurement are ambiguous and based on non-standardized definitions (Nuckols, Cassel, & Kaplan, 1972). This lack of cohesiveness has led to great diversity in approaches to identify and measure both formal and informal social support (Barrera, 1986). Shumaker and Brownell (1984) explicated that social support has both short-term and long-term dimensions, which are often neglected by researchers and professionals. It is also suggested that informal social support, that is support from friends, family, and social contexts, is less often recognized as a resource to mobilize during family crisis (Dunst et al., 1988). In communities today, many families live far from relatives and social networks, thereby limiting the perceived and received helpfulness of the informal social support network (Salonen et al., 2008). It is interesting to note that social isolation and decreases in informal support during early twentieth-century societal industrial and technical changes captured the attention of social researchers and led to an awareness of potential negative health implications resulting from lack of informal social supports (Brownell & Shumaker, 1984; Callaghan & Morrissey, 1993). Further research is necessary to consider the existence and impact of contextual factors, such as availability, of informal social support for participants in this study and the impact of findings on maternal health.

It is recognized that identification of helpfulness of available informal social support occurs when individuals' personal system needs are matched (Lakey, McCabe, Fisicaro, &

Drew, 1996; King, 1981; Meadows, 2009). In fact, informal social supports have potential to have both positive and negative influences as perceived helpfulness may depend on the perception of the participants (King, 1981; Raikes & Thompson, 2005; Stewart, 1993). How individual mothers perceive the label "helpfulness" may have had an impact on their responses to informal social support items on the FSS (Dunst et al., 1984). Further, Barrera (1986) stated it is important to distinguish between the active act of help seeking by the participant and help giving by others without assertive actions by the receiver (as an act of receiving help). Received and perceived help are not considered in the FSS and may have implications to responses (Haber et al., 2007).

For mothers, the birth of an infant involves significant social role adjustments to social interactions (McKellar et al., 2006; Mercer, 1981; Warren, 2005). Transition to parenthood may cause a disruption in those social supports which were helpful prior to birth. Establishing new informal social support resources, or new ways of interacting with current informal social supports, may be a requirement during transition to parenthood (Harrison et al., 1995). This process may take time and effort, both of which may be challenged during the adjustment to parenting. The role adjustment experience of mothers in this study is an unknown factor.

In addition, King describes interactions as being reciprocal. The postpartum period is identified as a time of when the expectation of reciprocity within informal social supports cannot easily be met by the mother (Harrison et al., 1995; May & Hu, 2000; Shumaker & Brownell, 1984). Nelson's (2003) results from an exploratory study confirm changes in social support systems from the 38th week of pregnancy to four months postpartum. Baby and You results of negative change during the postpartum period may be reflective of the transitional process where postpartum mothers are adjusting to new sources of informal social supports within the

constraints of their personal physical and emotional boundaries. Fabian et al. (2005) noticed this trend where 39% of first time mothers (n = 1055) at 2 months post parenting education class met with other class participants, whereas at 9 months post parenting education class 58% of participants (n = 989) met. It is speculated that more time is required to establish informal social support interactions. Further research to measure informal social support several months after the conclusion of the education program is needed.

The unexpected research study findings for informal social support has initiated questions concerning maternal definitions, perceived and received support, and timing issues for mothers transitioning to parenthood. Continued exploration of the rich and dynamic field of effective parenting education is spurred on by this unexpected research study findings of informal social support.

Relationship Between Knowledge and Social Support

As King has noted, personal and interpersonal systems are distinctly identified, yet exist in dynamic and complex relationship with each other. This is supported through Baby and You findings of statistically significant relationships between parenting knowledge, formal social support, and informal social support. The findings of relationships between parenting knowledge, formal social support, and informal social support are linked to other research findings conducted in parenting education settings (El-Mohandes et al., 2003; Jarrett et al., 2000). Mothers' have previously indicated that informal social supports provide important sources of parenting knowledge (McKellar et al., 2006; Warren, 2005). Both formal social supports and informal support are provided by group settings (Haggman-Laitila & Pietila, 2007; Raikes & Love, 2002). These outcomes are in relationship with each other within a parenting education setting where information is often the social support sought by mothers through interactions with other mothers

and the education facilitator. Formal social support and informal social support were resources mothers used for help in the transition to parenting (Sink, 2009). Further research of details regarding the connection of parenting knowledge to formal and informal social supports from the Baby and You program would be interesting.

Limitations

This study is based on secondary analysis of data from CPPEP. Thus, the current study was limited by the scope of variables collected for CPPEP. In future research, measurement of self-efficacy, behaviours associated with attaining knowledge, postpartum depression, ease of transition to parenting, and parenting sense of competence may be useful outcomes to consider.

The single group pre-test and post-test design creates study limitations related to internal validity (Polit & Beck, 2008). Pre-test and post-test designs make it difficult to account for factors other than the intervention that may be responsible for the difference in scores. Historical factors such as the economic downturn in 2008, or maturational factors, such as the passage of 4-weeks when maternal needs and infant growth and development needs progress quickly, were not controlled for. Testing effect through exposure of participants to the contents of the instrument prior to participating in the Baby and You program may have influenced participant awareness to outcomes being measured and may not reflect true differences. Hawthorne effect may influence participants' behaviour during class as they realize they are participating in research (Polit & Beck, 2008). A comparison group controls for many threats to internal validity and would have enhanced the rigour of the design and confidence in the results.

Caution is required in generalizing the results of the study to other samples based on convenience sampling, homogeneity of the participants, high income status, and high level of education. In addition, these results provide evidence of the effects of the Baby and You program

as currently delivered on parenting knowledge and social support scores. Intervention fidelity, or the degree to which programs are implemented as intended by program designers (Dusenbury, Brannigan, Falco, & Hansen, 2003), was assumed and not directly assessed. Evaluation of intervention fidelity may contribute to increased confidence in attributing outcomes to intervention (Dane & Schneider, 1998). The results of this study do not point to specific programming components (i.e., structure or process of the program) that contributed to these effects.

Participants completed the pre-test questionnaire at the beginning of a class they were attending for the first time and the post-test questionnaire when they were completing the final class. During both of these times, mothers had the responsibility of caring for their infant, and social responsibilities of engaging in group process. Respondent burden associated with these factors on validity of the data is unknown. This study does not investigate long-term impact of the difference the Baby and You program makes for mothers' parenting knowledge, formal social support, or informal social support.

Secondary analysis is based on the conceptual match between the research question and the data set, and recognition that important variables (such as participation in prenatal class prior to participation in the Baby and You program, response rate, and infant age) were unavailable for this study. Secondary analysis relies on the participant inclusion and exclusion criteria of the original study. Secondary analysis also relies on the instruments chosen in the original study and limits examination of potentially important outcome variables that might be emerging in the current literature.

The outcome measure for parenting knowledge was based on a scale with limited testing of reliability and validity. The outcome measure for formal and informal social support, Family

Support Scale (FSS), was based on the family work of Dunst et al. (1984), also with inadequate internal consistency reliability. The FSS was not intended as a pre-test and post-test measure of the difference of scores surrounding a brief parenting education program for mothers with infants between 2 and 9 months old. Language used on the items is reflective of the time period (1980s) the instrument was developed and may be outdated for the present sample. Directions for completing open-ended items were unclear and few mothers completed them. There were no items on the FSS that identified the Baby and You program, public health nurses, media technology, or nurse-staffed telephone resource line for young families as sources of social support.

