

FATHERS AND BREASTFEEDING:
THE ROLE OF PATERNAL BREASTFEEDING SUPPORT SELF-EFFICACY
IN BREASTFEEDING INITIATION

A Thesis

Presented to

The Graduate Faculty of The University of Akron

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

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August, 2013

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DEDICATION

This thesis is dedicated to my family. Without their love and support, and sometimes their prodding, it would not have come to fruition. I am especially thankful for my children who inspired me to return to school and who have sacrificed a lot of “mommy time” as I completed my coursework. I only hope to have demonstrated to them the importance of education and that sometimes life does not follow the path we anticipated.

ACKNOWLEDGEMENTS

In the course of my life, there have been a handful of people who have affected the path my life has taken. Twila Toth, may you rest in peace, without your support and your faith in my writing, I would have stopped writing long ago. Thank you for believing in me when I did not.

I would also like to acknowledge my committee: Dr. Pamela Schulze, Dr. David Witt, and Dr. Susan Witt. You have stood beside me and encouraged me, even as my path became long and winding. Dr. D. Witt, thank you for seeing something in me that I was unable to see in myself. Dr. S. Witt, thank you for always having time to lend an ear and for finding my typos. Dr. Schulze, I have learned so much from you. You were the first contact that I had with The University of Akron, and the conversation we had over the phone convinced me that UA was the school for me. Along the way, you have both challenged me and championed me; when I wanted to teach, you supported me. Sometimes you had the hard job of saying things that I needed to hear but did not want to. You have affected my life, personally and professionally, in so many ways, and for that I am deeply grateful. I am so thankful for all three of you, and I am honored to have studied under all of you.

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CHAPTER I

INTRODUCTION

Bandura (1977) defined self-efficacy as one's belief in his or her ability to successfully complete a given task (e.g. reading, using a computer, breastfeeding). Accordingly, one's success or failure at any given task is to some degree a product of his or her self-efficacy. In recent years, Bandura's ideas about self-efficacy have been applied to breastfeeding, specifically during the prenatal and postpartum period. In most research about parenting, the role of the father or partner in breastfeeding initiation and duration has been given minimal attention.

There have been a few promising studies that suggest that fathers or partners have a more important role than previously acknowledged. Several studies (Rempel & Rempel, 2004; Scott, Binns, & Aroni, 1997; Littman, Medendorp, & Goldfarb, 1994; Wolfberg, Michels, Shields, O'Campo, Bronner, & Beinstock, 2004; Scott, Landers, Hughes, & Binns, 2001; Pisacane, Continisio, Aldinucci, D'Amora, and Continisio, 2005; Stremler & Lovers, 2004; and Scott, Shaker, & Reid, 2004) have demonstrated a positive relationship between paternal support for breastfeeding and breastfeeding initiation and duration rates amongst their female partners. These findings suggest that fathers' support plays an important role in the mothers' decisions about breastfeeding, breastfeeding initiation, and possibly even how long she breastfeeds. Bandura's ideas of

self-efficacy, when applied to paternal breastfeeding support, suggest that father's support of breastfeeding and confidence in his ability to support his breastfeeding partner can have a positive affect on breastfeeding outcomes. Breastfeeding is a parenting practice, not a consumer choice. Breastfeeding, like all other parenting practices, is best understood in the context of the family system. Fathers are an important part of the family system and, directly and indirectly, exert an influence over all aspects of parenting.

Using the prenatal Breastfeeding Self-Efficacy Scale (BSES) designed by Wells (2006) as a model, a new breastfeeding support self-efficacy scale was designed for use with male partners of women with infants and young children. Understanding that the role of the father or male partner is important in the breastfeeding relationship, this study seeks to examine the level of breastfeeding support self-efficacy of fathers and its association with breastfeeding outcomes (e.g. rates of breastfeeding initiation and duration). This instrument could easily be adapted for use with any individual who is a source of support for mothers (e.g. friends, relatives, or other significant others), and thus has the potential to make a unique contribution to the body of research on breastfeeding promotion.

CHAPTER II

LITERATURE REVIEW

Throughout history, breastfeeding has been a topic of research, and sometimes, debate. The popularity of breastfeeding has waxed and waned, oftentimes influenced by society's attitudes towards infant feeding. Regardless, breastfeeding has been shown to be an important factor in the health, development, and overall well-being of the developing child (Schulze & Carlisle, 2010). In recent years, it continues to be a major focus of public health promotion and research.

