

Abstract

Kolberg, R. J. Factors Associated with Perceived Emotional, Instrumental, and Informational Support for Breastfeeding Mothers. M.S in Health Education, 1989. 94 pp. (G. Matheson)

Variables were examined to determine their relationship to perceived emotional, instrumental, and informational support as measured by the Hughes Breastfeeding Support Scale (R. B. Hughes), and experienced by breastfeeding mothers (N=83) within the tri-state area surrounding La Crosse, WI. Univariate analysis found the following results when examining differences: 1) women whose male partner attended a breastfeeding educational program had higher levels of perceived instrumental support and total support than women whose male partner did not attend an educational program, and 2) first-time breastfeeders had lower perceived informational support than women who had breastfed previously. Univariate analysis found the following results when examining relationships: 1) as the number of breastfeeding educational programs attended by women increased, perceived informational support increased, and 2) as perceived support from individuals or organizations increased, total perceived support increased. The individuals or organizations with the highest correlations with perceived total support were: 1) the breastfeeding support group, 2) the family practitioner, 3) the midwife, and 4) the father of the baby. The highest correlations for each subscale were the following: 1) instrumental support - breastfeeding support group, 2) emotional support - family practitioner, and 3) informational support - family practitioner.

FACTORS ASSOCIATED WITH PERCEIVED EMOTIONAL,
INSTRUMENTAL, AND INFORMATIONAL SUPPORT
FOR BREASTFEEDING MOTHERS

A Thesis Presented

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The Graduate Faculty

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In Partial Fulfillment
of the Requirements for the
Master of Science Degree

by

Rhonda Kolberg

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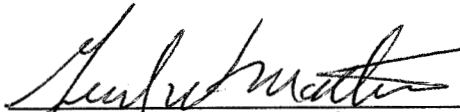
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We recommend acceptance of this thesis in partial fulfillment
of this candidate's requirements for the degree:

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DEDICATION

To my husband, Richard,
for his love and support

and

to my son, Derek,
for giving me the reason
to persevere in the
completion of this goal

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CHAPTER I

INTRODUCTION

The benefits of breastfeeding are now recognized by most health professionals and health organizations. The American Academy of Pediatrics and the American Public Health Association have both been instrumental in the promotion of breastfeeding. The Academy's 1982 policy statement indicates there is a "need for environmental and occupational support systems that will encourage more women to breastfeed" (Brown, 1986, p. 239). Since breastfeeding is a complex learned activity, social and psychological factors that may influence success must be considered.

Background

More American women are choosing to breastfeed than ever before. Wilton (1987) points out that "In 1960 the rate of women breastfeeding at the time of hospital discharge was at an all-time low of 18 percent, but by 1980 it had risen to 55 percent" (p. 40). This statistic, however, does not indicate whether a positive nursing experience ensues after hospital discharge or what the duration is of the breastfeeding experience. Studies by Cole, Cunningham, Martinez, and Dodd (cited in Hellings, 1985, p. 15) indicate "that as many as 15% - 35% of mothers have quit [breastfeeding] by the end of four to six weeks." Other studies indicate that 25% to 50% of new mothers discontinue breastfeeding within 4 weeks, and 50% to 70% have quit by 16 weeks post-partum

(Saunders & Carroll, 1988). The American Academy of Pediatrics (1978) advises that "breast milk should be practically the only source of nutrients for the first four-six months for most infants" (p. 597).

The duration of breastfeeding is critical to the nursing mother's perceived success of the experience. Hellings (1985) points out that "mothers who choose to breast-feed but who fail at doing so - particularly in the seemingly critical first month - express great disappointment, frustration, and sometimes guilt because of their 'inadequacy' "(p. 15). Various factors impact on the quality and the duration of the nursing experience. Factors such as how the mother herself was fed as an infant, the mother's education, feelings about the pregnancy, income, race, family and social support, attendance at educational programs, health during pregnancy, and the type of delivery have all been considered as important variables in a successful breastfeeding experience. Studies by Griffin and Kemmerling (cited in Hellings, 1985, p. 17) indicate that "the perception of support has also been found to be important."

Significance of the Study

Many studies have indicated that social factors, such as adequate social support encouraging breastfeeding, are extremely important for a successful nursing experience (Jones & West, 1986; Mogan, 1986; Riordan, 1983; Macey, 1986). Social support for breastfeeding can come from a variety of people including health educators, health care providers, family, mother-to-mother support groups, lactation clinics, friends, and nutritionists. Lactation educators or consultants are utilized at

health care facilities to provide that bridge between hospital and discharge to the community. This support is especially valuable during that critical first six weeks when many women terminate breastfeeding.

Since studies indicate the social support is a critical variable to a positive nursing experience, this study will examine variables that influence perceived social support for breastfeeding mothers. As Hughes (1984) points out, "Social support is likely to be useful to the individual only to the extent it is perceived as supportive" (pp. 357-358). Examining these variables will be helpful to health/lactation educators in choosing appropriate interventions that would have the potential of offering the most perceived support to the breastfeeding mother. If significant correlations are discovered in this study, health educators could target specific groups for more intervention. Husbands could be encouraged to attend educational programs. Support groups for breastfeeding mothers could be developed and encouraged. If age is a significant factor, health educators could tailor more intensive programs for younger mothers. First-time mothers could also be targeted for certain programs. These factors would all be important for the health educator to consider when formulating a program for the breastfeeding mother.

Statement of the Problem

This study examined the problem: How do the following variables relate to the level of perceived emotional, instrumental, and informational support experienced by breastfeeding mothers in the tri-state area around La Crosse, Wisconsin: (a) support ratings for

individuals involved with breastfeeding mothers, (b) participation in the WIC program, (c) the number of breastfeeding educational programs attended, (d) the attendance of the baby's father at a breastfeeding educational program, (e) whether a first-time breastfeeder or not, (f) active membership in religious faith, (g) annual family income, (h) friend or relative as role model, (i) married or not, (j) the educational level attained by the mother, (k) the self-rating of the nursing experience, (l) the intention to breastfeed again, and (m) the age of the mother.

Research Hypotheses

The following research hypotheses were tested to determine the relationship or differences between perceived support for breastfeeding mothers and pertinent social variables.

The following hypotheses were formulated to test the differences between groups:

1. Women who are participants of the Women, Infant, and Children's Program (WIC) will have significantly higher scores on the informational subscale of the HBSS than women who are not WIC program participants (Question #42).
2. Women who are participants of the WIC Program will have significantly lower scores on the emotional and instrumental subscales than women who are not WIC participants (Question #42).
3. Women whose male partner has attended an education program about breastfeeding will have significantly higher scores on the HBSS than women whose male partner did not attend any education program about

breastfeeding (Question #44).

4. Women who consider themselves an active member of any religious faith will have significantly higher scores on the HBSS than women who do not consider themselves an active member of any religious faith (Question #46).

5. Women who are breastfeeding for the first time will have significantly lower scores on the HBSS than women who are not first-time breastfeeders (Question #45).

6. Women who have had a friend or relative who was helpful in teaching them how to breastfeed will have significantly higher scores on the HBSS than women who did not have a friend or relative who was helpful (Question #48).

7. Women who are married will have significantly higher scores on the HBSS than women who are not married (Question #49).

The following hypotheses were formulated to test the relationship between variables:

8. There will be a positive linear correlation between scores of individual support for breastfeeding mothers and scores on the HBSS (Question #'s 31-41).

9. There will be a positive linear correlation between the number of breastfeeding educational programs attended and the scores on the informational subscales of HBSS (Question #43).

10. There will be a positive linear correlation between the scores on the HBSS and the family's annual income level (Question #47).

11. There will be a positive linear correlation between scores on the HBSS and educational level attained by the mother (Question #50).

12. There will be a positive linear correlation between self-rating scale of intention to breastfeed again and scores on the HBSS (Question #52).

13. There will be a positive linear correlation between the self-rating of the breastfeeding experience and scores on the HBSS (Question #51).

14. There will be a positive linear correlation between the scores on the HBSS and the age of the mother (Question #53).

Assumptions

1. Respondents are assumed to be honest and accurate in completing the questionnaire for this study.

2. Components of breastfeeding educational programs offered at different medical facilities were assumed to be similar in nature and scope for the purposes of this study.

Limitations

This research study involved the following limitations:

1. Since the number of women involved in this study was a small sample of breastfeeding women in the tri-state area around La Crosse, Wisconsin; it would be improper to extrapolate these results to a sample with a heterogeneous ethnic and cultural background.

2. Since the sample of this study was taken from a mid-size city (48,000 pop.), it would be improper to extrapolate these results to a sample from a more rural or metropolitan area.

Delimitations

This study involved the following delimitations:

1. The sample comprised women in the tri-state area around La Crosse, Wisconsin who either had post-partum medical care at The Family Practice Clinic, La Crosse, WI., Gundersen Clinic, La Crosse, WI., Skemp-Grandview Clinic, La Crosse, WI; or were participants of the La Crosse County WIC program.

2. The sample comprised women who were from three weeks to four months post-partum and were breastfeeding at the time of hospital discharge after the birth of their infant.

3. Responses from thirty subjects from each of the four sites were requested, but due to administrative difficulties at two of the sites, only 14 subjects were obtained from the Skemp-Grandview Clinic and only 7 subjects were obtained from The Family Health Center. The total sample obtained was 83 subjects.

4. Non-English speaking women were restricted from participating in this study.

Definition of Terms

1. Breastfeeding: The secretion of milk from the female breast and the suckling of the infant at the breast to secure its nutrition.

2. Emotional Support: Interactions which convey caring, trust, and love as measured by the Hughes Breastfeeding Support Scale.

3. Informational Support: Knowledge sharing behaviors as measured by the Hughes Breastfeeding Support Scale.

4. Instrumental Support: Task-oriented behaviors that directly assist the individual as measured by the Hughes Breastfeeding Support Scale.

5. Lactation: The process of breastfeeding.

6. Lactation Educator/Consultant: That health professional who supports, educates, and has follow-up contact with the breastfeeding mother.

7. Post-partum: The period of time following childbirth, after delivery.

8. WIC (Women, Infants, and Children Food Supplemental Program): WIC is a federally funded nutrition program for low and limited income pregnant or lactating women, infants, and children. Vouchers are provided to participants to purchase nutritious foods including juice, cereals, eggs, milk, cheese, and infant formulas. Each participants' health and nutritional status is screened, with persons at risk being accepted for the program. Breastfeeding mothers also meet individually with a breastfeeding educator.

CHAPTER II
REVIEW OF LITERATURE

This literature review will look at breastfeeding in general with topics including the incidence and duration of breastfeeding, the demographics of successful breastfeeders, and the benefits of breastfeeding. Social support will be examined by reviewing the literature regarding how certain individuals and groups impact on the support of breastfeeding mothers.

Duration and Incidence of Breastfeeding

Breastfeeding is a fundamental way to nurture an infant if adequate knowledge and support is available to the breastfeeding family. Breastfeeding is increasing among certain groups in the United States. Hawkins, Nichols, and Tanner (1987) point out that in a "1984 national survey of 30,694 new mothers, 61.5 percent were breastfeeding when the infant was 3-4 months old and 27.5% of mothers were breastfeeding when infants were 5-6 months old" (p.204). Studies of low-income women show much lower rates. A national survey indicates that although 40% of low-income women were breastfeeding while in the hospital, only 28% were breastfeeding at two months (Hawkins et al., 1987). Certain ethnic groups also have low incidence rates of breastfeeding. Urban and socially disadvantaged groups such as Latino, Asian, and Black populations have not shown as dramatic an increase in the number of breastfeeding mothers as White populations have shown (Scrimshaw, Engle,

Arnold, & Haynes, 1987). Statistics from 1984 indicate that 65% of white women and 33% of black women in the United States breastfed their infants. At five to six months post-partum, the rate for white women was 29%, and the rate for black women was 12% (Kurini, Shiono, & Rhoads, 1988). Looking at the problem nationally, one of the Surgeon General's "Health Promotion/Disease Prevention Objectives" for the nation is to increase breastfeeding to 75% at hospital discharge and 35% at 6 months post-partum (LaLeche League, 1987).