Calculation of Cronbach's alpha for the FSS was not possible because all mothers reported the use of the family or infant's physician as a source of formal social support. Thus, there was no variability in this item and Cronbach's alpha could not be calculated.

Significance for Advanced Nursing Practice

The Canadian Nurses Association (CNA; 2002) stated purpose of advanced nursing practice (ANP) is to "... improve the access of Canadians to effective, integrated and coordinated health care and contribute to nursing knowledge and the development and advancement of the profession" (p. 1). King (1981) summarized nursing as a process where nurses engage in various transactions to promote health goal attainment for individuals, groups, and communities. The results from this study suggest that mothers' perceived parenting knowledge and helpfulness of formal social support are amenable to change following a brief parenting education program. As these outcomes are linked to maternal health, parenting education programs for mothers is an important area for ANP among mothers of infants (Nichols & Humenick, 1988). King's (1981)

theory for nursing is used as the framework to understand the implications of the results of this study for advanced nursing practice.

Parenting Education

Baby and You is a brief parenting education program health care intervention targeted towards health promotion for mothers of infants between 2 and 9 months old. Health is understood as the dynamic life experiences of the individual who is continually adjusting to the internal and external environmental stressors through utilization of resources in order to maximize potential for daily living (King, 1981). Parenting education of postpartum mothers requires ANP to be aware of complex personal, interpersonal, and social factors women face during the demands of this stage of growth and development. As King (1981) proposed, the major factor involved in health goal attainment is transactions, where individuals come together to help and to be helped to maintain a state of health. For ANP, these transactions may occur in the roles of parenting program facilitator, planner, or evaluator. All of these roles are influential in promoting the health of postpartum mothers through the preventative health care intervention, parenting education programs.

Transactions

The advanced nurse practitioner potentially has three role functions within the transactions involved in mother parenting education. These potential functions are education facilitator, parenting education program planner, and mother parenting education program evaluator, none of which exist without collaboration. That is, they exist in transactions with others (Figure 2). It is interesting that these functions parallel constructs of King's (1981) conceptual framework. These role functions are components of the personal system (in

facilitation transactions with mothers), the interpersonal system (in planning education that is

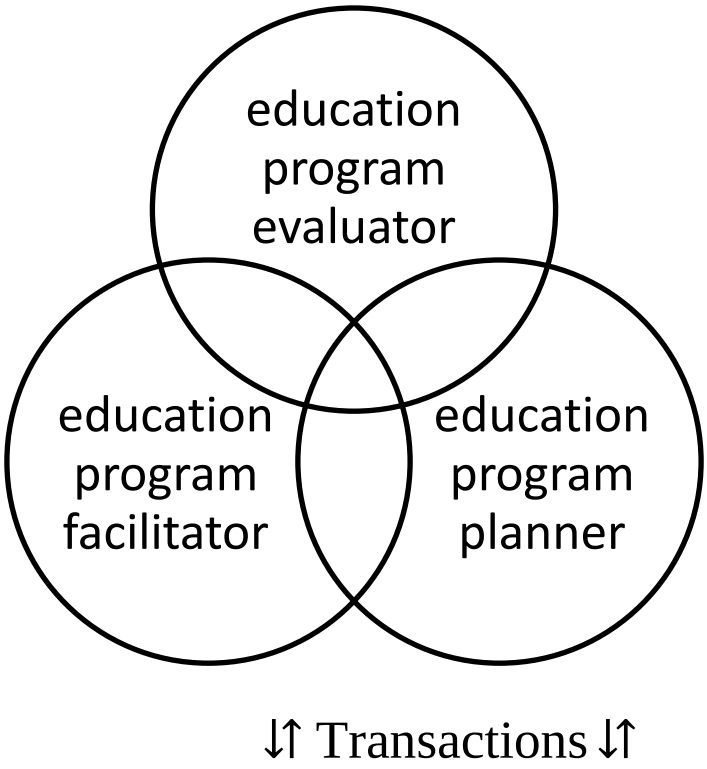

Figure 2. I. King (1981) conceptual framework for nursing transposed for advanced nursing practice roles within mother parenting education.

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valuable for transactions with multiple mothers), and the social system (in evaluating the effects of educational transactions). This framework helps to understand the advanced nurse practitioners' dynamic scope of practice within mother parenting education.

It is within transactions that the work of advanced nursing practice occurs. Advanced nursing practice is a cyclic process that requires ongoing transactions with mothers, parenting education program professionals, and parenting education program stakeholders. Assessment of holistic needs of postpartum mothers, planning parenting education programs as preventative health care interventions, implementation of parenting education programs, documentation of parenting education programs effects, and evaluation of mother parenting education programs are the domains of the advanced nurse practicing within parenting education. The positive finding from the Baby and You study suggest foundational first step results that transactions of ANP in parenting education practice health of mothers have an effect, but do not provide specific directives. A need exists for the advanced nurse practitioner to pursue the offering of such programs in attempts to promote maternal and infant health outcomes.

Education program facilitator. Facilitation of mother parenting education places ANP in direct contact with mothers. It is within these transactions that the advanced nurse has the opportunity to create caring environments for learning, to present mother parenting information in a manner that is received by mothers, and to assess mothers. Direct contact with mothers allows ANP to assess mothers' personal system concepts such as self-identity, growth and development, body image, time, space, and perception. King (1981) validated personal transactions as nurses' methods to assess individuals' knowledge level, listen to individuals' perception of their health, learn about how they feel about their health, and learn how they act to maintain health.

The ANP involved in direct transactions with mothers has the opportunity to develop a richness and depth of nursing practice through synthesis of practice and theory. Transactions with postpartum mothers are thus influenced through both experience and research. The results

from this research have suggested that the process of parenting education is important, but do not give directives for what components are influential in directing these transactions. Although these assumptions of program process have been made, substantive assessment, documentation, and evaluation would influence program planning of effective mother education programs that may meet current needs of mothers at reduced costs. These results are foundational to pointing to the need for building goal oriented transactions between parenting education facilitators and mothers with infants in efforts to promote health outcomes.

Education program planner. Parenting program planning consists of collaborative efforts to target the assessed needs of mothers with infants. The advanced nurse practicing in a collaborative setting has the opportunity to communicate nursing knowledge regarding population assessment, identification of needs, goals, program planning directives, suggestions for action, and evaluations of response to parenting education interventions. Communication is an integral component of transactions (King, 1981). The ANP is in a unique position to communicate this information in transactions with both postpartum mothers and Baby and You education professionals. The results of this study are intended to stimulate collaborative communication to effectively plan parenting education programs which bridge the gap between maternal experience and research results. The ANP applies these results within her role of education program planner.