Breastfeeding Benefits

The benefits of breastfeeding are many, both for the infant and for the mother. These include decreased risk of communicable illnesses, improved health, and possible protection from later diseases such as high blood pressure and cancer (Schulze & Carlisle, 2010; CDC, n.d.). While health promotional materials frequently place a larger emphasis on the benefits to the infant, there is a growing body of literature that shows maternal health benefits as well.

Except in rare circumstances, "breast is best," as breast milk provides immunological benefits and the optimal nutrition possible for an infant. The composition of breast milk is constantly changing. It changes day-to-day and even changes from the beginning of the feeding to the end (Pediatric Nutrition Handbook, 2004). Breast milk

changes to meet the unique nutritional needs of the individual infant and contains antibodies that protect infants from infection. It contains exactly the right amounts of vitamins, minerals, and fats that this particular baby needs at that specific point in time (Pediatric Nutrition Handbook, 2004). Despite the advertising claims, no formula can meet the nutritional needs of or provide an infant immunity like human milk can.

Infant Breastfeeding Benefits

The health benefits of breastfeeding have been well documented. The American Academy of Pediatrics (AAP), the World Health Organization (WHO), and UNICEF have published numerous documents on the benefits of breastfeeding (AAP Breastfeeding and the Use of Human Milk, 1997 & 2005; Horta, Bahl, Martinés, Victora, World Health Organization, 2007; WHO, 2009, UNICEF Innocenti Declaration, 1990). Infants who have been exclusively breastfed have been shown to have the lowest incidence of illness, even when compared to other infants who are breastfed sometimes, indicating that there is a “dosing” effect in the healthful benefits of breastfeeding (Raisler, Alexander, O’Campo, 1999). Breastfed infants are less likely to be ill, and have been shown to have decreased rates of otitis media (ear infections), diarrhea, gastroenteritis, and respiratory infections (U.S. Department of Health and Human Services, 2007); and they are less likely to suffer from atopic dermatitis (MacDonald, 2003).

Breastfed infants not only receive short-term health benefits from breast milk but also long-term benefits. The risk of Sudden Infant Death Syndrome (SIDS) is significantly decreased in breastfed infants (American SIDS Institute, 2009); Ford,

Taylor, Mitchell, Enright, Stewart, Becroft, Scragg, Hassall, Barry, Allen, & Roberts, 1993). Breastfeeding has also been associated with decreased risk of chronic illnesses such as asthma, juvenile diabetes, Crohn's disease, lymphoma, and some types of allergies (Kleinman, 2004; U.S. Department of Health and Human Services, n.d.). Additionally, early studies indicate that adults who were breastfed when infants have slightly lower blood pressure and cholesterol than their formula-fed counterparts (Martin, Gunnell, & Smith, 2005; WHO, 2009).

While the health benefits of breastfeeding are more frequently promoted, breastfeeding may provide emotional and cognitive developmental advantages to nursing infants. Green, Groves, and Tegano (2004) noted that breastfed babies raised by mothers who practice Attachment Parenting – a parenting style which advocates for extended nursing (often into toddlerhood), baby wearing, and co-sleeping – were less likely to use or to need transitional objects; rather, they found comfort in being held or being put to breast. Else-Quest, Hyde, and Clark (2003) also noted that in breastfeeding mother-infant dyads, the quality of the mother-infant relationship was higher than that of bottle-fed mother-infant pairs. While there may be increased emotional connections between breastfeeding mother-infant pairs, this is not to imply that bottle-fed dyads suffer emotionally. Indeed it is not clear whether breastfeeding alone, parental attitudes, parenting style, or other parental or environmental characteristics, may account for the outcomes.

It has been widely touted that breastfeeding provides an advantage to all babies' cognitive development; however many of the studies have been flawed and do not

account for maternal IQ, maternal education, paternal employment, and SES (Rey, 2003). When controlled for these factors, only premature and small for gestational age (SGA) infants demonstrate a true increase in cognitive development over their formula-fed counterparts (Rey, 2003). Smith, Durkin, Hinton, Bellinger, and Kuhn (2003) reported that at ages six to eight years, breastfed low birth weight infants scored higher on all tests of cognitive function; but after controlling for home environment, only visual-motor integration was statistically significant. The cognitive advantages of breastfeeding are most significant for premature and SGA infants; however birth complication and prematurity increase the likelihood of hospitalization in both of these groups which makes breastfeeding more challenging. Horwood and Fergusson (1998) noted that the incidence of breastfeeding corresponded with the birth weight of the infant; the lower the birth weight, the less likely it was that an infant would be breastfed.

