INFORMATION-SHARING: A NURSING STRATEGY TO FACILITATE INFORMED PRENATAL DECISION-MAKING ON INFANT FEEDING

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BY

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Abstract

The fact that women are still choosing to bottlefeed in spite of the scientific evidence on the benefits of breastfeeding supports further research on the promotion of breastfeeding. The incidence of breastfeeding varies regionally; Newfoundland, where this study was conducted, has the lowest incidence of breastfeeding in Canada. Thus, one problem for nurses in Newfoundland is to find a means to increase the incidence of breastfeeding. The present study examined the relationship between a nursing intervention (information-sharing on infant feeding) and decision-making on an infant feeding method.

This descriptive study examined the responses of a convenience sample (n=18) of primigravidous women to a nursing intervention. Primigravidous women in their third trimester of pregnancy were contacted through prenatal classes of two urban maternity hospitals and general practitioners.

The nursing intervention included an initial interview and two information-sharing sessions on infant feeding. The initial interview consisted of an assessment of the woman's knowledge and values of infant feeding, developed by the researcher, and a pre-test investigating attitudes towards infant feeding, developed by Manstead (1984). The two information-sharing sessions covered information on breast and bottle feeding, including feelings, attitudes and practical information about each method of infant feeding. The second information-sharing

session concluded with a post-test (a repeat of the pre-test) and feedback from the participants regarding the two sessions.

The results concurred with other studies in that (a) information-sharing alone has no significant effect on either a woman's attitudes or intention towards breast or bottle feeding, (b) attitudes are not the only influential factor in a woman's decision to breast or bottle feed, (c) a woman's prenatal intention to breast or bottlefeed is a good indicator of her postnatal choice, and (d) most women, prior to conception or in early pregnancy, have decided on an infant feeding method.

One of the assessment tools, Values and Knowledge on Infant Feeding (VKIF), emerged as a potential instrument for practice, education, and research. The tool more clearly delineated the differences between the women with intentions to breastfeed and the women who were either undecided or had intentions to bottlefeed than did the Manstead (1984) tool, A Questionnaire to Investigate Attitudes to Infant Feeding (QIAIF). The VKIF tool also indicated the areas that might be potential problems for breastfeeding mothers. The VKIF tool, as a nursing research instrument, shows potential as a mechanism to indicate the barriers to breastfeeding.

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In present day North American society many health professionals and consumers share an insufficient knowledge about the importance and implementation of breastfeeding (Reames, 1985; Schlegel, 1983). The origin of this knowledge deficit is complex. Within the last four decades a generation or more of people have grown-up in a rear absence of breastfeeding women (Goldfarb & Tibbetts, 1980). Kennell and Klaus (1985) indicated that North American society has nearly lost its cultural knowledge of lactation. Despite the present trend of an increasing number of women breastfeeding, role models and social support for breastfeeding are not always readily available (Arafat, Allen & Fox, 1981; Axelson, Kurinij, Sahlroot & Forman, 1985; Ellis, 1983).

The literature on breastfeeding that is available to the consumer infrequently outlines all the inter-related and complex biological, psychological and sociological factors influential in the decision-making process on breastfeeding. In addition, the ill-timed instructional and promotional breastfeeding programmes and the often inadequate knowledge of some health professionals towards breastfeeding coalesce to affect a woman's decision on infant feeding towards bottlefeeding. The purpose of this study is to describe the relationship between information-sharing about infant feeding and a pregnant woman's attitudes and intentions toward breast or bottle feeding.

Statement of Problem

The problem from which this study evolved is outlined under

the following three headings: the importance of breastfeeding, the decline in breastfeeding, and the situation in Newfoundland.

The Importance of Breastfeeding

The American Dietetic Association, the American Pediatric Association, the Canadian Pediatric Association and the World Health Organization have recommended the promotion of breastfeeding; breast milk is superior to artificial formula. From numerous studies it has been reported that breast milk and breastfeeding have many physical and psychological benefits for the infant and mother (Goldfarb & Tibbetts, 1980; Jelliffe & Jelliffe, 1978; Lawrence, 1985; Ray, 1985). The uniqueness of breast milk is not only that it supplies complete nutrition for a neonate to age six months but that all the necessary nutrients are in a bioavailable and biospecific form which ensures efficient and effective utilization (Casey & Hambridge, 1983; Lawrence, 1985). From feed to feed and from day to day, breast milk adjusts in constituents and quantity to meet the specific nutritional requirements of an infant (Casey & Hambridge, 1983; Hall, 1975; Ho, 1983; Lawrence, 1985).

The protective components, another unique property of breast milk, provide the infant with a defence mechanism against disease, especially respiratory, gastrointestinal and urinary tract infections (R. K. Chandra, personal communication, October 23, 1986; Jatsyk, Kuvaeva & Gribakino, 1985; Jelliffe & Jelliffe, 1984; Larsen & Homer, 1978). Breast milk also has been shown to delay the onset and to reduce the severity of

allergies, especially recurrent wheezing and atopic eczema (R. K. Chandra, personal communication, February 17, 1986; Weinberg, van Neikerk, Shore, Heese & van Schalkwyk, 1977). The higher cholesterol level in human milk than in cow's milk has been linked with a lower incidence of heart disease later in life; possibly in relation to enzyme development enabling cholesterol catabolism (Riordan & Countryman, 1980; While, 1985). In summation of breast milk's qualities, Howie (1985) stated that "it seems a monstrous waste of nature to deprive babies of their right to this natural protection against life-threatening illnesses" (p. 189).

Not only do benefits of breast milk outweigh those of infant formula but infant formula also has deleterious properties. Minchin (1985) and Blackwell and Salisbury (1981) have refuted the safety of mass produced formula over bioavailable and biospecific breast milk. Minchin reported that, since 1978, 22 calamities and difficulties arising from infant formulae -- inadvertent excess or missed additions of ingredients, or addition of untested ingredients, or improper preparation or storage of formulae -- have occurred. Many of these mishaps resulted in nutritional deficiency diseases for infants. Blackwell and Salisbury reported that such mistakes were compounded when a mother inadvertently misused a formula due to a lack of proper instruction, equipment, technique, and/or money. Minchin was emphatic in her plea to health professionals:

> State plainly to parents that they cannot make an informed decision about feeding choice until they have discovered to what risks other people inadvertently subjected their babies. (p. 32)

The Decline of Breastfeeding

Although a growing incidence of breastfeeding in North America can be found in the higher socioeconomic groups (Fieldhouse, 1984; Hendershot, 1984; McNally, Hendricks & Horowitz, 1985; Yeung, Pennell, Leung & Hall, 1981), in the lower socioeconomic groups breastfeeding is decreasing in participation and duration (Fieldhouse, 1984). Therefore, not only are many women still choosing to bottlefeed but of those who chose to breastfeed, the number still breastfeeding at six weeks is disappointingly low (Quandt, 1986).

In the post war years artificial infant feeding successfully replaced breastfeeding. Five reasons have been postulated by various authors for the decline in breastfeeding (Goldfarb & Tibbetts, 1980; Neville & Neifert, 1983; Riordan & Countryman, 1980; Silverton, 1985). Firstly, many women sought their independence from house work and thus the emphasis of woman's role shifted from the home to the office. Bottlefeeding became a symbol of the modern woman. Secondly, the food industry jumped on the band wagon and infant formula became big business. They advertised the readiness and ease of infant formula which enabled the mother to leave some of the care of her child to others. Thirdly, advertising also swayed the public and health professionals to believe that infant formula was equal in nutrition to breast milk. The influence was so strong that the

emphasis of infant nutrition in medical and nursing schools shifted from human lactation to formula preparation (Lightwood, 1980). Fourthly, modern technology and the move from the country to the city changed family life (Silverton, 1985). Extended families in the rural areas have been reduced in size and number and many urban and suburban families now consist only of parents and two to three children. Without the immediate support of extended families the accessibility of help and advice regarding infant care, including infant feeding, from mothers, aunts or grandmothers is lessened. Fifthly, in 20th century North American society women's breasts have become erotic symbols of the sexual revolution. This has meant that the beauty and nutritional value of breastfeeding has been depreciated. As a result either many women are embarrassed to breastfeed or a woman breastfeeding may embarrass others (Kelly, 1985; MacCaig & Smart, 1980).

The Situation in Newfoundland

In Newfoundland, in an attempt to counter the influx of artificial infant formula, there has been an increase in the reports on the benefits of breast milk and breastfeeding. Yet the incidence of breastfeeding proportionately has not increased. In fact, Newfoundland has the lowest incidence of breastfeeding in Canada -- 33.3% of women breastfeed (S. Banoub, personal communication, February, 1985) as opposed to a national average of 75% and the Atlantic provinces average of 61% (McNally et al., 1985).

Consistent with the Canadian pattern, the practice of breastfeeding in Newfoundland increases with education and socioeconomic status (Fieldhouse, 1984; Walker, 1986; Yeung et al., 1981). Given that Newfoundland has historically had the highest unemployment rate in Canada and is incorporated in a welfare state, there is a smaller proportion of women in the higher socioeconomic and education bracket (Hill, 1983; House, 1986). In turn this may be an influential factor in the low incidence of breastfeeding in Newfoundland.

The overwhelming scientific evidence supporting the benefits of breastfeeding, the deleterious effects of infant formula, and the fact that women are still choosing to bottlefeed, especially in Newfoundland, point to the need for nurses and other health professionals to find a means to increase the incidence of breastfeeding in Newfoundland. Given that, as stated earlier, the knowledge level of the importance and implementation of breastfeeding is low among the general population, the present study examined the relationship between information-sharing on infant feeding (a nursing intervention) and decision-making on an infant feeding method.

Research Questions

The following are the research questions:

1) What effect does information-sharing have on a woman's attitude towards breast or bottle feeding?

2) What effect does information-sharing have on a woman's intention to breast or bottle feed?

3) Is a woman's prenatal intention to breast or bottle feed a predictor of her early postnatal infant feeding choice?

4) Will a woman who scores higher on the tool, Values and Knowledge on Infant Feeding (Appendix A, p. 138), be more likely to breastfeed at hospital discharge than a woman who scores lower on the tool?

Assumptions

A number of assumptions guided the design of the study:

1) One's intentions determine one's behaviour (Ajzen & Fishbein, 1980).

2) Attitudes and intentions are potentially modifiable (Ajzen & Fishbein, 1980).

3) To modify attitudes and beliefs a person requires information to produce an effective change (Ajzen & Fishbein, 1980; Cousilman, Mackay & Copeland, 1983).

4) Nurses are in a unique position to share information on infant feeding with pregnant women.

5) The learning process or information acquisition is seen as a two way street in which both the teacher and pupil become active participants in an information-sharing process (Freire, 1973).

The Conceptual Framework

The conceptual framework used in this study incorporates Ajzen and Fishbein's (1980) theory of reasoned action and elements of Bentovim's (1976) model of psychosocial factors of breastfeeding. The incorporation of both are visually presented in Figure I (p. 8). The following discussion of the literature

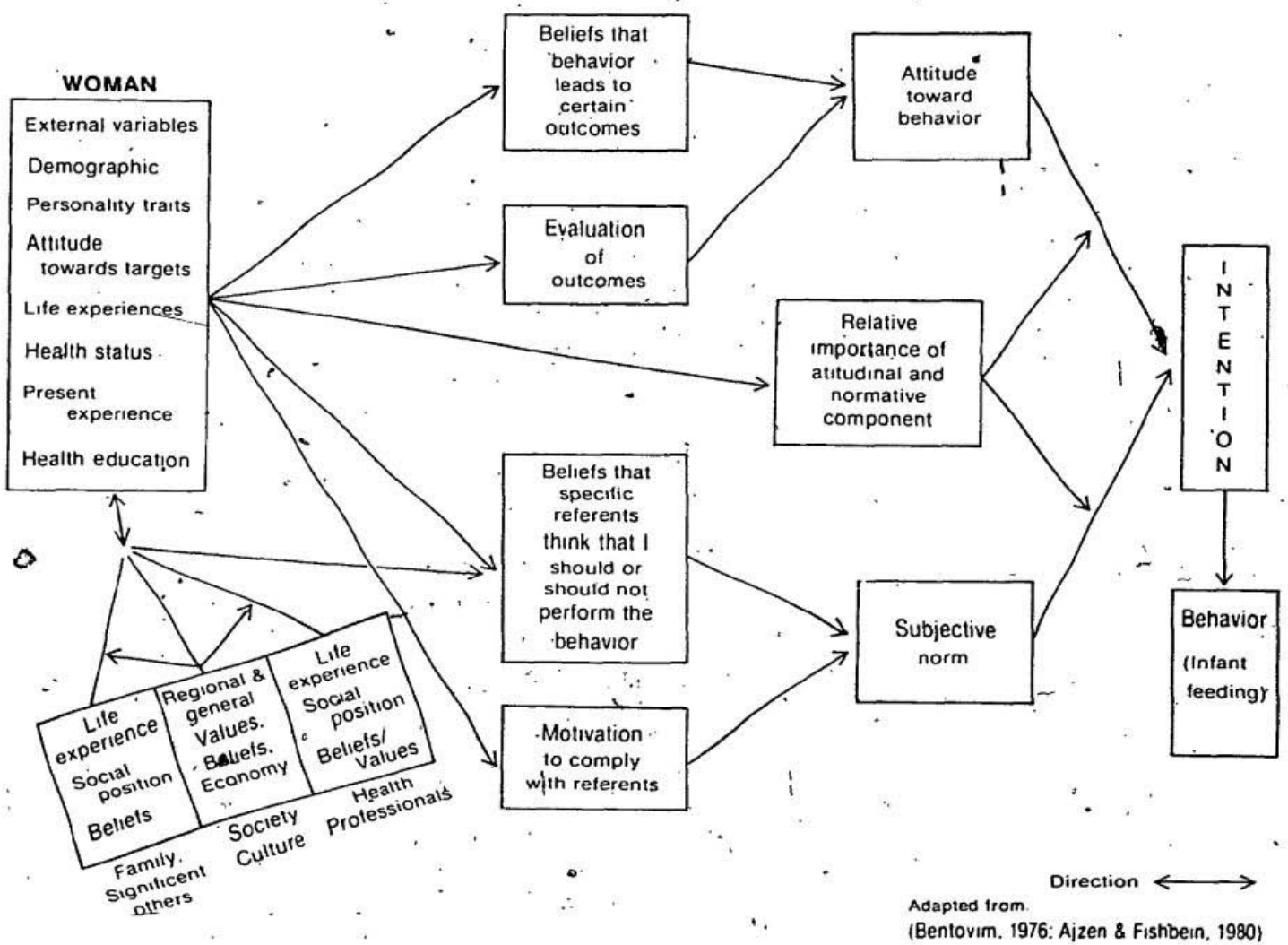

Figure 1. CONCEPTUAL FRAMEWORK

lends theoretical support for the rationale for this study in general and the nursing strategy, information-sharing (discussed, p. 38), in particular.

Ajzen and Fishbein's theory of reasoned action

The two aspects of the theory of reasoned action supported by Manstead, Pelvin, and Smart (1984) and Manstead, Proffitt, and Smart (1983) and pursued in the present study were: (a) the determinants of the intentions of infant feeding, that is, attitudes and (b) the components of those determinants, that is, beliefs. According to Ajzen and Fishbein (1980) the theory of reasoned action assumed that "most actions of social relevance are under volitional control and, ... a person's intention to perform (or not perform) a behavior is the immediate determinant of the action" (p. 5). The theory stated that a person's intention is a function of two basic determinants. The first is personal in that a person's attitude towards performing a behaviour, may be positive or negative. The second is social in that a person's perception of other peoples' attitudes toward them performing a behavior influences their action; defined as the "subjective norm" by Ajzen and Fishbein (1980). A person's intention is ultimately determined by the relative importance a person places on each of the two determinants -- personal and social. Thus, according to the theory of reasoned action, the individual's intention towards a behaviour develops not only from the importance of the behaviour to the individual but also from the perceived importance of the behaviour by support

person(s) (Ajzen & Fishbein, 1980).

A person's attitudes, as defined by Ajzen and Fishbein (1980), are the positive or negative values of a behaviour to be performed and are the "primary determinants of a person's responses" to a psychological object (p. 25). Ajzen and Fishbein stated that attitudes were a function of a person's beliefs and that a person's perceived likelihood or subjective probability of "performing a behaviour will result in a given outcome" (p. 66). That is to say, a positive attitude arises from the belief that the consequence of performing a behaviour will be positive (Ajzen & Fishbein, 1980). Ajzen and Fishbein's theory of reasoned action supported a direct correlation between the degree of the belief in the benefit of the outcome of a specific behaviour and the intention towards that behaviour.

Further, behaviour, in the theory of reasoned action, is believed to be goal-oriented and predictable, and intention is the "immediate determinate of behaviour ... [and can] provide the most accurate prediction of behaviour" (Ajzen & Fishbein, 1980, p. 4). Accordingly, if a pregnant woman believes that breastfeeding may be nutritionally beneficial for her baby, she may have a positive attitude towards breastfeeding. If she perceives a positive attitude towards breastfeeding from her support person(s), she may have good intentions towards breastfeeding and probably will breastfeed.

Manstead et al. (1984) and Manstead et al. (1983) applied Ajzen and Fishbein's theory of reasoned action to predict a

woman's choice of infant feeding and found substantial support for the theory. In the 1983 study the researchers surveyed 106 primiparous and 109 multiparous women, both antenatally and six weeks postnatally, on their attitudes, beliefs, intentions and behaviour towards infant feeding. In the 1984 study the same methodology was used but only primigravidous women (50) were surveyed. Findings from both these studies suggested that (a) mothers who breastfeed believe that "breast-feeding leads to desirable consequences" (Manstead et al., 1984, p. 230) and (b) "although intentions accounted for a large significant proportion of variance in behavior, adding attitudes to the regression significantly enhanced the prediction of behavior" (Manstead et al., 1983, p. 668).

Results from Zuckerman and Reis (1978) and both Manstead studies indicated that attitudes toward a behaviour play the greater role in accounting for a behaviour than intentions to perform a behaviour. Nonetheless, both Manstead studies confirmed the practical application of the theory of reasoned action:

> measuring behavioural intentions is the simplest and most efficient way to predict behavioural outcomes. [And] thus if one wanted to identify antenatally those mothers who are likely to breast-feed, with a view to promoting the incidence of breast-feeding, intentions measured on a single seven-point scale during the last trimester of pregnancy would provide a fairly accurate indication. (Manstead et al., 1984, p. 229)

Bentovim's model of psychological factors of breastfeeding

Ajzen and Fishbein's theory of reasoned action emphasized understanding of attitudes and prediction of behaviour rather

than changing behaviour. In the present study the researcher wished to use a nursing intervention to change behaviour toward breastfeeding. Moreover, it was recognized that factors other than attitudes and beliefs influence a woman's choice of a method of infant feeding, therefore, it was believed that the theory of reasoned action was incomplete. Thus, elements of Bentovim's (1976) model, which was developed to assess psychosocial factors of breastfeeding, were incorporated into the conceptual framework. Although Bentovim's model indicated that attitudes and beliefs affect a mother's decision to breastfeed, it also emphasized the importance of other interacting variables (Table 1, p. 13) on the underlying beliefs. However, unlike Bentovim, Ajzen and Fishbein (1980) were more reluctant to include what they called external variables: (a) demographic -- sex, age occupation, socioeconomic status, religion, and education; (b) attitudes toward the two targets, people and institutions; and (c) personality traits -- introversion, extroversion, neuroticism, authoritarianism and dominance. Ajzen and Fishbein rejected external variables because they believed that "there is no relation between any external variable and a given behavior ... [as the] external variables are not expected to have ... consistent effects" (p. 85).

Bentovim (1976) stated that "breastfeeding is a systemic product of many interacting factors rather than a product of individual behavior only" (p. 160). Consequently his model is

TABLE 1

THE INTERACTING VARIABLES OR "ELEMENTS OF A SOCIAL SYSTEM"
(Bentovim, 1976)

DEMOGRAPHIC: age, sex, socioeconomic status, education, religion, occupation, marital status.

PERSONALITY TRAITS: affection exchange, maternality and conventionality, masculine rather than feminine strivings, lower dependency and higher anxiety.

ATTITUDES TOWARDS TARGET: people, institutions, pregnancy, nudity, masturbation, sex play, breasts, body image and infant-centered.

LIFE EXPERIENCES: having been breastfed, previous success with breastfeeding, good mothering experiences, resolutions of psychosexual crisis, and absence of social, marital or family pressures.

HEALTH STATUS: pregnancy, delivery, puerperium, newborn and medications affecting these stages.

PRESENT EXPERIENCE: pregnancy, delivery, puerperium, responses to infant sucking and milk flow, amount of supplementary feeding interference, relationships and contacts with support system.

HEALTH EDUCATION: adequacy of information re: lactation and management of potential problem.

NOTE:

In Figure I (p. 8) the regional values and beliefs in the societal/cultural block include: subcultural groupings/traditions, role of women in the society, mass media with respect to infant feeding, wealth of the community, and the role of the breast as a sexual object or a nutritional function (Ajzen & Fishbein, 1980; Bentovim, 1976).

based on general systems theory and assesses psychosocial factors associated with breastfeeding (Table 1, p. 13). Hellings (1985) supported such an assessment, stating that "any attempt to identify factors that predict breastfeeding success must include recognition of the complex social and psychological factors that interact to influence success" (p. 472). Ray (1985) maintained that because attitudes do not "develop in isolation" they must be considered along with behaviours and beliefs as an "integrated whole" (p. 26). In the present study, the incorporation of Bentovim's model with Ajzen and Fishbein's theory of reasoned action was done to provide a more complete and holistic conceptual framework.

LITERATURE REVIEW

The purpose of this chapter is to examine the literature that addressed (a) the impact that the level of knowledge of health professionals and consumers has on a woman making an informed decision regarding an infant feeding method and (b) the impact of health education on infant feeding method decisions.

The Impact of Knowledge of Health Professionals and Consumers on Decision-making

In an age of consumerism, health professionals increasingly are becoming aware of the importance of informed decisions and of consumers' right to know all options before making a decision. It is important that health professionals offer the necessary information on infant feeding so that consumers can "make a knowledgeable choice based on awareness of alternatives" (Auerbach, 1979, p. 263).