Education program evaluator. Evaluation of the education program is fundamental to providing evidence that program provision matters. Nursing knowledge of research evaluation process, structure, and outcomes is imperative for the advanced nurse (CNA, 2002). The evaluation process requires ongoing efforts. The ANP works in collaboration with mothers, program professionals, and program stakeholders to provide nursing knowledge of parenting

education outcomes. The Baby and You study required collaboration of program administrative staff, program managers, program facilitators, researchers, and research support staff to evaluate the effects on outcomes. Recognition of the perception of all collaborative members is important to the dissemination of research results (Aaronson, 1991; Heath & Palm, 2006; Weiss & Jacobs, 1988). For the ANP a challenge exists to represent the perception of all collaborative members to determine the significance of evaluation results and the necessary clinical applications. The implication of the concept of perceptions is further explicated here as it is a fundamental concept to ANP (King, 1981) and to this study of mothers of infants.

Perceptions

Mothers are the client of care in the advanced nurse practice involving early mother parenting education. As such, the perception of the mother is central to practice. This study has revealed positive maternal perception of an increased level of parent knowledge and an increased perception of helpfulness of formal social support resources after participation in the Baby and you program. To generate a clearer understanding of the negative perception of informal social support the following concepts require further examination: (a) mothers' definition of informal social support and helpfulness; (b) variables involved in effecting asking for help and receiving help; (c) current language surrounding description of informal social support resources; (d) descriptive of informal social support; and (e) factors effecting access to informal social support resources. A greater understanding of mothers' perceptions may result in more effective parenting education programs, and warrants investment in further research efforts.

ANP Role Engagement

The advanced nurse practicing in parenting education has opportunities to engage in different roles with the common purpose of bettering health outcomes for mothers. These roles

are education program facilitator, education program evaluator, and education program planner. The importance of personal health goal attainment through community parenting education interventions is acknowledge federally through Canadian policy makers' recognition of social determinants (Frankish et al., 2007).Awareness of the dynamic and complex perceptions and transactions of mothers, advanced nurse practitioners, parenting education professionals, and stakeholders are keys to providing effective education programs. The advanced nurse practicing in parenting education is stimulated to use research findings such as those from this study to engage in practice that makes a difference to mothers of infants.

Conclusions

Mothers of infants are challenged to become knowledgeable and enabled individuals in caring for themselves and their infants (Wandersman et al., 1980; Weible, 1998). While most parenting programs collect information regarding satisfaction with the program, few provide results about outcomes for mothers. These results suggest that mothers' perceptions of parenting knowledge and formal social support increased following participation in Baby and You. The results from this study provide parenting educators, ANP, and stakeholders with information that suggests the Baby and You program has a positive effect on parenting knowledge and formal social support. The unexpected decrease in informal social support may be related to instrument limitations, characteristics of the participants, or timing of measurement. That is, helpfulness of informal social support may not be evident until long after the conclusion of the parenting education program when the groups of mothers of infants have solidified interactions in their informal network. Future research is required to better understand the unexpected decrease in perceptions of informal social support following participation in the program among mothers of infants 2 to 9 months of age.

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Appendix A

Baby and You Program Logic Model

Baby and You Program Logic Model

Outcome statements		
Short-term	Mid-term	Long-term
New parents access evidence-based, current early parenting New fathers access a father-only early parenting class Participants have increased knowledge in target areas: -community resources -child development -child health -positive parenting practices -social/environmental factors that influence family health -importance of quality child care Participants have increased skill in target areas: -access community resources -use developmentally appropriate parenting practices -develop or use social support network -use positive parenting practices -improve family functioning -create a positive family environment	Children's health is enhanced through parents knowledge and skills. Participants choose quality child care for their children Participants access community resources Participants continue with peer support groups	Participants value: - parenting resources - child's perspective/ experience (i.e., empathy for the child) -range of individual differences in children (behavioural/physical) - impact of positive parenting practices on child development - help seeking behaviour for parenting issues - effect of multiple environmental factors on family health - parenting and the parenting role - quality child care for their children

Appendix B

Baby and You Satisfaction Survey

calgary health region

Perinatal Education Program

BABY AND YOU FOR MOMS
Class Evaluation

Location: ☐☐☐☐☐☐☐☐☐☐

Date: D D / M M / Y Y Y Y ☐☐/☐☐/☐☐☐☐ Educator's Name: ☐☐☐☐☐☐☐☐☐☐☐☐

Are you a Best Beginning Client? ○ Yes ○ No How many MONTHS old is your baby today? ☐☐

How did you hear about this Baby and You Program? *(Please check all that apply)*

○ In From Here Through Maternity ○ At a prenatal class ○ From Public Health Nurse
○ At Your Library Magazine ○ Library Website ○ Library poster or flyer
○ Community Newsletter ○ Other: _____

Why did you attend Baby and You?

A) To learn about feeding my baby (breastfeeding to solids)	○ Yes	○ No
B) To discuss the adjustments parenthood has brought to my life	○ Yes	○ No
C) To learn about my baby's growth and meeting those needs	○ Yes	○ No
D) To learn about handling infant illness and sleep problems	○ Yes	○ No
E) To learn about my baby's oral health	○ Yes	○ No
F) To learn about safety concerns	○ Yes	○ No
G) To discuss relationships and emotions of postpartum changes	○ Yes	○ No
H) To meet other new mothers in my area	○ Yes	○ No
I) To share experiences and concerns with other new mothers	○ Yes	○ No

J) Other; (please list) _____

K) What content did you find the MOST helpful/useful as a new mother?

_____

_____

L) What content did you find the LEAST helpful/useful as a new mother?

_____

_____

Please rate your confidence from 1 (low) to 6 (high):

Please rate your confidence as a new mom:	Low 1	2	3	4	5	High 6
A) BEFORE you started your classes?	○	○	○	○	○	○
B) AFTER you finished your classes?	○	○	○	○	○	○

Please rate each of the following from 1 (poor) to 6 (excellent):

	Poor 1	2	3	4	5	Excellent 6
A) The educator spoke in a clear voice and was easy to understand	○	○	○	○	○	○
B) The educator allowed time for discussion and encouraged questions	○	○	○	○	○	○
C) The educator made me feel comfortable enough to ask questions	○	○	○	○	○	○
D) The educator seemed enthusiastic, interested, and concerned	○	○	○	○	○	○
E) Posters, models, and videos were easy to see and helped me learn	○	○	○	○	○	○
F) Handouts were informative and useful	○	○	○	○	○	○
G) I feel that I was satsified with the classes	○	○	○	○	○	○

Appendix C

Baby and You Curriculum

Baby and You Curriculum[1]