Demographics of Successful Breastfeeders

A review of literature (Harrison, 1985) examined factors considered to promote a successful breastfeeding experience. The following four areas were included: 1) infant factors, 2) maternal factors, 3) early post-partum experiences, and 4) environmental factors. Infant factors included the infant's ability to suck and infant responsiveness. Maternal factors included maternal health, previous breastfeeding experience, the mother's motivation to breastfeed, and whether the mother was breastfed as an infant. Early post-partum experiences included post-natal mother-infant bonding and the opportunity for rooming-in. Environmental factors included social support from family, friends, and health professionals; societal norms, and the work environment (Harrison, 1985).

Factors significantly associated with the duration of breastfeeding in Wright and Walker's study (1983) of 373 primiparas were the following: age at birth of child, social class, age at leaving school, smoking habits, mother's own infant feeding history, attendance at

prenatal classes, time of first breastfeeding, difficulties with subsequent breastfeedings at hospital, perceived favorability of health professionals to breastfeeding, use of supplemental formula, perceived views of friends with babies, and maternal attitudes to breastfeeding.

Labbock and Simon's (1988) descriptive study mirrored results found in national study data. Variables that correlated with breastfeeding included maternal age, education, race, socio-economic status, and primiparity. This study found that maternal educational level was an important predictor in the decision to breastfeed.

In a prospective study of 94 infants, (Loughlin, Clapp-Channing, Gelbach, Pollard, & McCutchen, 1985) certain factors were identified as predictors for early termination of breastfeeding. These factors were the following: 1) maternal lack of confidence in breastfeeding, 2) anticipated duration of nursing less than six months, 3) ratings by the nursery staff of the infant's excessive crying, 4) the infant's demanding personality, 5) trouble with feeding, and 6) supplementing with formula before two weeks post-partum. The authors indicate that further studies are necessary to evaluate intervention strategies based on these predictive variables.

Higher levels of maternal education correlate positively with the decision to breastfeed and the duration of breastfeeding. Richards (cited in Houston, 1981) feels that educated mothers are more successful at breastfeeding because they 1) understand the advantages of breastfeeding, 2) place the needs of the child above their own needs for comfort and convenience, and 3) are not as disturbed by issues of modesty and sexuality.

Coreil and Murphy (1988) found that formula supplementation had a negative effect on the duration of breastfeeding. Formula supplementation was also negatively correlated with social support. Coreil and Murphy (1988) point out that "Lack of social support may be a mediating variable in the decision to use formula supplementation" (p.277).

In a descriptive study of 91 women, Alder and Bancroft (1988) found that women who were from a higher socio-economic class had longer durations of breastfeeding. They also found that women who breastfed for a longer time were less neurotic, according to their scale, and were more likely to report happy episodes in the previous year.

Some research indicates that a person's intention to perform an act is the most significant predictor of whether the act will be performed. Coreil and Murphy's study (1988) of 44 breastfeeding mothers examined the duration of the breastfeeding experience in relation to the mother's pre-natal intention to breastfeed. This study found that prenatal intention was the strongest predictor of the duration of breastfeeding.

Lynch, Koch, Hislop, & Coldman (1986) found that maternal age, education, when the decision was made to breastfeed, intended duration of breastfeeding, and the infant's age at the first breastfeeding were significant predictors in the duration of breastfeeding.

Cronenwett (1987) found that mothers who breastfeed for a longer duration of time have higher educations, more friends who breastfeed, support from family and friends, more information sources and knowledge about breastfeeding, and higher attendance at prenatal classes.

Hawkins et al., (1987) found that mothers who breastfed longest were older, married, better educated, had fewer pregnancies, and had babies with higher birth weights.

Hellings study (1985) to develop a discriminant model to predict breastfeeding success found that the mother's education, her income, the type of delivery, and feeling about the pregnancy were the predictors for a successful breastfeeding experience.

A study of 166 nursing mothers found that improved breastfeeding duration was correlated with maternal age, maternal education, nonsmoking, previous breastfeeding experience, planned pregnancy, initiation of breastfeeding within the first 16 hours, and minimal use of formula supplementation (Feinstein, Berkelhamer, Gruszka, Wong, & Carey, 1986).

Hawkins et al., (1987) found the following four predictors for the duration of breastfeeding in low-income women: 1) the age of the infant in weeks at the time of introduction of solid foods, 2) maternal report of perceived success, 3) the mother's years of education, and 4) the age of the infant in weeks at the time of introduction of formula.

Other variables, such as personality, personal and cultural attitudes, and emotional states have measurable effects on the success of the breastfeeding experience (Kearney, 1988). Infant fussiness or irritability have also been implicated in the lack of breastfeeding success (Kearney, 1988). Women who are poorer, younger, less educated, and from minorities have shorter durations of breastfeeding (Saunders & Carroll, 1988).

Cultural factors

The type of breastfeeding experience that a family has is also determined by cultural factors. Some cultures practice unrestricted nursing where the baby is allowed to nurse anytime and anyplace. Other cultures, such as the American culture, practice restricted nursing. The infant has severe limitations, placed by social custom, on the duration, interval, and place of suckling.

Carter (1984) points out that infant feeding patterns have historically reflected the values and beliefs of the culture. During the Middle Ages, urbanization began to influence breastfeeding practices. As sophistication and urbanization increased, dehumanization also increased. Carter (1984) describes a continuum of infant feeding practices. The range of this continuum was the mother who fully breastfed, the mother who partially breastfed, the mother who exclusively bottlefed with formula, the wet nurse, the nanny, permanent abandonment, and infanticide. Only in the 1920's, did infant formula become medically safe. Prior to that, an infant's chances for survival without breastmilk were much lower than for that of a breastfed infant.

An anthropological examination of breastfeeding practices in an American community (Samuels, 1982) found that the culture discourages breastfeeding in a number of ways. One of the cultural obstacles that a woman has to face is that the formula-fed infant is considered the norm. Formula-fed infants and breastfed infants have very different behavioral patterns, in part, due to the composition of the milk they are fed. These behavioral differences are evidenced in feeding and sleeping

schedules. Samuels (1882) points out that the medical system encourages breastfeeding; and the economic system discourages it. Samuels (1982) believes that there is a critical absence of socio-cultural support for breastfeeding in American society. This lack of support undermines a mother's confidence in her ability to support her infant nutritionally.

Employed Mothers

The numbers of working mothers continue to rise in the United States. The statistics show that 48% of women with children under one year of age are working and 67% of mothers with children below age three work full-time. If breastfeeding is to be promoted nationally, lactating women's needs have to be met in the workplace (Moore and Jansa, 1987).

Moore and Jansa's study (1987) which sampled 100 of the most profitable Fortune 500 companies with a mailed questionnaire about support for breastfeeding had a return rate of 29%. This study was not able to document generalized support for breastfeeding mothers. Moore and Jansa (1987) state: "We found little evidence that the American workplace has yet responded to the changing needs of its workers brought about by the trend to employ mothers of young infants" (p. 195).

MacLaughlin and Strelnick's study (1984) surveyed 96 women who had successfully combined breastfeeding and employment. The findings from this study indicated that women found the following three requirements essential for successfully combining breastfeeding and employment: 1) trusted child care, 2) an efficient method for the expression of milk, and 3) support from significant others. A support network, exclusively

for working mothers who are breastfeeding, was mentioned by some mothers in this study as a way to gain the support working mothers need.

McLaughlin and Strelnick (1984) suggest the establishment of a telephone network to offer support to breastfeeding working mothers.

MacLaughlin and Strelnick's review of literature (1984) indicated that many authorities discuss the working mother in a negative way, leading to feelings of guilt in the mother. Instead of offering mothers advice on how to combine breastfeeding and employment, mothers are encouraged to stay home. MacLaughlin and Strelnick (1984) feel that health professionals have an obligation to approach the working mother with a positive attitude and offer needed support and information.

Some countries do have legislation supporting the breastfeeding working mother. France, Japan, and Israel provide half hour nursing breaks. Sweden provides infant care at the worksite. The United States, Canada, Belgium, Finland, the United Kingdom, and New Zealand have no legislation protecting nursing mothers at the worksite (Samuels, 1982). The lack of legislative coverage reflects the culture's lack of support for breastfeeding.

Studies suggest that maternity leaves of 16 weeks or more are needed to encourage continued breastfeeding with employment. If the leave is less than 16 weeks, a further reduction in time off does not appear to have an effect on the duration of breastfeeding (Madlon-Kay & Carr, 1988).

In an epidemiological and anthropological research study, Samuels (1982) found that women who planned on returning to work had a lower duration of breastfeeding than women who did not plan on returning to

work.

Scrimshaw et al., (1987) found that there was an association between the intention to work post-partum and the decision not to breastfeed or to breastfeed for shorter durations.

An employed breastfeeding mother can be successful with both endeavors if she is motivated, has complete and accurate information, and a good support system. Health professionals need to have accurate information on various techniques of expressing milk; supplemental feedings; storing, transporting, and thawing breast milk; nutrition; and clothes; in order to offer accurate informational support to breastfeeding mothers who are employed (Ballard, 1983).

In a study of 567 self-selected respondents, (Auerbach, 1984) the most significant complaint of employed breastfeeding mothers was role overload. This stress may be reduced by providing the mother with specific information about breastfeeding, providing encouragement in setting priorities, and encouraging others to help in household and child care duties (Auerbach, 1984).

With legislative and cultural support for employed breastfeeding mothers, success can be achieved in these endeavors. Scrimshaw et al., (1987) points out that "in much of the rest of the world, work is not incompatible with breastfeeding, indicating a need for change in the U.S. in order to facilitate breastfeeding" (p. 470).

Brown (1986) points out that "with the growing employment of women, maternity leave and/or provision of nursing and breastfeeding facilities in places of work loom as important issues for employers and governments to face" (p.239).

Benefits of Breastfeeding

Breastfeeding benefits society and the family in many ways. Infants benefit by having a nutritionally superior food. The nutrients in human milk are more easily digestible than those in infant formula (Gulick, 1986). Many elements found in human milk are not found in cow's milk in significant quantities (Riordan, 1983). The immunologic benefits of human milk are well-known. Gulick's study (1986) determined that the "health pattern during infancy was significantly correlated with duration of breastfeeding" (p.51). The correlation between infant and toddler health was also significant, showing that protection from illness was offered even after the weaning experience (Gulick, 1986). Other benefits include prevention of allergies, associated higher levels of cognitive performance, promotion of attachment and bonding, and prevention of obesity and lowering of cholesterol levels (Anholm, 1986). Breastmilk provides seven to ten times more cholesterol than infant formula. This high intake of cholesterol in infancy helps in the formation of metabolic pathways which help to metabolize cholesterol more effectively later in life (Anholm, 1986). Nonbreastfed infants also have higher hospital costs than do breastfed infants (Anholm, 1986). Studies have also found an increased risk for children who were never breastfed, or breastfed for a short time, to develop insulin-dependent diabetes mellitus (Borch-Johnson, Glatthaar, & Mayer, cited in Davis, Savitz, & Graubard, 1988).

A case-control study (Davis et al., 1988) found that there was an increased risk for childhood cancers, especially lymphomas, for children

who were breastfed six months or less. Lymphoma was the cancer most highly associated with artificial feeding. The authors feel that artificial feeding, which provides no immunological benefits, may change the child's developing immune system.

The benefits to the mother include increased uterine contractions, which help alleviate post-partum hemorrhage; convenience, especially for night feedings; the development of a close attachment to the infant; and a method of contraception. A 2-year study (Elias, Teas, Johnston, & Bora, 1986) showed that women who nursed frequently (more than eight times a day) and were breastfeeding exclusively, did not begin their menses as soon as mothers who nursed infrequently.

Social Support

New parents are experiencing a stressful life event. New knowledge and skills are needed at this transition time to assist with the coping process. Social support is also needed at this critical period of adjustment. Access to and use of social resources is imperative to a successful breastfeeding experience. A study of the buffering effect of social support on major life events (Lin, Woelfel, & Light 1985) indicated that strong social ties helped reduce any depressive symptoms from the major life experience. Social support has been described by Pearlin (cited in Lin et al., 1985) as "the mobilization and use of social resources" (p.250). Cobb (cited in Lin et al., 1985) describes social support as "information that conveys care and love, esteem, and mutual obligation" (p.250). Kaplan (cited in Lin et al., 1985) defines support as "a person's basic needs (approval, esteem, succor, etc.)

being met by the presence of psychological support from significant others" (p.250). House (cited in Brown, 1987) defines social support as an intrapersonal transaction involving emotional concern, instrumental aid, information, and appraisal (information needed for self-evaluation).