It is believed that among consumers and health professionals there exists a poor level of knowledge regarding breastfeeding. Knowledge, as used in the present study, was not restricted to factual knowledge but rather encompassed both the science and art of breastfeeding. In this context knowledge of breastfeeding included the biological, physiological and psychological aspects of lactation; the necessary maternal nutritional and psychosocial support; and the practical knowledge required to facilitate (a) effective and efficient infant sucking and (b) maximum maternal comfort and pleasure.

Making an informed decision on an infant feeding method

requires that a woman has information on all the feeding options (Haun, 1985). Neifert (1983) contended that all "parents should be provided with sufficient information to permit an informed decision about infant feeding" (p. 275). The urgency for such information is suggested by the fact that a lack of knowledge is an influential factor in a woman's decision to bottle rather than breast feed (Axelson et al., 1985; Florack, Obermann-de Baer, Kampen-Donker, Wingen & Kromhout, 1984; Gulick, 1982; Yeung et al., 1981). Moreover, Florack et al. (1984) believed that a lack of knowledge is the overriding causal factor in a woman's decision to stop breastfeeding because of an insufficient supply of milk.

The literature will be reviewed regarding the level of knowledge of health professionals about breastfeeding which impedes informed decision-making on an infant feeding method, as well as, the influence of psychosocial factors on making infant feeding method decisions which affect consumers' level of knowledge of breastfeeding.

Health Professionals Level of Knowledge About Breastfeeding

It has been suggested that the consumer's problem of gaining adequate knowledge of breastfeeding partially lies with the educational preparation of health professionals, and thus in turn, with the health information, formal and informal, that health professionals offer the consumer (Ellis, 1981; Lightwood, 1980; Neifert, 1980). At the 1984 U. S. Surgeon General's Workshop on Breastfeeding and Human Lactation it was concluded

that the "professional's knowledge about lactation and breastfeeding is too often inadequate, ineffective and -- in some situations -- unavailable" (Koop & Brannon, 1984, p. 556).

There appears to be a paucity of breastfeeding information in many educational programmes for health professionals. It has been suggested that medical professionals are ill-prepared to understand human lactation and that as students they need more information on infant nutrition (Lightwood, 1980; Newton, 1976; Reames, 1985). It has been observed that medical schools take a neutral stand on the issue of the superiority of breast milk (Neifert, 1980), but that the focus of medical education in early infant nutrition is on artificial formula and not on human milk (Lightwood, 1980; Naylor & Wester, 1987). There are studies that have indicated that there is a need for all health professionals to gain knowledge on every aspect of breastfeeding (Ellis, 1981; Ellis & Hewat, 1984; Reames, 1985; Schlegel, 1983). Naylor and Wester (1987) maintained that perinatal health care professionals are not educated on either a woman's need for (a) encouragement in the natural process or (b) knowledge of how to prevent and deal with the abnormal. Neifert and Seacat (1985) reiterated the need for health clinicians to obtain the training necessary to deal with the practical problems of lactation. Nursing schools also have provided inadequate information to their students. Kurtz (1981) elaborated that nursing education has not provided nurses with the necessary confidence needed for promotion of breastfeeding. Moreover, many nurses lack the

necessary knowledge to adequately support breastfeeding mothers (Crowder, 1981; Kurtz, 1981; Schlegel, 1983).

Many nurses' inadequate and inconsistent knowledge of breastfeeding has been passed on to mothers (Hayes, 1981; Martin & Monk, 1983). Weaknesses in nursing education regarding breastfeeding were discussed by Wainwright (1981). Many of the 24 English women (no statistics cited) in her study reported that there was not enough information given on breastfeeding in mother care classes and they complained that they received confusing information from nurses of what to expect and how to deal with problems of breastfeeding. Minchin (1985), who herself overcame a low supply of breast milk due to an undiagnosed candida infection of her nipples, maintained that the overriding cause of an inadequate milk supply was poor or inappropriate professional advice. Gulick (1982) found that "breastfeeding information from professional sources remains proportionally small compared with non-professional sources" (p. 374). Similarly, Martin and Monk (1983) in a comparative examination of the incidence of breastfeeding in England and Wales between 1975 and 1980 found that discussion of infant feeding during antenatal care occurred only 40% of the time.

Influence of Psychosocial Factors on Infant Feeding Method Decisions

Ray (1985) suggested that one of the reasons women choose not to breastfeed is the ignorance by health professionals of the influence of psychosocial factors "that are at work long

before a woman and her partner make the decision to embark on a pregnancy, let alone a decision on how to feed their child" (p. 26). Many other studies have pointed to the critical impact that psychosocial factors have on the decision to breastfeed (Aberman & Kirchhoff, 1985; Beske & Gravis, 1982; Ekwo, Dusdieker & Booth, 1983; Goodine & Fried, 1984; Gunther, 1976; Jeffs, 1977). Such psychosocial factors explored here include feelings, attitudes, and beliefs towards breasts and breastfeeding; social pressures; socioeconomic circumstances; and influences of support person(s).

Feelings, attitudes, and beliefs towards breasts and breastfeeding.

A woman's feelings about her breasts can influence her decision to breast or bottle feed. Gunther (1976) stated that "the thought of breastfeeding is tangled with what the woman feels about breasts in general and her own in particular" (p. 146). For example, a woman concerned about her body image could erroneously be deterred from breastfeeding by fear of developing sagging breasts (Helsing, 1983). One study revealed that young mothers often were repulsed by the mere thoughts of breastfeeding (Yoos, 1985).

Dusdieker, Booth, Seals and Ekwo (1985) identified that the "strongest psychosocial influence" on the decision to breastfeed was the "presence of strong beliefs and the absence of specific worries about breastfeeding" (p. 701). Ekwo et al. (1983) found that some women choose breastfeeding because "they believed it

would be self-fulfilling or emotionally satisfying ... [while others] thought breast-feeding would enhance maternal infant bonding" (p. 377). Dusdieker et al. (1985) surveyed 94 breastfeeding and 54 bottlefeeding primiparae regarding the strength of their beliefs towards infant feeding. They concluded that "the strongest net predictor of maternal breastfeeding beliefs was the mother's expectation that she would herself benefit from breastfeeding " (p. 701). Brown, Lieberman, Winston and Plushette (1960) in a study of 55 breastfeeders and 55 bottlefeeders found that the "major difference between the two groups seems to lie in the belief of the breastfeeders that the baby enjoys the breast more than the bottle" (p. 427). Sarett, Bain and O'Leary (1983), in a telephone survey of 400 women, found that the main reason women gave for bottlefeeding was convenience. On the other hand, Manstead et al. (1983) found that among 253 mothers who chose to bottlefeed a frequently cited reason was that bottlefeeding allows others the opportunity to feed the baby.

An insufficient milk supply, the main reason cited by women for cessation of breastfeeding, is well reported in the literature (Florack et al., 1984; Houston, 1984; Salariya, Easton & Cater, 1980; Sjolin, Hofvander & Hillervik, 1977; Tully & Dewey, 1985). However, the underlying cause for the insufficient milk syndrome is less well known. West (1980) contended that the underlying reason behind the mother's concern for decreased lactation is anxiety. While Tully and Dewey (1985)

found that "the perception of insufficient milk was significantly more common among mothers who believed that breastfeeding was inconvenient, whose infants had received formula in the hospital and whose infants were of low birth weights" (p. 239). The three reasons delineated by Salariya et al. (1980) were (a) a mother had no personal desire to breastfeed, (b) inadequate knowledge of lactation, and (c) the socially acceptable excuse for stopping breastfeeding was a lack of milk. Sjolin et al. (1977) found socioeconomic tendencies in the more specific reasons for the milk drying up; anxiety was stated more often by younger mothers, inconvenience by single-parent mothers, stress by students, and mental fatigue by students and housewives.

Social pressures.

It is clear from the literature that there must be more than mere physical factors at play in areas where the incidence of breastfeeding is low. Many studies have reported that there are few contraindications to breastfeeding (Jewell, 1984; Neifert, 1980), physiological lactation failure is rare (Cowie, 1974), and the majority of women are physically capable of breastfeeding (Helsing, 1983; Minchin, 1985; Neifert, 1985). Arafat et al. (1981) offered an explanation suggesting that "breastfeeding should be viewed as a social act in which certain biophysical responses necessary for nursing are dependent on social pressures and cultural conventions" (p. 95).

Breastfeeding has been affected by the fact that in our

society not only has there been a "trend to a cash economy in which the earning power of a woman has become valued, if not essential, in many families" (Jelliffe, 1976b, p. 234), but also there appears to be a social consensus for the role of a woman at home and at work. Furthermore, feminists reportedly have associated the mother/wife role with breastfeeding, implying a consequential restriction on a women's social development (Brack, 1975). There is a social, psychological and political climate which fosters a woman's independent role as a career person rather than a "traditional role of homemaker" (Arango, 1984). This translates into a perceived need to separate the worlds of work and home (Koop & Brannon, 1984). Thus, the emphasis on a woman's role as a career person, public promotion of the breast as a sex symbol (Blackwell & Salisbury, 1981), and confusion as to "the purpose of the mammary glands" (Ellis, 1981, p. 320) has lead to the depreciation of the value of a woman as the provider of infant nutrition (Arango, 1984; Brown et al., 1960).

Socioeconomic circumstances.

Hally et al. (1984) in a prospective study of 380 primigravidae, 38% of whom had bottlefeeding intentions, presented results which indicated that socioeconomic circumstances -- low socioeconomic status and a non-conducive home environment -- sway a woman's decision toward bottlefeeding. Likewise, McIntosh (1985) in an examination of 80 working class primigravidae (58% with bottlefeeding intentions)

concluded that the barriers to breastfeeding were a non-conducive atmosphere and an inadequate support system rather than negative attitudes toward breastfeeding. For example, 20 out of 40 women bottlefeeding at the point of hospital discharge, were living with parents or other relatives, while only 6 out of 29 women breastfeeding at hospital discharge were not living in their own house (McIntosh, 1985).

In recent years in North America there has been a trend among women across all socioeconomic strata towards breastfeeding; even though, as noted, breastfeeding is most common among the well educated and/or the affluent in society (Adair, 1983; Eckhardt & Hendershot, 1984; Yeung et al., 1981). Those in the lower socioeconomic bracket appear to be more vulnerable to the social factors that discourage breastfeeding. Blackwell and Salisbury (1981) listed these factors to be: (a) the persuasiveness of artificial formula advertisements on those who have not been educated on the benefits of breastfeeding, (b) the perception that the bottle is a means of liberation for the mother, and (c) the social promotion of the breast as a sex symbol.

Influence of support person.

A contentious issue over one commonly cited variable is the extent of the influence of the support person(s) on a woman's decision-making towards breast or bottle feeding. In general, Pender (1982) stated that "significant others function as an important lay referral system for individuals making decisions

to seek professional care for health promotion" (p. 355). More specifically, it has been suggested that the family plays an important role in supporting a woman's decision to breastfeed or bottlefeed (Arango, 1984). Dusdieker et al. (1985) contended that "perceived support ... is relatively important in the infant feeding decision" (p. 702). This was substantiated by the fact that their study demonstrated that for a woman the most significant worry regarding breastfeeding was the possible lack of support from relatives and friends. In Manstead's et al. (1983) study all the breastfeeding women (n=127) perceived that their support person(s) had positive attitudes towards breastfeeding and negative attitudes towards bottlefeeding while all the bottlefeeding women (n=88) did not perceive their support person(s) to have either negative or positive attitudes towards one or the other method.

Bacon and Wylie (1976), Bryant (1982), Jeffs (1977), and Martin (1978) also noted the positive influence of husband, friends and relatives in the mother's decision to breastfeed (i.e., a woman's preference moved towards breastfeeding over bottlefeeding). Bacon and Wylie surveyed 200 mothers and found that 92% or 78 of the breastfeeding women and 97% or 122 of the bottlefeeding women's choices had been influenced by their own feelings. However, 35% of the breastfeeding women claimed that their husbands had encouraged them, while only 11% of the bottlefeeding women claimed that they had been encouraged by their husbands (Bacon & Wylie). Jeffs findings concurred with

Manstead et al. (1983). Jeffs interviewed 130 postpartum women -- 79 breastfeeding and 51 bottle feeding -- 49 or 62% of the husbands of the breastfeeding women preferred breastfeeding and 6 or 12% of the husbands of the bottlefeeding women preferred bottlefeeding. However, 26 or 51% of the husbands in the latter case did not mind which method a woman used. Martin's (1978) extensive infant feeding survey in England of 535 mothers reported that the highest correlation with planned method of feeding was the distaste for breastfeeding, 0.56; second highest was breastfeeding is best for babies, 0.54; and third was the husbands' view, 0.45.

Other authors have disagreed with these findings. In an English prospective two-year study of 507 primigravidae, Hally et al. (1984) found that 82% of 331 women who received advice to breastfeed actually breastfed. However, although the majority of women studied discussed infant feeding with various sources -- husbands, mothers, relatives and friends -- only 65 women claimed that "the advice given directly affected their choice of method" (Hally et al., 1984, p. 36). Manstead et al. (1984) in their study of 50 primiparous women also found that, in decision-making on infant feeding, a woman's own attitude outweighed that of her significant other(s). A standard regression analysis of behaviour revealed that in an increment of 7%, 5.9% was attributable to the attitudinal component. Mackey and Fried (1981) stated that although 32 out of 50 women reported that the baby's father preferred breastfeeding only five women stated

that "their husbands had been the main influence upon them in deciding how to feed the baby" (p. 314).

The Impact of Health Education on Infant Feeding Decisions

There is disagreement on the impact of health education on decisions regarding an infant feeding method. Some studies have reported that the impact was positive towards breastfeeding while others have reported that it was negative or neutral towards breastfeeding. It also has been reported that there were problems with the timing and/or the content of the information given. The impact of health education on decisions regarding an infant feeding method will be discussed under the headings: positive or negative impact, timing of health education, and content of health education.

Positive or Negative Impact

Wiles (1984) found that in a comparison study of 40 primiparous women with intentions to breastfeed, the 20 women given prenatal breastfeeding education had a greater breastfeeding success rate (18 out of 20) than those not given the prenatal breastfeeding education (6 out of 20). Wainwright (1981) conducted a study in which 24 women were divided into two groups, an experimental and a control group, with 12 women in each. In the experimental group the women received extra information and support during the pre- and postnatal period. All of the women had intentions to breastfeed and were interviewed in their third trimester and later in postpartum. Of the experimental group 50% were still breastfeeding at eight

weeks while only 20% of the control group were breastfeeding at the same period. Over half of the 10 women, in Aberman and Kirchhoff's (1985) study, who had attended prenatal classes "reported that the discussions on infant feeding influenced their final decisions" (p. 396). Husband (1983) reported a statistically significant increase in knowledge of pregnancy, labour, puerperium and infant care by women who had attended prenatal classes over those who had not attended.

In contrast, Jeffs (1977) found that antenatal classes, advice from health professionals, and reading material had little influence on a woman's choice of infant feeding. Moreover, Jeffs stated that "none of the mothers [50] who planned to bottlefeed changed their minds" (p. 914). Jones (1984) also found that antenatal advice or preparation did help common breastfeeding problems. Similarly, Sarett et al. (1983) found that of the 507 women, who during their pregnancy had intentions to breastfeed, 96% breastfed after delivery, regardless of whether or not they had talked with their physicians about breastfeeding. They also found that although 58% of the 420 women with intentions to bottlefeed discussed breastfeeding with their physician, 97% of these women still bottlefed after delivery.

Timing of Health Education

Recently, evidence has been mounting that the efforts of health professionals should be focusing on support for the women who have decided to breastfeed rather than chastising those who

have chosen to bottlefeed (Dusdieker, et al., 1985). This critique stems from the fact that the ill-timed instructional and promotional breastfeeding programmes in existence tend to inadvertently foster bottlefeeding. In other words, the emphasis on promoting breastfeeding is often done in the third trimester or after delivery; the hospital (or post delivery) is no place to begin teaching about breastfeeding (Ellis, 1981). Not only has it been found that most woman have chosen or are committed to a method of infant feeding either before conception or in early pregnancy (Ekwo et al., 1983; Hally et al., 1984; Jones, West & Newcombe, 1986; Mackey & Fried, 1981; Rousseau, Lescop, Fountaine, Lambert & Roy, 1982; Sarett, et al., 1983) but that those who decided early in pregnancy to breastfeed were more apt to be successful breastfeeders than those who decided late in pregnancy (Gulick, 1982; Jones et al., 1986). Furthermore, Manstead et al. (1984) and Sarett, et al. (1983) found that a woman's intention regarding infant feeding before delivery was consistent with what she practiced after delivery.

Content of Health Education

Jeffs (1977) stated that "antenatal classes tend to focus on physical preparation for breastfeeding" (p. 912); such a focus ignored the reasons women give for their infant feeding decisions. These are often psychosocial in nature (Jeffs, 1977; Lawrence, 1985). Although practical information is important, Hewat (1985) stressed that there was a need to include an assessment of the woman's attitudes and feelings, her support

person's attitudes and feelings and the accompanying potential psychosocial problems of breastfeeding. Furthermore, Hewat contended that "it has been well established that learning is enhanced when the three components of the learning process are addressed: the affective, cognitive and psychomotor aspects of learning" (p. 38).

Ellis and Hewat (1984) advised that although the facts are not enough, they are essential and that "information about the physiology of lactation and the art of breast-feeding also gives mothers the confidence to persevere in the face of negative attitudes of health professionals, family and friends" (p. 86). In the prenatal guidance component of the San Diego Lactation Programme, expectant parents are given classes on the advantages of human milk and breastfeeding, the anatomy and physiology of lactation, as well as basic techniques of successful nursing (Naylor & Wester, 1987).

Jordan (1986) suggested that a prenatal discussion of breastfeeding should include not only the benefit for the baby but also the "normalcy of positive and negative feelings" of both parents (p. 95). Moreover, she suggested that the father's feelings -- potential for jealousy, feelings of rejection and becoming burdened with housework -- if not discussed in the antenatal period, later may lead to a breastfeeding crisis. Blachman (1981a) stated that inherent in the "denial of the dark side" of breastfeeding -- ambivalent feelings of motherhood, tiredness, constant giving -- are deleterious consequences for

the mother, her partner and her child (p. 275). For example, if the mother is unprepared and she encounters ambivalent feelings of motherhood, she will almost inevitably face a "breastfeeding crisis" (Blachman, 1981a, p. 276). Not only is the unknown scary but the unexpected is harder to deal with if it is thought to be abnormal rather than a deviation from the norm. Maclean, Byrne, Gray-Snelgrove, Ferrier and Katamay (1985) and Winters (1973) reported that the painting of a rosy picture of breastfeeding in the antenatal period resulted in guilt feelings in the postnatal period if breastfeeding failed.

Although Jones (1984) found that prenatal information did not reduce postnatal breastfeeding problems, Maclean et al. (1985) and Winters (1973) found that in retrospect the mothers who had discontinued breastfeeding believed that if they had been told about potential problems they might not have ceased breastfeeding. Hewat and Ellis (1986) reported that many women expressed the regret that during pregnancy they had not been given information on different infant feeding patterns that would have enabled them to contend more easily with problems. Rice (1984) suggested that prenatal anticipatory guidance, for such potential problems as massive congestion, can prevent cessation of breastfeeding during the crucial first few days by reassuring a woman that the problem is not only a common one but that there is a solution. Moreover, Fisher (1985), Minchin (1985) and Schlegel (1983) emphasized that sore nipples are an unnecessary occurrence if the infant is sucking properly.

Actually Fisher (1985) stated that if problems occur "correct feeding seems to aid the healing process" (p. 51).

A few studies have examined breastfeeding promotion programmes. Naylor and Wester (1987) reported on a breastfeeding promotion programme -- the San Diego Lactation program -- which is directed at all pregnant women and includes three components, prenatal classes, postpartum hospital practices, and a lactation clinic and telephone service. An important adjunct of the programme is in-service for perinatal personnel. However, although it is implied, the success rate of this extensive programme is not made explicit in the report. Yeung et al. (1981) also reported on a successful breastfeeding programme in Vancouver, B. C. in which the incidence of breastfeeding at hospital discharge increased from 68% to 93%. The programme, including interventions and evaluations, was not described.

Summary

From the literature it is evident that the inadequate knowledge level of some health professionals regarding breastfeeding has had a negative impact on a woman's decision toward breastfeeding. If women are going to make an informed decision about infant feeding they need as much information as possible. Health professionals generally are not knowledgeable about breastfeeding as their educational programmes have not contained the necessary information.

In addition to the lack of knowledge about breastfeeding, many health professionals are not aware of some of the complex

psychosocial factors reported in the literature that are involved in a woman's decision regarding infant feeding. Some of the psychosocial factors studied have been the woman's feelings, attitudes, and beliefs towards breasts and breastfeeding; social pressures; socioeconomic circumstances; and the influence of the woman's support person(s). It is important to explore these factors when discussing methods of infant feeding.

There is some disagreement on what impact health education has on decisions regarding a method of infant feeding. In some research studies it was concluded that health education had a positive effect on breastfeeding while other researchers reported a negative or neutral effect. Two factors are believed to influence the decision making process. These factors are the timing and the content of the health education programmes. Timing is important because most women decide very early in pregnancy, if not prior to pregnancy, how they will feed their infant. Content is inadequate because programmes tend to give information on physical preparation for breastfeeding rather than exploring why women make certain decisions regarding feeding their infant. However, the literature does support that women who are informed about potential breastfeeding problems deal better with the problems than do women who are not prepared.

Few researchers have entertained and/or tested for a comprehensive list of variables and few have taken an holistic approach which might have indicated that knowledge, regarding

breastfeeding, was lacking. As a result, little attention has been paid to trying to develop a nursing intervention to enhance the decision-making process, to influence attitudes and intentions, and/or to fill the knowledge gap. The inconclusive and conflicting results of some of the research on infant feeding decisions discussed supported the need for the present study. Furthermore, the generally low knowledge level of breastfeeding among health professionals and consumers and the inadequate quality and quantity of breastfeeding programmes indicated the need for the use of information-sharing on breast and bottle feeding as a nursing strategy. The present study was undertaken to examine the relationship between such a nursing strategy and a woman's decision-making regarding choices of an infant feeding method.

METHODOLOGY

In this chapter the methodology of the study will be discussed under the following headings: design, definitions, population, nursing strategy, research tools, data collection, and data analysis.