Baby and You – Session 1

Time	Learning Experience	Unit	Key Content	Resources
1230	Arrange chairs in semicircle. Put out handouts. Final check of equipment and materials. Put up agenda.			Handouts TV & VCR/DVD Overhead Flipchart or Whiteboard
1245	Welcome participants as they come in. Direct to name tags			Name tags
120 (30 minutes)	ADJUSTING TO PARENTHOOD Discussion about experiences and feelings as a parent using Activity 3	A	Becoming a parent is a life transition and one can draw on the strengths developed during other transitional experiences. Becoming a parent entails major changes and the end of a certain way of life. It is normal to have grieving for the 'old self'. Individuals vary in their coping strategies – there is no one 'right' way.	Discussion question cards
150 (15 minutes)	POSTPARTUM BLUES AND DEPRESSION Cover key points Show clip from Heartache and Hope	A	Recovering from labour and delivery is a physical and mental process. Hormonal changes and sleep deprivation can cause 'baby blues'. Parents need to know the difference between postpartum depression and baby blues.	Heartache and Hope Video
205 (25 minutes)	TAKING CARE OF YOURSELF Taking care of Yourself – Activity 5	A	New parents often find that the reality of parenting a new baby may not be in keeping with what they were expecting. Coping with the demands	Handouts TV & VCR/DVD Overhead Flipchart or Whiteboard

			of early parenting can be tiring, confusing, rewarding, challenging, and frustrating. It is normal for parents to feel this way. A tired, frustrated caregiver and a crying baby can be deadly combination leading a parent to shake a baby in a moment's frustration. NEVER SHAKE A BABY	
230 (15 minutes)	ACCESSING COMMUNITY RESOURCES Accessing Community Resources – Activity 6	A	Life with a baby can be unpredictable and challenging. All parents need support. There are many sources of support for new parents in the community.	Flip chart paper Markers Handout of community resources
245 (10 minutes)	NEEDS ASSESSMENT Circle check to find out topics of interest to participants	Course Info		
255 (5 minutes)	CLOSURE Tell us one thing you are going to do for yourself this week. Next week we are going to check-in and see how you did. In preparation for next week, ask participants to bring one of their baby's favourite toys	Course Info		

Baby and You – Session 2

Time	Learning Experience	Unit	Key Content	Resources
1230	Arrange chairs in semicircle. Put out handouts. Final check of equipment and materials. Put up agenda			Handouts TV & VCR/DVD Overhead Flipchart or Whiteboard
1245	Welcome participants as they come in. Direct to name tags			Name tags
100 (10 minutes)	CIRCLE CHECK IN Ask participants to introduce self and baby again and tell what they did for themselves this week Open p for questions/comment from last week	Course Info		Attendance List
110 (20 minutes)	INFANT DEVELOPMENT Activity 1: Youngest to Oldest Observations	D	Infants go through physical, cognitive, speech and language, emotional, and social changes. Development is sequential and predictable; however, each child will proceed at their own pace within the developmental norms. Daily tummy time is important for infants.	Developmental overheads
130 (15 minutes)	EARLY BRAIN DEVELOPMENT Activity 2: Early Brain Development	D	The 'wring' of the brain in the early years is a result of stimulation and reinforcement. There are 'windows of opportunity' for optimal brain development	Brain Quiz overhead
145 (15	ATTACHMENT	D	Attachment is the critical	Video: A Simple

minutes)	Show video – A Simple Gift: Comforting Your Baby Ask for questions/ Comments		foundation for emotional development and it is formed in the first year.	Gift
200 (15 minutes)	INTERACTING WITH BABY Activity 3: Toy Show and Tell	D	Parents can introduce simple, developmentally appropriate activities, games and toys to stimulate their infant's development. Follow baby's lead. Engage in babbling with your baby – it is the foundation of speech. Talking, reading, singing, and playing are all communication and are keys for early literacy development.	Selection of different types of toys Power of Play handouts
215 (15 minutes)	HOW BABIES COMMUNICATE: DEALING WITH A CRYING BABY Using Activity 2 from Unit J, discuss ways babies communicate with us and brainstorm ways to deal with a crying baby	D J	Babies communicate through verbal and nonverbal cues. All babies cry. Babies communicate their needs by crying. Infant crying follows a predictable pattern. It is normal for all babies to have a fussy period every day. There are many ways to calm a crying baby. Imagine what the baby is trying to communicate. Colic can be physically and emotionally draining for parents – they need help and support. NEVER SHAKE A BABY. Put the baby down in a safe place and phone for support if you feel overwhelmed by the baby's crying.	When Your Baby Can't Stop Crying Handout

230 (25 minutes)	SLEEP Small Group Discussion: What are your experiences with your baby's sleep? What have you learned about infant sleep so far? What questions do you want answered today? (10 minutes) In large group answer questions from small groups. Offer information on sleep patterns, sleep associations, and sleep plans as appropriate.	J	Infant's sleep patterns change throughout the first year and becomes more organized as the baby grows. Parents have an important role in helping their infants establish good sleep habits. If a parent chooses to use a plan to help baby sleep, it should be respectful of the needs of both the parents and the infants. No one plan fits for all parents. Putting infants to sleep on their backs on a firm, flat mattress can reduce the risk of SIDS.	Safe Sleeping for Your Baby's First Year handout Information re: The Sleep Workshop for Tired Parents
255 (5 minutes)	CLOSURE Around the circle – what's one thing you'll do this week with your baby? In preparation for next week, distribute Thinking About Parenting handout.	Course info		Thinking about Parenting handout

Baby and You – Session 3

Time	Learning Experience	Unit	Key Content	Resources
1230	Arrange chairs in semicircle. Put out handouts. Final check of equipment and materials. Put up agenda.			Handouts TV & VCR/DVD Overhead Flipchart or Whiteboard
1245	Welcome participants as they come in. Direct to name tags			Name tags
100 (10 minutes)	INTRODUCTIONS Circle introductions and response to questions: What's one thing you did this week to interact with your baby? How did you decide on your baby's name? Open for questions/ comments from last week	Course Info		Attendance List
110 (10 minutes)	BREASTFEEDING Ask what experience participants have had with breastfeeding. Address issues and concerns. Present reasons to continue to breastfeed and community supports	C	Breast milk is ideal for baby. Exclusive breastfeeding is recommended for 6 months, then addition of complementary foods, for 2 years and beyond. If a mother decides not to breastfeed, iron-fortified infant formula is the best alternative.	Breastfeeding overheads
120 (30 minutes)	INTRODUCING SOLIDS Activity 1 – Reading baby food labels	C	Babies are ready for solid foods at 6 months of age (including breast fed, formula fed and mixed fed babies). Introduce iron-rich foods	Baby Food Labels from Activity 1 Feeding Baby Solid Foods handout

			followed by a variety of vegetables and fruits, grain and milk products. Whole milk should not be introduced before 9 to 12 months of age. Progress to more textured foods and finger foods based on developmental readiness. To protect their infant's health, parents should practice food safety at home and avoid high-risk foods for infants.	
150 (5 minutes)	FEEDING RELATIONSHIP Introduce the idea of the feeding relationship – parent's role and child's role. Refer participants to handout.	C	Distinguish between the role of the parent and the role of the child while feeding (often referred to as the 'feeding relationship'). The 'when to feed' component of the feeding relationship changes over the first year from infant driven (based on hunger cues) to parent driven (once child is eating family foods).	Feeding Relationship handout
155 (20 minutes)	COMMON ILLNESSES Activity 1: Common illness scenarios Reinforce information with illness overheads as needed	E	Parents need to be able to identify the signals that their child is sick, signs and symptoms of some common illnesses, when and how to treat common illnesses at home, and when to call the doctor. Teething is normal development, it is not an illness. Discuss comfort measures.	Illness scenario cards Activity1 info sheet Demonstration kit Illness overheads
215 (10 minutes)	KEEPING CHILDREN HEALTHY Brainstorm as a group what our	E	Children are healthier when they receive nutritious food, balanced sleep and activity, a safe environment, and	