Breastfed infants have demonstrated a significant advantage over formula-fed infants in gross motor development, visual acuity, academic achievement, and possibly social skills (Petryk, Harris, Jongbloed, 2007). As with health benefits, there is evidence that the cognitive advantages of breastfeeding are dose-dependent (Morrow-Tlucak, Haudi, & Ernhart, 1988 as cited in Petryk et al, 2007), similar to the health benefits. The “dosing” effect of extended breastfeeding cannot be discounted for developmental benefits.

The health and developmental benefits of breastfeeding, especially for premature and SGA babies, are irreplaceable. Breast milk provides optimal nutrition and immunity not available anywhere else. Breast milk offers protection from common infections,

decreases the risk of SIDS, and boosts cognitive and motor development. Breastfeeding provides an infant with the best possible nutrition for healthy growth and development.

Maternal Breastfeeding Benefits

Breastfeeding education and promotion sometimes concentrates on health benefits for the infant and ignores or does not adequately emphasize benefits to the mother. There are, however, many proven health benefits provided to women who choose to nurse their babies. These include decreased blood loss after birth, decreased risk of premenopausal breast cancer, decreased risk of ovarian cancer, overall lifetime decreased menstrual blood loss, possible protection from some infections, reduced risk of osteoporosis, increased reported satisfaction with motherhood, and feelings of success that support mental health (Labbok, 1999; U.S. Department of Health and Human Services, n.d.; Labbok, 2001). Pesa and Shelton (1999) argue that breastfeeding mothers engage in a healthier lifestyle, which contributes to the health benefits of breastfeeding.

Breastfeeding has also been shown to help with postpartum weight loss and to boost the mother's mood (U.S. Department of Health and Human Services, n.d.). Breastfeeding mothers enjoy long-term health benefits from nursing their babies.

Breastfeeding and Public Health Campaigns

The battle to keep babies at the breast is not new. As early as the late 1800s physicians and other public health officials worked to encourage women to breastfeed their babies; others worked to “clean up” the dairy industry in order to provide “clean milk” (e.g. pasteurized) for society, including non-nursing babies (Wolf, 2003).

Physician recommendations play an important role in how children are fed. Ironically, the

early commercially produced formulas (e.g. Enfamil and Similac) were only sold by physicians (in their offices) to mothers directly (Schuman, 2003). For a large part of history, however decreased breastfeeding rates can be attributed to poor counseling from physicians to mothers.

One of the more recent public health challenges to breastfeeding comes in the form of formula companies' violations of the World Health Organization (WHO) Code (Parrilla-Rodriguez & Gorrin-Peralta, 2008). WHO established the Code in order to promote breastfeeding and protect infants worldwide from the adulteration of and dangers of formula. Parrilla-Rodriguez and Gorrin-Peralta (2008) analyzed the labels of thirty-four commercially produced formulas and found that all of them (100%) violated the WHO Code labeling requirements. The most obvious offenses were that many of the formula companies omitting the required "breastfeeding is best" statement and had text or pictures that idealized bottle (formula) feeding rather than breastfeeding. These two violations in particular continue the dissemination of misleading information and undermine women's confidence in their ability to breastfeed. Within the last few years, Enfamil RestFull® formula, designed with a special food starch that expands to fill an infant's stomach more fully, has come under fire by some pediatricians for its possible links to SIDS (McMacken, 2009).

Historical Perspective

Historically, babies were breastfed, and additional options for mothers were limited. Breastfeeding was the norm. Aside from giving an infant cow or goat milk, mothers' only other option was to hire a wet nurse (Schuman, 2003). Babies were

breastfed because it was considered normal, natural, and socially acceptable.

Additionally, little girls grew up seeing older girls and women breastfeeding, and it was nearly an expectation (due to limited options). Supplementation or “hand-feeding” (Wolf, 2003) infants with cow or goat’s milk occurred throughout history, although rarely, but became more common during the 1800s. As more infants were supplemented with, or fed completely cow’s milk-based diets, the breastfeeding model became less and less visible.