Design

The design is that of a descriptive study comparing the responses of a convenience sample of primigravidous women before and after a nursing intervention. A tool, Values and Knowledge on Infant Feeding, VKIF, was developed to assess the participants' values and knowledge about infant feeding methods (Appendix A, p. 138). The VKIF tool also provided a guide to the nursing intervention and a means to describe the population studied. A pre- and post-test, Manstead et al.'s (1984) Questionnaire to Investigate Attitudes to Infant Feeding (Appendix B, p. 146; QIAIF), was used to measure the relationship between information-sharing on infant feeding and a primigravidous woman's attitudes and intention toward a method of infant feeding.

Definitions

Belief

Belief is a person's perception of the likelihood or subjective probability "that performing a behaviour will result in a given outcome" (Ajzen & Fishbein, 1980, p. 66). Based on this definition the belief items in the QIAIF tool included the participants belief about the consequences of the behaviour

(Manstead et al., 1983).

Intention

Intention is the "immediate determinate of behaviour ... [and can] provide the most accurate predication of behaviour" (Ajzen & Fishbein, 1980, p. 410). It consists of two determinants, the person's value of performing the behaviour and the person's perception of the value others place on his/her performing the behaviour. The intention item in the QIAIF tool was based on this definition and referred to which method of infant feeding a woman intended to use.

Attitudes

Attitudes are the primary determinant of a person's intention and they encompass the positive or negative values of the behaviour to be performed (Ajzen & Fishbein, 1980). Based on this definition, in the QIAIF tool a score was computed for the participant's attitudes to infant feeding by mathematically incorporating the participant's beliefs about breast or bottle feeding and the participant's evaluation of each method.

Subjective Norm

The subjective norm is the second determinant of intention which "... is the person's perception of the social pressures put on him [/her] to perform or not to perform the behaviour in question" (Ajzen & Fishbein, 1980, p. 6). In the QIAIF tool this definition governed the computation of the participant's score of the subjective norm to infant feeding, which mathematically incorporated normative belief and motivation.

Information-sharing

Information-sharing is an on going assessment/intervention process involving an active free flow of information between nurse/researcher and client/participant, which facilitates the learning process for the participant.

Support person

The support person denotes the person who is most important to the woman during her pregnancy whether it be her husband (common law or married), partner, boyfriend, close friend (male or female), relative (e.g., mother, father, sister, or aunt) or possibly a professional (e.g., nurse or social worker).

Population

The criteria for participants for the study were as follows; (a) a primigravida, (b) in the third trimester (28 to 38 weeks gestation) of pregnancy, (c) able to speak and read English, (d) 18 years of age or older, (e) living within a 48 kilometre radius of the city or within a 48 kilometre radius of a nearby community medical clinic, (f) planning to keep her baby, and (g) having an uneventful pregnancy up to the time of the study.

It was decided to restrict the study to primigravidas for three reasons: (a) to decrease the number of extraneous variables, (b) because there is a high tendency to use the same feeding method for subsequent babies as for the first (Martin & Monk, 1983), and (c) because Fishbein and Ajzen's theory of

reasoned action was based on first time behaviour.

In addition, it was decided to have women in their third trimester for three reasons: (a) It was believed that if the study was begun earlier in pregnancy there would be potential for a high commitment expectation from participants, a high attrition rate, and researcher burnout (Clinton et al., 1986). (b) Manstead et al. (1984) stated that "if one wanted to identify antenatally those mothers who are unlikely to breast-feed, with a view to promoting the incidence of breast-feeding, intentions measured on a single seven-point scale during the last trimester of pregnancy would provide a fairly accurate indication" (p. 229). (c) To take advantage of short term memory, allowing for greater recall post delivery by sharing information close to delivery.

Participation was restricted to women who could speak and read English because (a) participants were expected to play an active role in the information-sharing session, (b) written material in the form of booklets and pamphlets were used to give information, and (c) the research tools were self-administered questionnaires.

Women 18 years of age or older were included in order to give informed consent to participants.

The researcher needed to restrict participants' distance away from the city or nearby medical clinic to 48 kilometers for the following reasons: (a) researcher had to have easy access to the subjects for the information-sharing sessions, and (b) to

facilitate participants meeting in small groups for the sessions.

Only women planning to keep their infants were included in order that a participant would be involved in the decision-making regarding a method of infant feeding.

Finally only women having an uneventful pregnancy up to the time of the study were included (a) to reduce the effects of extraneous factors and (b) to reduce the risk of participants having to withdraw from the study before it was completed.

Nursing Strategy

The nursing strategy in the present study was an educational process on infant feeding which included two information-sharing sessions. The nursing strategy began when a woman was in her third trimester. A convenient time and location for a participant was chosen. The strategy consisted of a first interview in which attitudes, values and knowledge towards infant feeding were assessed and was followed by two information-sharing sessions lasting approximately one hour each. The information-sharing sessions embodied an on going assessment/participation process incorporating the information obtained from the first interview using the research tools (Appendices A, B & C, pp. 138, 146 & 151). The objectives of the information-sharing sessions were to provide the pregnant woman with (a) an awareness of the many factors that can influence decision-making in infant feeding and (b) the necessary knowledge to make an informed decision on infant feeding.

Specific objectives for each session were given to the participant in advance of the sessions (Appendix C, p. 151).

Each session began with a brief exchange/discussion of the pregnant women's wellness status. If there were any problems, a time was set aside to discuss these and, if necessary, appropriate referrals were made. Taking into consideration the educational level of participants, pamphlets (Appendix D, p. 153) covering the respective topics for the first session were given at the end of the first interview and at the end of each information-sharing session. The participants were asked to read the pamphlets and to raise any questions or concerns on their content at the next information-sharing session. A reading list and a list of resource people and agencies on infant feeding were distributed to all the participants at the last session (Appendix E, p. 155). The first information-sharing session was usually conducted on an individual basis while the second session was conducted in a small group, ideally consisting of four to six participants.

After the initial discussion, an information-sharing session was given on infant feeding titled: Infant Feeding Choices and the Value of Each for the Baby, Mother, and Family. This information-sharing session began with a discussion and an examination of why the participant chose a particular method of infant feeding. In addition, the discussion included what the participant believed were the influencing factors that affected her decision-making (i.e., advertisements, support person(s),

relatives and/or friends); the woman's feelings about her breasts; the importance of being a career woman versus being a mother; and the resultant influence of both infant formula advertisement and the sexual attribution of the breast on attitudes towards infant feeding.

The subsequent discussion looked at both infant feeding methods from the perspective of the mother and the infant with regards to the following: (a) the value of breastfeeding and bottlefeeding, including for each method the nutritional benefits (Appendix F, p. 157), cost in money (Appendix G, p. 159), time and energy, convenience, as well as breastfeeding's ability to accomplish several needs at one time; (b) the anatomy and physiology of lactation and sucking (Riordan & Countryman, 1980); (c) the nurture and comfort of sucking; (d) the mother's commitment and involvement of others in the infant's care; and (e) the pleasure or displeasure for the woman breastfeeding or bottlefeeding.

The second information-sharing session was titled: The How To of Infant Feeding, Including Potential Problems -- Prevention and Cure. The focus of this session was on the skills and preparation involved in breast and bottle feeding and potential problems one might encounter. With the visual-aid of slides the following areas, related to breast and bottle feeding, were discussed: (a) early initiation and establishment of breastfeeding, (b) positioning of infant and effective sucking, (c) maternal and neonatal nutrition, (d) introduction of solids,

(e) sore nipples, (f) insufficient milk supply, (g) maternal lack of confidence, (h) facing adverse situations and conflicting advice, (i) contraception, and (j) variety, forms and preparation of available infant formula.

Preparation for the possibility of problems or concerns was provided throughout the two sessions, including the father/partner's feelings and involvement. The diverse potential feelings of being new mothers and new fathers were discussed with the participant and her partner, when present. Included in the discussions of the reality of the postnatal period was an acknowledgement of the time initially involved, especially in breastfeeding; how to allow for rest and time to one's self; and the importance of involving others in the care of the infant to preserve energy for feeding and to avoid total exhaustion of the mother. Practical ways of how to involve the support person and others in infant care also were discussed.

In discussing the initiation and establishment of breastfeeding, the participants were encouraged to let hospital personnel know their desire to breastfeed as soon as possible after delivery. However, it was emphasized that a woman should not feel that she has failed or will not succeed at breastfeeding if separated from her infant for medical reasons during the first 12 hours or so post delivery.

At the end of the second information-sharing session the participants were asked to complete a short questionnaire, Participant's Feedback on Information-sharing Sessions (Appendix

H, p. 160). This questionnaire was developed by the researcher simply to obtain from the participants an evaluation on the educational process used in the nursing strategy. The questionnaire consisted of eight questions related to content and design of the information-sharing sessions. The questions were placed on a Likert scale from 1 to 5. Scores were computed on the individual questions only, for frequency of response.

Research Tools

The two research tools used in the present study were: (a) an attitudes testing tool designed by Manstead et al. (1984), QIAIF and (b) a tool designed by the researcher, Values and Knowledge of Infant Feeding (Appendix A, p. 138; VKIF).

Questionnaire to Investigate Attitudes to Infant-Feeding

The tool, QIAIF, was developed and used by Manstead et al. (1984) and Manstead et al. (1983) to determine the effect of attitudes, beliefs, and perceived norms on a pregnant woman's intention to bottlefeed or breastfeed. Manstead gave written permission to use the tool in this study (Appendix I, p. 161). Since the validity and reliability of the tool were not reported in the literature, the content validity of the tool was assessed by three experts in the maternal-child health field and was found to have content comprehensiveness. The reliability of the tool was tested through a pilot study of eight pregnant women; the coefficient alpha was found to be 0.4739.

Manstead et al. (1984) had divided the questions in the tool into belief items, evaluating items, normative belief

items, motivation to comply items, intention towards infant feeding and commitment to breastfeeding. The evaluation items in the QIAIF tool included the participant's evaluation of the consequences of the behaviour -- the infant feeding method chosen. The normative belief items in the tool were the participant's perceptions of her support persons' expectations of her infant feeding method. The motivation items referred to the participant's motivation to comply to each of the support persons' expectations.

The specific questions included in each category are outlined in Table 2 (p. 44). The computations designed by Manstead et al. (1984) are described below. The questions were placed on a Likert scale from one to seven. For computation the scores for the belief items A-1, A-2, A-5, A-6, A-9, A-10, A-11 and A-12 were reversed. That is, if a woman scored a 7 on A-1, it would be coded as 1; if 6, a 2; and so on. All the scores for the belief items (B-1 to B-11) and the normative belief items (C-1 to D-4) were reversed. The rest of the questions were coded as scored. Attitudes to breastfeeding were computed by summing the products of each breastfeeding belief item and its corresponding evaluation item (e.g., belief item A-1 x evaluation item B-4 + belief item A-3 x evaluation item B-5, etc.). The attitudes to bottlefeeding were computed in a similar fashion (e.g., belief item A-2 x evaluation item B-3 + belief item A-4 x evaluation item B-7, etc.). The subjective norm to breastfeeding was computed by summing the products of each

TABLE 2

OUTLINE OF THE DIVISION OF THE QUESTIONS IN THE TOOL:

A QUESTIONNAIRE TO INVESTIGATE ATTITUDES TO INFANT-FEEDING
(Manstead, 1984)

ITEM NAME	QUESTION NUMBERS
Breastfeeding Belief	A1, A3, A5, A7, A9, A11
Bottlefeeding Belief	A2, A4, A6, A8, A10, A12
Breastfeeding Evaluation	B1, B2, B4, B5, B7, B11
Bottlefeeding Evaluation	B3, B6, B7, B8, B9, B10
Breastfeeding Normative Belief	C1, C2, C3, C4
Bottlefeeding Normative Belief	D1, D2, D3, D4
Motivation to Comply	E1, E2, E3, E4
Intention towards Infant Feeding	F
Commitment to Breastfeeding	G

normative belief item and its corresponding motivation to comply item (e.g., breastfeeding normative belief item C-1 x motivation to comply item E-1). Likewise, the subjective norm to bottlefeeding was computed (e.g., normative belief item to bottlefeeding item D-1 x motivation to comply item E-1). A participant's overall attitude toward infant feeding or attitudinal difference score was computed by subtracting the attitude to bottlefeeding score from the attitude to breastfeeding score. A participant's subjective norm regarding infant feeding or subjective difference score was computed by subtracting the subjective norm to bottlefeeding score from the subjective norm to breastfeeding score. See Table 3 (p. 46) for an outline of the computations of the QIAIF tool.

Values and Knowledge of Infant Feeding

The VKIF tool, a 64 item questionnaire, was designed by the researcher as a tool to assess the participants' values and knowledge about infant feeding methods. It served also as a guide for the information-sharing sessions and provided descriptive data on the participants. Demographic Data (Appendix J, p. 162), such as, age, education, employment status and a woman's support person's employment status, shown by several researchers (Adair, 1983; Blackwell & Salisbury, 1981; Eckhardt & Hendershot, 1985; Yeung, et al., 1981) to be important variables in a woman's decision-making, were also included. Reliability of the tool, VKIF, was not tested. The content validity of the tool was assessed by three experts in the

TABLE 3

OUTLINE OF THE COMPUTATIONS OF THE TOOL:

A QUESTIONNAIRE TO INVESTIGATE THE ATTITUDES TO INFANT FEEDING
(Manstead, 1984)

BREASTFEEDING BELIEFS = A1 + A3 + A5 + A7 +A9 + A11

BOTTLEFEEDING BELIEFS = A2 + A4 + A6 + A8 + A10 + A12

BREASTFEEDING EVALUATIONS = B4 + B5 + B2 + B1 + B7 + B11

BOTTLEFEEDING EVALUATIONS = B3 + B7 + B6 + B9 + B8 + B10

BREASTFEEDING NORMATIVE BELIEFS = C1 + C2 + C3 + C4

BOTTLEFEEDING NORMATIVE BELIEFS = D1 + D2 + D3 + D4

MOTIVATION TO COMPLY = E1 + E2 + E3 + E4

ATTITUDES TO BREASTFEEDING = (A1*B4) + (A3*B5) + (A5*B2) +
(A7*B1) + (A9*B7) + (A11*B11)

ATTITUDES TO BOTTLEFEEDING = (A2*B3) + (A4*B7) + (A6*B6) +
(A8*B9) + (A10*B8) + (A12*B10)

SUBJECTIVE NORM TO BREASTFEEDING =
(C1*E1) + (C2*E2) + (C3*E3) + (C4*E4)

SUBJECTIVE NORM TO BOTTLEFEEDING =
(D1*E1) + (D2*E2) + (D3*E3) + (D4*E4)

ATTITUDE TO INFANT FEEDING =
ATTITUDES TO BREASTFEEDING - ATTITUDES TO BOTTLEFEEDING

SUBJECTIVE NORM TO INFANT FEEDING =
SUBJECT. NORM TO BREASTFEEDING -
SUBJECT. NORM TO BOTTLEFEEDING

maternal-child field and the tool was found to have content comprehensiveness.

The VKIF tool involved collecting information on what a woman did not know, what a woman would like to have known and what concerns a woman had regarding infant feeding. A closed-question format was used to obtain specific answers and to aid in ease of coding. In addition, the closed-questions were chosen to overcome inhibitions a participant might have in expressing her comments in writing. Simopoulos and Grave (1984) indicated that some women will not give specific answers unless asked, resulting in over generalizations and erroneous conclusions being drawn.

To facilitate the analysis process of the data from the VKIF tool the Precede model (Green, Kreuter, Deeds & Partridge, 1980), a health education model, was applied as an organizational and computation framework. Using the three categories of the Precede model -- predisposing factors, enabling factors, and reinforcing factors (Green et al., 1980) -- the researcher subdivided the questions. The questions that were thought to be influential on health behaviour, internal to an individual, and which supported the health behaviour were placed in the predisposing category. The questions that included the skills of an individual and/or the structure of an individual's environment that both supported the behaviour and allowed access to the resources which supported or allowed the behaviour to occur were placed in the enabling category. The questions that

were placed into the reinforcing category included the support an individual received from his/her significant social environment to obtain or maintain a health behaviour -- family, partner, friends, and health professionals. Table 4 (p. 49) delineates the question-contents of the VKIF tool into the three categories, just described.

The Precede model (Green et al., 1980) which also guided the analyses of the demographic data and data obtained from the VKIF tool, placed the scores on a grid system weighting each item as to its importance to the behaviour. However, for the VKIF tool, the researcher assigned a value to each item on a ordinal scale of zero to three; with zero being the lowest and referring to a positive response towards bottlefeeding; one, a do not know response; two, a mid-value related to infant feeding or a neutral stance; three, being the highest value and relating to positive attitudes, values, and knowledge towards breastfeeding. The basis for this scoring resided on the premise that, for example, if a woman perceived that breastfeeding was the most popular, if the woman's friends and relatives were all breastfeeding, and/or a woman believed breastfeeding was beneficial to her and/or her infant then a woman was more likely to have intentions to breastfeed than to bottlefeed.

Each question was coded on an individual basis, that is, some questions had the full range of responses from zero to three while others only three responses, one, two, and three; and still others only two responses, one or two. In any case the

TABLE 4

VALUES AND KNOWLEDGE ON INFANT FEEDING and DEMOGRAPHIC DATA

DIVIDED INTO THE PRECEDE MODEL CATEGORIES

PREDISPOSING: Feeding method in Canada; feeding method in Newfoundland; feeding methods of family, friends; seen anyone breastfeeding, at home, on tv, in a magazine, in a friend's house, in the newspaper, in a relative's home; fed as an infant; women with small breasts produce less milk; breastfeeding in public; breast suckling causes sexual excitement; this is upsetting; age to introduce solids; the best milk; most convenient for you; makes baby healthier; makes baby happier; makes you happier; milk given more often; stools smell; sleeps longer; more time to rest; ties you down; benefits jaws and gums; cheapest; easiest; allows other's involvement; get pregnant while breastfeeding; breastfeeding and the pill; breastfeeding and the IUD; produce enough milk, feed twins; best milk for preemie; breastfeed post c-section; breastfeed with a cold; permanent changes in the breasts; does this concern you.

ENABLING: Examine breasts; uncomfortable touching breasts; have a quiet place to feed; breastfeed in front of family, friends, or public; return to work; afford a nursing bra, dress; eating well; attend prenatal classes; source of information; who involved in baby care; infant feeding method; when decided on method; number of adults in the house; number of rooms in the residence; live with partner; age; gestation; education; employment status; support person's employment status.

REINFORCING: Breastfeeding in front of family and friends; would family mind, friends mind; method physician discussed; method RN discussed; get help from mother, best friend, grandmother, public health nurse, hospital staff, physician, other; breastfeeding now, best friend, someone at work, relative, other; able to talk with anyone; heard of the breastfeeding clinic; heard of the La Leche League.

lower number had the lower value or negative value with respect to breastfeeding, and the higher number, the higher value or positive value to breastfeeding. Some of the questions (Q8, Q9, & Q10) were omitted from the analysis because of poor or confusing responses obtained in this study.

The predisposing score was computed by summating the scores of the questions placed in the predisposing category (e.g., Q1 + Q2 + Q3, etc.). The enabling and reinforcing scores were done in a similar fashion. The overall score was computed by summating the three category scores, that is predisposing plus enabling plus reinforcing. Table 5 (p. 51) outlines the computations using the three categories of the Precede model.

Ethical Considerations

All prospective participants were given a handout explaining the purpose and process of the study (Appendix K, p. 163). Understanding of the study for a participant was ensured before signing the consent (Appendix L, p. 165) which was done prior to commencement of the first interview. Each participant was informed verbally and in writing that she was free to withdraw from the study at any time and that the researcher was available throughout the study should any questions or problems arise. In addition, if any medical problems or other problems requiring a referral arose the researcher was prepared to act accordingly. The participants were informed that the researcher would contact the hospital/general practitioner for information regarding the feeding method used at time of hospital discharge.

TABLE 5

OUTLINE OF THE COMPUTATIONS OF

VALUES AND KNOWLEDGE OF INFANT FEEDING + DEMOGRAPHIC DATA

PREDISPOSING = Q1+Q2+Q3+Q4+Q5+Q6A+Q6B+Q6C+Q6D+Q6E+Q6F+Q6H
+Q7+Q11+Q12+Q13+Q14+Q15+Q16+Q17+Q18+Q19+Q20
+Q21+Q22+Q23+Q24+Q25+Q26+Q27+Q28+Q29+Q30+Q31
+Q32+Q33+Q34+Q35+Q36+Q37+Q38+Q39+Q40+Q41

ENABLING = Q42+Q43+Q44+Q45A+Q45B+Q45C+Q48+Q49+Q50+Q51+Q52
+Q53A+Q53B+Q53C+Q53D+Q53E+Q53F+Q53G+Q53H+Q54A
+Q54B+Q54C+Q54D+Q62+Q63
+AGE+ED+EMP+RMS+ADULT+SUPEMP+LIVES+F

REINFORCING = Q46+Q47+Q55+Q56+Q57A+Q57B+Q57C+Q57D+Q57E+Q57F
+Q57G+Q58A+Q58B+Q58C+Q58D+Q59+Q60+Q61

TOTAL SCORE = PREDISPOSING + ENABLING + REINFORCING

Confidentiality was maintained throughout the study. The researcher had sole access to the identity of the participants and a file number only was recorded on all the questionnaires. Approval to do the study was obtained form the Human Subjects Review Committee of the Memorial University School of Nursing and the ethical review committees of the respective agencies used in the study.

Information regarding the results of the study were offered to the participants and for anyone interested in the study a copy of the completed thesis will be made available at the Memorial University of Newfoundland library.

Data Collection

The data collection schedule was followed as outlined in Appendix M (p. 166). The different settings in which participants were sought are outlined as follows. Prenatal classes at the two urban hospitals providing maternity care were used. At each hospital a prenatal instructor introduced the researcher to members of a prenatal class. The researcher then briefly explained the study, invited members of the class to participate in the study, and left them copies of a written explanation of the study (Appendix K, p. 163). Each pregnant woman who agreed to participate, passed her name to the prenatal instructor, who in turn, provided the woman's name and phone number to the researcher. Fifteen prenatal classes with a total of 136 class members were approached. Only nine women agreed to participate. The prenatal instructors reported that some of the

women had stated that they did not have time in their busy schedules and that they already knew enough about breastfeeding through reading and talking with friends and health professionals. Of the nine who did consent only three fit the criteria; the majority were multigravidas.