	children need to be healthy. Make a list on the flipchart.		preventive medical care. Exposure to second hand smoke is detrimental to a child's health. Exposure to toxic substances has a greater effect on children's health than adult's health	
225 (10 minutes)	Review Oral health interactive kit	F	Review causes of Early Childhood Tooth Decay and how it can be prevented through good oral health habits	
235 (25 minutes)	PARENTING Activity 1: Thinking about parenting discussion	G	Parenting is a set of learned skills that need to be geared to the developmental level of the child. Parenting skills learned through your relationship with your new baby form the foundation for parenting skills needed for the future. Parenting style makes a difference. The most beneficial style for optimal child growth and development is a respectful, warm, nurturing style. Moms and dads are different and thus parent differently. The baby benefits from this difference as long as both parents are providing safe, warm, nurturing care. Responsive, nurturing care is THE most important parenting skill in the infant year.	Thinking About Parenting handout Pencils Markers
255 (5 minutes)	CLOSURE Read "The Parent's Affirmation of Imperfection"			The Parent's Affirmation of Imperfection handout

Baby and You – Session 4

Time	Learning Experience	Unit	Key Content	Resources
1230	Arrange chairs in semicircle. Put out handouts. Final check of equipment and materials. Put up agenda.			Handouts TV & VCR/DVD Overhead Flipchart or Whiteboard
1245	Welcome participants as they come in. Direct to name tags			Name tags
100 (10 minutes)	INTRODUCTIONS Treasures Basket Opener – ask participants to select something from the basket that tells something about themselves or their week. Go around the circle and share their choice plus names. Open for questions/ comments from last week	Course Info		Attendance list Basket with objects
110 (10 minutes)	FUTURE PLANS Give participants time to discuss ways that may want to connect after the class is over			
120 (10 minutes)	CHILD SAFETY Ask the questions: What do you think is the #1 cause of death and hospitalization for children	B	Injury is a major health issue facing children, and parents have the biggest responsibility in preventing their child from being injured.	
130 (20 minutes)	SAFETY HAZARDS Activity 4: Room	B	There are age-specific injury risks facing children and there are	Activity 4 overhead Paper copies of

	by Room safety discussion		specific steps parents can take to reduce these risks. Most injuries to young children occur in the home.	overhead Pencils
150 (5 minutes)	INFANT CAR SEATS Discuss common mistakes made with car seats and resources available to ensure car seats are properly installed and used.	B	Serious injuries can occur during vehicle travel. Manu parents continue to use child restraints incorrectly.	Car Seat overhead
155 (20 minutes)	RETURNING TO WORK Group discussion: Ask each person to share what they did for work before they had the baby. What are you planning to do after your parental leave is over: "If you are returning to work have you any thoughts yet on childcare?" As people share, acknowledge the feelings experienced and add key information on work options and childcare.	I	Returning to work after the birth of a baby ignites a wide range of mixed emotions. Finding work and family balance is an individual family journey guided by values and personal circumstances. A variety of work options exist that may help individuals balance their work and family roles. Parents can choose from a selection of childcare options to find care that works for their baby's needs and their personal situation. They should look for a quality of care that enhances all aspects of development and addresses health, safety, and relationship needs.	
215 (20 minutes)	PARTNER RELATIONSHIP Small group discussion: "What are some positive ways the	H	Relationships experience challenges and changes with the introduction of a baby. Communication and problem solving are key to	

	new baby has influenced your relationship?" What do you think will be the challenges in keeping your partner relationship healthy?" As a large group, brainstorm a list of strategies to maintain and strengthen a relationship.		fostering and maintaining a health partner relationship. Mothers and fathers influence babies in different by complementary ways.	
235 (15 minutes)	POSTNATAL SEXUALITY Activity 1: Sexuality Kit	H	Physical and emotional changes can impact sexual intimacy. There are benefits to spacing children at least 18 months apart	Sexuality kit
250 (10 minutes)	CLOSURE Read a poem "If I had my life to live again" or "Today" Ask participants to fill out evaluation forms			Copy of poem Evaluation forms Pencils

[1]From "*Baby and You: A facilitator's resource guide*" by Calgary Health Region, 2007, Calgary, AB: Author.

Appendix D

Pre-Test Questionnaire

calgary health region

ID # _____

Baby and You for Moms

Program Evaluation Survey

We are very excited that you are participating in *Baby and You for Moms*. We are doing a study of the *Baby and You* program to find out if it is valuable for new parents. Your participation in the study may help us to improve the program for other new parents. We would like you to fill out this survey before the first class.

The survey has only a study ID#. We will not use your name or your child's name.

Read each question and answer the best that you can, there are no right or wrong answers.

When you have completed the survey, please return it to your *Baby and You* facilitator at your first class.

We know how busy life can be with a new baby. Thank you for taking the time to fill the survey. If you have any questions or concerns, please ask your *Baby and You* facilitator or the researchers (ph: 220-8058 Maternal Child Health Research Unit: Brigitte Otis, Project Coordinator).

Baby and You Program Location:_____

PART A

Listed below are people and groups that oftentimes are helpful to members of a family raising a young child.
This questionnaire asks you to indicate how helpful each source is to your family.
Please **circle** the response that best describes how helpful the sources have been to your family during the past **3 to 6 months**.
If a source of help has not been available to your family during this period of time, circle the **NA** (Not Available) response.

		Not Available	**Not At All Helpful**	**Sometimes Helpful**	**Generally Helpful**	**Very Helpful**	**Extremely Helpful**
1.	My parents	NA	1	2	3	4	5
2.	My spouse or partner's parents	NA	1	2	3	4	5
3.	My relatives/kin	NA	1	2	3	4	5
4.	My spouse or partner's relatives/kin	NA	1	2	3	4	5
5.	Spouse or partner	NA	1	2	3	4	5
6.	My friends	NA	1	2	3	4	5
7.	My spouse or partner's friends	NA	1	2	3	4	5
8.	My own children	NA	1	2	3	4	5
9.	Other parents	NA	1	2	3	4	5
10.	Co-workers	NA	1	2	3	4	5
11.	Parent Groups	NA	1	2	3	4	5
12.	Social groups/clubs	NA	1	2	3	4	5
13.	Church members/minister	NA	1	2	3	4	5
14.	My family or child's physician	NA	1	2	3	4	5
15.	Early childhood intervention program	NA	1	2	3	4	5
16.	School/day-care center	NA	1	2	3	4	5
17.	Professional helpers	NA	1	2	3	4	5
18.	Professional agencies	NA	1	2	3	4	5
19.	----------	NA	1	2	3	4	5
20.	----------	NA	1	2	3	4	5

PART B

When you think of your daily life as a parent, how often do you feel:

		Not at all	Rarely	Sometimes	Often	Very Often
1.	Optimistic	1	2	3	4	5
2.	Worried	1	2	3	4	5
3.	Contented	1	2	3	4	5
4.	Frustrated	1	2	3	4	5
5.	Satisfied	1	2	3	4	5
6.	Happy	1	2	3	4	5
7.	Stressed	1	2	3	4	5
8.	Lonely	1	2	3	4	5
9.	Exhausted	1	2	3	4	5
10.	Guilty	1	2	3	4	5

PART C

For each statement, please indicate your level of knowledge.