Brown's exploratory study (1987) was conducted to discover and compare what expectant mothers' and fathers' perceptions were of the importance of support. A tool was developed to measure an individual's perception of the importance of various supportive behaviors. Men's and women's scores were compared, as were husband's and wife's scores. The results indicated a more uniform need among women for increased support. Men had a great need for acceptance of their work schedules, and women felt a need to be reassured about their attractiveness. Brown (1987) found this Social Support Tool to be very valuable to use with husbands and wives in facilitating communication about what they valued as important sources of social support.

Breastfeeding mothers obtain support in various ways and from various people. Husbands, relatives, health professionals, support groups, and nutritionists can all impact on the breastfeeding experience. New mothers in Western society are helped by two different professional systems: the hospital or medical system and the community support system. Mothers are also advised by books, pamphlets, and articles. Friends and relatives also offer advice on infant feeding. Many mothers find the information offered conflicting and confusing (Houston, 1981). When discussing advice received from health professionals, the most common complaint from breastfeeding mothers is

that of conflicting advice (Hewatt & Ellis, 1984).

Summer and Fritsch's study (cited in Chapman, Macey, Keegan, Borum, & Bennett, 1985) found that the highest percentage of maternal questions related to infant feeding. The greatest number of questions, in this category, related to breastfeeding.

Health Professionals

The health care system is extremely important in lactation success. The main reason for the failure of health professionals to support lactation effectively is that they lack knowledge about breastfeeding (Pelto, 1984). Reilly's study (cited in Pelto, 1984) found that the incidence of breastfeeding doubled after health care providers attended a breastfeeding seminar and established a communication and referral network.

Health care providers possess various levels of knowledge about breastfeeding. Cronenwett (1987) points out that "...it is not surprising that breastfeeding mothers' most frequent complaint is the barrage of conflicting advice" (p. 202). Cronenwett (1987) feels that different mothers probably benefit from different kinds of support, and that professional actions based on an assessment of the type of support a family needs would have more impact.

In a review of descriptive studies, Cronenwett (1987) found that professionals were not viewed as a major source of information or support for breastfeeding mothers. Auerbach's study (cited in Cronenwett, 1987) sampled 567 breastfeeding mothers. Fifty-nine percent indicated that husbands were the most supportive. Health care providers

were not seen as significant sources of support. It is interesting to note that health care providers view themselves as the most important source of support for breastfeeding mothers. This was evidenced in Lawrence's study (cited in Cronenwett, 1987) which sampled 2400 health care providers. These health care providers viewed the influence of relatives and friends as secondary to the breastfeeding mother.

Lactation Educators

Professional support from lactation educators has been shown to increase the duration of breastfeeding. A study (Jones & West, 1986) indicated that breastfeeding mothers who were supported by a lactation nurse breastfed a significantly longer time than a control group who did not receive support from a lactation educator. Mogan's study (1986) indicated that if problems with breastfeeding occurred, they usually occurred at the two week and the one month period. It was suggested that professional support at this time may improve the success and duration of the breastfeeding experience (Mogan, 1986). Lactation educators or consultants have been found to significantly increase the duration of breastfeeding (Kearney, 1988).

A randomized control study (Lynch et al., 1986) was conducted with 270 breastfeeding mothers to determine if a breastfeeding consultant would increase the duration of breastfeeding. The lactation consultant provided mothers, in the experimental group, with one home visit after delivery and then telephone follow-up. Only one subgroup from the population showed any benefit from the consultant's services. This group was women who had decided to breastfeed after the first trimester

of pregnancy.

Saunders' and Carroll's study (1988) found that post-partum support in the form of a phone call, a structured group support class, and a home visit were effective in extending the duration of breastfeeding. The experimental group had a 20-25% increase in breastfeeding duration, in comparison to the control group.

Sjolin (cited in Kearney, 1988) found that counseling and support given to the breastfeeding mother during periods when the mother's motivation to breastfeed was decreased, prevented weaning during the crisis period.

Structured home visits by a health professional may increase the duration of breastfeeding. An experimental study (Houston, 1981) found that a program of structured visiting by one person, based on an appointment system, generated a breastfeeding success rate of 100% at 12 weeks post-partum. The control group had a breastfeeding rate of 75% at 12 weeks. Houston (1981) postulates that this success rate was produced because the breastfeeding mother was able to tolerate problems knowing that help was available at a predictable point in time.

In a case-control study, Wainwright (1981) found that the most significant factor in promoting successful breastfeeding was additional information and support provided by a familiar health visitor on a routine, scheduled basis.

In a prospective study of 75 randomly selected breastfeeding women, Sjolin, Hofvander, and Hillervik (1979) found that a mother's acceptance of the fact that breastfeeding is superior to infant formula, and her access to immediate help for feeding problems, will increase the

likelihood of a successful breastfeeding experience.

Educational Programs

Educational programs providing mothers with more information about breastfeeding have been shown to result in a longer duration of breastfeeding (Chapman et al., 1985).

Historically, education for breastfeeding was completed as a gradual and informal process- through observation of family role models. Urbanization eroded inter-generational continuity, and the family became less of a controlling and educational mechanism (Carballo, 1977). Raphael (cited in Carballo, 1977) discusses the example of support given to new mothers in certain mammal species (the elephant and dolphin). The author makes the analogy that perhaps human mammals also need this same type of education and support following the birth of a new baby.

A case-control study (Gulick, 1982) found that successful breastfeeders (those who breastfed at least four weeks) had significantly more information on breastfeeding than unsuccessful breastfeeders (those who breastfed less than four weeks). Successful breastfeeders had significantly higher scores than unsuccessful breastfeeders on the following items: 1) the benefits of breastfeeding, 2) nipple care during pregnancy, 3) waking a sleepy baby for feeding, and 4) bowel movement characteristics of breastfed babies.

Heath (cited in Tzuriel & Weller, 1986) found that women who breastfed longer than three months had received more accurate information and more social support than mothers who discontinued breastfeeding before three months.

In an experimntal study with a sample of 64 low-income women, Hill (1985) found that women who received a breastfeeding educational program did have an increase in knowledge. Women in the treatment group were also more knowledgeable than those in the control group. However, there were no differences between groups in the duration of breastfeeding or in the woman's perception of success. This indicates that knowledge alone does not ensure a successful breastfeeding experience.

Heath's study (1976) indicates that women who perceived higher levels of social support and accurate information had longer durations of breastfeeding. This study also suggests that support and information are necessary for a successful breastfeeding experience. Providing only support or only information was not sufficient to alter behavior.

Wiles' study (1984) examined the effects of prenatal breastfeeding education on maternal perception of success in breastfeeding and maternal perception of the infant. Mothers who had the anticipatory guidance of a prenatal breastfeeding educational program perceived a higher frequency of success, than mothers who did not attend the class. Mothers who attended the class felt that this class was the most important variable in their success. Women who attended the class also had a positive perception of the infant, measured at one month post-partum. Wiles (1984) feels that prenatal education is important because 1) the mother is motivated to learn at that time, and 2) there is adequate time to process the information. Information given during the hospital stay is not as well received because of the limited duration of stay and the stress of just having delivered.

Lynch et al., (1986) conclude that since an early decision to breastfeed (pre-pregnancy) was correlated with an increased duration of breastfeeding; educational programs before pregnancy, in childhood or adolescence, may be needed to increase knowledge about breastfeeding and increase the duration of breastfeeding.

Gulick's study (1982) found a positive correlation between the number of informational sources a mother used and the information she had about breastfeeding. Using several sources of knowledge generated a higher informational score than the use of a single source.

Women need to be counseled on all aspects of breastfeeding-not just a romanticized version of it. They need to know that natural does not always mean easy (Samuels, 1982). Hewatt's and Ellis' study (1984) found that women felt they would be better able to cope with breastfeeding problems if they had been made aware of potential problems. Coping strategies for common problems should be provided to women to allow them a measure of self-directed care (Hewatt & Ellis, 1984).

If educational programs can help to increase breastfeeding success, health professionals must publicize the need for education in this area. Marketing and advertising strategies may have to be used to help individuals understand the need for these educational programs (Dessertine, 1982).

Mother-Mother Support Groups

The most well-known mother-mother support group for breastfeeding is the La Leche League organization. As of 1983, La Leche League had

5000 active groups serving 10,000 mothers monthly. La Leche League is an international organization serving 50 countries, with the majority of active groups residing in the United States (Riordan, 1983). Founded in 1956, the La Leche League began with small neighborhood groups of women who participated in monthly meetings. This format is still used with the monthly meetings discussing structured educational topics including childbearing, breastfeeding, and child rearing (Riordan, 1983). The La Leche League is built on the concept of informed mothers helping other mothers.

The La Leche League's motto is "good mothering through breastfeeding" (Merrill, 1987, p. 222). The group teaches a type of natural mothering which is founded on a shared philosophy. This philosophy encompasses the following beliefs: 1) mothering through breastfeeding is the best way to meet a baby's needs, 2) mother-infant separation is discouraged, 3) working outside the home is discouraged, 4) breast milk is the best infant food, 5) babies should be fed exclusively breastmilk until six months of age, 6) breastfeeding should be continued until the child outgrows the need on its own, 7) mothers should actively participate in the childbirth process, 8) the father should provide material aid and support which allows the mother to concentrate her time on mothering, 9) mothers should eat nutritious, wholesome food, and 10) discipline is based on the principles of 'loving guidance' (Merrill, 1987).

The group teaches its members how to mother by the process of inter-generational modeling. Since the modern family structure is more isolated, a majority of women have no role model available to them. The

La Leche League support group tries to provide positive examples for the new mother through help and guidance from more experienced mothers (Merrill, 1987).

The La Leche League does not try to convert mothers to breastfeeding. The organization tries to assist mothers who have chosen to breastfeed by 1) telephone counseling or 2) monthly discussion groups. The La Leche League, an international organization, has access to a board of 38 professionals in various fields that can be called on for assistance in problem-solving (Turner, 1987).

This support group fills the gap that has been created by a highly mobile and urban society that tends to isolate the new mother. Many cultures have what has been called by Raphael a "doula" (a supportive other) (Riordan, 1983). This "doula" is a person who has knowledge about breastfeeding and assists the new mother with this process (Riordan, 1983). Riordan points out that:

" failure to provide a doula may in large part be responsible for the low rate of long-term successful breastfeeding. In some measure the emergence and proliferation of self-help groups, in which mothers unite and become doulas for one another, fills the gap that society has created" (p.11).

Follow-up care to breastfeeding mothers is important. Primiparas (first-time mothers) benefit greatly from prenatal education, follow-up calls, and breastfeeding support groups (Macey, 1986).

Studies conducted in Kentucky, Chicago, and on the Papago reservation (Pelto, 1984) all confirm that the peer support model works very well with disadvantaged mothers. These systems need the support and reinforcement of the health care system to function optimally. Society needs to invest time and money to assist with peer support

networks if they are to function efficiently in economically disadvantaged groups (Pelto, 1984).

A descriptive study, assessing the rate of breastfeeding, (Labbock & Simon, 1988) found that physicians had very little influence on a woman's decision to breastfeed. Women were persuaded to breastfeed when they received this advice from a female peer and when they received special knowledge about feeding methods. These variables had even greater impact on women who had lower levels of education. The authors concluded that targeting younger, less educated women for educational programs and women-to-women support groups may lead to an increase in these women breastfeeding (Labbock & Simon, 1988).

Successful breastfeeding not only depends on the mother's ability to lactate, but also on the availability of role models upon which she can base her own performance and depend on for psycho-social support (Carballo, 1977).