A total of 19 urban general practitioners were approached. Two of the general practitioners were on maternity leave and thus unable to assist; another was in the middle of changing office locations. Of the total, 10 physicians offered their cooperation and three of them acted as liaison for their partners. The general practitioners handed out a copy of the explanation of the study and an invitation to participate in the study to pregnant clients and passed on consenters' names and phone numbers to the researcher. From the general practitioners' clientele, initial acceptance was obtained from 22 women. However, because many of the women were either multigravida or had delivered prior to contact by the researcher only 14 of these women were accepted into the study.

In a medical clinic in a nearby community, three general practitioners, after consulting with their pregnant clients, provided the researcher with a list of 16 names and phone numbers. Of these only three women were primigravidous and able to participate. One of the three consenting women knew a friend who fit the criteria of the study and invited her to participate; which she did.

One final source for obtaining participants was tried. One

of the urban participants explained (unsolicited) the study to a maternity clothes shop owner who volunteered to assist in gathering participants. Twenty-five copies of the explanation of the study (Appendix K, p. 163) were given to the shop owner which she included with her own handouts to her customers. Unfortunately however, no participants were obtained through this method.

A total of 18 participants were obtained for the study. Initial contact with the participants by the researcher was made via phone and a convenient time and place to meet was arranged with each participant. The first two interviews usually took place in the participant's home and the third interview, at the breastfeeding clinic of one of the urban hospitals. The exceptions to this are outlined below. One participant had all three interviews at her own home and another had all three at the breastfeeding clinic. One participant had the first two interviews in an office of a general practitioner's clinic, and the third at the breastfeeding clinic. Another had the first two interviews in a room at a chiropractor's office and the third at the breastfeeding clinic. Two participants had all three interviews in a room at a nearby community medical clinic. Finally, for two participants the first interviews were held in their own homes and for the third interview, one went to the other's home. Irrespective of the location of the interviews the physical setting allowed for privacy and no interruptions occurred.

The first interview was divided into three parts, beginning with (a) demographic data collection, followed by (b) attitude testing, QIAIF, and finally (c) an assessment of values and knowledge on infant feeding, VKIF. The QIAIF tool was used as a pre-test to measure participants' attitudes and intentions towards infant feeding prior to the nursing strategy -- information-sharing sessions. The demographic data and VKIF tools were used to obtain descriptive data on the participant. This participant profile was then used to aid the researcher in the conduction of the information-sharing sessions.

One to three weeks following the first interview the information-sharing sessions began. Each session took approximately one hour with time allowed for concerns or problems the participant might have had regarding infant feeding and/or pregnancy. The discussions for each session were directed by the information-sharing objectives (Appendix C, p. 151), given to each participant and the information-sharing outline (Appendix N, p. 167).

The first of the two information-sharing sessions, occurred in the third trimester for all but two of the 18 women. These two women were 20 weeks gestation and were included because of the difficulty the researcher had in obtaining subjects. The first session for all but two participants was on an individual basis. The second session, for all but one participant, was a small group of two to four participants to allow for greater discussion among participants. It closed with the participants

completing a repeat of the QIAIF tool as a post-test. In addition, the researcher administered a short questionnaire (Appendix H, p. 160) to provide some evaluation on the value of the information-sharing sessions to the participants.

The final portion of the data collection involved contacting the maternity hospitals to obtain information on the feeding method used by each participant at the time of discharge from the hospital. The coordinators of the breastfeeding clinic at each hospital were the contact persons. The nurse-in-charge of the nursery of one of the urban hospitals was consulted when the coordinator no longer had information on one of the participants. Two of the general practitioners were consulted, once each, when information on two participants was not available elsewhere. Complete data were collected on all participants.

Analysis

The participants were divided into two groups for ease of analysis. The breastfeeders were the group of 13 participants who stated in the post-test, after the information-sharing sessions, that they had intentions to breastfeed. The bottlefeeders were the group of five participants of whom at this time four were undecided about breast or bottle feeding and one had intentions to bottlefeed.

Data were coded and analysed using SPSS-X. Mean scores of attitudes and subjective norms towards infant feeding from the pre-test, QIAIF, were compared with the mean scores of attitudes

and subjective norms towards infant feeding from the post-test, QIAIF, to determine if there was a relationship between information-sharing and attitudes and/or subjective norm. Comparisons also were made between the mean scores of the other corresponding components of the pre- and post-tests to determine if there was a relationship between information-sharing and the various sub-components of attitudes.

Frequencies and cross-tabulations were done on the data obtained from the QIAIF and VKIF research tools. Fisher's Exact Test was used to determine significant differences in the pre- and post-test between the two groups -- breastfeeders and bottlefeeders. In addition, raw score comparisons were made between the two groups and with each participant. Frequencies of intention in the pre- and post-tests were examined, as well frequencies of response to some of the questions were used in describing the population.

The mean scores from the VKIF tool and the demographic data, using the Precede model of categories, were compared between the two groups, breastfeeders and bottlefeeders. Fisher's Exact Test was used to determine significant differences between the two groups. Raw score comparisons were made between the two groups and with each participant. Frequencies of demographic data and responses to the various questions from the VKIF tool were used to describe the population. For the open-ended question 64 of the VKIF tool, which asked why the participant had decided on a particular

feeding method, responses were grouped under major themes and frequencies reported. In addition, frequencies of responses from the evaluation questionnaire were reported.

PRESENTATION AND DISCUSSION OF RESULTS

Using the conceptual framework for the study, which was based on Ajzen and Fishbein's theory of reasoned action and Bentovim's model of psychological factors of breastfeeding, the presentation and discussion of results addresses the four research questions guiding the study. The discussion is divided into the following headings: description of population, the relationship between information-sharing and a woman's attitude and intention, and prenatal intention as a predictor of postnatal choice.

The results from the VKIF tool; recommendations for future use of the VKIF tool; comparison of the two research tools used, QIAF tool and VKIF tool; as well as a comparison of these two tools are also discussed. In discussion of the findings consideration was given to the small sample size and the resultant limited generalizability of the study. As stated earlier the participants were divided into two groups, breastfeeders and bottlefeeders based on the participants' decisions stated in the post-test.

Description of Population

Description of the population is outlined in Tables 6, 7, and 8 (pp. 60-62). Eighteen participants were obtained for the study. All of the participants were primigravidous women, able to speak and read English, and were 18 years of age or older. Fourteen of the participants lived within the city and four lived within a 48 kilometre radius of a nearby community medical

TABLE 6

DEMOGRAPHIC DATA

FACTORS	BREASTFEEDERS		BOTTLEFEEDERS	
	Mean	S.D.	Mean	S.D.
Age in Years				
Participant	24.38	9.540	21.4	1.500
Support Person (S.P.)	29.16	4.745	32.2	11.309
Participant	NO.	%	NO.	%
Gestation (third trimester)	13	100	3	60
Education				
Post Secondary	11	84.6	2	40
</= High School	2	15.4	3	60
Employment Status				
Employed	8	61.5	0	0
Unemployed	5	38.5	5	100
Head of Household				
S.P. &/or Participant	13	100	2	40
Participant's Parents	0	0	3	60
Newfoundlanders	8	61.8	5	100
Support person (S.P.)				
Education				
Post Secondary	11	84.6	2	40
</= High School	2	15.4	3	60
Employment status				
Employed	13	100	2	40
Unemployed	0	0	3	60

TABLE 7

BREASTFEEDING EXPERIENCES

EXPERIENCE	BREASTFEEDERS		BOTTLEFEEDERS	
	NO.	%	NO.	%
How fed as an infant				
Breastfed	3	23.1	1	20
Bottlefed	7	53.8	4	80
Both	3	23.1	0	0
Main family method				
Breastfeeding	8	61.5	0	0
Bottlefeeding	1	7.7	4	80
Both	4	30.8	1	20
Friends who have				
Breastfed	8	61.5	0	0
Bottlefed	1	7.7	0	0
Both	4	30.8	5	100
Seen anyone breastfed	13	100	4	80
Where seen				
Friends	10	76.9	2	40
Relatives	12	92.3	1	20
Home	9	69.2	2	20
Presently breastfeeding				
Best friend	3	23.1	0	0
Someone at work	2	15.4	0	0
Relative	1	7.7	2	40

TABLE 8

FEELINGS TOWARD BREASTFEEDING

FEELING	BREASTFEEDERS		BOTTLEFEEDERS	
	NO.	%	NO.	%
Breastfeed in front of				
Family	11	84.6	0	0
Friend	11	84.6	0	0
Would family mind				
Yes	0	0	1	20
No	10	76.9	2	40
Don't Know	3	23.1	2	40
Would friends mind				
Yes	0	0	1	20
No	12	92.3	2	40
Don't Know	1	7.7	2	40
Baby's father believes				
Definitely breastfeed	10	76.9	1	20
Neutral	0	0	4	80
Participant's mother believes				
Definitely breastfeed	8	61.5	0	0
Neutral	2	15.4	5	100
Female friend believes				
Definitely breastfeed	8	61.5	1	20
Neutral	2	15.4	3	60

clinic. All the women planned to and kept their baby, had an uneventful pregnancy up to the time of the study and all but two were in their third trimester (28 to 38 weeks gestation). Two of the women were in their second trimester (20 weeks gestation) and were included because of difficulty in obtaining participants for the study.

The following is a summary of the two groups' comparable characteristics beginning with the breastfeeders.

Breastfeeders (n=13)

The breastfeeders compared to the bottlefeeders were older (24.38 +/- 9.54 yrs. vs 21.4 +/- 1.5 yrs.), had more formal education (84.6% with post secondary education vs 40%), and were usually employed (61.5% vs 0%). All of the breastfeeders lived with their partners in their own home, and only four were planning to return to work. In addition, their partners had more formal education (84.6% with post secondary education vs 40%) and all were employed. Eight of the women were Newfoundlanders, three were from out of the province, one was English, and one was Dutch.

The breastfeeders compared to the bottlefeeders had a stronger cultural influence for breastfeeding. That is, although as infants the majority of them (10) had been bottlefed and three were breastfed, eight stated that the main feeding method of their immediate family was breastfeeding. All of them had seen someone breastfeeding, in either a friend's and/or a relative's home. Eight of them had friends and five had best

friends who had breastfed. At the time of the study three had a best friend, two knew someone at work, and one had a relative, breastfeeding.

Among those choosing to breastfeed there was overwhelming social support for breastfeeding. Eleven stated that they believed that they would be able to feed in front of their families and friends. Ten believed that their families would not mind if they breastfed in front of them and three were not certain what their families would think. Twelve believed that their friends would not mind and one was unsure. Moreover, their perceptions of their support persons were that 10 partners, eight mothers and eight best friends believed that they definitely should breastfeed. Only one partner thought that the woman definitely should bottlefeed and this woman was bottlefeeding at hospital discharge. One hundred percent of their mothers, 84.6% of their partners and 76.9% of their best friends were opposed to bottlefeeding. That is, for these support people, their scores, on a Likert scale of 1 to 7, ranged from 1 to 4; from definitely should not bottlefeed to a neutral stance on bottlefeeding.

The pre-test tool, QIAIF, was examined for attitudinal comparisons; the post-test tool results were not significantly different. The breastfeeders' mean attitude score towards breastfeeding was 199.615 with a standard deviation of 27.521 and a Fisher's Exact Test of 0.27778, their mean attitude score towards bottlefeeding was 122:077 with a standard deviation of

31.787 and a Fisher's Exact Test of 0.02171, and their mean of the attitudinal difference score was 77.538 with a standard deviation of 44.775 and a Fisher's Exact Test of 0.04412 (Tables 9 & 10, pp. 66-68). These statistics indicated that the breastfeeders compared with the bottlefeeders, generally, but not statistically significant, had an overall more positive attitude towards breastfeeding than towards bottlefeeding. For example, important to all of the breastfeeders was a method which provided complete nourishment, protection against infection, and a close bond with the baby. All of them stated that breastfeeding would provide complete nourishment, protection against infection, and a close bond with the baby. Further, from the tool, VKIF, it was found that all the breastfeeders stated that breast milk is the best milk for all babies including premature infants and that it makes the baby healthier. In addition, 12 stated that breastfeeding would make them happier and 11 that breastfeeding was the easiest method and would make the baby happier.

Bottlefeeders (n=5)

The bottlefeeders, all Newfoundlanders, were younger than the breastfeeders (21.4 +/- 1.5 yrs. vs 24.38 +/- 9.54 yrs.), only two had a post secondary education, none were employed, and three did not live with their partner. Their partners, compared to the breastfeeders' partners, had had less formal education (40% with post secondary education vs 84.6%) and only two were employed.

TABLE 9

MEAN SCORES FROM THE TOOL:

QUESTIONNAIRE TO INVESTIGATE ATTITUDES TO INFANT FEEDING
(Manstead, 1984)

Breastfeeders = GRP. 1 Bottlefeeders = GRP. 2

VARIABLE	GRP.	PRE-TEST Mean	PRE-TEST S.D.	POST-TEST Mean	POST-TEST S.D.
Attitude towards Breastfeeding	1	199.615	27.521	204.615	26.847
	2	190.200	26.883	196.800	35.450
Attitude towards Bottlefeeding	1	122.077	31.787	108.538	27.823
	2	163.000	31.338	160.600	25.822
Subjective Norm to Breastfeeding	1	117.846	49.702	116.462	31.653
	2	87.800	41.973	101.000	35.653
Subjective Norm to Bottlefeeding	1	46.462	22.875	51.231	22.532
	2	78.200	49.206	73.000	25.894
Attitudinal Difference	1	77.538	44.775	96.077	33.861
	2	27.200	53.504	36.200	35.534
Subjective Norm Difference	1	71.385	46.400	65.231	33.417
	2	9.600	57.544	28.000	58.669

TABLE 9 (continued)

MEAN SCORES FROM THE TOOL:

QUESTIONNAIRE TO INVESTIGATE ATTITUDES TO INFANT FEEDING
(Manstead, 1984)

Breastfeeders = GRP. 1 Bottlefeeders = GRP. 2

VARIABLE	GRP.	PRE-TEST Mean	PRE-TEST S.D.	POST-TEST Mean	POST-TEST S.D.
Breastfeeding Beliefs	1	36.154	4.059	34.923	3.685
	2	30.800	3.114	31.600	4.278
Bottlefeeding Beliefs	1	24.462	4.313	24.846	3.236
	2	28.600	6.877	29.400	6.025
Evaluations of Breastfeeding	1	32.154	4.506	32.846	4.220
	2	35.200	5.119	35.000	3.536
Evaluations of Bottlefeeding	1	29.308	5.453	26.231	4.969
	2	32.800	5.630	31.000	3.808
Normative Beliefs to Breastfeeding	1	24.923	3.530	24.769	2.088
	2	18.200	3.834	18.400	5.079
Normative Beliefs to Bottlefeeding	1	11.385	4.093	11.769	4.304
	2	15.800	5.070	14.400	4.450
Motivation	1	18.385	7.018	18.462	4.648
	2	19.600	8.355	21.200	3.633

TABLE 10

COMPARISON OF BREASTFEEDERS WITH BOTTLEFEEDERS

FROM THE PRE-TEST TOOL

QUESTIONNAIRE TO INVESTIGATE ATTITUDES TO INFANT FEEDING

	BELIEFS ON		ATTITUDES TO	
	BREAST FEEDING	BOTTLE FEEDING	BREAST. FEEDING	BOTTLE FEEDING
FISHERS EXACT TEST	0.22549	0.31373	0.27778	0.02171

	EVALUATION OF		NORMATIVE BELIEF ON	
	BREAST FEEDING	BOTTLE FEEDING	BREAST FEEDING	BOTTLE FEEDING
FISHERS EXACT TEST	No Difference	0.50980	0.27778	0.09874

	MOTIVATION	ATTITUDINAL DIFFERENCE	SUBJECTIVE NORM DIFFERENCE
FISHERS EXACT TEST	0.56092	0.04412	0.17157

The bottlefeeders, compared to the breastfeeders, had a stronger cultural influence for bottlefeeding. Four of the five were bottlefed as an infant, the main feeding method of either their immediate family or friends was bottlefeeding, and none of them had a best friend who either had breastfed or was breastfeeding at the time of the study. Nonetheless, four had seen someone breastfeeding either at home or in a friend's house and at the time of the study, three did know someone breastfeeding.

The bottlefeeders' social support were neither strongly in favour of bottlefeeding or breastfeeding. While planning to bottlefeed, when the bottlefeeders were asked if they were to breastfeed, none stated that they would breastfeed in front of friends, four would not in front of their family and one did not know. However, only one felt that friends or family would mind if she breastfed in front of them, the rest either thought that they would not mind or they did not know. They did not perceive strong preference for either infant feeding method from their social support. Three partners, five mothers and three best friends neither thought that the woman should or should not breastfeed. Only one partner and one best friend thought that the woman definitely should breastfeed. Three partners, four mothers and two best friends were also neutral towards the woman bottlefeeding. One mother and one female friend thought that the woman definitely should bottlefeed.

Again, examining the pre-test scores of the tool, QIAIF,

the bottlefeeders' overall attitude towards infant feeding score, although less than the breastfeeders' score, was not statistically lower; mean of the attitudinal difference score was 96.077 with a standard deviation of 33.861 and a Fisher's Exact Test of 0.04412 (Tables 9 & 10, pp. 65-67). Interestingly, very important to all of the bottlefeeders was a method that provided complete nourishment and protected the baby from infection. All stated that breast milk is the best nourishment for a baby. Four of the five stated that breastfeeding makes a baby healthier and protects a baby from infection and three stated that breastfeeding makes the baby happier. Nonetheless, important to all was being able to see how much milk the baby was getting, four stated that bottlefeeding provided that opportunity, and three stated that bottlefeeding would make them happier. Although all of them stated breastfeeding is the cheapest method only two of them were concerned about the cost of feeding an infant. Very important to three bottlefeeders was having their partner involved in feeding the infant and four stated that bottlefeeding allowed their partner and others to be involved. These results concurred with the results reported in the literature. For example, Manstead et al. (1983) found that women who bottlefed stated that bottlefeeding would more likely allow the partner to be involved in the feeding of the infant than would breastfeeding.

To note, from the QIAIF tool few significant differences were found between the two groups in either the over all scores

or the scores from the various components, except on the attitude towards bottlefeeding; Fisher Exact Test was 0.02171 (Table 10, p. 68). That is, the bottlefeeders had a slightly significant higher score; 163.000 versus 122.077 (Table 9, p. 66). However, it is not surprising that the bottlefeeders perceived bottlefeeding as being more beneficial for them than breastfeeding. Hally et al. (1984), Maclean et al. (1985), and others have reported that the reasons women give for bottlefeeding are that bottlefeeding is more convenient and allows one more freedom to go out socially.

A comparison between the breastfeeders and bottlefeeders, although few statistically significant results were obtained, suggested factors such as age, education, cultural influence for breastfeeding were important variables. This is in keeping with Bentovim's model developed to assess psychosocial factors of breastfeeding and incorporated into the conceptual framework of the study.

The Relationship Between Information-sharing and a Woman's Attitude

Comparing the pre- and post-test mean scores (Table 9, pp. 66-67) indicated that information-sharing had no statistically significant effect on the participant's attitude towards breast or bottle feeding. The mean of the attitudinal difference scores for both groups increased only slightly after the information-sharing sessions. The mean of the subjective norm difference scores (Table 9, p. 66) after the information-sharing sessions

decreased slightly for the breastfeeders and increased somewhat for the bottlefeeders. Jones (1987) also found that information has little influence on a woman's decision regarding infant feeding choice.

An examination of individual pre- and post-test scores (Tables 11 & 12, pp. 73-76) indicated that some of the women's attitudinal difference scores decreased because their attitudes towards breastfeeding scores decreased or failed to increase as much as their scores on attitudes towards bottlefeeding increased. For example, participant 9's attitudinal difference score from pre-test to post-test had a negative differential of 26. Her post attitudes towards breastfeeding score (204) increased over the pre-test score (186) but did not increase as much as her post attitude toward bottlefeeding score (135) over her pre-test score (91).