Circle the number '1' for little or no knowledge and the number '5' for lots of knowledge.

	My current level of knowledge about	**A Little**	←		→	**A Lot**
1.	how to know when my baby is ready for solids.	1	2	3	4	5
2.	the pace and process of a baby's development in the first year.	1	2	3	4	5
3.	when to seek medical attention for my baby.	1	2	3	4	5
4.	how parenting style impacts child development.	1	2	3	4	5
5.	postnatal sexuality and changes in couple's intimacy	1	2	3	4	5
6.	resources and programs for new parents.	1	2	3	4	5
7.	understanding and coping with baby's crying.	1	2	3	4	5

Note. Adapted from Reece's Parent Expectation Survey

PART D

In the PAST YEAR, have you or your child used or attended any of the following? Please mark ☒ all that apply to you

☐ Health Link (Calgary Health Region Telephone Information Line; 943-LINK or 943-5465)

☐ 211 (City of Calgary/United Way Telephone Information-Referral Line)

☐ Parent Link Centre(s) (an organization that provides parenting information at sites across Calgary and Alberta)

☐ Your local Community Health Centre (Calgary Health Region, community health sites-**NOT** hospitals or doctor's offices)

☐ Daycare facilities

☐ Drop in centres (locations where you can leave your child for a short time to run errands etc...)

☐ Your local YMCA or YWCA, either for classes, exercise, or child programs

☐ Calgary's Child (free parenting magazine/newspaper)

☐ Calgary Catholic Immigration Society

☐ Calgary Immigrant Women's Association

☐ Calgary Immigrant Aid Society

☐ Calgary Counseling Centre

☐ Families Matter Parenting and Family Programs

☐ Boys and Girls Club

☐ "Growing Miracles" parenting resource book

☐ Children's music classes

☐ Moms and tots groups

☐ Children's sports groups (e.g. t-ball, soccer, hockey, karate)

☐ Child swimming lessons

☐ Child art or crafts classes

☐ Your local library

☐ A story time meeting in your community

☐ A local fitness, recreation centre, or leisure centre BY YOURSELF

☐ A local fitness, recreation centre, or leisure centre WITH YOUR CHILD

☐ A children's theatre or acting group

☐ Sparks or Beavers groups

☐ A local church or spiritual leader, mentor or organization

☐ A parenting group on the internet

☐ Calgary Learning Centre

☐ Family Literacy Programs

☐ Preschool facilities

☐ Parenting classes:

If yes: What did you want to learn from the parenting classes? (check all that apply):

- ☐ What normal child development is
- ☐ How to help your child learn
- ☐ Feeding baby
- ☐ Baby's growth and needs
- ☐ Baby's oral health
- ☐ Relationship and postpartum changes
- ☐ Sharing experience with other new mothers
- ☐ Managing your child's behaviour
- ☐ Parenting resources
- ☐ Adjustments to parenthood
- ☐ Infant illness and sleep
- ☐ Home safety for baby
- ☐ Meeting other new mothers

Other specify:_____

Currently, how often do you read to your child(ren)?

- ☐ Never or rarely
- ☐ Less than once a month
- ☐ Once a month
- ☐ A few times a month
- ☐ Once a week
- ☐ A few times a week
- ☐ Daily

PART E

Finally, we would like to ask you background questions about yourself. Your answers are confidential. We use this information to compare groups of people not specific individuals.

1. How many children 18 years and under usually live in your household? _____

2. What is your current marital status?

- ☐ Single (Never married)
- ☐ Married
- ☐ Common Law/Living with Partner/Living as Married
- ☐ Divorced
- ☐ Separated
- ☐ Widowed

3. Which of the following best describes your **MAIN** activity? Mark one answer only. Are you mainly...

- ☐ Working for pay or profit (either part-time, full-time, or casual)
- ☐ Caring for family
- ☐ Looking for work
- ☐ On parental leave
- ☐ Going to school
- ☐ Other, specify: _____

4. What is the total income, **before taxes and deductions**, of all household members from all sources in the past 12 months (your best guess is ok)? **Was the total household income:**

- ☐ Less than $20,000
- ☐ $20,000-$39,999
- ☐ $40,000-$59,999
- ☐ $60,000-$79,999
- ☐ $80,000-$99,999
- ☐ $100,000 or more
- ☐ I prefer not to answer this question

5. How many times have you moved in the past 2 years? _____ times

6. What is the highest level of schooling you have completed?

- ☐ Grade School
- ☐ High School
- ☐ College or technical school
- ☐ University Degree
- ☐ Post-Graduate Degree (e.g. PhD, MD, MA, MSc)

7. What is your relationship to the child(ren) in the program? (e.g. Mother, Father, Grandmother, Nanny)

_____

8. What is your birth date? _____ Day _____ Month _____Year

9. Please enter today's date: _____ Day _____ Month _____Year

Thank you VERY much for your time!

Please give this survey to your *Baby and You* facilitator.

Appendix E

Post-Test Questionnaire

calgary health region

ID # _____

Baby and You for Moms

Program Evaluation Survey

We are pleased that you participated in *Baby and You for Moms*. Now that your classes are over, we would like you to fill out this survey to see how the program has made a difference.

The survey has only a study ID#. We will not use your name or your child's name.

Read each question and answer the best that you can. There is no right or wrong answer.

When you have completed the survey, please return it to your *Baby and You* facilitator.

We know how busy life can be with a new baby. Thank you for taking the time to fill out all of this survey. If you have any questions or concerns, please ask your *Baby and You* facilitator or the researchers. (Maternal Child Health Research Unit: Brigitte Otis, Project Coordinator

Ph: (403)220-8058)

Baby and You Program Location:_____

PART A

Listed below are people and groups that oftentimes are helpful to members of a family raising a young child.
This questionnaire asks you to indicate how helpful each source is to your family.
Please **circle** the response that best describes how helpful the sources have been to your family during the past **3 to 6 months**.
If a source of help has not been available to your family during this period of time, circle the **NA** (Not Available) response.