Support from Husbands

Whether or not a woman breastfeeds at all is influenced by support of relatives. A study of 832 Israeli mothers (Tzuriel and Weller, 1986) indicated that perceived support of friends and relatives was an important variable in the decision to breastfeed. Other studies have shown that the husband is an important variable in the duration of breastfeeding. A 1984 study (Dusdieker, Booth, Ekwo, and Seals) examined support offered by health professionals, support groups, friends, and relatives. This study determined that the infant's father was quite supportive during the breastfeeding experience, but that this

support was not associated with the mother's choice to continue to breastfeed longer. Dusdieker et al., (1984) also points out that "Since breastfeeding women were enrolled in the study only after successfully breastfeeding... for six weeks, we could have excluded women who discontinued breastfeeding earlier due to family difficulties" (p. 124). Samuels' study (1982) found that if a woman's male partner was not supportive of breastfeeding, the duration of breastfeeding decreased. Hewatt and Ellis' qualitative study (1984) found that women who breastfed for longer durations had husbands who provided emotional and psychological assistance.

Husbands frequently experience negative reactions to breastfeeding. Fathers may feel excluded by the mother-infant dyad. MacLaughlin and Strelnick's study (1984) found that some women reported that the father of the baby felt left out. Including him in the planning process may facilitate more support from him in the breastfeeding experience. Some of the negative feelings experienced may include envy, inadequacy, and jealousy (Jordan, 1986). Jordan (1986) points out that "fathers should be included in the teaching and implementation of breastfeeding..." (p. 95). Discussions of breastfeeding should include "the normalcy of positive and negative feelings" (Jordan, 1986, p.95). Improved communication between the mother and father can help to strengthen the marital relationship and prepare them for their new roles (Jordan, 1986). A supportive husband is critical to the success of breastfeeding. Jordan (1986) points out that: "A nonsupportive atmosphere is perhaps the greatest threat to successful breastfeeding because it causes the anxiety-nursing failure syndrome" (p.95).

In a descriptive study of 76 families in Dade County, Florida, (Bryant, 1984) social support networks were found to be critical to the success of lactation. The husband or boyfriend was the most important provider of support. The author discusses program strategies for developing social support networks for economically disadvantaged groups. The La Leche League is typically comprised of white, formally educated, married women. Bryant (1984) organized a support network for economically disadvantaged women. Women received telephone counseling, home visits, and mailed written materials. This support network also included men who were trained as counselors. These men were extremely valuable to the program by serving as role models for the other men.

The male partner of the breastfeeding mother must be prepared to provide positive support. An assessment of his beliefs, values, and goals about breastfeeding is essential. This type of assessment should be the focus of open discussion between the parents. Hopefully, this will sensitize the male partner to the critical role he plays in the success of the breastfeeding experience (Hewatt & Ellis, 1984).

Conclusions

To help increase the incidence and duration of breastfeeding, legislation is needed to provide maternity leaves, job guarantees, nursing breaks at the workplace, creation of community support systems, and training for health professionals (Carballo, 1977).

Anholm (1986) summarizes the necessary changes needed to help support breastfeeding mothers by saying:

"By directing our interventions to a multisystem approach that includes role modeling, education, revisions in hospital policies, supportive job policy and new legislation, breastfeeding can be established on a widespread basis. Professionals must provide the leadership needed to establish breastfeeding as infancy's most significant health intervention" (p.8).

With adequate support from all societal dimensions, perhaps mothers and infants can succeed in this crucial first step toward health. As Jelliffe and Jelliffe point out: (cited in Jordan, 1986) "in any part of the world, no single pediatric measure has had such widespread and dramatic potential for child health as the return to breastfeeding" (p.94).

CHAPTER III

METHODOLOGY

Since social support is an extremely important variable, influential in the success of breastfeeding, this study will examine social support from the perspective of the person receiving support. Hughes (1984) discusses the idea that if the support given by health professionals is not perceived as supportive, then the support given probably was not too useful. The support process can be studied from two different theoretical frameworks. Studies can be done examining the structure of a social support network. This type of study focuses on objective measures of the support system, such as marital status or the number of relationships. The other type of study focuses on the functional measures of the support system. This type of study is more subjective and examines whether the system serves certain functions; such as providing affection, feelings of belonging, information, or material assistance (Cohen & Syme, 1985). Functional measurements examine the individual's perceived resources of support. Cohen and Syme (1985) point out that:

"To the degree that the relationship between support and health is mediated by psychological representations of available support, ...functional measures would be expected to provide better predictors of ...health behavior" (p. 12).

This study will examine functional measures of support as related to the breastfeeding mother.

Subjects

Subjects for this study consisted of new mothers who were breastfeeding at hospital discharge. The subjects consisted of a total of 83 women. There were 30 subjects from the La Crosse WIC Program, 32 subjects from the Gundersen Clinic-La Crosse, 14 subjects from the Skemp-Grandview Clinic-La Crosse, and 7 subjects from the Family Health Center-La Crosse. All women were breastfeeding at hospital discharge and were between three weeks and four months post-partum. Clients from the Gundersen Clinic had delivered their infants at Lutheran Hospital-La Crosse, and clients from the Skemp-Grandview Clinic and the Family Health Center had delivered their infants at the St. Francis Medical Center- La Crosse.

Instrumentation

The instrument chosen for this study to measure perceived support of breastfeeding mothers was the Hughes Breastfeeding Support Scale (HBSS) developed by Robbie B. Hughes, R.N., M.S., Ed. D. This instrument is self-administered and uses a Likert-type scale. Emotional, instrumental, and informational subscales are measured, which create the total score of the HBSS. A pilot study (Hughes, 1984) of 30 breastfeeding mothers at one month post-partum showed that there was a moderately high internal consistency for each subscale.

Calculations for reliability were done using split-half correlations for each subscale score (Hughes, 1984) (See Table 1).

Table 1
Correlation Coefficients and Corrected Split-Half
Reliability Scores of HBSS Subscales

HBSS subscales	Correlation coefficient	Corrected split half reliability*
Emotional	0.74568	0.8543
Informational	0.80448	0.8917
Instrumental	0.73914	0.8500

*Using Spearman-Brown Prophecy formula
(Hughes, p. 359, 1984)

Table 2
Summed Item Variance, Subscale Variance, and Alpha
Coefficients of HBSS Subscales, n=30

HBSS Subscales	Summed item variance	Subscale variance	Alpha coefficient
Emotional	7.0747	31.08161	0.85820
Informational	12.7130	61.96692	0.88316
Instrumental	8.9185	36.19947	0.83737

(Hughes, p. 360, 1984)

The alpha coefficient was used to measure internal consistency. These coefficients were calculated for each subscore (see Table 2).

A panel of six experts examined the tool to establish face validity (Hughes, 1984). There was unanimous agreement of the panelists that face validity existed (Hughes, 1984).

The demographic variables for this study were generated by written self-report from the respondents.

Procedures

After examining places and programs where breastfeeding mothers interacted with the health care system, several sites were chosen to ensure an adequate representation from each group.

The researcher contacted an administrative person at each site by telephone to gain verbal support. Each site's requirements for more information were met. These included requests to see the questionnaire and the research proposal.

Questionnaires were distributed to the different sites. The contact people at the clinic sites were instructed to have the first 30 women who met the researcher's criteria complete the questionnaire. Women who had left the hospital breastfeeding and were now at the three week to four month post-partum period met criteria for inclusion in the study. The researcher picked up the questionnaires in person from the various clinic sites.

Three breastfeeding mothers from the WIC group assessed the readability of the questionnaire. No problems or difficulties with the readability of the questionnaire were discovered from their assessment.

Data Collection and Analysis

Data collection was done in the months of November 1988, December 1988, and January 1989. Contact persons were instructed to sample the first 30 women who met the criteria given.

The following statistical tests were used to analyze the hypotheses for this study at the 0.05 level of significance:

The Wilcoxon rank sum test, a nonparametric statistical test, was used to analyze Hypotheses 1 through 7 because 1) the dependent variable is quantitative and continuous in nature, 2) the independent variable is between subjects in nature, and 3) the independent variable has two values. Scores on the dependent variable were converted to ranks.

The Spearman's rank order correlation coefficient was used to analyze the relationship between variables for Hypotheses 8 through 14 because both independent and dependent variables are quantitative and continuous in nature and are in the form of ranks.

A descriptive analysis of the data, including measures of central tendency and variability, was included to give a profile of the study population.

These were the procedures used for the analysis of data for this study.

CHAPTER IV

RESULTS

Univariate statistical analyses were used to identify differences or relationships associated with the Hughes Breastfeeding Support Scale (HBSS). The HBSS includes instrumental (INSTHBSS), informational (INFOHBSS), and emotional (EMOHBSS) subscales. All statistical analyses were done using the SAS computer software at the University of Wisconsin-La Crosse, Wisconsin.

Descriptive Statistics

The following descriptive statistics will be included to give the reader a better understanding of the study population.

Demographic Information

Of the 83 women in this study, 38.75% were WIC participants. Women whose father of the baby attended an educational program about breastfeeding comprised 07.5% of the sample. Married women comprised 82.5% of the sample. Those who felt that they were actively involved in a religious faith were 75% of the study population. Forty-two percent of the women surveyed were first time breastfeeders. The percentage of women who had a friend or relative who helped to teach them how to breastfeed was 27.5%.

HBSS Scores

To present an overview of the sample population in this study, measures of central tendency, variability, and skewness were examined for the HBSS scores. The total score possible on the HBSS is 120. Each one of the three subscale categories has a possible high score of forty points, with a possible range of ten to forty. Table 3 below presents the pertinent descriptive data regarding the HBSS scores for this study.

Table 3

Measures of Central Tendency
and Variability of the HBSS Scores
for the Sample Population

HBSS scores	Mean	Median	Minimum	Maximum	Std Dev	Skewness
HBSSTOTAL	94.94	98.0	47	118	15.85	-0.74
INFOHBSS	32.56	35.0	12	40	7.16	-1.06
INSTHBSS	28.36	28.5	12	39	6.78	-0.21
EMOHBSS	33.99	35.0	19	40	5.21	-1.05

The distribution has a slight negative skewness, with the instrumental subscale having the lowest mean in comparison to the other subscale scores.

Age

The age of the subjects in this study ranged from 16-44, with a median age of 28 years of age. The mean age was 27.75 years of age.

Programs Attended

Of the women in this study, the mean and median number of educational programs attended was one program, with a range of none to four or more.

Income

The mean annual income of women in this study was \$15,000-\$19,000/year. The median annual family income was \$20,000-\$24,999/year. The range of income was less than \$2,000/year to \$25,000 or more/year.

Inferential Statistics

Each hypothesis is stated in null form and the results of the statistical analysis are reported. The statistical test that was used to test the difference between groups was the Wilcoxon 2-Sample test on the SAS computer software program. This Wilcoxon 2-Sample test corresponds to the Mann-Whitney U Test or the Wilcoxon rank sum test if the data used is classified in two levels (SAS User's Guide, 1985). One tailed tests were performed by transforming the significance probability by $p/2$ (SAS User's Guide, 1985, p. 608). Any observations with missing data were not included in the SAS statistical analysis. If an individual failed to answer a question on the survey, they were not included in the statistical analysis for that variable or subscale.

Null Hypothesis 1

Women who are participants of the Women, Infant, and Children's Program (WIC) will have scores on the informational subscale of the HBSS that are equal to or lower than women who are not WIC program

participants.

A directional Wilcoxon 2-sample test was applied to the ranked data for WIC participants (n=31) and non-WIC participants (n=49). As Table 4 indicates, the mean rank for the WIC group was 39.06, and the mean rank for the non-WIC group was 41.41. The difference in ranks was statistically nonsignificant ($z = 0.4359$, ns).

This indicates that WIC participant scores on the informational subscale of the HBSS were not significantly greater than non-WIC participant scores.

The author failed to reject the null hypothesis.

Table 4
Comparison of HBSS Scores
for WIC and Non-WIC Groups
(Hypotheses 1 and 2)

Wilcoxon 2-Sample Test					
Subscale	Group	N	Mean Rank	z-score	p value
Informational	WIC	31	39.06	-0.44	0.3314
	non-WIC	49	41.41		
Emotional	WIC	31	39.53	-0.29	0.3850
	non-WIC	49	41.11		
Instrumental	WIC	31	37.58	-0.89	0.1866
	non-WIC	49	42.35		

Null Hypothesis 2

Women who are participants of the WIC program will have equal or greater scores on the emotional and instrumental subscales than women who are not WIC program participants.