The reason for the decrease in attitude scores is not clear. Perhaps it was in the presentation of the information-sharing sessions or perhaps the participant(s) answered the post-test from a more objective and/or subjective point of view than the pre-test. Furthermore, the reliability coefficient of Manstead et al.'s (1984) tool in the pilot study was found to be low (0.4739) which could indicate that some of the questions in the pre and post-test may not have elicited the influential factors in decision-making. For example, many women stated that bottlefeeding most likely allows the partner to be involved in feeding the baby and that that was important to them. Yet, they

TABLE 11

EXAMINATION of INDIVIDUAL SCORES of the BREASTFEEDERS

QUESTIONNAIRE TO INVESTIGATE ATTITUDES TO INFANT FEEDING
(Manstead, 1984)

ID	ATTDIF	PATTDIF	SUBJDIF	PSUBJDIF	ATTBF	PATTBF
1	77	104	10	60	225	210
2	136	111	33	0	236	233
3	46	127	17	61	188	214
4	121	139	49	52	186	175
5	76	80	120	84	191	180
6	80	75	48	50	220	185
7	55	77	3	20	182	222
8	1	128	124	67	188	233
9	95	69	106	98	186	204
10	74	58	78	107	175	164
11	11	71	110	42	162	207
12	77	52	126	105	196	179
13	159	158	104	102	260	254

ID	ATTBOT	PATTBOT	BELBF	PBELBF
1	148	106	35	32
2	100	122	38	36
3	142	87	34	37
4	65	36	38	32
5	115	100	37	30
6	140	110	41	31
7	127	145	29	34
8	187	105	28	39
9	91	135	36	37
10	101	106	38	30
11	151	136	35	36
12	119	127	40	39
13	101	96	41	41

ID = IDENTIFICATION NUMBER OF PARTICIPANT
ATTDIF = PRE-TEST ATTITUDINAL DIFFERENCE
PATTDIF = POST-TEST ATTITUDINAL DIFFERENCE
SUBJDIF = PRE-TEST SUBJECTIVE NORM DIFFERENCE
PSUBJDIF = POST-TEST SUBJECTIVE NORM DIFFERENCE
ATTBF = PRE-TEST BREASTFEEDING ATTITUDE
PATTBF = POST-TEST BREASTFEEDING ATTITUDE
ATTBOT = PRE-TEST BOTTLEFEEDING ATTITUDE
PATTBOT = POST-TEST BOTTLEFEEDING ATTITUDE
BELBF = PRE-TEST BREASTFEEDING BELIEF
PBELBF = POST-TEST BREASTFEEDING BELIEF

... continued

TABLE 11 (continued)

EXAMINATION of INDIVIDUAL SCORES of the BREASTFEEDERS

QUESTIONNAIRE TO INVESTIGATE ATTITUDES TO INFANT FEEDING
(Manstead, 1984)

ID	BELBOT	PBELBOT	EVALBF	PEVALBF	EVALBOT	PEVALBOT
1	26	22	37	38	32	30
2	24	24	37	38	27	32
3	29	24	32	33	29	23
4	21	25	28	29	20	13
5	25	20	28	29	23	28
6	32	28	32	32	26	23
7	21	30	36	38	37	28
8	29	20	38	35	38	31
9	15	27	30	32	35	29
10	24	25	26	27	25	24
11	26	30	27	33	32	28
12	24	24	29	26	31	29
13	22	24	38	37	26	24

ID	NORMBF	PNORMBF	NORMBOT	PNORMBOT	MOTIVAT	PMOTIVAT
1	19	21	18	11	17	21
2	24	23	14	23	12	19
3	18	23	15	11	22	19
4	26	25	7	9	9	10
5	26	25	8	10	24	20
6	28	24	11	9	11	13
7	22	24	19	16	4	12
8	28	23	8	13	24	22
9	28	26	11	8	25	22
10	25	27	13	[illegible]	24	22
11	28	28	8	10	22	14
12	26	25	8	10	22	25
13	26	28	8	9	23	21

ID = IDENTIFICATION NUMBER OF PARTICIPANT
BELBOT = PRE-TEST BOTTLEFEEDING BELIEF
PBELBOT = POST-TEST BOTTLEFEEDING BELIEF
EVALBF = PRE-TEST BREASTFEEDING EVALUATION
PEVALBF = POST-TEST BREASTFEEDING EVALUATION
EVALBOT = PRE-TEST BOTTLEFEEDING EVALUATION
PEVALBOT = POST-TEST BOTTLEFEEDING EVALUATION
NORMBF = PRE-TEST BREASTFEEDING NORMATIVE
PNORMBF = POST-TEST BREASTFEEDING NORMATIVE
NORMBOT = PRE-TEST BOTTLEFEEDING NORMATIVE
PNORMBOT = POST-TEST BOTTLEFEEDING NORMATIVE
MOTIVAT = PRE-TEST MOTIVATION TO COMPLY
PMOTIVAT = POST-TEST MOTIVATION TO COMPLY

TABLE 12

EXAMINATION of INDIVIDUAL SCORES of the BOTTLEFEEDERS

QUESTIONNAIRE TO INVESTIGATE ATTITUDES TO INFANT FEEDING
(Manstead, 1984)

ID	ATTDIF	PATTDIF	SUBJDIF	PSUBJDIF	ATTBF	PATTBF
14	-1	89	30	42	196	226
15	115	42	7	64	211	180
16	40	27	92	92	213	205
17	-18	-10	-63	0	147	144
18	0	33	-18	-58	184	229

ID	ATTBOT	PATTBOT	BELBF	PBELBF	BELBOT	PBELBOT
14	197	137	29	34	29	23
15	96	138	34	30	18	24
16	173	178	34	33	27	29
17	165	154	27	25	36	36
18	184	196	30	36	33	35

ID = IDENTIFICATION NUMBER OF PARTICIPANT
ATTDIF = PRE-TEST ATTITUDINAL DIFFERENCE
PATTDIF = POST-TEST ATTITUDINAL DIFFERENCE
SUBJDIF = PRE-TEST SUBJECTIVE NORM DIFFERENCE
PSUBJDIF = POST-TEST SUBJECTIVE NORM DIFFERENCE
ATTBF = PRE-TEST BREASTFEEDING ATTITUDE
PATTBF = POST-TEST BREASTFEEDING ATTITUDE
ATTBOT = PRE-TEST BOTTLEFEEDING ATTITUDE
PATTBOT = POST-TEST BOTTLEFEEDING ATTITUDE
BELBF = PRE-TEST BREASTFEEDING BELIEF
PBELBF = POST-TEST BREASTFEEDING BELIEF
BELBOT = PRE-TEST BOTTLEFEEDING BELIEF
PBELBOT = POST-TEST BOTTLEFEEDING BELIEF

... continued

TABLE 12 (continued)

EXAMINATION of INDIVIDUAL SCORES of the BOTTLEFEEDERS

QUESTIONNAIRE TO INVESTIGATE ATTITUDES TO INFANT FEEDING
(Manstead, 1984)

ID	EVALBF	PEVALBF	EVALBOT	PEVALBOT	NORMBF	PNORMBF
14	41	39	41	33	19	19
15	36	30	30	30	20	23
16	37	36	36	35	23	23
17	27	33	27	25	13	16
18	35	37	30	32	16	11

ID	NORMBOT	PNORMBOT	MOTIVAT	PMOTIVAT
14	13	13	15	22
15	16	13	7	16
16	9	9	26	26
17	22	16	25	22
18	19	21	25	20

ID = IDENTIFICATION NUMBER OF PARTICIPANT
EVALBF = PRE-TEST BREASTFEEDING EVALUATION
PEVALBF = POST-TEST BREASTFEEDING EVALUATION
EVALBOT = PRE-TEST BOTTLEFEEDING EVALUATION
PEVALBOT = POST-TEST BOTTLEFEEDING EVALUATION
NORMBF = PRE-TEST BREASTFEEDING NORMATIVE
PNORMBF = POST-TEST BREASTFEEDING NORMATIVE
NORMBOT = PRE-TEST BOTTLEFEEDING NORMATIVE
PNORMBOT = POST-TEST BOTTLEFEEDING NORMATIVE
MOTIVAT = PRE-TEST MOTIVATION TO COMPLY
PMOTIVAT = POST-TEST MOTIVATION TO COMPLY

still chose to breastfeed. On the other hand, all of the bottlefeeders rated breastfeeding as providing the best nourishment and that that was important to them. Yet, they still chose to bottlefeed. Hally et al. (1984) found that 27% of 292 pregnant women who stated that breastfeeding was best for baby had intentions to bottlefeed.

The Relationship Between Information-sharing and a Woman's Intention

Whether or not the participants' scores on attitudes towards breastfeeding increased or decreased after the information-sharing sessions, they still did not change their intention (Table 13, p. 78). All the women who had intentions to breastfeed prior to the information-sharing sessions had intentions to breastfeed after the information-sharing sessions. The three women who had not decided on an infant feeding method prior to the information-sharing sessions still had not decided after the information-sharing sessions. Again the results indicated that information is not sufficient to affect a women's decision regarding infant feeding choice. Therefore, other factors are at play in a woman's decision-making which will be discussed subsequently (p. 85).

The results do show that, although slight, changes had occurred in some of the components of the QIAIF tool after the information-sharing sessions. Thus, as indicated in Table 13 (p. 78), after the information-sharing sessions, one woman who had had intentions to bottlefeed prior to the information-sharing

TABLE 13

THE EFFECT OF INFORMATION-SHARING

ON

INTENTION TOWARDS INFANT FEEDING

FEEDING METHOD	PRE-TEST INTENTION	POST-TEST INTENTION	AT HOSPITAL DISCHARGE
BREASTFEEDING	13	13	12
UNDECIDED	3	4	0
BOTTLEFEEDING	2	1	6

was now undecided. In question G, which asked those with intentions to breastfeed how persistent would they be with breastfeeding, three of the participants after the information-sharing sessions, rated a higher score, indicating that they would persist longer with breastfeeding. Of the two who had intentions to bottlefeed prior to the information-sharing sessions, one was undecided after the sessions and the other was less adamant about her intentions to bottlefeed. That is, from question F on a Likert scale from one to seven, with seven being the strongest intention towards bottlefeeding, the latter participant rated her intention as a seven, prior to the information-sharing sessions and a six, after the information-sessions.

The participants' stated reasons for deciding to breast or bottlefeed, response to question 63 on the VKIF tool, were more revealing than the attitudinal scores on the QIAIF tool. The four themes that ran through the participants stated reason for deciding on a particular method of infant feeding are summarized below.

Health benefits for the baby was the most often cited reason for breastfeeding (Table 14, p. 80). This coincided with the literature in which many researchers reported that the main reason for choosing breastfeeding was that breastfeeding is best for the baby (Dusdieker et al., 1985; Hally et al., 1984; Jeffs, 1977). The following are some exemplary comments: "mainly health benefits for baby -- increased immunity to infections,

TABLE 14

MOTHERS' REASONS FOR INFANT FEEDING CHOICE

REASON	BREASTFEEDERS (n=13)	BOTTLEFEEDERS (n=5)
Health benefits for baby	11	0
Easiest	5	0
Bonding/Intimacy	3	0
Natural	3	0
Embarrassment (breastfeeding)	0	1
Schedule	0	1
Not enough information	0	1
Haven't thought about it	0	1
Distaste for breastfeeding	0	1

allergies; proper bone formation in jaw, etc."; "I think it will make my baby healthier than bottlefeeding"; "I feel very comfortable with the thought of breastfeeding. Certain antibiotics [sic] are passed from mother to infant which helps protect them from infections until their defense system is fully developed"; and, "I have always believed breastfeeding is best for babies and everything I have learned recently from talking to friends, other mothers, reading, etc. has confirmed this".

The second theme was that breastfeeding was seen to be the easiest or most convenient. For example, one women wrote, "I think it is very convenient (eg. no preparing bottles)". Another wrote, "better for the baby and more convenient for me". The third theme was that breastfeeding offered intimacy or a bonding between mother and infant. For example, one woman wrote, "As a woman I wanted to feel the intimacy between mother and child, I felt breastfeeding offered that". Another wrote, "breastfeeding has [sic] a definite bonding between mother and child". The fourth theme was that the participants stated that breastfeeding was natural. One woman wrote, "I think it is the most natural thing that can be done". Another wrote:

> I never thought I would have children but I know [sic] that if it happened I would breastfeed because that is so natural for me. What made it so natural for me is that the first picture I had of 'somebody' breastfeeding is (when I was very young) a cow with her calf and it always stayed in my mind because I thought it was wonderful.

Among those undecided the comments were "I haven't had enough information yet to decide"; "Haven't thought about it

that much"; or "Just thinking about breastfeeding turns my stomach, I'm so tender [breasts] no baby will touch me". One of the two women who had intentions to bottlefeed stated that "it's gross to breastfeed in public". The other woman said that she chose bottlefeeding "mainly because of schedule". Such comments are in agreement with those found in the literature. For example, Yoos (1985) reported that some women expressed disgust and embarrassment towards breastfeeding.

Prenatal Intention As a Predictor of Postnatal Choice

Although the population size of the present study was too small for statistical comparison, all of the breastfeeders, but one, with intentions to breastfeed were breastfeeding at time of discharge from the hospital. And five of the bottlefeeders, were bottlefeeding at the time of discharge from the hospital (Table 13, p. 78). This was in agreement with Ajzen and Fishbein's theory of reasoned action in that postnatal behaviour was consistent with prenatal intentions. And it was also in agreement with results found in the literature. For example, Manstead et al. (1984) and Manstead et al. (1983) reported that prenatal infant feeding intention was a predictor of postnatal infant feeding choice.

The results demonstrated little change in a decision toward a method of infant feeding in spite of the nursing intervention aimed at influencing the woman's decision toward breastfeeding. The results also support Bentovim's model which indicates the influence of psychosocial factors on the decision to breastfeed.

Life influences are probably so strong on how we choose to feed our infant that this decision is set early in one's life and is not easily changed.

Results of the Tool, Values and Knowledge on Infant Feeding

The results of the VKIF tool indicated that if a woman scored high on the tool she would have had a greater likelihood of choosing to breastfeed. The mean of the total score on the VKIF tool for the breastfeeders was 180.308, with a standard deviation of 11.750 (Table 15, p. 84). The mean for the bottlefeeders was 138.600, with a standard deviation of 7.956. All of the bottlefeeders scored lower than the breastfeeders on the total score, the predisposing score, and the enabling score. Furthermore, cross-tabulation data analysis indicated that there was a significant difference between the two groups on the total score (Fisher's Exact Test = 0.00070), on the predisposing score (Fisher's Exact Test = 0.00245) and on the enabling score (Fishers Exact Test = 0.00097) (Table 15, p. 84). Examination of the individual scores (Table 16, p. 85) revealed that the most notable was participant 7, a breastfeeder, who scored the lowest in her group in the total score and in all three category scores. This woman was bottlefeeding at hospital discharge. These findings were consistent with those previously reported in the literature and will be discussed below.

The present study indicated that attitude was not the only factor affecting decision-making and that other possible influential factors were present such as those identified in

TABLE 15

MEAN SCORES

FROM THE TOOL

VALUES AND KNOWLEDGE ON INFANT FEEDING

SCORES CATEGORY	BREASTFEEDERS		BOTTLEFEEDERS		FISHERS EXACT TEST
	Mean	S.D.	Mean	S.D.	
Predisposing	87.846	7.603	61.6	5.95	.00245*
Enabling	65.769	3.655	52.8	2.280	.00097*
Reinforcing	26.692	2.955	24.2	2.683	.38235
Total	180.308	11.750	138.600	7.956	.00070*

* Statistically significant at 0.01 level

TABLE 16

INDIVIDUAL SCORES

FROM THE TOOL

VALUES AND KNOWLEDGE ON INFANT FEEDING

BREASTFEEDERS

ID	PREDISPOSING	ENABLING	REINFORCING	TOTAL
1	80	65	25	170
2	81	66	29	176
3	78	63	28	169
4	96	70	22	188
5	90	68	28	186
6	91	68	30	189
7	75	56	23	154
8	86	64	23	173
9	86	69	27	182
10	99	69	29	197
11	92	67	31	190
12	91	64	24	179
13	97	66	28	191

BOTTLEFEEDERS

ID	PREDISPOSING	ENABLING	REINFORCING	TOTAL
14	58	54	24	136
15	62	55	24	141
16	71	53	27	151
17	60	49	26	135
18	57	53	20	130

Bentovim's model and incorporated into the conceptual framework for the study. Using the Precede model (Green et al., 1980) for organization, the data from the VKIF tool plus the demographic data, were examined for influential factors on decision-making under the following headings (a) predisposing, (b) enabling, and (c) reinforcing.

Predisposing

Among the bottlefeeders the predisposing score on the VKIF tool was lower than any of the breastfeeders' predisposing scores. The predisposing category, as defined earlier to include a woman's values, knowledge, and experiences of infant feeding will be discussed under the following headings (a) knowledge gap, (b) experiences with breastfeeding, and (c) mother's perception of benefits of breastfeeding.

Knowledge gap.

From the literature one can speculate about the many reasons for a woman deciding to bottlefeed. Lack of knowledge about infant feeding in general and breastfeeding in particular is well documented in the literature. Auerbach (1978), Hally et al. (1984), Haun (1985), Minchin (1985), Naylor and Wester (1987) and others recognized the necessity for information on infant feeding methods in order for a woman to make an informed choice.

The breastfeeders were fairly knowledgeable on most aspects of breastfeeding; 12 out of 13 attended prenatal classes. All knew that the size of the breast did not affect milk production,

that breastfeeding was the cheapest method, that a woman can produce enough milk and that it is possible to breastfeed twins. Twelve of the breastfeeders knew that a woman could breastfeed after a cesarean delivery and 11 knew that the infant could receive enough nourishment from breastfeeding up to six months of life, that breast milk needs to be given more often and that one can get pregnant while breastfeeding. However, none of the breastfeeders realized that it was possible to breastfeed if the mother had a cold and 10 did not know that a baby suckling on the breast can cause sexual excitement. Only half of them knew that a bottlefed baby's stools smell more than a breastfed baby's stools and that bottlefeeding aids in the baby sleeping longer than does breastfeeding. Five did not know when to introduce solids to an infant.

There were gaps in the bottlefeeders knowledge of infant feeding; four out of five attended prenatal classes. Four of the five women did not know at what age to introduce solids, which method causes stools to smell more, which method aids in the baby sleeping longer nor whether or not breastfeeding causes permanent changes in the breast. None of the women knew about the usage of the intrauterine device or the diaphragm while breastfeeding nor did they know that a woman with a 'cold' could breastfeed. Three of the women did not know that breastfeeding can provide complete nourishment for an infant up to six months of life, which method would be needed to be given most often, which method would benefit the jaws and gums, and that one could

breastfeed after a cesarean delivery.

Two of the women who were undecided stated that they did not have enough information, as yet, to make a decision. During the information-sharing sessions, two of the bottlefeeders and a husband of one of the breastfeeders, who was against breastfeeding, expressed their surprise at the multitude of benefits of breastfeeding. The husband was especially amazed at the nutritional benefits, convenience and inexpense of breastfeeding. One of the bottlefeeders said, "I might have considered breastfeeding ... especially after reading the information you gave me. I had not understood how good it [breastfeeding] was". But she did not breastfeed because she was living at home with her parents.

Despite the failure of the information-sharing sessions to address the knowledge gap issue, the evaluation on these sessions indicated that all 18 participants stated that they would recommend the sessions to other women (Table 17, p. 89). Ten of the 13 breastfeeders and all of the bottlefeeders rated the sessions very useful, and three of the breastfeeders rated the sessions moderately useful. Further, all of the bottlefeeders and five of the breastfeeders stated they learnt a great deal and three of the five bottlefeeders claimed it was their main source of information. A couple of the participants stated in their comments on the evaluation that although they had learned most of the information prior to the study, they stated many other women would benefit from the information-

TABLE 17

PARTICIPANTS FEEDBACK ON INFORMATION-SHARING SESSIONS

QUESTION	BREASTFEEDERS NO.	BREASTFEEDERS %	BOTTLEFEEDERS NO.	BOTTLEFEEDERS %
Usefulness				
Very	10	76.9	5	100
Moderately	3	23.1	0	0
How much learnt				
A great deal	5	38.5	5	100
Main source of info				
Very definitely	2	15.4	3	60
Moderately definitely	6	46.2	1	20
Recommend to others	13	100	5	100
All private sessions				
Mod. to definitely not	10	76.9	3	60
All group sessions				
Indifferent	7	53.8	1	20
Mod. to very definit.	2	15.4	3	60
Sessions occur more often				
Indifferent	9	69.2	2	40
Mod to very definit.	3	23.1	3	60
Begin earlier				
Indifferent	5	38.5	3	60
Mod. to very definit.	5	38.5	1	20

sharing sessions. Others stated that they learned more from discussing than just reading -- "easier to understand .... more simple and more friendly". One of the bottlefeeders stated halfway through the first information-sharing session that "you've got me thinking about breastfeeding, watch now I may end up breastfeeding after all".

Experiences with breastfeeding.

Whether or not a woman has seen a baby being breastfed and/or was breastfed herself are other controversial influential factors in a woman's decision to breast or bottle feed. It has been reported in some studies that those who were breastfed themselves were more likely to breastfeed their infant. Hally et al. (1984) conceded that mothers who were "familiar with breastfeeding because they had themselves been breastfed or because they had seen a baby being breastfed, were more likely to breastfeed their own baby" (p. 36). In McIntosh's (1985) study of 80 working class women, "many had never seen a baby suckled" and thus there was not "a tradition" of breastfeeding (p. 216). However, he argued that the eight women who found breastfeeding disgusting would not have changed their attitude no matter how many women they had seen breastfeeding. McIntosh maintained that for some women exposure to breastfeeding would only be "counter productive, putting them off breastfeeding" (p. 216). In the present study only four of the 18 participants were themselves breastfed yet 13 breastfed their infants. All the breastfeeders and four of the five

bottlefeeders had seen a woman breastfeeding. One of the bottlefeeders claimed that "breastfeeding was gross". She went on to say that "we use to go to social gatherings and there would probably be 100 people there and women would breastfeed. They didn't seem to mind, but it's not for me".

Mother's perception of benefits of breastfeeding.

Dusdieker et al. (1985) stated that the "strongest net predictor of maternal breastfeeding beliefs was the mother's expectations that she would herself benefit from breastfeeding" (p. 701). In part, the present study results agreed with Dusdieker et al.. Twelve out of 13 breastfeeders stated that breastfeeding would make them happier, 11 stated that breastfeeding was the easiest method and nine stated that breastfeeding was good for the figure (Table 18, p. 92). However, the present study differed from Dusdieker et al.'s study in that, although going out socially was important to six of the 13 breastfeeders, nine stated that breastfeeding would tie a person down, and seven stated that bottlefeeding would give one more time to rest. Moreover, important to 11 was a method which allowed the partner to be involved and eight stated that bottlefeeding provided this.

None of the bottlefeeders stated breastfeeding would make them happier or give a woman more time to rest, in fact, four stated that breastfeeding would tie a person down. Moreover, being able to go out socially was important to three. Important to all was being able to see how much milk the baby was getting

TABLE 18

MOTHERS' PERCEPTIONS OF BENEFITS OF BREASTFEEDING

BENEFIT	BREASTFEEDERS (n=13)	BOTTLEFEEDERS (n=5)
Good for figure		
Yes	9	1
Neutral	4	4
Most convenient method	9	4
Makes baby healthier	13	3
Makes baby happier	11	3
Makes you happier	12	0
More time to rest	4	0
Cheapest	13	5
Easiest	11	2

and four stated bottlefeeding provided this. Four stated bottlefeeding allowed the father to be involved and this was important to three. However, all of the bottlefeeders stated that breastfeeding was cheapest, two stated that breastfeeding was easier and one stated that breastfeeding was a convenient method and good for the figure.

Enabling

Among the bottlefeeders the enabling scores, obtained from VKIF tool, were lower than any of the breastfeeders' scores (Table 16, p. 85). The enabling category was defined earlier to include a woman feeling comfortable with her own body; others feeling comfortable with a women breastfeeding; socioeconomic factors such as employment status, marital status, and conducive environment; access to information; when and which method decided on. Subsequently, the enabling category will be discussed under the following headings (a) socioeconomic factors, (b) breastfeeding is embarrassing, (c) sources of information, (d) timing of decision, and (e) maternal complications.

Socioeconomic factors.