		Not Available	**Not At All Helpful**	**Sometimes Helpful**	**Generally Helpful**	**Very Helpful**	**Extremely Helpful**
1.	My parents	NA	1	2	3	4	5
2.	My spouse or partner's parents	NA	1	2	3	4	5
3.	My relatives/kin	NA	1	2	3	4	5
4.	My spouse or partner's relatives/kin	NA	1	2	3	4	5
5.	Spouse or partner	NA	1	2	3	4	5
6.	My friends	NA	1	2	3	4	5
7.	My spouse or partner's friends	NA	1	2	3	4	5
8.	My own children	NA	1	2	3	4	5
9.	Other parents	NA	1	2	3	4	5
10.	Co-workers	NA	1	2	3	4	5
11.	Parent Groups	NA	1	2	3	4	5
12.	Social groups/clubs	NA	1	2	3	4	5
13.	Church members/minister	NA	1	2	3	4	5
14.	My family or child's physician	NA	1	2	3	4	5
15.	Early childhood intervention program	NA	1	2	3	4	5
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17.	Professional helpers	NA	1	2	3	4	5
18.	Professional agencies	NA	1	2	3	4	5
19.	----------	NA	1	2	3	4	5
20.	----------	NA	1	2	3	4	5

PART B

When you think of your daily life as a parent, how often do you feel:

		Not at all	Rarely	Sometimes	Often	Very Often
1.	Optimistic	1	2	3	4	5
2.	Worried	1	2	3	4	5
3.	Contented	1	2	3	4	5
4.	Frustrated	1	2	3	4	5
5.	Satisfied	1	2	3	4	5
6.	Happy	1	2	3	4	5
7.	Stressed	1	2	3	4	5
8.	Lonely	1	2	3	4	5
9.	Exhausted	1	2	3	4	5
10.	Guilty	1	2	3	4	5

PART C

For each statement, please indicate your level of knowledge.

Circle the number '1' for little or no knowledge and the number '5' for lots of knowledge.

	My current level of knowledge about	**A Little**	←		→	**A Lot**
1.	how to know when my baby is ready for solids.	1	2	3	4	5
2.	the pace and process of a baby's development in the first year.	1	2	3	4	5
3.	when to seek medical attention for my baby.	1	2	3	4	5
4.	how parenting style impacts child development.	1	2	3	4	5
5.	postnatal sexuality and changes in couple's intimacy	1	2	3	4	5
6.	resources and programs for new parents.	1	2	3	4	5
7.	understanding and coping with baby's crying.	1	2	3	4	5

Note. Adapted from Reece's Parent Expectation Survey

8. What topics were you wanting to learn from Baby and You? (check ALL that apply):

- ☐ What normal child development is
- ☐ How to help your child learn
- ☐ Feeding baby
- ☐ Baby's growth and needs
- ☐ Baby's oral health
- ☐ Relationship and postpartum changes
- ☐ Sharing experience with other new mothers
- ☐ Managing your child's behaviour
- ☐ Parenting resources
- ☐ Adjustments to parenthood
- ☐ Infant illness and sleep
- ☐ Home safety for baby
- ☐ Meeting other new mothers

Other specify:_____

9. Have you accessed resources or programs that you heard about in *Baby and You for Moms*?

☐ Yes ☐ No

Comments: _____

_____

10. Have you used any information or ideas that you learned in *Baby and You for Moms*?

☐ Yes ☐ No

Comments: _____

_____

11. Do you plan to stay in contact with other participants from your *Baby and You for Moms* group?

☐ Yes ☐ No

Comments: _____

_____

PART D

Since attending your first session of Baby and You, have you or your child used or attended any of the following? Please mark ☒ all that apply to you

☐ Health Link (Calgary Health Region Telephone Information Line; 943-LINK or 943-5465)

☐ 211 (City of Calgary/United Way Telephone Information-Referral Line)

☐ Parent Link Centre(s) (an organization that provides parenting information at sites across Calgary and Alberta)

☐ Your local Community Health Centre (Calgary Health Region, community health sites-**NOT** hospitals or doctor's offices)

☐ Daycare facilities

☐ Drop in centres (locations where you can leave your child for a short time to run errands etc...)

☐ Your local YMCA or YWCA, either for classes, exercise, or child programs

☐ Calgary's Child (free parenting magazine/newspaper)

☐ Calgary Catholic Immigration Society

☐ Calgary Immigrant Women's Association

☐ Calgary Immigrant Aid Society

☐ Calgary Counseling Centre

☐ Families Matter Parenting and Family Programs

☐ Boys and Girls Club

☐ "Growing Miracles" parenting resource book

☐ Children's music classes

☐ Moms and tots groups

☐ Children's sports groups (e.g. t-ball, soccer, hockey, karate)

☐ Child swimming lessons

☐ Child art or crafts classes

☐ Your local library

☐ A story time meeting in your community

☐ A local fitness, recreation centre, or leisure centre BY YOURSELF

☐ A local fitness, recreation centre, or leisure centre WITH YOUR CHILD

☐ A children's theatre or acting group

☐ Sparks or Beavers groups

☐ A local church or spiritual leader, mentor or organization

☐ A parenting group on the internet

☐ Calgary Learning Centre

☐ Family Literacy Programs

☐ Preschool facilities

☐ Parenting classes:

If yes: What did you want to learn from these parenting classes? (check ALL that apply):

- ☐ What normal child development is
- ☐ How to help your child learn
- ☐ Feeding baby
- ☐ Baby's growth and needs
- ☐ Baby's oral health
- ☐ Relationship and postpartum changes
- ☐ Sharing experience with other new mothers
- ☐ Managing your child's behaviour
- ☐ Parenting resources
- ☐ Adjustments to parenthood
- ☐ Infant illness and sleep
- ☐ Home safety for baby
- ☐ Meeting other new mothers

Other (specify): _____

Currently, how often do you read to your child(ren)?

- ☐ Never or rarely
- ☐ Less than once a month
- ☐ Once a month
- ☐ A few times a month
- ☐ Once a week
- ☐ A few times a week
- ☐ Daily

How many Baby and You classes have you been able to attend? _____

Please enter today's date: _____Day _____Month _____Year

Appendix F

Ethics Approval

Conjoint Health Research Ethics Board

Ethic ID: E-21360

Appendix G

CPPEP Consent Form

UNIVERSITY OF CALGARY

PARENT CONSENT FORM

TITLE: A Community Strategy to Evaluate Preventative Parenting Education and Support Programs

SPONSORS: The United Way of Calgary & Area; Calgary Children's Initiative

INVESTIGATORS: Karen Benzies, Laura Ghali, Graham Clyne, Leslie Barker, Lori Friesen, Diane Dennis

This consent form is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, please ask. Take the time to read this carefully and to understand any accompanying information. You will receive a copy of this form.

BACKGROUND

Parents play a key role in shaping their children's self-confidence, ability to form relationships with others, values and belief systems, and motivation to learn and solve problems. Effective parenting education programs have the potential to improve the lives of both the parents and their children. There is a desire on the part of those who provide parenting education programs, as well as those funding them, to understand whether these programs improve outcomes, such as parental perceptions of role quality, parenting morale, social support, and knowledge of parenting. Desperately needed are community strategies to develop and test evaluation capacity within programs, and the use of common measures to demonstrate outcomes. This is a new study that will use a pre-test/post-test design. We expect that approximately 500 parents and 5 parenting program staff members will participate in this study.

WHAT IS THE PURPOSE OF THE STUDY?

The main purpose of the study is to increase the evaluation capacity within community parenting education programs. The secondary purpose is to objectively assess parenting program outcomes with the intent of creating opportunities for continuous quality improvement.

WHAT WOULD I HAVE TO DO?