Sub-hypothesis 2A: emotional subscale. As indicated in Table 4, the mean rank for the WIC group was 39.53, and the mean rank for the non-WIC group was 41.11. A directional Wilcoxon 2-sample test was applied to the ranked data for WIC participants (n=31) and non-WIC participants (n=49). The difference in ranks was statistically nonsignificant ($z = -0.29$, ns).

This indicates that WIC participants did not have significantly lower scores on the emotional subscale than non-WIC participants. The author failed to reject the null hypothesis.

Sub-hypothesis 2B: instrumental subscale. As indicated in Table 4, the mean rank for the WIC group was 37.58, and the mean rank for the non-WIC group was 42.35. A directional Wilcoxon 2-sample test was applied to the ranked data for the WIC participants (n=31) and non-WIC participants (n=49). The difference in ranks was statistically nonsignificant ($z = -0.89$, ns).

This indicates that WIC participants did not have significantly lower scores on the instrumental subscale than non-WIC participants. The author failed to reject the null hypothesis.

Null Hypothesis 3

Women whose male partners have attended an education program about breastfeeding will have equal or lower scores on the HBSS than women

whose male partners have not attended any education program about breastfeeding.

Sub-hypothesis 3A: informational subscale. As indicated in Table 5, the mean rank for Group I (fathers attending an education program about breastfeeding) was 47.75, and the mean rank for Group II (fathers not attending an education program about breastfeeding) was 39.91. A directional Wilcoxon 2-sample test was applied to the ranked data for Group I (n=6) and Group II (n=74). The difference in ranks was statistically nonsignificant ($z = 0.79$, ns).

This indicates that women whose male partners have attended an education program about breastfeeding did not have significantly higher scores on the informational subscale of the HBSS than women whose male partners did not attend any education program about breastfeeding. The author failed to reject this hypothesis.

Sub-hypothesis 3B: emotional subscale. As indicated in Table 5, the mean rank for Group I (fathers attending an education program about breastfeeding) was 51.33, and the mean rank for Group II (fathers not attending) was 39.62. A directional Wilcoxon 2-sample test was applied to the ranked data for Group I (n=6) and Group II (n=74). The difference in ranks was statistically nonsignificant ($z = 1.18$, ns).

This indicates that women whose male partners have attended an education program about breastfeeding do not have significantly higher scores of the emotional subscale of the HBSS than women whose male partners have not attended any education program about breastfeeding. The author failed to reject this null hypothesis.

Table 5

Results of Comparison of Fathers Attending
Education Programs about Breastfeeding (Group I)
and Fathers Not Attending (Group II)
and HBSS Scores (Hypothesis 3)

Wilcoxon 2-Sample Test

Subscale	Group	N	Mean Rank	z-score	p value
Informational	I	6	47.75	0.79	0.2153
	II	74	39.91		
Emotional	I	6	51.33	1.18	0.1185
	II	74	39.62		
Instrumental	I	6	63.25	2.49	0.0064
	II	74	38.66		
Total HBSS score	I	6	58.92	2.18	0.0147
		72	37.88		

Sub-hypothesis 3C: instrumental subscale. As indicated in Table 5, the mean rank for Group I (fathers attending an education program about breastfeeding) was 63.25, and the mean rank for Group II (fathers not attending) was 38.66. A directional Wilcoxon 2-sample test was applied to the ranked data for Groups I (n=6) and Group II (n=74). The difference in ranks was statistically significant ($z = 2.49$, $p = 0.0064$). The strength of the relationship, as measured by the Glass rank biserial correlation coefficient, was 0.61. This indicates that

there is a moderate linear correlation between variables.

This indicates that women whose male partners have attended an education program about breastfeeding have higher scores on the instrumental subscale of the HBSS than women whose male partners have not attended an education program about breastfeeding. The author rejected the null hypothesis.

Sub-hypothesis 3D: total HBSS score. As indicated in Table 5, the mean rank for Group I (fathers who have attended an education program about breastfeeding) was 58.92, and the mean rank for Group II (fathers not attending) was 37.88. A directional Wilcoxon 2-sample test was applied to the ranked data for Group I (n=6) and Group II (n=74). The difference in ranks was statistically significant ($z = 2.18$, $p = 0.0147$). The strength of the relationship, as measured by the Glass rank biserial correlation coefficient, was 0.54. This indicates that there is a moderate linear relationship between variables.

These findings indicate that women whose male partners have attended an education program about breastfeeding have significantly higher scores on the HBSS than women whose male partners have not attended an education program about breastfeeding. The author rejected the null hypothesis.

Discussion of Hypotheses 1 through 3

Of the first three hypotheses, statistically significant results were obtained when analyzing the differences of HBSS scores between women whose male partners attended an education program about breastfeeding and those whose male partners did not attend an education

program. Those whose male partners attended scored higher on the instrumental subscale and the total HBSS score. Current research does not address the differences between fathers who attend education programs and those who do not. The research, however, does address the issue of how important the father is in offering instrumental support to the breastfeeding mother (Dusdieker et al., 1984). This study cannot infer a causal relationship between fathers attending education programs and their mates then receiving more instrumental support. The effects of breastfeeding education programs on husbands is an issue that needs more investigation. Several authors discuss the issue that perhaps the male partner should be included in the education process (Hill, 1985). This study did find that women whose male partner attended an education program perceived a higher level of support, especially instrumental support.

WIC and non-WIC participant differences in the HBSS scores were not statistically significant. Since WIC clients see a breastfeeding educator on an individual basis, this researcher felt that the WIC participant scores on the informational subscale would be significantly greater. The literature reflects differences in duration of breastfeeding associated with breastfeeding consultants or educators.

WIC clients are also from low-income families which accounts for the hypothesis postulating that scores on the emotional and instrumental subscales would be lower. The literature addresses the concern that low income women have a lower duration of breastfeeding (Hawkins, 1987). No differences were found in this study for WIC vs. non-WIC clients. WIC clients not only receive support from the WIC program, but could also

be recipients of the education programs offered at hospitals or clinics. This may be one of the reasons why there were no significant differences between the WIC and non-WIC populations.

Null Hypothesis 4

Women who consider themselves an active member of any religious faith will have equal or lower scores on the HBSS than women who do not consider themselves an active member of any religious faith.

Sub-hypothesis 4A: informational subscale. As indicated in Table 6, the mean rank for the active group was 41.08, and the mean rank for the non-active group was 38.78. A directional 2-sample Wilcoxon test was applied to the ranked data for the active group (n=60) and the non-active group (n=20). The difference in ranks was statistically nonsignificant ($z = -0.38$, ns).

Sub-hypothesis 4B: emotional subscale. As indicated in Table 6, the mean rank for the active group was 39.72, and the mean rank for the non-active group was 42.83. A directional 2-sample Wilcoxon test was applied to the ranked data for the active group (n=60) and the non-active group (n=20). The difference in ranks was statistically nonsignificant ($z = 0.51$, ns).

Sub-hypothesis 4C: instrumental. As indicated in Table 6, the mean rank for the active group was 40.87, and the mean rank for the non-active group was 39.32. A directional Wilcoxon 2-sample test was applied to the ranked data for the active group (n=61) and for the non-active group (n=19). The difference in ranks was statistically nonsignificant ($z = -0.25$, ns).

Table 6

Results of Comparison of Being Active
in Religion vs. Non-Active in Religion
and HBSS Scores (Hypothesis 4)

Wilcoxon 2-Sample Test

Subscale	Group	N	Mean Rank	z-score	p value
Informational	Active	60	41.08	-0.38	0.3523
	Non-active	20	38.78		
Emotional	Active	60	39.72	0.51	0.3040
	Non-active	20	42.83		
Instrumental	Active	61	40.87	-0.25	0.4016
	Non-active	19	39.32		
Total HBSS score	Active	59	39.39	0.07	0.4721
	Non-active	19	39.84		

Sub-hypothesis 4D: total HBSS score. As indicated in Table 6, the mean rank for the active group was 39.39, and the mean rank for the non-active group was 39.84. A directional Wilcoxon 2-sample test was applied to the ranked data for the active group (n=59) and for the non-active group (n=19). The difference in ranks was statistically nonsignificant ($z = 0.07$, ns).

Conclusions for Hypothesis 4. The above statistical tests indicate that this researcher is unable to conclude that women who consider themselves an active member of any religious faith have significantly

higher scores on the HBSS than women who do not consider themselves an active member of any religious faith. The author failed to reject the null hypothesis.

Null Hypothesis 5

Women who are breastfeeding for the first time will have equal or higher scores on the HBSS than women who are not first-time breastfeeders.

Sub-hypothesis 5A: informational subscale. As indicated in Table 7, the mean rank for the first-time breastfeeders was 35.43, and the mean rank for women who were not first-time breastfeeders was 44.25. A directional Wilcoxon 2-sample test was applied to the ranked data for the first-time breastfeeders ($n=34$) and for those who were not first-time breastfeeders ($n=46$). The difference in ranks was statistically significant ($z = -1.68$, $p = 0.0465$). The strength of the relationship, as measured by the Glass rank biserial correlation coefficient, was -0.22 , indicating a weak linear relationship.

This result indicates that first-time breastfeeders had significantly lower scores on the informational subscale of the HBSS than women who were not first-time breastfeeders. The null hypothesis was rejected.

Sub-hypothesis 5B: emotional subscale. As indicated in Table 7, the mean rank for the first-time breastfeeders was 37.54, and the mean rank for those who were not first-time breastfeeders was 42.68. A directional Wilcoxon 2-sample test was applied to the ranked data for the first-time breastfeeders ($n=34$) and to those who were not first-time

breastfeeders (n=46). The difference in ranks was statistically nonsignificant ($z = -0.98$, ns).

Table 7

Results of Comparison of First-time Breastfeeders
vs. Not First-time Breastfeeders and HBSS Scores
(Hypothesis 5)

Wilcoxon 2-Sample Test

Subscale	Group	N	Mean Rank	z-score	p value
Informational	First child	34	35.43	-1.68	0.0465
	Second or more	46	44.25		
Emotional	First child	34	37.54	-0.98	0.1643
	Second or more	46	42.68		
Instrumental	First child	34	40.62	0.03	0.4864
	Second or more	46	40.41		
Total HBSS score	First child	34	36.24	-1.11	0.1315
	Second or more	44	42.02		

Sub-hypothesis 5C: instrumental subscale. As indicated in Table 7, the mean rank for the first-time breastfeeders was 40.62, and the mean rank for those who were not first-time breastfeeders was 40.41. A directional Wilcoxon 2-sample test was applied to the ranked data for first-time breastfeeders (n=34) and for those who were not first-time breastfeeders (n=46). The difference in ranks was not statistically significant ($z = 0.03$, ns).

Sub-hypothesis 5D: total HBSS score. As indicated in Table 7, the mean rank for first-time breastfeeders was 36.24, and the mean rank for those who were not first-time breastfeeders was 42.02. A directional Wilcoxon 2-sample test was applied to the ranked data for the first-time breastfeeders (n=34) and for those who were not first-time breastfeeders (n=44). The difference in ranks was statistically nonsignificant ($z = -1.11$, ns).

Conclusions. This researcher is unable to conclude that women who are first-time breastfeeders have significantly lower scores on the emotional, instrumental, and total HBSS scales than women who are not first-time breastfeeders.

Null Hypothesis 6

Women who have had a friend or relative who was helpful in teaching them how to breastfeed will have equal or lower scores on the HBSS than women who did not have a friend or relative who was helpful.

Sub-hypothesis 6A: informational subscale. As indicated in Table 8, the mean rank for women who had a friend or relative who was helpful in teaching them how to breastfeed (Group I) was 41.77, and the mean rank for women who did not have a friend or relative (Group II) was 40.22. A directional Wilcoxon 2-sample test was applied to the ranked data for Group I (n=22) and Group II (n=58). The difference in ranks was statistically nonsignificant ($z = 0.30$, ns).