Other factors affecting decision-making included the woman's level of education, marital status and/or economic status (Table 6, p. 60). Hally et al. (1984) in their study of 507 primigravidae concurred with other researchers that "bottlefeeding was associated with being young, single, from the manual [sic] social classes, and having received a minimum of

education" (p. 36). McIntosh (1985) found that younger age and lower social class usually correlated with a lower number of breastfeeders. While Dusdieker et al. (1985) reported that the single most important demographic factor in predicting breastfeeding was education. In the present study, two of the bottlefeeders had less than grade eight education, one had high school and one was in the third year of university. In addition, three of the bottlefeeders were single and two were young; 22 years of age. None of the bottlefeeders were employed and only two had partners who were employed. In contrast to the bottlefeeders, 11 of the 13 breastfeeders were 24 years or older, had post secondary education, eight were employed and all had partners who were employed. The one breastfeeder who bottlefed at hospital discharge was 18 years old, unemployed and had a grade nine education.

Other coincidental social factors, not apparently conducive to breastfeeding and identified by Hally et al. (1984), included "living in public housing, with the mother's family, in an overcrowded household and in a household containing children" (p. 36). McIntosh (1985) found that only six out of 26 women, who were living with parents or other relatives breastfed their babies. McIntosh believed that for these women the lack of a breastfeeding tradition and the housing situation were such that "breastfeeding was not a practical proposition even if they had wanted to" (p. 217). Three of the six women in the present study who bottlefed on leaving the hospital were living with their

parents. In fact one woman stated that if she and her boyfriend had had their own place she would have considered breastfeeding and, moreover, she plans to try breastfeeding her next baby.

Breastfeeding is embarrassing.

The perceived disadvantages of breastfeeding is cited as one reason for bottlefeeding. McIntosh (1985) stated that "83% [33 women] cited negative aspects of breastfeeding among their reasons for deciding to bottlefeed" (p. 215). These included a perceived social unacceptability and an associated inconvenience of breastfeeding. This related to a feeling of embarrassment or of being tied down because of a lack of privacy to breastfeed afforded by being at a friend's house or within public viewing. In the present study, one woman stated that "my oldest sister breastfed [but] my second oldest sister bottlefed, she was shyer".

From the VKIF tool it was found that the breastfeeders, compared to the bottlefeeders (Table 16, p. 85), generally were more comfortable with their own body and their support persons were more comfortable with them breastfeeding. Eleven of the breastfeeders stated that they would breastfeed in front of their family and friends, and twelve stated that their friends would not mind and 10 that their family would not mind. None of the 13 women with intentions to breastfeed would mind seeing a woman breastfeed in public yet only six of the 13 would themselves breastfeed in public, three did not know and four would not. Of the four breastfeeders who would not breastfeed in

public, one was bottlefeeding at hospital discharge.

By comparison, the bottlefeeders may not be as comfortable with their own bodies and their support persons were more comfortable with them bottlefeeding. Of the five bottlefeeders, three stated that seeing a woman breastfeeding in public would cause them some concern. None of the five would breastfeed in public nor in front of their friends and four of them would not breastfeed in front of their family. One of the bottlefeeders stated, "I don't think it's right to breastfeed in front of others, children especially and there's a lot who come running in here off and on". Another bottlefeeder stated "One can't breastfeed if you're downtown -- can't just whip out the breast in public". Interestingly, two of the five stated that their family would not mind if they breastfed in front of them.

A significant factor in the embarrassment issue was the identification of the woman's father or father-in-law "as the individuals who were generally more embarrassed" (Hewat & Ellis, 1986, p. 40). In the present study, one woman stated that "my father was uncomfortable at first by my sister breastfeeding in front of him. My mother didn't mind". Another woman stated that "my father wouldn't like it [breastfeeding in front of him]. I don't think my mother would mind too much. I'll just go into a room by myself".

Sources of information.

Neifert and Seacat (1985) cited from the U. S. Surgeon General's Workshop 1984 that there was a "potential role of the

media in depicting breastfeeding as a routine part of family life, reflected in cartoons, soaps, movies and magazines" (p. 319). In the present study, 9 of the 13 breastfeeders and two bottlefeeders had seen someone breastfeed at home. None of the bottlefeeders had seen anyone breastfeeding on television, in a magazine, or in a film. Two of them had seen someone breastfeed in a friend's house. Among the 13 breastfeeders, five, seven, six, and 10 had seen someone breastfeeding on television, in a magazine, in a film and at a friend's house, respectively.

The breastfeeders had slightly better access to information and help than did the bottlefeeders. Twelve had attended classes and obtained information from books. Over half stated that they had obtained information from prenatal classes, friends and relatives while 10 stated that the resource person most readily available to them was their physician. Registered nurses, public health nurses, and hospital staff were not seen as either sources of information nor as resource persons for assistance with problems. Twelve breastfeeders would not turn to either a public health nurse or hospital staff person for help and only four stated that a nurse had discussed breastfeeding with them. Yet nine stated that a physician had discussed breastfeeding and 10 would turn to their physician for help. Ten knew about the La Leche League but only five knew about either of the two breastfeeding clinics at the urban maternity hospitals.

Sources of information were limited in the case of the bottlefeeders. None of them reported having obtained information

on infant feeding from physicians, magazines, television or friends. Four of the five reported not having obtained information from prenatal classes or relatives. Moreover, the main source of information on breastfeeding obtained from a health professional was from a physician. Three reported that the physician had discussed breastfeeding with them while only one reported having discussed breastfeeding with a nurse.

The bottlefeeders also had limited resources for help with breastfeeding. None of them knew about either the La Leche League or the breastfeeding clinics. Nor would any of them turn for help to a hospital staff person, public health nurse, their grandmother or best friend. However, four would turn to their physician for help and two, to their mother.

Timing of decision.

An influential factor in decision making is the timing of the decision in relation to the pregnancy. The results from the study done by Hally et al. (1984) indicated that nearly 75% of 507 pregnant women had already chosen a method by the first antenatal visit. Forty-five percent of the 234 women who had intentions to breastfeed at the first antenatal visit, breastfed in the hospital. Whereas 85% of the 146 women with early intentions to bottlefeed, bottlefed in the hospital (Hally et al.). Manstead et al. (1984) found similar results; 17 out of 34 mothers with intentions to breastfeed did so for the first six weeks postpartum and 11 of the 16 mothers, who were either undecided or had intentions to bottlefeed, bottlefed for the

first six weeks postpartum. In Aberman and Kirchhoff's (1985) study 62% of 51 women had decided by the end of the first trimester. By the third trimester Mackey and Fried (1981) found that 49 of the 50 women had decided on a method of infant feeding. Beske and Gravis (1982) found that approximately 87% of 97 breastfeeding mothers had decided on breastfeeding by the sixth month of pregnancy. Results from the present study were in concurrence; 14 of 18 women had decided prior to conception and all of them used that method at hospital discharge. Twelve of the breastfeeders had decided prior to or early in pregnancy. The one who decided later in pregnancy to breastfeed actually bottlefed at hospital discharge as did the three who were undecided.

Maternal complications.

Maternal complications in the immediate postpartum period can affect a woman's infant feeding choice. Reiff and Essock-Vitale (1985) found that "in general, mothers in the breast-to-bottle group reported more maternal complications than mothers in the breast-only group ($X^2 = 4.9$, $p < .05$)" (p. 875). In the present study, one of the five bottlefeeders, who at the time of the study stated that she might give breastfeeding a try in the hospital, had venereal warts, delivered prematurely and was very upset about management of labour and delivery. She did not breastfeed. Another bottlefeeder, who at the time of the study was undecided, delivered at 28 weeks gestation and as a result the infant was hospitalized for two months. She did not

breastfeed.

Reinforcing

From the VKIF tool the reinforcing category was identified as being the area of greatest weakness for both the breastfeeders and the bottlefeeders; only five out of 18 women scored high in that area. This outcome was supported by other studies which have shown that some of the barriers to breastfeeding were (a) the lack of social support and (b) inadequate health care worker and agency support. McIntosh (1985) stated that

> instead of devoting the bulk of our effort to changing women's attitudes we should as, McIntyre (1982) argues, concentrate much more on the external barriers and constraints which make it difficult for women of all social classes, but particularly those from working class background to breastfeed. Indeed, the impact of health education itself is likely to be severely limited in the absence of attempts to resolve these difficulties. (p. 222)

The lack of social support.

Social support encompasses the woman's immediate support persons, health care workers and agencies, and the public, in general. The influence of social support on infant feeding decisions is well documented in the literature. However, the extent of its impact is debated. Manstead et al. (1984) in their study of 50 primiparous women found that the perception of the support person's attitude was not as strong an influence as the woman's own attitude towards an infant feeding method. Yet Manstead et al. (1983) found no difference and Dusdieker et al. (1985) found an indirect influence. Dusdieker et al. reported

that

> the perceived influence of the father on a woman's choice of breastfeeding, like that of health professionals was indirect by influencing her breastfeeding beliefs... the father's input may be the deciding factor for those women who have ambivalent beliefs about breastfeeding and with no strong commitment or other resources.. (p. 702)

In the present study, the real or perceived social support for breastfeeding was somewhat stronger for the breastfeeders than for the bottlefeeders. One of the breastfeeders' partners stated, "they [breasts] are there for a purpose so why not use them". Many of the breastfeeders said that although their partners were in favour of breastfeeding, the final decision was left to them. A couple of women said if their partner was not in favour of breastfeeding they would not breastfeed. One woman stated that although she did not want to breastfeed, her partner stated that "that's what they [breasts] are there for" and, therefore, she would give it a try. However, another woman stated that she was definitely going to breastfeed but her partner stated that he was "a Carnation baby and so that should be good enough" for his baby. This woman was the only breastfeeder who bottlefed at hospital discharge.

Apparently the advice given by health care workers, especially nurses, is not seen as very important. McIntosh (1985) found that "of the advice that was offered to our mothers, the most influential by far was that which was received from their own social networks with their mothers and partners proving [to be] particularly persuasive" (p. 218). Ray (1985)

stated that "health behaviours can be modified and revamped if the credibility and importance of the person giving the message is seen to be high" (p. 27). And McIntosh (1985) found that "when formal and informal sources were in agreement, the combination proved irresistible" (p. 218). In the present study, the informal sources apparently were the stronger influence. Although 12 stated that a physician had discussed breastfeeding with them, this had impact on only a few. Of the 12, nine were breastfeeders who had decided prior to conception and three were bottlefeeders who were bottlefeeding at hospital discharge. One woman said her physician had mentioned breastfeeding so she thought she would try but needed more information. Another woman stated "I decided to breastfeed in part because the doctor mentioned it's the best you can give your baby and I want to give my baby the best. I've also read that it was good". Unfortunately, a nurse, or more specifically a public health nurse, was not seen by the participants as a resource person for infant feeding. And only five stated that a nurse had discussed breastfeeding with them.

Associated with social support are the worries of not having any social support. Dusdieker et al. (1985) noted that "worries about the lack of psychosocial support reinforce specific worries about breastfeeding; the stronger these breastfeeding worries, the less likely it is that women will attempt to breastfeed" (p. 702). Cole (1977) found that the deciding factor in continuing to breastfeed was the

"availability of support and other resources to which one can turn when problems arise rather than the presence or absence of problems" (p. 355). In the present study two of the participants had no one to turn to and they did not feel they had any real support. Their mothers had not breastfed and they were not sure if they knew anyone who had breastfed.

Jordan (1986) offered another but rather provocative twist to the influence of social support which might be an underlying causal factor in a woman's choice of bottlefeeding over breastfeeding and/or in deciding to quit breastfeeding. She suggested that breastfeeding might be seen as a risk factor for fathers. Evidence for this, Jordan contended, was well substantiated by the negative responses that some fathers have towards breastfeeding, such as jealousy. Although these possible paternal responses were discussed in the present study with all the participants, and their partners, if present, none of them voiced having similar thoughts. However, in answering question number 30 of the VKIF tool, regarding the feeding method that allowed others to be involved in infant care, none of the bottlefeeders and only seven of the 13 breastfeeders stated that breastfeeding would allow others to be involved in an infant's care. Likewise, in question A-6 of the QIAIF tool, regarding bottlefeeding and involvement of the father in feeding the infant, 11 of the 18 participants indicated that it was moderately to very likely that bottlefeeding allows the father to become involved in feeding the infant.

Inadequate health care worker and agency support.

Recommendations from the 1984 U. S. Surgeon General's Workshop on Breastfeeding and Human Lactation suggested that health care workers and agencies need to "be better informed and more clearly supportive of lactation and breastfeeding" (Koop & Brannon, 1984, p. 556). Similar conclusions have been drawn from various studies cited in the literature; some of which were discussed earlier. McIntosh (1985) found that 71% of the 28 women who breastfed on leaving the hospital later "stopped because they had problems and not for social reasons" (p. 219). The main reason given (15 out of 28) for stopping was insufficient milk (McIntosh). However, the rationale for the inadequate milk supply McIntosh attributed to the advice given to women prenatally -- the "universal explanation" taught and understood prenatally is that the infant will quickly settle into "a four hourly pattern of 20 minute feeds" (p. 220). Thus in the postnatal period if the infant did not settle into this pattern it was perceived as problematic (McIntosh). Postnatally the women discovered that breastfeeding is not as natural as they had expected. Blachman (1981b) stated that "many people think that the milk will just turn on ... maternal instinct will take care of everything" (p. 281). When many of the women in McIntosh's study sought advice to overcome the problem of insufficient milk it was recommended that they transfer to bottlefeeding. In the present study, while pursuing one woman's infant feeding method on discharge from the hospital, her family

physician was contacted and he stated that "after six weeks the baby had not gained weight so it had to be given formula".

Health care professionals' inadequate knowledge facilitates inappropriate practices in health care agencies which in turn has adverse consequences for breastfeeding. Martin and Monk's (1982) study found that "one half of all babies born in Scotland were not put to the breast within four hours of delivery, four percent were not demand fed and half received complementary feeds while in hospital" (cited in McIntosh, 1985, p. 221). Hewat and Ellis (1986) found that some women "who breastfed briefly did not feed their infants as frequently during the establishment phase of breastfeeding [due to the fact that in the hospital] infants were not brought to them day and night and only every four hours during the day, and/or supplements were given to their infants" (p. 40). Reiff and Essock-Vitale (1985) stated that "nonverbal teaching by modeling is more effective than verbal counselling" (p. 877), therefore, such practices as the handing out of sample formula are "a vote of non-confidence" for a breastfeeding woman (Ellis, 1981, p. 322). Thus, it is incumbent on health care agencies to acknowledge that

> the greatest challenge is not in changing the written policies nor the curtains or surroundings but in changing attitudes and beliefs of the staff, so that human lactation and breastfeeding are treated as normal physiologic, psychological and nurturing activities of mothers and infants. (Cohen, 1987, p. 195)

Rousseau et al. (1982) were in agreement and recommended

that hospital practices "be modified to minimize predictable causes of failure -- fixed feeding schedules, early supplementation with bottles and excessive use of medications such as sedatives by the mothers" (p. 704). From the VKIF tool, scores in the reinforcing category were low for some of the breastfeeders and all of the bottlefeeders. For example, none of the participants stated that they would turn to a hospital staff person if they were to have problems with breastfeeding. According to the nursery head nurse, one of the participants started to breastfeed in the hospital but went home bottlefeeding. This woman might have benefited from better professional support in the hospital.

Recommendations for Future Use of the Tool — Values and Knowledge on Infant Feeding

In the VKIF tool, the three categories of predisposing, enabling and reinforcing provided a profile of the pregnant woman and hence, individual analysis. Where an individual scored low would indicate the area(s) for nursing intervention. The information obtained from this assessment could be of assistance in the postnatal period by forewarning of any potential for problems and/or acting as a guide for nursing intervention -- both preventative and immediate. For example, if a women scored low on the enabling category then the nurse could intervene with information on how to become more comfortable touching her breasts, or how to find a quiet place to feed her baby, or how to feed the baby in public, and so on. Another example might be

that if a woman scored low in the reinforcing category then the nurse would concentrate on developing good social support, that is, sharing information with the woman's support person(s), and developing a good referral team in the hospital and at home.

In addition, low scores in the enabling and/or reinforcing categories might indicate to a nurse to pay special attention to the availability of support for the immediate and long term postpartum period. In other words, such an assessment could alert a nurse to those women who might have greater potential for early cessation of breastfeeding. The tool might also assist a nurse in determining the effort needed to bring about a more positive attitude towards breastfeeding and the likelihood of success. If for example, a woman scored low in the predisposing category and she was in her last trimester, it perhaps would prove a more difficult task for a nurse to promote breastfeeding than if the woman was in her first trimester of pregnancy.

Further use of the VKIF tool as a research instrument would require some modifications. For example, the tool would require the inclusion of questions similar to those in the QIAIF tool which discern (a) the feeding method supported by the partner and other support persons and (b) how much importance the woman places on the support person(s)' infant feeding choice. Other questions in the VKIF tool would need to be deleted or reworded. For example, question three, regarding the method most used by the woman's family, should be changed to what method was used to feed siblings and then the extended family (question #8),

including the partner's family, where applicable. In question 30, regarding the involvement of others in the care of the infant, the word infant should be changed to feeding. The aim of such questions would be to determine which feeding method is a part of a woman's social/cultural environment. In addition, the questions which addressed modesty and/or embarrassment in relation to breastfeeding (e.g., #11, #12, & #13) need to be reworded and expanded upon. Questions that would perhaps indicate a woman's perception of the barriers to breastfeeding should be added. Gabriel, Gabriel and Lawrence (1986) suggested that many women perceive cessation of smoking and/or a change in diet as major barriers to breastfeeding.

With such modifications and subsequent pilot testing for reliability and validity, the VKIF tool could be used as both a nursing research instrument and as an infant feeding assessment tool for nurses in hospital and community settings.

Comparison of the Two Research Tools

The VKIF tool, in comparison to the QIAIF tool, more clearly delineated differences in two areas (a) the breastfeeders from the bottlefeeders and (b) the breastfeeders with potential problems. As mentioned earlier, in the VKIF tool there was a clear distinction between the breastfeeders and bottlefeeders in their total, predisposing, and enabling scores (Table 15, p. 84). However, in the QIAIF tool the only areas in which the two groups differed significantly was in their scores on attitudes to bottlefeeding (Table 10, p. 68). When examining

individual scores, the VKIF tool more clearly demarcated between the two groups. For example, comparing Table 16 (p. 85) with Tables 11 and 12 (pp. 73-76) the bottlefeeder's, participant 16, scores on the VKIF tool were lower than any of the breastfeeders' scores (Table 16, p. 85). However, her scores on the QIAIF tool were not consistently lower than the breastfeeders' scores (Table 11, pp. 73-74). Another example, breastfeeder, participant 7, on the VKIF tool scored low in all three categories compared to the scores of the other 12 breastfeeders (Table 16, p. 85). Yet her scores on the QIAIF tool did not discriminate her from the other 12 breastfeeders (Table 11, pp. 73-74). This woman did not breastfeed on leaving the hospital.

The VKIF tool also indicated that attitudes of either the pregnant women or her social support person were not the only factors influencing a decision. Again looking at breastfeeder, participant 7, although her scores were low in all three categories, the enabling category showed the greatest discrepancy from the other breastfeeders' scores (Table 16, p. 85). This category included the individual's skills and environment which facilitate carrying out the behaviour. Furthermore, participant 7, in the QIAIF tool, did not have the lowest scores in either attitudes to breastfeeding or attitudinal difference (Table 11, p. 73).

The predisposing category alone was more encompassing than the total QIAIF tool. The predisposing category included, not

only attitudes towards breastfeeding, but also an assessment of the woman's knowledge of specific facts related to infant feeding and her experiences with breastfeeding. In the QIAIF tool some of the belief items might arguably be knowledge items; for example, question A-9 which evaluated the best nourishment or A-11 which evaluated the best protection against infection (Appendix B, p. 146). In the present study, some of the attitudinal questions addressed in the QIAIF tool were not included in the VKIF tool, in order to avoid repetition. And, as stated earlier, attitudes were not the only factors affecting a woman's decision to breast or bottle feed.

Another strength of the VKIF tool was its provision for acknowledgement of the individual and thus facilitation of individualized nursing interventions. Despite the small population in the present study the variation among the individuals predicated the need for individual assessment and planning for health teaching. Blachman (1981b) pointed out that "there are as many answers as there are women" (p. 285). Therefore, generalizations would overlook the individual need and deny the individual her right to an informed decision and to support from a health professional.

Summary

The results of the present study were consistent with the literature -- information-sharing is not enough to promote breastfeeding. The results of the present study indicated that breastfeeders generally were more knowledgeable and had a more

positive attitude toward breastfeeding than bottlefeeders. Yet simply providing information was not enough to change attitudes or intentions. In fact, the results revealed that some of the women's scores on attitudes towards breastfeeding decreased after the information-sharing sessions.

The conceptual framework also was supported. That is the VKIF tool through the Precede model categories indicated that factors other than attitude were influential in a woman's decision to breast or bottle feed. For example, the bottlefeeders scored low in the enabling category which included such factors as socioeconomic; well reported in the literature to have an influence on a woman's decision (Dusdieker et al., 1985; Hally et al., 1984; McIntosh, 1985). Life experiences, including the woman's sociocultural group and more directly her support group, influence a woman's beliefs, attitudes, and values toward choosing a method of infant feeding. The intention of whether to bottlefeed or breastfeed an infant to some extent is determined by attitudes and subjective norms, that is, the person's perception of the social pressures put on her to perform or not perform the behaviour in question. These intentions are made and not easily changed by nursing strategies such as information-sharing sessions on infant feeding. Thus, in keeping with Ajzen and Fishbein, prenatal intention was a good predictor of postnatal behaviour.

In comparison with the QIAIF tool, the VKIF tool more clearly demarcated the participants into two groups,

breastfeeders and bottlefeeders and for the individual participant, better delineated potential problem areas with infant feeding. In addition, the VKIF tool emerged as a potential tool for nursing research and practice. In nursing practice, the tool might be used prenatally as an assessment of decision-making regarding infant feeding, indicating areas for nurses to intervene pre- and postnatally. For further research, the tool might be used to more clearly delineate the barriers to breastfeeding.

LIMITATIONS AND RECOMMENDATIONS

In this chapter the limitations of the study will be discussed and recommendations for further research will be delineated.