You need to fill out two questionnaires: one before starting your parenting classes, and one after you finish your parenting classes. It will take about 15 minutes to fill out each questionnaire. This is longer than it normally takes to fill out a satisfaction questionnaire at the end of the program. You will be in the study only while you are participating in your parenting program. For example, if your parenting program runs for 10 weeks, then you will be in the study for 10 weeks. There will be no follow-up study.

WHAT ARE THE RISKS?

There are no risks associated with completing questionnaires about parental role quality, social support, parenting morale, and knowledge of parenting.

WILL I BENEFIT IF I TAKE PART?

If you agree to participate in this study there may or may not be a direct benefit to you. Your parenting may be improved during the study but there is no guarantee that this research will help you. The information we get from this study may help us to provide better parenting programs. If you wish, we can give you a copy of the results when we are finished the study.

DO I HAVE TO PARTICIPATE?

Your participation in this study is voluntary. You have the right to refuse to answer any question. You are free at any time to withdraw from the study by telling the researcher that you wish to withdraw. Withdrawal from the study will not jeopardize your participation in the parenting program, or other health care and social services. The researcher can withdraw you from the study if there are too many missing answers on your questionnaire. If new information becomes available that might affect your willingness to participate in the study, you will be informed as soon as possible.

WILL I BE PAID FOR PARTICIPATING, OR DO I HAVE TO PAY FOR ANYTHING?

You will not be paid for taking part in this study. You will not have to pay for anything to be part of the study. If there are costs for the parenting program, you will have to pay for these costs.

WILL MY RECORDS BE KEPT PRIVATE?

Your name will not be on any of the questionnaires. Your answers on the questionnaires will be kept confidential. The exception is when professional codes of ethics or the law require reporting. In that case we cannot uphold your right to confidentiality and privacy. Only the

Investigators and their Research Assistants will have access to your questionnaires. Paper copies of consents and questionnaires will be stored separately in locked filing cabinets in a locked research office at the University of Calgary for a period of seven years (2015) and then shredded by hand on-site at the university. Information will be entered into an electronic file and stored on a password protected, timed-out computer in a locked research office. Information will be used to write reports and papers that may be published or presented at conferences. You will not be identified. We might look at the information again in the future. If so, the ethics board will review the study to ensure we use the information ethically.

IF I SUFFER A RESEARCH-RELATED INJURY, WILL I BE COMPENSATED?

In the event that you suffer injury as a result of participating in this research, no compensation will be provided to you by the the United Way of Calgary and Area, the University of Calgary, the Calgary Health Region or the Researchers. You still have all your legal rights. Nothing said in this consent form alters your right to seek damages.

SIGNATURES

Your signature on this form indicates that you have understood to your satisfaction the information regarding your participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the investigators, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time without jeopardizing your health care. If you have further questions concerning matters related to this research, please contact:

Dr. Karen Benzies (403) 220-2294
or
Dr. Laura Ghali (403) 955-7221

If you have any questions concerning your rights as a possible participant in this research, please contact The Ethics Resource Officer, Internal Awards and Research Services, University of Calgary, at 220-3782.

Participant's Name	**Signature and Date**
Investigator/Delegate's Name	**Signature and Date**
Witness' Name	**Signature and Date**

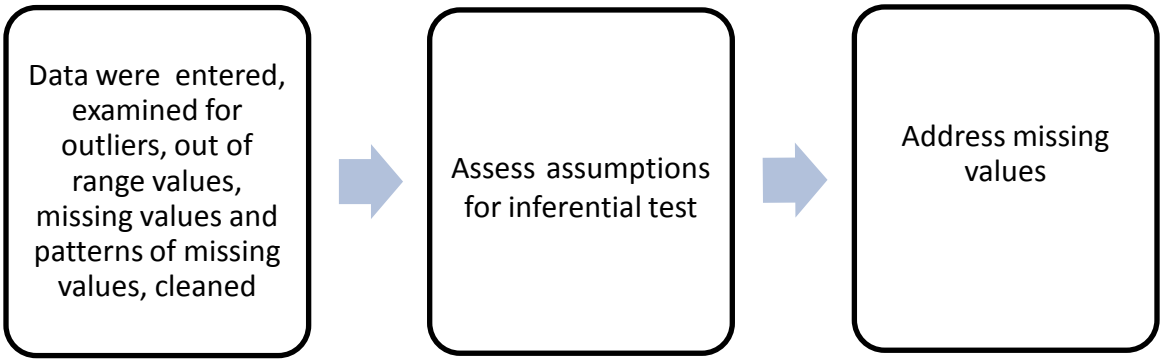
The University of Calgary Conjoint Health Research Ethics Board has approved this research study.

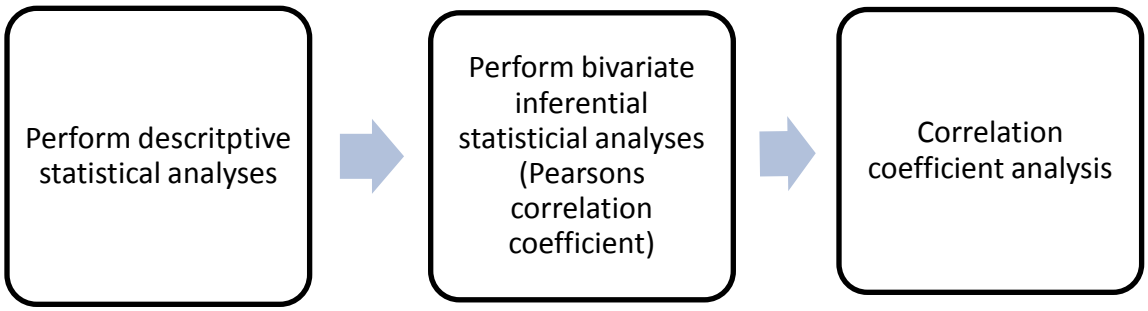
A signed copy of this consent form has been given to you to keep for your records and reference.

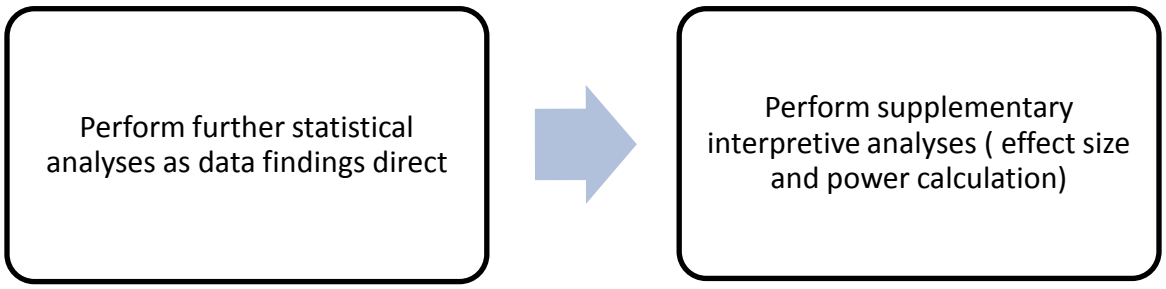
Appendix H

Data Analysis Strategy

Data Analysis Strategy






Perform further statistical analyses as data findings direct
Perform supplementary interpretive analyses (effect size and power calculation)