Sub-hypothesis 6B: emotional subscale. As indicated in Table 8, the mean rank for women who had a friend or relative who was helpful in teaching them how to breastfeed (Group I) was 40.59, and the mean rank

for women who did not have a friend or relative (Group II) was 40.47. A directional Wilcoxon 2-sample test was applied to the ranked data for Group I (n=22) and Group II (n=58). The difference in ranks was statistically nonsignificant ($z = 0.02$, ns).

Table 8

Results of Comparison of Women with Friend or Relative Who Was Helpful in Teaching (Group I) vs. Women Who Did Not Have A Friend or Relative (Group II) and HBSS Scores (Hypothesis 6)

Wilcoxon 2-Sample Test					
Scale	Group	N	Mean Rank	z-score	p value
Informational	I	22	41.77	0.30	0.3831
	II	58	40.22		
Emotional	I	22	40.59	0.02	0.4935
	II	58	40.47		
Instrumental	I	22	36.66	-0.91	0.1823
	II	58	41.96		
Total HBSS score	I	22	37.75	-0.42	0.3364
	II	56	40.19		

Sub-hypothesis 6C: instrumental subscale. As indicated in Table 8, the mean rank for women who had a friend or relative who was helpful in teaching them how to breastfeed (Group I) was 36.66, and the mean rank

for women who did not have a friend or relative (Group II) was 41.96. A directional Wilcoxon 2-sample test was applied to the ranked data for Group I (n=22) and Group II (n=58). The difference in ranks was statistically nonsignificant ($z = -0.91$, ns).

Sub-hypothesis 6D: total HBSS score. As indicated in Table 8, the mean rank for women who had a friend or relative who was helpful in teaching them how to breastfeed (Group I) was 37.75, and the mean rank for women who did not have a friend or relative (Group II) was 40.19. A directional Wilcoxon 2-sample test was applied to the ranked data for Group I (n=22) and for Group II (n=56). The difference in ranks was statistically nonsignificant ($z = -0.42$, ns).

Conclusions. The above statistical tests indicate that this researcher was unable to conclude that women who had a friend or relative who was helpful in teaching them how to breastfeed had significantly higher scores on the HBSS than women who did not have a friend or relative. The author failed to reject the null hypothesis.

Null Hypothesis 7

Women who are married will have equal or lower scores on the HBSS than women who are not married.

Sub-hypothesis 7A: informational scale. As indicated in Table 9, the mean rank for married women was 41.06, and the mean rank for unmarried women was 37.86. A directional Wilcoxon 2-sample test was applied to the ranked data for married women (n=66) and unmarried women (n=14). The difference in ranks was statistically nonsignificant ($z = -0.46$, ns).

Table 9
Results of Comparison of
Married vs. Unmarried Women
and HBSS Scores
(Hypothesis 7)

Wilcoxon 2-Sample Test

Scale	Group	N	Mean Rank	z-score	p value
Informational	Married	66	41.06	-0.46	0.3214
	Unmarried	14	37.86		
Emotional	Married	67	39.78	0.63	0.2649
	Unmarried	13	44.23		
Instrumental	Married	67	41.28	-0.67	0.2505
	Unmarried	13	36.50		
Total HBSS score	Married	66	39.64	-0.12	0.4504
	Unmarried	12	38.71		

Sub-hypothesis 7B: emotional subscale. As indicated in Table 9, the mean rank for married women was 39.78, and the mean rank for unmarried women was 44.23. A directional Wilcoxon 2-sample test was applied to the ranked data for married women (n=67) and unmarried women (n=13). The difference in ranks was statistically nonsignificant ($z = 0.63$, ns).

Sub-hypothesis 7C: instrumental subscale. As indicated in Table 9, the mean rank for married women was 41.28, and the mean rank for

unmarried women was 36.50. A directional Wilcoxon 2-sample test was applied to the ranked data for married women (n=67) and unmarried women (n=13). The difference in ranks was statistically nonsignificant ($z = -0.67$, ns).

Sub-hypothesis 7D: total HBSS score. As indicated in Table 9, the mean rank for married women was 39.64, and the mean rank for unmarried women was 38.71. A directional Wilcoxon 2-sample test was applied to the ranked data for married women (n=66) and unmarried women (n=12). The difference in ranks was statistically nonsignificant ($z = -0.12$, ns).

Conclusions. As the above statistical test indicate, this researcher is unable to conclude that married women have significantly higher scores on the HBSS than unmarried women. The author failed to reject the null hypothesis.

Discussion of Hypotheses 4 through 7

Various predictors have been identified in previous research to indicate the duration of the breastfeeding experience. Some of these variables include previous experience with breastfeeding, maternal knowledge level, and social support. Since levels of social support have been correlated with the duration of breastfeeding, this study evaluated certain variables as they related to perceived social support for the breastfeeding mother. The variables of religiosity, previous experience with breastfeeding, having a friend or relative as role model, and marital status were examined in relationship to the mother's perceived social support. The only statistically significant finding

was previous breastfeeding experience and scores on the informational subscale of the HBSS. First-time breastfeeders had lower scores on the informational subscale, indicating that they perceived they were receiving less information about breastfeeding than they could have received.

Religiosity and the relationship of role models to perceived social support may be variables that need further examination with a more sensitive instrument. This study examined this issue through the use of two very general questions. Perhaps these questions were not sensitive enough to discern any differences in these areas.

Null Hypothesis 8

There will be no significant correlation between the scores on the individual/organization's support for breastfeeding and the HBSS scores.

The following individuals/organizations were evaluated in this hypothesis: 1) father of the baby, 2) obstetrician, 3) midwife, 4) relatives, 5) friends, 6) pediatrician, 7) hospital nursing staff, 8) family practitioner, 9) breastfeeding support group, 10) breastfeeding educator, and 11) employer.

Sub-hypothesis 8A: informational subscale. Support scores for the eleven individuals/organizations in this hypothesis were examined by the use of the Spearman's rank order correlation coefficient. Table 10 indicates the statistical results. Significant correlations were found between the informational subscale scores and the scores for the following individuals or organizations (in order of highest correlation): 1) family practitioner, 2) friends, 3) relatives,

Table 10
Correlation of Informational Subscale Scores
and Individual/Organization Support Scores
(Hypothesis 8)

Spearman's rank order correlation coefficient

Individual or Organization	N	Correlation Coefficient	Coefficient Squared	p value
<u>Family practitioner</u>	21	0.5364	0.29	0.0122
<u>Friends</u>	81	0.4209	0.18	0.0001
<u>Relatives</u>	79	0.3941	0.15	0.0003
<u>Employer</u>	28	0.3926	0.15	0.0388
<u>Breastfeeding educator</u>	34	0.3842	0.15	0.0249
<u>Father</u>	79	0.3518	0.12	0.0015
<u>Hospital nursing staff</u>	80	0.3469	0.12	0.0016
<u>Pediatrician</u>	74	0.2524	0.06	0.0300
Midwife	18	0.4204		0.0824
Support group	8	0.3155		0.4464
Obstetrician	66	0.2400		0.0522

*Underlined denotes statistical significance at $p < 0.05$ level

4) employer, 5) breastfeeding educator, 6) father of the baby, 7) hospital nursing staff, and 8) pediatrician.

As the scores for these individual's support increased, the informational subscale scores also increased. The null hypothesis was

rejected in relationship to the preceeding eight individuals or organizations.

The scores for the obstetrician, midwife, and breastfeeding support group were not significantly correlated with the informational subscale scores of the HBSS. Table 10 indicates the respective statistical analyses. The author was unable to reject the null hypothesis for these three individuals.

Sub-hypothesis 8B: emotional subscale. Support scores for the eleven individuals/organizations in this hypothesis were examined by the use of the Spearman's rank order correlation coefficient. Table 11 indicates the results of this analysis. Significant positive correlations were found between the emotional subscale score and the scores for the following individuals/organizations (in order of highest correlation): 1) family practitioner, 2) father of the baby, 3) midwife, 4) relative, 5) friends, 6) obstetrician, 7) hospital nursing staff, and 8) pediatrician. As these individual support scores increased, the scores on the emotional subscale of the HBSS also increased. The null hypothesis was rejected in relationship to these eight individuals.

The scores for the support group, breastfeeding educator, and employer were not significantly correlated. Table 11 reflects the respective statistical analysis. The author was unable to reject the null hypothesis as related to these three individuals.

Sub-hypothesis 8C: instrumental subscale. Support scores for the eleven individuals/organizations in this hypothesis were examined by the use of the Spearman's rank order correlation coefficient. Table 12 indicates the results of this analysis. Significant correlations were

Table 11
Correlation of Emotional Subscale Score
and Individual/Organization Support Scores
(Hypothesis 8)

Spearman's Rank Order Correlation Coefficient

Individual or Organization	N	Correlation Coefficient	Coefficient Squared	p value
<u>Family practitioner</u>	21	0.6495	0.42	0.0014
<u>Father</u>	79	0.5762	0.33	0.0001
<u>Midwife</u>	18	0.4696	0.22	0.0493
<u>Relative</u>	79	0.3594	0.13	0.0011
<u>Friends</u>	81	0.3529	0.12	0.0012
<u>Obstetrician</u>	66	0.3179	0.10	0.0093
<u>Hospital nursing staff</u>	80	0.2637	0.07	0.0181
<u>Pediatrician</u>	74	0.2320	0.05	0.0466
Support group	8	0.4116		0.3110
Employer	28	0.3226		0.0940
Breastfeeding educator	33	0.2658		0.1349

*Underlined denotes statistical significance at $p < 0.05$ level

found between the instrumental subscale scores and the scores for the following individuals or organizations (in order of highest correlation): 1) breastfeeding support group, 2) midwife, 3) family practitioner, 4) employer, 5) father, 6) relatives, 7) friends, 8) obstetrician, 9), hospital nursing staff, and 10) pediatrician. As

Table 12

Correlation of Instrumental Subscale Scores
and Individual/Organization Support Scores
(Hypothesis 8)

Spearman's rank order correlation coefficient

Individual or Organization	N	Correlation Coefficient	Coefficient Squared	p value
<u>Support Group</u>	8	0.8719	0.76	0.0048
<u>Midwife</u>	17	0.6502	0.42	0.0047
<u>Family practitioner</u>	21	0.6267	0.39	0.0024
<u>Employer</u>	27	0.5242	0.27	0.0050
<u>Father</u>	79	0.5201	0.27	0.0001
<u>Relatives</u>	79	0.3782	0.14	0.0006
<u>Friends</u>	81	0.3318	0.11	0.0025
<u>Obstetrician</u>	67	0.2646	0.07	0.0304
<u>Hospital nursing staff</u>	80	0.2604	0.07	0.0197
<u>Pediatrician</u>	74	0.2466	0.06	0.0341
Breastfeeding educator	33	0.1784		0.3204

*Underlined denotes statistical significance at $p < 0.05$ level

these individuals/organization's support scores increased, the scores on the instrumental subscale also increased. The null hypothesis was rejected in relationship to these ten individuals or organizations.

The scores for the breastfeeding educator did not correlate with the instrumental subscale scores. Table 12 reflects the statistical analysis. The author was unable to reject the null hypothesis as related to the breastfeeding educator and the instrumental subscale score.

Sub-hypothesis 8D: total HBSS score. The relationship between the scores for the eleven individuals/organizations in this hypothesis and the total HBSS score was examined by the use of the Spearman's rank order correlation coefficient. Significant positive correlations were found for all of the eleven examined. Table 13 lists the statistical results obtained. The table lists the individuals/organizations in order of highest correlation. As the scores for the individual/organization increase, scores for the HBSS also increase. The author rejected the null hypothesis.

Discussion of Hypothesis 8

This hypothesis examining the relationship between the scores of selected individuals/organizations and HBSS scores found statistically significant results.