Limitations

The study was limited in its population size and in its low incidence of bottlefeeders and thus in its generalizability. Some plausible explanations for these limitations are: Women who are willing to be participants in research have a tendency to be more positive towards breastfeeding. Hally et al. (1984) found that breastfeeding was higher among the 507 responders to their request for participation than among the 173 non-responders. Further, Simopoulos and Grave (1984) indicated that difficulties are inherent in studying women and their infant feeding choices. For example, one is unable to randomly select for a feeding method, instead it is a volunteer choice. This in turn, creates a bias through self selection. A similar argument might be made, generally, for those who volunteer to be participants in research. Those with a higher education and economic status are more likely to have a greater understanding of research and thus a greater willingness to be participants in research. The fact that the researcher was not involved in a clinical setting inhibited access to the target population and may have decreased the researcher's perceived credibility. Further, by having an intermediator between the researcher and potential participants possibly limited participation. That is, women may have had

difficulty granting permission to a stranger to come to their home. Whenever possible a researcher should be able to address the target population his/her self and extend an invitation to participate on an individual basis (van Poppel & Estok, 1984).

A complicating factor in the selection of a sample population was the restriction of participants to primigravidous women. During procurement of participants it was found that primigravidous women were not as willing to participate as multigravidous women. This may be in part due to the increased self-confidence gained by a woman who has had one or more children. An additional complicating factor was the apparent renewed tendency towards more women breastfeeding. The head nurse of the nursery in one of the St. John's maternity hospitals stated that the end of the month report for January, 1987 indicated that the breastfeeding incidence rate at hospital discharge was 40%; the hospital's highest breastfeeding incidence rate. The results of the present study might have reflected an increasing tendency towards breastfeeding.

The timing of the data collection to occur in a woman's third trimester of pregnancy was another limitation of the study. Many studies have shown that the decision to breastfeed is often made prior to conception (Hally, et al., 1983; Sarett et al., 1983). In designing the research the ideal sought was to begin information-sharing early in pregnancy, in the first trimester, and disseminate it over the three trimesters. However, the seven to nine month data collection span was

thought to be too great for a master's level research.

The next alternative was to begin the information-sharing sessions in the first trimester but finish early in the third trimester before the women had attended prenatal classes. This would have produced incomplete data and conflicted with the theoretical framework which was designed to predict behaviour from intention. Manstead et al. (1984) stated that "if one wanted to identify antenatally those mothers who are unlikely to breast-feed, with a view to promoting the incidence of breast-feeding, intentions measured on a single seven-point scale during the last trimester of pregnancy would provide a fairly accurate indication" (p. 229).

If we view breastfeeding to be on a continuum from preconception to future pregnancies (Ray 1985) at each stage various influences have an effect on a woman's decision and each stage affects the next. Ray (1985) suggested that "we need to consider the exact nature of the interdependence between these areas and plan our health teaching accordingly" (p. 26). To take advantage of short term memory, allowing for greater recall post delivery by sharing information close to delivery, and guided by the conceptual framework it was decided to examine women and their decisions regarding infant feeding in their third trimester.

Another possible limitation of the present study was the reliability and validity of the research tools. The reliability coefficient alpha of the QIAIF tool done on a pilot study was

low -- 0.4739. However, this low value, in part, reflected the complexity of the tool's computations and the low sample population (n=8) of the pilot study. The limitations of using the research tool, VKIF, which had only been tested for content validity, are obvious. However, the tool proved to be useful as a descriptive tool and as a guide to the information-sharing sessions. Further research is necessary to determine reliability and validity of the tools.

A further limitation was the pre-test, post-test design used in the study. Factors other than the nursing intervention of information-sharing might affect the results of the QIAIF post-test. Most notably would be familiarity of the test the second time round. Participants may have remembered questions from the pre-test, thought they had answered incorrectly and made an effort to 'correct' their answers. Random assignment to a control group who did not receive the nursing intervention might have remedied the situation. In addition, the results of the post-test might have been affected by history, that is, participants' differential experiences with information/discussions of and exposure to infant feeding methods. Again random assignment to a control group might have been helpful.

Recommendations

The subsequent discussion outlines recommendations for three areas of nursing: (a) practice, (b) education, and (c) research.

Nursing Practice

The importance of timing of information-sharing on breastfeeding reported in the literature was supported by the present study. Thus, the implication for nursing practice are two-fold: (a) offer school-age children information on breastfeeding and (b) provide prenatal information on infant feeding methods, especially breastfeeding, early in pregnancy.

The importance of the content of information-sharing also has been documented in the literature. As an holistic approach the information-sharing sessions used in the present study might be included in prenatal class curriculum. As discussed earlier, the VKIF tool might be used as a prenatal assessment tool of infant feeding intentions, facilitating individualization of information for prenatal class members. The statement from all of the participants that they would recommend the information-sharing sessions to others indicates to nurses the need for more information on infant feeding methods to be offered.

Here in Newfoundland, an extensive breastfeeding clinical service might be one means of offering more information on infant feeding methods. Perhaps a breastfeeding clinic could be modeled after the San Diego Lactation programme. A breastfeeding clinical service should provide not only a consultation service for breastfeeding mothers and families but also an opportunity for teaching nursing, medical and other health professional students (Naylor & Wester, 1987). A suggestion to further extend this service to reach people who are reluctant to seek health

care/education comes from Jones and West's (1985) study. Jones and West found that a lactation nurse had the most effect on duration of breastfeeding ($p < 0.005$) among the lower social class and those previously unsuccessful at breastfeeding. Whatever services are provided more advertisement regarding the services that are available is required. The present study indicated that several women were unaware of the available breastfeeding clinics and/or the La Leche League.

To strive towards complete social support, McIntosh (1985) suggested that "we need to achieve a greater measure of social acceptability for breastfeeding by changing public attitudes generally" (p. 223). It is readily acknowledged in the literature that in order to bring about change in the public's attitudes toward breastfeeding, the target population for educational programmes must be school age children; their attitudes are developing and more pliable (Martin, 1978; Rousseau et al., 1982; Sawley, 1985). Rousseau et al. (1982) endorsed the incorporation of public education on breastfeeding throughout the school system but recommended the utilization of all forms of media. Lenz (1984) also advocated the importance of "passively acquired information" (p. 69).

A recent Newfoundland Public Health department's television and newspaper campaign for breastfeeding put into practice some of these suggestions in an attempt to reach a large target population -- a pregnant woman's social group, influential in a woman's decision. Surveys done before and after the Public

Health Department's campaign revealed that adolescent girls' (700 sample population) attitudes but not their knowledge were affected by the advertisements. The television advertisements were found to be twice as effective as the newspaper advertisements (J. Friel & N. Hudson, personal communication, November 10, 1986). The present study was conducted at the time of the media campaign. However, none of the participants stated that they had seen anyone breastfeeding in a newspaper and only five of the breastfeeders stated that they had seen anyone breastfeeding on television. Perhaps a more extensive campaign is needed and/or a different advertisement. More research is indicated for this area.

Nursing Education

The present study pointed to the inclusion in nursing education of the importance of using an holistic approach when developing a nursing intervention, including health teaching. More specifically the information-sharing sessions possibly could be used as a guide for content on infant feeding methods to be included in nursing education programmes. The VKIF tool possibly could be used to assess nurses' and/or nursing students' values and knowledge on infant feeding.

In addition, the VKIF tool could be used as an educational tool for nurses and nursing students, to illustrate the complexity of the decision-making process on infant feeding. And thus, in turn, demonstrate the need for a detailed assessment of a woman's values and knowledge on infant feeding prior to

commencement of any information-sharing sessions.

Nursing Research

Recommendations for further research would include a repeat of the study with all or some of the following modifications: (a) a larger sample population to give more statistically significant results; (b) attempt to obtain a population sample representative of the group(s) which has a high bottlefeeding incidence; (c) expand the criteria for choosing participants to include multigravidas; (d) include a control group, for example by incorporating the information-sharing sessions into prenatal classes for one group and comparing with a group taking regular prenatal classes; (e) begin earlier in a woman's pregnancy, extending the information-sharing sessions throughout the pregnancy; (f) include a woman's support person(s) as participants in the whole study; (g) extend the study into the postnatal period providing additional support and information; and (h) choose a sample population of pre-conceptual persons.

Naylor and Wester (1987) found that "despite prenatal preparation, skilled postpartum care and thorough counseling at discharge, nursing problems still arise from time to time" (p. 35). One solution to this problem for the San Diego Lactation Programme was/is to offer a telephone consultation service to any health professional or breastfeeding mother and/or family (Naylor & Wester, 1987). In the present study, each participant was given a list of people, clinics and agencies to contact for consultation. A follow up survey of the use of such resources

would be informative. Another study might be to put into place a similar service to the San Diego telephone consultation programme and evaluate its effectiveness.

Recommendations for other research include an examination of the support person(s) by directly involving the support person(s) in an infant feeding assessment; that is, collecting information about infant feeding from the support person(s). Dusdieker et al. (1985) concurred with this, they suggested that "more detailed investigation of paternal attitudes and influence needs to be undertaken, including obtaining information directly from the baby's father" (p. 702). The tool, VKIF, could be modified for assessment of the support person(s) regarding infant feeding. To properly determine the effectiveness and generalizability of the VKIF tool, a mail or telephone survey could be conducted on a large representative sample population. As well, prenatal instructors, public health nurses and hospital staff could be selected to utilize the tool in order to test its usefulness to other nurses in a variety of settings.

Conclusion

Despite the limitations, especially in population sample size and timing of the information-sharing sessions during pregnancy, the present study results were in concurrence with results from other studies. That is, that (a) information-sharing alone was not enough to promote breastfeeding and (b) the timing and content of information sharing was important in enhancing informed decision-making regarding infant feeding.

Both of these results have implications for nursing practice. The present study suggested that the timing of the information-sharing should be early rather than late in pregnancy. The results of the study further indicated the complexity of decision-making in infant feeding by indicating that the content of the information-sharing should include an assessment and/or discussion of attitudes, values, and feelings of a woman and of her social support person, in addition, to the practical aspects of breastfeeding. The VKIF tool, supporting the conceptual framework, delineated many of the factors, other than attitudes, that influence a woman's choice in infant feeding. In addition, the present study gave support to Ajzen and Fishbein's theory of reasoned action which indicates that intention can predict behaviour. Twelve of the 13 women with intentions to breastfeed were breastfeeding at the time of hospital discharge.

The present study also had implications for nursing in the areas of education and research. For nursing education the implications are the importance of an holistic approach for nursing interventions. For nursing research the implications from the study are the need for (a) further research in development and evaluation of information-sharing on infant feeding methods and (b) further investigation into the barriers to breastfeeding especially among the groups with a high incidence of bottlefeeding.

The tool, VKIF, has emerged as a potential practical, educational and research instrument. As indicated earlier the

tool would require some modifying and testing before being used. However, once done the tool could be used in nursing practice to (a) indicate the areas where preventive measures should be taken, prenatally and postnatally and (b) to individualize interventions towards promotion of breastfeeding. In nursing education, the tool could be used to illustrate the complexity of the infant feeding decision-making process. As an instrument for nursing research, the tool has potential that, with modifications and pilot testing, could give a detailed description of the underlying factors in a woman's decision-making regarding infant feeding. This, in turn, might delineate the barriers to breastfeeding enabling the development of an improved process to promote breastfeeding.

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Appendix A

VALUES and KNOWLEDGE on INFANT FEEDING

FILE # _____

The following are questions on infant feeding. Most of these questions have NO RIGHT answer(s) but instead record your opinion(s). Please circle the option or options which most clearly express your point of view. For example: in #1 you might choose a) and in #6 you might choose c), e) & g).

---- 1) In your opinion which infant feeding method do you believe is most popular in Canada?

a) Bottlefeeding
b) Breastfeeding
c) Other _____

---- 2) In your opinion which infant feeding method do you believe is most popular in Newfoundland?

a) Bottlefeeding
b) Breastfeeding
c) Other _____

---- 3) Which infant feeding method is most used by your family?

a) Bottlefeeding
b) Breastfeeding
c) Other _____
d) Not applicable

---- 4) Which infant feeding method is most used by your friends?

a) Bottlefeeding
b) Breastfeeding
c) Other _____
d) Not applicable

---- 5) Have you seen any one breastfeeding?

a) Yes b) No

---- 6) If yes, where?

a) at home
b) on television
c) in a magazine
d) in a film
e) in a friend's house
f) in the newspaper
g) in a relative's house
h) other _____

---- 7) How were you fed as an infant?

a) Bottlefed c) Other _____
b) Breastfed d) Not known

8) By putting the appropriate letter beside each person, indicate which infant feeding method is/was used by each of the following persons:

a = Bottlefeeding c = Other _____
b = Breastfeeding d = Not known
e) Not applicable

---- i) Your Grandmother(s) _____
---- ii) Your Aunt _____
---- iii) Your Sister _____
---- iv) Your Cousin _____
---- v) Your In Laws _____
---- vi) Your best friend _____

---- 9) What do you think of when the word breast is used?

a) food? b) sex? c) other _____

---- 10) What do you think of when the word breastfeeding is used?

a) food? b) sex? c) other _____

---- 11) Do women with small breasts produce less milk than women with large breasts?

a) Yes b) No c) Don't know

---- 12) Would it concern you to see a woman breastfeeding in public?

a) Yes b) No c) Don't know

---- 13) Do you think that a baby sucking on a woman's breast would make the woman feel sexually excited?

a) Yes b) No c) Don't know

---- 14) Would it upset you if the baby sucking on your breast made you feel sexually excited?

a) Yes b) No c) Don't know

---- 15) At what age can one introduce solids into a baby's diet?

a) 1 to 2 months c) 4 to 6 months
b) 3 to 4 months d) Don't know

---- 16) Can a baby be healthy on just breast milk until the age of 6 months?

a) Yes b) No c) Don't know

---- 17) Which milk do you think will be best for your baby?

a) Carnation c) another formula
b) breast milk d) don't know

---- 18) Which infant feeding method do you feel will be the most convenient for you to use?

a) Bottlefeeding c) There is no difference
b) Breastfeeding d) Don't know

---- 19) Which infant feeding method do you think will make the baby healthier?

a) Bottlefeeding c) There is no difference
b) Breastfeeding d) Don't know

---- 20) Which infant feeding method do you think will make the baby happier?

a) Bottlefeeding c) There is no difference
b) Breastfeeding d) Don't know

---- 21) Which infant feeding method do you think will make you happier?

a) Bottlefeeding c) There is no difference
b) Breastfeeding d) Don't know

---- 22) Which infant feeding method do you think needs to be given more often during a 24 hour period?

a) Bottlefeeding c) There is no difference
b) Breastfeeding d) Don't know

---- 23) Which infant feeding method do you think will make the baby's stools smell?

a) Bottlefeeding c) There is no difference
b) Breastfeeding d) Don't know

---- 24) Which infant feeding method will allow the baby to sleep longer at night?

a) Bottlefeeding
b) Breastfeeding
c) There is no difference
d) Don't know

---- 25) Which infant feeding method gives the mother more time to rest?

a) Bottlefeeding
b) Breastfeeding
c) There is no difference
d) Don't know

---- 26) Which method of infant feeding will tie you down the most?

a) Bottlefeeding
b) Breastfeeding
c) There is no difference
d) Don't know

---- 27) Which infant feeding method benefits the jaws and gums of infants?

a) Bottlefeeding
b) Breastfeeding
c) There is no difference
d) Don't know

---- 28) Which infant feeding method is the cheapest?

a) Bottlefeeding
b) Breastfeeding
c) There is no difference
d) Don't know

---- 29) Which infant feeding method is the easiest?

a) Bottlefeeding
b) Breastfeeding
c) There is no difference
d) Don't know

---- 30) Which infant feeding method allows others to be involved in the care of the baby?

a) Bottlefeeding
b) Breastfeeding
c) There is no difference
d) Don't know

---- 31) Can a woman get pregnant while completely breastfeeding her baby?

a) Yes b) No c) Don't know

---- 32) Can a woman take the birth control pill while breastfeeding?

a) Yes b) No c) Don't know d) Not recommended

---- 33) Can a woman have an IUD (Intrauterine Device) while breastfeeding?

a) Yes b) No c) Don't know d) Not recommended

---- 34) Can a woman use a diaphragm while breastfeeding?

a) Yes b) No c) Don't know d) Not recommended

---- 35) Generally speaking is a physically healthy woman capable of producing enough milk to breastfeed?

a) Yes b) No c) Don't know

---- 36) Do you think that it is possible for a woman to breastfeed twins?

a) Yes b) No c) Don't know

---- 37) Which milk would be the best for a healthy premature baby?

a) Carnation c) another formula
b) breast milk d) don't know

---- 38) Do you think that it is possible for a woman who has had a cesarean delivery to breastfeed her baby?

a) Yes b) No c) Don't know

---- 39) If a woman has an infection such as the common cold should she stop breastfeeding?

a) Yes b) No c) Don't know

---- 40) Do you think breastfeeding would cause permanent changes in your breast?

a) Yes b) No c) Don't know

---- 41) If it did, would this concern you?

a) Yes b) No c) Don't know

---- 42) Do you examine your breasts

a) Yes b) No

---- 43) Do you feel uncomfortable touching your breasts?

a) Yes b) No

---- 44) If needed, do you have a quiet place to feed your baby?

a) Yes b) No c) Don't know

45) In the following, indicate how you feel with the appropriate letter:

a = Yes b = No c = Don't know d = Not applicable

If you were to breastfeed would you do so in front of:

---- i) your family? ----
---- ii) your friends? ----
---- iii) in public? ----
---- iv) no one? ----

---- 46) Would your family mind if you breastfed in front of them ?

a) Yes b) No c) Don't know d) Not Applicable

---- 47) Would your friends mind if you breastfed in front of them ?

a) Yes b) No c) Don't know d) Not Applicable

---- 48) Do you plan to return to work?

a) Yes b) No c) Don't know

---- 49) Could you afford a breastfeeding bra if you needed one?

a) Yes b) No c) Don't know

---- 50) Do you have or could you get a shirt or dress that opens easily for breastfeeding?

a) Yes b) No c) Don't know

---- 51) Now that you are pregnant are you eating well to give both you and your baby a healthy diet?

a) Yes b) No c) Don't know

---- 52) Do you plan to attend or are you attending prenatal classes?

a) Yes b) No c) Don't know

---- 53) Did you receive any information on infant feeding from:

a) Prenatal classes?
b) Your physician?
c) Books?
d) Magazines?
e) Television?
f) Friends?
g) Relatives?
h) Other? _____
i) Have not received any information

---- 54) Who will be most involved in your baby's care?

a) You
b) Your mother
c) Your partner
d) Other _____

---- 55) Which infant feeding method has your doctor discussed with you?

a) bottlefeeding
b) breastfeeding
c) both
d) neither
e) not applicable

---- 56) Which infant feeding method has a nurse discussed with you?

a) bottlefeeding
b) breastfeeding
c) both
d) neither
e) not applicable

---- 57) If you had problems with infant feeding who would you turn to for help?

a) Your mother
b) Your best friend
c) Your grandmother
d) Public Health nurse
e) Your doctor
f) Hospital staff
g) Other _____
h) No one

---- 58) Do you know anyone breastfeeding now?

a) Your best friend
b) Someone at work
c) A relative
d) Other _____
e) No one

---- 59) If yes, would you be able to talk with them about breastfeeding?

a) Yes b) No c) Don't know

---- 60) Have you heard of the breastfeeding clinic?

a) Yes b) No

---- 61) Have you heard of the La Leche League?

a) Yes b) No

---- 62) Which infant feeding method do you plan to use?

a) Bottlefeeding
b) Breastfeeding
c) Other ----------
d) Undecided

---- 63) When did you decide on a method?

a) Before becoming pregnant
b) Early in pregnancy
c) Recently
d) Have not decided yet

64) If you have decided on a method, why did you choose that method? or If you have not decided yet, why not?

Appendix B

QUESTIONNAIRE TO INVESTIGATE ATTITUDES TO INFANT FEEDING

(Manstead, 1984) FILE #___

A. Below are a number of statements about different methods of feeding one's baby. Please indicate on the scale below each statement how likely or unlikely it is that the statement is true, by circling one number on each scale. The numbers in these and other scales in this questionnaire represent stronger positions as they get closer to each end of the scale. In this set of scales, for example, 1 and 7 represent strong beliefs (very likely or very unlikely), 2 and 6 represent slightly less strong beliefs (moderately likely or moderately unlikely), 3 and 5 represent even less strong beliefs (somewhat likely or somewhat unlikely), and 4 represents the mid-point (neither likely nor unlikely).

1) Breastfeeding establishes a close bond between mother and baby.

___ Very likely 1 2 3 4 5 6 7 Very unlikely

2) Bottlefeeding is a very convenient method of feeding a baby.

___ Very likely 1 2 3 4 5 6 7 Very unlikely

3) Breastfeeding is embarrassing for the mother.

___ Very likely 1 2 3 4 5 6 7 Very unlikely

4) Bottlefeeding provides incomplete nourishment for a baby.

___ Very likely 1 2 3 4 5 6 7 Very unlikely

5) Breastfeeding is good for the mother's figure.

___ Very likely 1 2 3 4 5 6 7 Very unlikely

6) Bottlefeeding makes it possible for the baby's father to become involved in feeding the baby.

___ Very likely 1 2 3 4 5 6 7 Very unlikely

7) Breastfeeding limits the mother's social life.

___ Very likely 1 2 3 4 5 6 7 Very unlikely

8) Bottlefeeding is an expensive method of feeding a baby.

__ Very likely 1 2 3 4 5 6 7 Very unlikely

9) Breastfeeding provides the best nourishment for a baby.

__ Very likely 1 2 3 4 5 6 7 Very unlikely

10) Bottlefeeding is a trouble-free method in feeding a baby.

__ Very likely 1 2 3 4 5 6 7 Very unlikely

11) Breastfeeding protects a baby against infection.

__ Very likely 1 2 3 4 5 6 7 Very unlikely

12) Bottlefeeding allows one to see exactly how much milk the baby has had.

__ Very likely 1 2 3 4 5 6 7 Very unlikely

B. Please examine each of the following aspects of infant feeding methods, and indicate how important each of them is to you by circling a number on the scale below it.

1) Using a feeding method that allows me to go out socially is:

__ Very important to me 1 2 3 4 5 6 7 Completely unimportant to me

2) Using a feeding method that is good for my figure is:

__ Very important to me 1 2 3 4 5 6 7 Completely unimportant to me

3) Using a feeding method that is convenient is:

__ Very important to me 1 2 3 4 5 6 7 Completely unimportant to me

4) Using a feeding method that establishes a close bond between me and my baby is:

__	Very important to me	1	2	3	4	5	6	7	Completely unimportant to me

5) Using a feeding method that does not make me feel embarrassed is:

__	Very important to me	1	2	3	4	5	6	7	Completely unimportant to me

6) Using a feeding method that allows the father to become involved in feeding is:

__	Very important to me	1	2	3	4	5	6	7	Completely unimportant to me

7) Using a feeding method that provides complete nourishment for my baby is:

__	Very important to me	1	2	3	4	5	6	7	Completely unimportant to me

8) Using a feeding method that is trouble-free is:

__	Very important to me	1	2	3	4	5	6	7	Completely unimportant to me

9) Using a feeding method that is inexpensive is :

__	Very important to me	1	2	3	4	5	6	7	Completely unimportant to me

10) Using a feeding method that allows me to see exactly how much milk my baby has had is:

__	Very important to me	1	2	3	4	5	6	7	Completely unimportant to me

11) Using a feeding method that protects my baby against infection is:

__	Very important to me	1	2	3	4	5	6	7	Completely unimportant to me

C. What does each of the following people think about you breastfeeding the baby?

1) The baby's father thinks that I

___	Definitely should breastfeed	1	2	3	4	5	6	7	Definitely should not breastfeed

2) My mother thinks that I

___	Definitely should breastfeed	1	2	3	4	5	6	7	Definitely should not breastfeed

3) My closest female friend thinks that I

___	Definitely should breastfeed	1	2	3	4	5	6	7	Definitely should not breastfeed

4) My medical advisor thinks that I

___	Definitely should breastfeed	1	2	3	4	5	6	7	Definitely should not breastfeed

D. What does each of the following people think about you bottlefeeding your baby?

1) The baby's father thinks that I

___	Definitely should breastfeed	1	2	3	4	5	6	7	Definitely should not breastfeed

2) My mother thinks that I

___	Definitely should breastfeed	1	2	3	4	5	6	7	Definitely should not breastfeed

3) My closest female friend thinks that I

___	Definitely should breastfeed	1	2	3	4	5	6	7	Definitely should not breastfeed

4) My medical adviser thinks that I

__	Definitely should breastfeed	1	2	3	4	5	6	7	Definitely should not breastfeed

E. In general, how much do you care about what each of the following people thinks you should do?

1) The baby's father :

__	Do not care at all	1	2	3	4	5	6	7	Care very much

2) Your mother:

__	Do not care at all	1	2	3	4	5	6	7	Care very much

3) Your closest female friend:

__	Do not care at all	1	2	3	4	5	6	7	Care very much

4) Your medical adviser:

__	Do not care at all	1	2	3	4	5	6	7	Care very much

F. How do you intend to feed your baby?

__	I shall definitely breastfeed my baby	1	2	3	4	5	6	7	I shall definitely bottlefeed my baby

__ G. (Only to be answered by those scoring 1, 2 or 3 on Question F):

	I definitely intend to persist with breastfeeding even if there are problems	1	2	3	4	5	6	7	I definitely intend to give up breastfeeding if there are any problems

Appendix C

OBJECTIVES FOR INFORMATION-SHARING SESSIONS

PART I: Infant Feeding Choices and the Value of Each for the Baby and Mother.

By the end of this session, with the researcher, you will have:

1) Discussed some of the factors that influence a woman's attitudes and intentions towards infant feeding.

2) Identified the basic facts of the anatomy and physiology of lactation and sucking.

3) Outlined the pleasure and/or displeasure that breastfeeding or bottlefeeding gives a woman.

4) Describe the mother's commitment that is required for the caring and feeding of her infant.

5) Outlined ways to involve others in the care of the infant.

6) Compared breastfeeding with bottlefeeding regarding the benefits for mother and infant.

Part II: The How to of Infant Feeding and Potential Problems: Prevention and Cure

By the end of this session the group, with the researcher, will have:

1) Outlined the necessary diet for a pregnant woman, a breastfeeding mother, and a breast or bottle fed infant.

2) Discussed the early initiation and establishment of breastfeeding.

3) Described the various positions of the infant for effective sucking in breast and bottle feeding.

4) Discussed preventive and curative measures for potential breast and bottle feeding problems.

5) Described some of the available infant formulas and the preparation procedures.

6) Outlined the different forms of contraception available to women who are either breast or bottle feeding.

7) Viewed a film or slide show and/or talked with a woman currently breastfeeding.

8) Discussed question and concerns arising from the previous objective.

9) Received a resource list of people, agencies and materials for further information and/or help on infant feeding before and after delivery.

Appendix D

LIST OF PAMPHLETS and HANDOUTS

The pamphlets and handouts used during the information-sharing sessions will be listed in the order that they were handed out.

AFTER THE FIRST INTERVIEW:

Objectives for first information-sharing session
(Appendix C, p. 147)
Nutritional requirements of infants
(Stoppard, 1983, p. 83-84)
Breastfeeding and bottlefeeding discussion
(Stoppard, 1983, pp. 84-85; 99)
Alternate milks
(N. S. Department of Health)
Now you are a family
(Rayner)
Fathers ask: Questions about breastfeeding
(Health Education Associates, 1978)

AFTER THE FIRST INFORMATION-SESSION:

Objectives for second information-sharing session
(Appendix C, p. 147)
Anatomy and physiology of lactation
(Riordan & Countryman, 1980, pp. 210; 211; 213)
Breastfeeding versus bottlefeeding
(Appendix F, p. 153)
Cost of infant feeding
(Appendix G, p. 155)
Why breastfeed your baby?
(Health Education Promotion Nutrition Division, Nfld.)
Nursing your baby for the first time
(Danner, 1983)
How to's of breastfeeding and possible problems
(Stoppard, 1983, p. 89-97)
How to's of bottlefeeding and possible problems
(Stoppard, 1983, p. 100-105)
Possible problems with infant feeding
(Stoppard, 1983, p. 106-113)
Sore nipples
(Stoppard, 1983, p. 98)

AFTER THE SECOND INFORMATION-SHARING SESSION:

Breastfeeding -- Your questions answered
(Meredith, 19?)
Nursing your baby beyond the first days
(Danner & Cerutti, 1984)

Baby's first year
(Health Education, Promotion and Nutrition Division, 1985)
When baby's cry
(Harris, 1979, p. 33)
Resource list
(Appendix E, p. 151)

Appendix E

RESOURCE LIST

(For information on infant feeding
or for help or support with infant feeding.)

PEOPLE:

Public Health Nurse 576-2793
Public Health Services Building
Forest Road

Nutritionist 576-2685
Public Health Services Building
Forest Road

La Leche League Leaders:
Martha Shingle 726-1246
Emily Remartinez 753-2219
Bonnie Cole 368-0319
Sue Templeton 726-9511

Janette Georghio 778-3333
Breastfeeding Clinic
(Referral Office)
St. Clare's Hospital

Annette Leonard 778-6188
Breastfeeding Clinic
Grace Hospital

Karen Olsson ..... 579-4842 (H)
737-8856 (W)
or leave a message at 737-669[illegible]

Your Family Doctor .....

A woman you can turn to for help ..

AGENCIES: (Phone Numbers are in the Phone Book)

Public Health Nursing Services
Forestry Road
Phone: 576-2793

La Leche League, St. John's
Meetings, the second Wednesday of every month
Phone: 722-9113

Breastfeeding Clinics:

St. Clare's Hospital ..... 778-3111 (INFO)
Mondays: 1:30 pm - 4:00 pm

Grace Hospital ..... 778-6222 (INFO)
Thursdays: 2:30 pm - 3:30 pm

BOOKS:

The Canadian Mother and Child, published by the Minister of National Health and Welfare Canadian Government Publishing Centre Supplies and Services Canada Hull, Quebec K1A 0S9

Up the Years From One To Six, by the Health Programs Branch, Published by the Minister of National Health and Welfare. (Same address as above)

Day By Day Baby Care, by Miriam Stoppard, published by Villard Books, New York in 1983.

The Complete Book of Breastfeeding, by Marvin Eiger and Sally Wendkos Olds, published by Bantam Books, New York in 1973.

The Experience of Breastfeeding, by Sheila Kitzinger, published by Penquin Books, New York in 1979.

The Womanly Art of Breastfeeding, by the La Leche League, published by New American Library, New York in 1981.

Nursing Your Baby, by Karen Pryor, published by Pocket Books, New York in 1973.

There are numerous books on infant feeding and general infant care, in the book store or at the Public Library, that you might find useful.

Appendix F

BREASTFEEDING VERSUS BOTTLEFEEDING
(Adapted from Casey & Hambridge, 1983; Goldfarb & Tibbetts, 1980; Lawrence, 1985)

Ingredient	Function	Breast Milk	Infant Formula
Protein	Source of amino acids, body's building blocks.	High, greatest % in whey, which is easily digested. Also contains essential amino acids for brain growth.	Greatest % in casein, which is hard to digest.
Fat	Largest source of calories (energy).	Efficiently absorbed Changes within feeds and from feed to feed to meet the needs of the infant.	Not well absorbed. Never changes.
Essential Fatty Acid	Brain and nervous tissue growth and function.	Adequate supply of all.	Some or at low levels.
Cholesterol	Develops enzyme	High, enables older child to make better use of the cholesterol.	Low, older child at higher risk for heart disease.
Lactose	Enhances iron and calcium absorption. Helps to provide energy for rapidly growing brain. Provides protection from harmful bacteria in the intestine.	Present in large amounts.	Usually present in small amounts.

Immune Factors produced (IgA)	Protection against many bacteria and viruses that cause colds, diarrhea and ear infections.	Present.	Not Present and not in infants until 6 mos.
(Lysozyme)	Against allergies.		Cow's milk allergies.
Thyroid Hormone	Growth and energy.	Present	Not present.
Iron	Production of red blood cells for energy.	Small but adequate until 4-6 mos. Absorbed well.	Present but not well absorbed. May cause loss of iron.
Calcium	Strong bones and teeth.	Moderate, very well absorbed.	High, but not well absorbed.
Zinc	Long term protective effect.	Present. Well absorbed.	Present in cow's milk, not well absorbed.
Vit. A	Good eye sight, skin, and growth.	Present.	Added.
Vit. C	Tissue growth, wound healing.	Large amounts.	Small amounts.
Vit. D	Helps to absorb calcium.	Small but well absorbed.	Added.
Vit. E	Prevents destruction of red blood cells.	Present.	Very small amounts.
Vit. K	Prevents bleeding.	Small amounts, well absorbed.	Added in some. Not produced first few weeks.

Appendix G

COST OF INFANT FEEDING

(Adapted from: Results of Infant Formula Costing Survey
N. Shouse, January, 1986)

BREASTFEEDING:

Recommended additional intake while breastfeeding is 20 g of protein and 500 mls of fluid. An example of the cost of this is shown below.

Food Items	Protein	Calories	Cost Per Day ($)	Cost Per Month ($)
500 mls of 2% Milk	18g.	258	.62	
15 mls of Peanut Butter	4g.	95	.16	
2 slices of Whole Wheat Bread	6g.	145	.10	
Total	28g.	499	.88	26.40

BOTTLEFEEDING:

Cost for feeding an infant from birth to three months:

Formulas	Per mls	Per Day	Per month
Carnation	.07	.56	21.00
Enfalac	.22	1.87	66.00
Simulac	.22	1.87	66.00
SMA	.22	1.87	66.00

NOTE:
These prices do not include the cost of the bottles, nipples, sugar, heating of formula, or sterilizing of equipment.

Appendix H

PARTICIPANT'S FEEDBACK on the INFORMATION-SHARING SESSIONS

FILE # ___

1) How would you rate the information-sharing sessions?

Not useful 1 2 3 4 5 Very useful

2) How much did you learn?

A great deal 1 2 3 4 5 Nothing at all

3) Would you say that the main source of your information on infant feeding was from the information-sharing sessions?

Very definitely 1 2 3 4 5 Definitely not

4) Would you recommend that other pregnant women participate in similar sessions?

Not likely 1 2 3 4 5 Most likely

5) Would you have preferred that all the sessions were private?

Very definitely 1 2 3 4 5 Definitely not

6) Would you have preferred that all the sessions were held in a group?

Definitely not 1 2 3 4 5 Very definitely

7) Would you recommend that the sessions occur more often?

Very definitely 1 2 3 4 5 Definitely not

8) Would you recommend that the sessions begin earlier?

Definitely not 1 2 3 4 5 Very definitely

General Comments:

Appendix I

LETTER OF PERMISSION

UNIVERSITY OF MANCHESTER
MANCHESTER M13 9PL

DEPARTMENT OF PSYCHOLOGY:
PROFESSOR J.T. REASON
PROFESSOR M.S. HALLIDAY

TELEPHONE:
061-273 7121

29th July 1987

Karen Olsson
School of Nursing
Memorial University of Newfoundland
St. John's
Newfoundland
CANADA
A1B 3V6.

Dear Ms. Olsson,

Thank you for your letter of July 8th. I hereby give you my permission to use my attitudes to infant feeding questionnaire.

Yours sincerely,

A.S.R. Manstead, D.Phil.,
Lecturer in Psychology

NOTE: This letter confirms the verbal consent used to start data collection.

Appendix J

DEMOGRAPHIC DATA

FILE # __

Age: Date:

LMP: EDD: Present gestation; __ wks

Education:

Occupation:

Employment status:

Residence: # of rooms:

# of people: Adults____ Children:____

Head of household:

Support person: Male____ Female ____

Age:

Education:

Occupation:

Employment status:

Lives with above?

Are you originally from Newfoundland?

Appendix K

EXPLANATION OF THE STUDY FOR THE PARTICIPANT

Infant feeding is the topic of this study.

My name is Karen Olsson and I am a registered nurse, completing the Master's Programme in Nursing at Memorial University. You are invited to participate in a study on infant feeding. The purpose of this study is to see if the sharing of up to date facts and ideas on infant feeding will help pregnant women to make informed choices regarding infant feeding.

You may invite your support person, the person most important to you during your pregnancy (be they your partner, husband, boyfriend, mother, sister, friend, nurse, or whoever), to join you in the study.

The study will start when you are about seven months pregnant and take a total of three hours of your time over a one month period. The time of the interviews and information-sharing sessions will be arranged to occur at your convenience. The two individual sessions probably will be held in your home and the one group session (5-6 other participants), in a room at one of the hospitals.

Confidentiality will be maintained at all times and your name will not be recorded with any of the information that you give.

The study will involve the following:

1) An introductory interview, taking approximately 30 minutes.
2) Two, one-hour information-sharing sessions on infant feeding, and
3) A closing interview that will be done at the end of the second information-sharing session and will take an additional 30 minutes.

The introductory and closing interviews will consist of a series of questions which will give me information on what you know and believe about infant feeding. During the two information-sharing sessions you and I will have an informal discussion on the various aspects of infant feeding, as follows:

Part I: Infant Feeding Choices and the Value of each for the Baby, Mother, and Family.

Part II: The How To of Infant Feeding, including Potential Problems -- Prevention and Cure.

Throughout the study you will be given various

pamphlets on infant feeding which you might want to read and give your comments. In the last information-sharing session a film and/or slide show on breastfeeding will be shown. In addition, you will be offered a resource list, which will include the following: 1) where to get more written information and 2) where to find people and places for further help and advice either before or after the delivery of your baby. You may not directly benefit from the study but the information you give may help nurses to develop a programme to provide information on infant feeding for other pregnant women.

At no time will you be tested or quizzed for scoring purposes but rather you will be asked to share with me your opinions and information on infant feeding. I will be learning from you.

At each session an opportunity will be made for you to express any problems you might be having with the study and/or your pregnancy. If necessary appropriate referrals will be made.

Again I wish to stress that your name will not be recorded or identified with any of the information that you give. You will be free to withhold any information and/or have any information withdrawn at anytime during the study. You will also be free to withdraw from the study at any time without consequence to you.

Upon completion of the study you will receive a letter describing the results of the study and a copy of the complete study will be made available at the Memorial University library.

If you have any questions about the study or wish to withdraw from the study please contact me at 579-4842.

Appendix L

CONSENT

- I have read the explanation of the proposed study.
- I agree to participate in the study as outlined in the explanation.
- If I partake in the study my name and any personal information will be kept confidential and not available to anyone other than the aforementioned researcher.
- I may withhold any information or have information withdrawn at any time without consequence to me.
- I may with draw from the study at any time without consequence to me.

Participant_____ Date_____

Researcher _____ Date _____

Appendix M

RESEARCH SCHEDULE

Approximate Gestation	Time Period	Place	Activity
27 wks	Early June to Mid June	Health Care Agency	Initial Contact
28 wks	Mid June to Late June	Telephone (~1 wk. later)	Confirm Consent
29 wks	Late June to Early July	Prearranged (~1 wk. later)	Pre-Test + Assessment (30 mins.)
30 wks	Early July to Mid July	Prearranged (~1 wk. later)	I S (Individ.) Session I (1 hr.)
31 wks	Mid July to Late July	Prearranged (~1 wk. later)	I S (Group) Session II (1 hr.) and Post-Test (30 mins.)
Post Delivery	Late Aug. to Mid Sept.	Hospital	Infant Feeding Method

Appendix N

OUTLINE OF INFORMATION SHARING SESSIONS

At the end of each session the participant will be given an opportunity to raise questions or concerns regarding the pamphlets received, information received elsewhere or other general concerns related to pregnancy and infant feeding.

PART I: Infant Feeding Choices and the Value of each for the Baby and Mother.

1. Some of the factors that influence a woman's attitudes and intention towards infant feeding.

   1.1 The decision made on infant feeding and why
   Using an analogy, eg. buying cereal:
   i) the importance of the decision to the individual.
   ii) the belief in the benefit of the outcome.

   1.2 Possible influences of a woman's past experiences and a woman's support person(s).
   1.21 Whether or not a woman has seen anyone breastfeeding.
   1.22 Support person's attitudes, beliefs and practices.
   1.23 The importance of this to the individual.

   1.3 Possible influence of advertisements and social trends.

   1.4 Feelings about one's breasts -- comfortable with own body, sensitivity to sexual stimulation and the

perceived function of the breasts.

1.5 The importance of being a career woman versus being a mother.

2. The basic facts of anatomy and physiology of lactation and sucking (Handout titled: Anatomy and Psychophysiology of Lactation, adapted from Riordan & Countryman, 1980, pp. 210, 211, 213).

2.1 normal and inverted nipples

2.2 the site of milk production

2.3 stimulation of milk production -- hormones and sucking.

2.4 the differences between bottle and breast sucking action.

3. The pleasure and/or displeasure that breast or bottle feeding gives a woman.

3.1 The mixed emotions of being a mother (Pamphlet: Now you are a family, Health Education Council, London, G. B.).

3.2 The various responses of women to an infant suckling.

3.3 The feeling of closeness to the infant; does it differ with the feeding method used?

4. The mother's commitment towards the caring and feeding of her infant.

4.1 The greater time initially involved in breastfeeding.

5. Ways to involve others in the care of the infant (Pamphlet: Fathers ask, Health Education Associates, Pa).

5.1 Support person can/should hold, cuddle, talk to the infant.

5.2 Support person/others can take a turn to bath infant, do some of the house work, and/or occasionally feed the infant some expressed milk.

6. Compare breastfeeding with bottlefeeding regarding the benefits for mother and infant (Handout: Breastfeeding versus Bottlefeeding, Appendix F, p. 153).

6.1 Nutritional value

6.2 Cost -- money, time and energy.

6.3 Convenience -- traveling, visiting, and night feeds.

6.4 Meeting several needs at one time -- nutrition, comfort, attention and stimulation.

PART II: The How To of Infant Feeding and Potential Problems: Prevention and Cure.

1. Mother and infant nutrition (Pamphlet: Good foods for mothers-to-be, Nfld. Department of Health, 1984; Handout: Nutritional requirements, Stoppard, 1983, p. 83; Handout: Breastfeeding versus Bottlefeeding, Appendix F, p. 153).

   1.1 Nutrition for pregnant women and new mothers.

   1.2 Vitamin/mineral supplements for newborns.

   1.3 Introducing solids.

2. Early initiation and establishment of breastfeeding (Pamphlet: Nursing your baby for the first time, Danner, 1983).

   2.1 Begin as soon as possible after delivery.

   2.2 Colostrum and "milk coming in".

   2.3 Alert hospital personnel re: demand feeding, no supplementation, and rooming-in.

3. The various positions for effective sucking in breast and bottle feeding (Pamphlets: Nursing your baby for the first time, Danner, 1983 & Nursing your baby beyond the first few days, Danner & Cerutti, 1984; Handouts: How to hold the baby breastfeeding & bottlefeeding, Stoppard, 1983, pp. 88-91; 104-105).

   3.1 Comfortable positions for mother and baby.

   3.2 Baby latching on to breast and effective suckling.

   3.3 Proper position for holding baby and bottle when bottlefeeding.

4. Preventative and curative measures for potential breast and bottle feeding problems (Pamphlet: Nursing your baby beyond the first days, Danner, 1984; Handouts: How to's of breastfeeding and possible problems, Sore nipples, & Bottlefeeding and possible problems, Stoppard, 1983, pp. 89-97; 98; 106-109).

4.1 Sleepy baby

4.2 Tired or sick mom

4.3 Engorged breasts, sore nipples; sore breasts

4.4 Over and under feeding

4.5 Burping and spitting up

4.6 Milk "dried-up"/ milk allergies

4.7 Refusing the breast/ bottle

4.8 Feeding in public

4.9 Contradictory advice

5. Some of the available infant formulas and the preparation procedures (Alternate milk, N. S. Department of Health, pp. 8-10; How to's of bottlefeeding, Stoppard, 1983, pp. 100-103).

5.1 SMA, Similac and Carnation.

5.2 Choosing bottles and nipples

5.3 Ready made formula, liquid and powdered formula preparations.

5.4 Warming formula and sterilization techniques.

6. Different forms of contraception available to either breast or bottle feeding women.

6.1 Oral contraception and IUD not recommended for breastfeeding women.