Positive correlations were found between the informational subscale score and the scores for the following individuals/organizations (in order of highest correlation): 1) family practitioner, 2) friends, 3) relatives, 4) employer, 5) breastfeeding educator, 6) father of the baby, 7) hospital nursing staff, and 8) pediatrician. Of these relationships, the family practitioner had the highest correlation with the informational subscale score. Simon et al., (1988) discusses the

Table 13
Correlation of Total HBSS Scores and
Individual/Organization Support Scores
(Hypothesis 8)

Spearman's rank order correlation coefficient

Individual or Organization	N	Correlation Coefficient	Coefficient Squared	p value
<u>Support group</u>	8	0.7546	0.57	0.0305
<u>Family practitioner</u>	21	0.6279	0.39	0.0023
<u>Midwife</u>	17	0.6249	0.39	0.0073
<u>Father</u>	77	0.6121	0.37	0.0001
<u>Employer</u>	27	0.4987	0.25	0.0081
<u>Relative</u>	77	0.4649	0.22	0.0001
<u>Friends</u>	79	0.4600	0.21	0.0001
<u>Breastfeeding educator</u>	32	0.3744	0.14	0.0348
<u>Hospital Nursing Staff</u>	78	0.3552	0.13	0.0014
<u>Obstetrician</u>	65	0.3543	0.12	0.0038
<u>Pediatrician</u>	72	0.3071	0.09	0.0087

*Underlined denotes statistical significance at $p < 0.05$ level

idea that family practitioners are in an ideal position to offer support to the breastfeeding family because the practitioner counsels the mother within the family context. Care is not fragmented and mothers feel more comfortable in asking questions about breastfeeding.

Friends and relatives also had positive correlations with the informational subscale score, indicating that these individuals are quite important in the mother's perception of support. This is consistent with the literature (Hill, 1985; Cronenwett, 1987; Samuels, 1982).

The obstetrician, midwife, and breastfeeding support group were not correlated with the informational subscale scores. Cronenwett (1987) found that health professionals were not seen as a major source of support by breastfeeding mothers. Simon, Johnson, and Liese (1988) point out that "...physicians ...have not taken a leadership role in teaching mothers about breastfeeding. Physicians need education on breastfeeding" (1988, pp. 224-225). These health professionals are in a unique position to assist the breastfeeding mother with her informational needs, both pre-natally and post-natally.

The findings related to the breastfeeding support group are not consistent with the findings reported in the literature. The literature points out that breastfeeding support groups are usually a source of informational support for the breastfeeding mother (Samuels, 1982; Riordan, 1983; Macey, 1986).

Significant positive correlations were found between the emotional subscale score and the scores for the following individuals/organizations: 1) family practitioner, 2) father of the baby, 3) midwife, 4) relative, 5) friends 6) obstetrician, 7) hospital nursing staff, and 8) pediatrician. Again, the family practitioner had the highest correlation with the emotional subscale score. This is logical as this individual has an opportunity to relate to the entire

breastfeeding couple-mother and infant. Relatives and friends, again, had positive correlations with the emotional subscale score. The father's support, in this respect, has been discussed in the literature (Cronenwett, 1987).

Significant positive correlations were found between the instrumental subscale scores and the scores for the following individuals/organizations (in order of highest correlation): 1) breastfeeding support group, 2) midwife, 3) family practitioner, 4) employer, 5) father of the baby, 6) relatives, 7) friends, 8) obstetrician, 9) hospital nursing staff, and 10) pediatrician. The breastfeeding support group had the highest correlation which is logical. Women who are involved in a support group develop a larger social support network, which is capable of offering more instrumental support to the new mother.

Significant positive correlations were found between the total HBSS score and the scores for all eleven individuals/organizations tested. The highest correlations were found between the HBSS score and the following (in order of highest correlation): 1) breastfeeding support group, 2) father of the baby, 3) family practitioner, and 4) midwife. Hill's study (1985) found that women ranked the following individuals/organizations (in order of importance) as follows: 1) the male partner, 2) nurse, 3) friend, 4) their mother, 5) physician, 6) La Leche League. Even though the number of women who had contact with a breastfeeding support group, in this study, was small ($n=8$), the correlation with the HBSS was quite high at 0.75. Women who perceived a certain level of support, as indicated by their HBSS score, also perceived a similar

level of support from the people who had an opportunity to impact on their breastfeeding experience.

Null Hypothesis 9

There will be no statistically significant correlation between the number of breastfeeding education programs attended and the scores on the informational subscale of the HBSS.

A Spearman's rank order correlation was applied to the ranked data for the number of breastfeeding education programs attended and the informational subscale score of the HBSS. The observed correlation was 0.2790 and was statistically significant ($p = 0.0122$). The strength of the relationship (r-squared) was 0.08.

As the number of breastfeeding education programs attended increased, perceived informational support also increased.

Discussion of Hypothesis 9

The positive correlation between the number of breastfeeding education programs attended and informational support is logical. The number of programs a woman attends and her subsequent knowledge base was not addressed in the literature. However, differences between women who attend breastfeeding education programs and those who do not attend breastfeeding education programs have been found in studies. Women who attend breastfeeding education programs are more knowledgeable than those who do not attend programs (Hill, 1985). Women who are more knowledgeable have a longer duration of breastfeeding (Cronenwett, 1987; Chapman et al., 1985).

Null Hypothesis 10

There will be no statistically significant correlation between the scores on the HBSS and the family's annual income level.

A Spearman's rank order correlation was applied to the ranked scores for income level and HBSS scores. As Table 14 indicates, there were no statistically significant correlations. The author failed to reject the null hypothesis. This study was unable to conclude that as income level increased, perceived social support also increased.

Table 14

Correlation of Income and HBSS Scores
(Hypothesis 10)

Spearman's rank order correlation

Scale	N	Correlation Coefficient	p value
Informatinal	79	-0.0420	0.7100
Emotional	79	-0.0611	0.5923
Instrumental	79	0.0454	0.6907
Total HBSS score	77	-0.0432	0.7086

Null Hypothesis 11

There will be no statistically significant correlation between the scores on the HBSS and the educational level attained by the mother.

A Spearman's rank order correlation was performed on the ranked data for HBSS scores and educational level attained by the mother. As Table 15 indicates, there were no statistically significant correlations. The author failed to reject the null hypothesis. This study is unable to conclude that as maternal educational level increases, perceived social support also increases.

Table 15
Correlation of HBSS Scores and
Maternal Educational Level
(Hypothesis 11)

Spearman's rank order correlation

Scale	N	Correlation Coefficient	p value
Informational	80	-0.0250	0.8228
Emotional	80	-0.0666	0.5567
Instrumental	80	-0.1073	0.3433
Total HBSS score	78	-0.1066	0.3527

Null Hypothesis 12

There will be no statistically significant correlation between the self-rating scale of intention to breastfeed again and scores on the HBSS.

A Spearman's rank order correlation was performed on the ranked data. As Table 16 indicates, no statistically significant correlations were found. The author failed to reject the null hypothesis. This study is unable to conclude that as perceived social support increases, intention to breastfeed also increases.

Table 16

Correlation of Intention to Breastfeed
and HBSS Scores
(Hypothesis 12)

Spearman's rank order correlation

Scale	N	Correlation Coefficient	p value
Informational	80	0.0638	0.5739
Emotional	80	0.1379	0.2225
Instrumental	80	-0.0648	0.5677
Total HBSS score	78	0.0226	0.8443

Null Hypothesis 13

There will be no statistically significant correlation between the self-rating of the breastfeeding experience and the scores on the HBSS.

A Spearman's rank order correlation was performed on the ranked data. As Table 17 indicates, there were no statistically significant

correlations. The author failed to reject the null hypothesis. This study is unable to conclude that as perceived social support increases, the perception of a successful nursing experience also increases.

Table 17

Correlation of Self-Rating of Breastfeeding Experience
and HBSS Scores (Hypothesis 13)

Spearman's rank order correlation

Scale	N	Correlation Coefficient	p value
Informational	80	0.0537	0.6357
Emotional	80	0.1778	0.1144
Instrumental	80	-0.0362	0.7497
Total HBSS score	78	0.0703	0.5406

Null Hypothesis 14

There will be no statistically significant correlations between the HBSS score and the age of the mother.

A Spearman's rank order correlation was performed on the ranked data. As Table 18 indicates, there were no statistically significant correlations. The author failed to reject the null hypothesis. This study is unable to conclude that as maternal age increased, HBSS scores increased.

Table 18
Correlation of Maternal Age
and HBSS Score (Hypothesis 14)

Spearman's rank order correlation

Scale	N	Correlation Coefficient	p value
Informational	80	0.0192	0.8653
Emotional	80	0.0297	0.7932
Instrumental	80	-0.1889	0.0932
Total HBSS score	78	-0.0676	0.5561

Discussion of Hypotheses 10 through 14

No significant correlations were found between the HBSS scores and the family's annual income, the educational level attained by the mother, the intention to breastfeed again, or maternal age. The literature indicates that increased duration of breastfeeding correlates with higher maternal age, higher maternal educational level, higher levels of support, and higher levels of income (Cronenwett, 1987; Hellings, 1985; Hawkins et al., 1987). Since levels of social support have been correlated with the duration of the breastfeeding experience, these hypotheses were formulated to ascertain the relationship between these variables and perceived support. This study did not find any

correlations in this respect.

There were also no correlations between the mother's intention to breastfeed again or the self-rating of the breastfeeding experience and the scores on the HBSS. Perceived levels of social support were not seen as influencing the decision to breastfeed again. The decision to breastfeed is a complex one; encompassing many variables, including health beliefs, cultural norms, body image, employment status, and support from significant others (Hill, 1985; Samuels, 1982).

A woman's perception of having had a successful nursing experience and her perceived level of social support also did not correlate in this study. Some women who perceive a lack of social support, but are individuals who seek out their own support, from books or individuals, may feel quite successful in their nursing experience because they have met their own goals. Others, although they perceive adequate social support, may not have met their own expectations for a successful nursing experience due to other variables. The perception of success of the breastfeeding experience is a highly individual and complex one, depending on the woman's own expectations.

Summary

When examining difference between groups, univariate analysis found statistically significant results for the following variables: 1) women whose male partner attended a breastfeeding educational program had higher perceived instrumental support and perceived total support than women whose male partner did not attend any educational program about breastfeeding, and 2) women who were first-time breastfeeders had less

perceived informational support than women who were not first-time breastfeeders.

Statistically significant results were found when examining the relationship between support scores for various individuals/organizations and total perceived support.

Significant correlations were found between perceived informational support and the support received for the following individuals/organizations (in order of highest correlation): 1) family practitioner, 2) friends, 3) relatives, 4) employer, 5) breastfeeding educator, 6) father of the baby, 7) hospital nursing staff, and 8) pediatrician.

The positive correlations between perceived emotional support and support received from the following individuals/organizations were (in order of highest correlation): 1) family practitioner, 2) father of the baby, 3) midwife, 4) relatives, 5) friends, 6) obstetrician, 7) hospital nursing staff, and 8) pediatrician.

Significant correlations were found between perceived instrumental support and the perceived support from the following individuals/organizations (in order of highest correlation): 1) breastfeeding support group, 2) midwife, 3) family practitioner, 4) employer, 5) father of the baby, 6) relatives, 7) friends, 8) obstetrician, and 9) hospital nursing staff.

All eleven individuals/organizations correlated positively with total perceived support for the breastfeeding mother. The following are listed in order of highest correlation: 1) breastfeeding support group, 2) family practitioner, 3) midwife, 4) father of the baby, 5) employer, 6) relatives, 7) friends, 8) breastfeeding educator, 9) hospital nursing

staff, 10) obstetrician, and 11) pediatrician.

This study also found a statistically significant correlation between the number of breastfeeding educational programs attended by the breastfeeding mother and perceived informational support.

These were the variables that showed statistical significance in this study.

CHAPTER V

SUMMARY

Selected variables were examined to determine their relationship to perceived emotional, instrumental, and informational support as measured by the Hughes Breastfeeding Support Scale, and experienced by breastfeeding mothers within the tri-state area around La Crosse, Wisconsin. Data obtained from 83 breastfeeding mothers between the post-partum period of three weeks to four months was analyzed using the Wilcoxon rank sum test or the Spearman's rank order correlation coefficient. A significance level of $p < 0.05$ was used for all tests. A total of 14 null hypotheses were examined.

The hypotheses examining differences found the following statistically significant results: 1) women whose male partner attended a breastfeeding educational program had higher levels of perceived instrumental support than women whose male partner did not attend an educational program about breastfeeding, and 2) first-time breastfeeders had lower perceived informational support than women who had breastfed previously.

The hypotheses examining relationships found the following statistically significant correlations: 1) as the number of breastfeeding educational programs attended by women increased, perceived informational support also increased, and 2) as perceived support from individuals or organizations increased, total perceived support also increased.

The individuals or organizations with the highest correlations with perceived total support for the breastfeeding mother were (in order of highest correlation): 1) the breastfeeding support group, 2) the family practitioner, 3) the midwife, and 4) the father of the baby.

Conclusions

Within the limitations of this study, and based on the statistical analysis of the data, the following conclusions were made for the main problem addressed in this study.

One of the conclusions that can be drawn from this study is that differences exist between women whose male partner attends breastfeeding educational programs and women whose male partner does not attend breastfeeding educational programs, in the woman's perceived instrumental and total support. Women whose male partner attends a breastfeeding educational program perceive a higher level of instrumental and total support. This study cannot infer a causal relationship between these two events, but it appears that male partners who attend educational programs about breastfeeding offer more support to their partners. The reasons for this relationship may be varied. There is the possibility that these male partners are quite supportive individuals, and because of this aspect of their personality, attend educational programs with their partner. It is also possible that male partners who attend educational programs receive information or knowledge about the breastfeeding process from the program that encourages them to be more supportive. This is an area that could be addressed in further research.

Another conclusion from the data analyzed in this study is that women who are breastfeeding for the first time experience less perceived informational support than women who have breastfed previously. This reflects the great need new mothers have to receive information concerning the art of breastfeeding. Since breastfeeding is a learned art, care must be taken to ensure that the new mother's needs for information have been met.

This study also found that as women attend more educational programs about breastfeeding, they perceive a higher level of informational support. This suggests that women may benefit from having the opportunity to learn about breastfeeding over a period of time, as opposed to a single class experience. This extended time period may allow the woman the time needed to process and assimilate the information.

When looking at perceived support from individuals or organizations, the group with the highest correlation with total perceived support was the breastfeeding support group. Breastfeeding support groups also had the highest correlation with perceived instrumental support.

In regards to health professionals' support for breastfeeding mothers, this study found that as perceived support from family practitioners increased; perceived informational, instrumental, emotional, and total support also increased.

As perceived support from midwives increased; perceived emotional, instrumental, and total support also increased.

Perceived support from friends and relatives had higher correlations with perceived total support, than did perceived support from the breastfeeding educator, the hospital nursing staff, the obstetrician, or the pediatrician.

Recommendations for Health Care Providers

1) Assessment of the breastfeeding mother's perceived social support would allow the health professional to identify areas where support is limited and to then devise interventions based on that assessment.

2) Planning and implementing a breastfeeding education program to cover a series of classes, instead of a single class approach, would allow the breastfeeding mother time to process and assimilate the new knowledge.

3) Targeting first-time breastfeeders for more extensive educational programs would help these women to meet their learning needs.

4) Health professionals who interact with breastfeeding mothers should assess their own knowledge base and ability to offer support to the breastfeeding mother.

5) Breastfeeding support groups should be encouraged.

Recommendations for Further Research

1) Conduct a similar study with a larger and more diverse sample.

2) Research needs to be done to determine the factors that cause women to perceive more instrumental support when her male partner

attends educational programs about breastfeeding.

3) More research needs to be done to assess a breastfeeding mother's perception of success. The development of a tool to assess this accurately is needed.

4) There needs to be an in-depth look at the individual personality of the mother and her perceived social support.

5) Research needs to be done to evaluate the perceived success of the breastfeeding experience and the number and type of educational programs attended.

6) Research needs to be done to evaluate the relationship between perceived support from the male partner and the woman's perceived success of the breastfeeding experience.

7) Research needs to be done to evaluate the relationship between the mother's intention to breastfeed again and the perceived success of the breastfeeding experience.

8) A longitudinal study needs to be done to evaluate the relationship between perceived social support and the duration of the breastfeeding experience.

9) Further development of a tool to evaluate the impact that certain individuals or organizations have on the breastfeeding mother is indicated. A tool that would allow for ranking and rating of the health professionals for various areas of support would be more reliable.

In conclusion, health care providers and/or researchers need to assess the breastfeeding mother's chance for a successful nursing experience. An evaluation of the mother's perceived level of social support should help assist in this task.

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APPENDIX A

PLEASE NOTE: If you have already completed this questionnaire, please DO NOT complete a second one. Thank you very much.

Questions about Support for Breastfeeding Mothers

Most new mothers need help and support for a period of time after they have a new baby. This support is often given by the baby's father, relatives, friends, and professional people such as nurses, doctors, or social workers. The purpose of this questionnaire is to ask about the amount of support you received from all of these people after your baby arrived.

Place a circle around the number that best describes the amount of help you received in each of the following areas during the first month after your baby arrived.

- 1=No help at all
- 2=A small amount of help
- 3=A moderate amount of help
- 4=As much help as I wanted

	No help at all	Small amount	Moderate amount	As much as I wanted
	1	2	3	4
1. Reassured me that I was doing well caring for my baby	1	2	3	4
2. Took care of the house	1	2	3	4
3. Took me to the store, church, and other places I needed to go	1	2	3	4
4. Answered my questions about breastfeeding	1	2	3	4
5. Took care of the new baby	1	2	3	4
6. Made me feel confident even when I made mistakes	1	2	3	4
7. Prepared meals	1	2	3	4
8. Answered the telephone	1	2	3	4
9. Listened to me talk about the new baby	1	2	3	4
10. Did my laundry	1	2	3	4
11. Entertained visitors	1	2	3	4
12. Showed concern when I felt blue	1	2	3	4
13. Did correspondence I usually do myself	1	2	3	4
14. Shopped for needed items	1	2	3	4
15. Believed that I am a good mother	1	2	3	4
16. Lent or gave me money for baby things	1	2	3	4
17. Was there when I felt lonely	1	2	3	4

	No help at all	Small amount	Moderate amount	As much as I wanted
18. Praised me for my efforts to care for the baby	1	2	3	4
19. Made me feel that I am still an attractive person	1	2	3	4
20. Showed concern about my physical condition	1	2	3	4
21. Gave me tips about breastfeeding	1	2	3	4
22. Told me about sources of help (i.e., social services, breastfeeding groups, etc.)	1	2	3	4
23. Showed me how to nurse my baby	1	2	3	4
24. Showed me how to bathe my baby	1	2	3	4
25. Showed me how to diaper my baby	1	2	3	4
26. Answered my questions about my baby	1	2	3	4
27. Helped me to understand my baby's cries	1	2	3	4
28. Taught me how to take care of myself	1	2	3	4
29. Showed me how to hold my baby	1	2	3	4
30. Praised me for my efforts to breastfeed	1	2	3	4

Place a circle around the number that best describes how helpful the following people were to you while you were breastfeeding.

CIRCLE 5 IF YOU HAVE HAD NO CONTACT WITH THE INDIVIDUAL MENTIONED.

	No help at all	Small amount	Moderate amount	As much as I wanted	Does not apply
1=No help at all					
2=A small amount of help					
3=A moderate amount of help					
4=As much help as I wanted					
5=Does not apply to me					
31. FATHER OF THE BABY	1	2	3	4	5
32. OBSTETRICIAN (Doctor who delivers babies)	1	2	3	4	5
33. MIDWIFE	1	2	3	4	5
34. RELATIVES	1	2	3	4	5
35. FRIENDS	1	2	3	4	5
36. PEDIATRICIAN (Doctor who takes care of children)	1	2	3	4	5
37. HOSPITAL NURSING STAFF	1	2	3	4	5
38. FAMILY PRACTITIONER	1	2	3	4	5
39. BREASTFEEDING SUPPORT GROUP	1	2	3	4	5
40. BREASTFEEDING EDUCATOR	1	2	3	4	5
41. EMPLOYER	1	2	3	4	5

Please circle correct answer for the following questions.

42. Are you a participant of the Women, Infant, and Children's Program (WIC)?
(circle number)

1. YES
2. NO

43. How many educational programs about breastfeeding have you attended?
(circle number)

1. NONE
2. ONE
3. TWO
4. THREE
5. FOUR OR MORE

44. Did the baby's father attend an educational program about breastfeeding?
(circle number)

1. YES
2. NO

45. Is this the first baby that you have breastfed? (circle number)

1. YES
2. NO

46. Do you consider yourself an active member of any religious faith? (circle number)

1. YES
2. NO

47. Approximately, what is your family's total yearly income? (If you are not sure, please estimate or guess.) (circle number)

1. less than \$2,000
2. \$2,000-\$3,999
3. \$4,000-\$5,999
4. \$6,000-\$9,999
5. \$10,000-\$14,999
6. \$15,000-\$19,999
7. \$20,000-\$24,999
8. \$25,000 or more

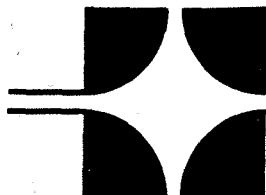
48. Do you have a friend or relative who helped to teach you how to breastfeed? (circle number)

1. YES
2. NO

49. Are you married? (circle number)

1. YES
2. NO

APPENDIX B



University of Wisconsin - La Crosse

Health Education Department

La Crosse, Wisconsin 54601

203 Mitchell Hall • 608/785-8162

Dear Breastfeeding Mother:

As a graduate student in the Community Health Education program at the University of Wisconsin-LaCrosse, I am conducting this survey as part of my master's thesis. The information collected about support for breastfeeding mothers should be extremely useful to health professionals when they are assisting breastfeeding mothers with their needs.

It is felt that your participation in this survey will provide us with very valuable information. Therefore, there is attached to this letter a confidential questionnaire for you to complete. Please take the time to complete this questionnaire. When finished with the questionnaire, please place and seal it in the attached envelope. No names are being requested or will be used for this study. Everything is completely confidential.

Your response to this survey is critical. The more responses that I receive, the better the survey will represent the support that is actually received by breastfeeding mothers.

If you are interested in receiving a summary of the results of this survey, you can call me at the following number: (608) 784-3812.

Thank you for your cooperation.

Sincerely,

Rhonda Kolberg, RN, BSN
Graduate Student

Gerald Matheson, Ed.D.
Chairperson, Health Education Dept.
University of Wisconsin-LaCrosse

APPENDIX C

College of Nursing

DEPARTMENT OF INSTRUCTION



December 8, 1988

Rhonda Kolburg
1900 South Second Street
Apt. 213
La Crosse, WI 54601

Dear Rhonda:

Thank you for your letter requesting further information about the HBSS. I agree with you that the breakdown of the subscales as I gave you does not agree with the items with the HBSS.

The breakdown by content should be as follows:

Emotional Items -

1, 6, 9, 12, 15, 17, 18, 19, 20, 30

Informational Items -

4, 21, 22, 23, 24, 25, 26, 27, 28, 29

Instrumental Items -

2, 3, 5, 7, 8, 10, 11, 13, 14, 16

I apologize for any confusion that my previous letter created in your study. Please feel free to contact me again if you have further questions about this.

Good luck with your study. I will look forward to receiving a summary of your results.

Sincerely,

A handwritten signature in cursive script that reads 'Robbie B. Hughes'.

Robbie B. Hughes
Head, Department of Instruction

APPENDIX D

GUNDERSEN MEDICAL FOUNDATION, LTD.
1836 SOUTH AVENUE
LA CROSSE, WISCONSIN 54601
(608) 784-4483

A.C.V. ELSTON III, M.D.
Director of Research

November 14, 1988

TO: Rhonda Kolberg, BS, RN
FROM: James V. Beardsley, Ph.D.
Secretary, Research Committee

Dear Rhonda Kolberg:

This letter is to inform you that the following research protocol has been approved by the Research Committee.

Masters Thesis: "Breastfeeding Survey"

Approval will be forwarded to the Institutional Review Board.

Sincerely,

James V. Beardsley, Ph.D.
James V. Beardsley, Ph.D.

JVB (ks)

cc: Reverend Daniel Vinge

*"Achieving the finest patient care
requires continuous effort and study
by individuals devoted to the advancement
of medical science and practice."*

ADOLF GUNDERSEN, M.D. · 1923