According to Wolf (2003), by the 1880s, supplementation or complete hand-feeding became more common. This feeding method was popular with both wealthy and lower-income women. Hand-fed infants were typically fed straight or diluted cow’s milk until breast milk substitutes became more readily available. While the introduction and development of commercially produced formulas began with European scientists during the late 1800s, it was not until the 1960s that formula feeding became the norm and the incidence of breastfeeding hit an historical low of twenty-five percent (25%) (Fomon, 2001; Schuman, 2003). Physicians, public health officials, and allied health professionals have been working to restore breastfeeding as the norm ever since while formula companies have been working to more closely simulate human milk.

Self-Efficacy and Breastfeeding

During the late 1970s, Bandura introduced his theory of learning on cognition, called Social Cognitive Theory (SCT). SCT is a model for understanding an individual’s behavior in a specific situation and examines the role of the individual, his/her behavior, and the role of the environment on the behavior (Bandura, 1977; Bandura, 1986;

Bandura, 1998; Bandura, 2004). One of the main components of SCT is Bandura's idea of an individual's self-efficacy – that is one's belief in his/her ability to successfully complete a given task. He theorized that individuals with higher self-efficacy would view specific tasks as something that he/she could master. Research applying Bandura's concept of self-efficacy has been widespread, ranging from topics such as food preparation skills (Schulze & Schulze, 2003) to health-related behaviors, and breastfeeding (Dennis, 1999; Wells, 2006). Practical application of this idea translates into increased success on tasks for which the individual has a high self-efficacy. Extrapolating from the self-efficacy research, it would follow that women with a high breastfeeding self-efficacy would be more likely to initiate and maintain breastfeeding than women with a low breastfeeding self-efficacy (Bandura, 1986; Bandura, 1998; Bandura, 2004). Knowing that part of one's self-efficacy is affected by one's environment, it is likely that self-efficacy may be influenced by a myriad of factors, such as geography, ethnicity, social support, education, and national trends.

For many women the decision of whether or not to breastfeed is made even before she becomes pregnant (Dix, 1991). Women who wait until pregnancy to make the decision of whether or not to breastfeed are more likely to formula-feed (Dennis, 2005). The availability of formula and general social stigma about public breastfeeding often prevents women from choosing breastfeeding (Kendall-Tackett & Sugarman, 1995). Likewise, there may be racial and ethnic disparities in breastfeeding initiation. Braveman, Cubbin, Marchi, Egerter, and Chavez (2001) caution that the noted racial disparities often reported may be misrepresented because of the demographic information collected on some ethnic populations. Celi, Rich-Edwards, Richardson, Kleinman, and Gillman (2005)

also found that for U. S. born minorities (e.g. U. S. born Hispanic and U. S. born black mothers), their breastfeeding initiation was comparable to U.S. born white women. They also found a correlation between immigration status and breastfeeding initiation. However, despite what some research may indicate, the CDC's 2011 Breastfeeding Report Card shows that breastfeeding initiation is highest amongst the Hispanic population (77.9%). Sixty-three percent of Caucasians initiate breastfeeding, and the African-American population had the lowest initiation rate (54.1%).

Some states do not offer women legal protection for breastfeeding, and some companies do not make it easy or possible for women to express milk after returning to work (La Leche League International, n.d.; Li, Hsia, Fridinger, Hussain, Benton-Davis, & Grummer-Strawn, 2004). Together, these factors often negatively influence a woman's breastfeeding self-efficacy. One must question how societal influences affect a woman's confidence in her ability to breastfeed. Bandura (2004) noted that health-related behaviors are both individual and social matters. The popular discourse about breastfeeding or bottle-feeding as a "choice" discounts the sociological and cultural context in which "choices" are made.

While a mother's level of education, geographic location, ethnicity, and social support have been shown to be associated with breastfeeding initiation rates (Breastfeeding Report Card, 2011; Schulze & Carlisle, 2010), it would be irresponsible to not consider the role of a woman's breastfeeding self-efficacy in her choice of infant feeding. Breastfeeding self-efficacy is affected by a variety of factors (e.g. social support, media, public opinion). As such, the availability and marketing of commercially-

produced infant formulas or breast milk substitutes have decreased women's breastfeeding self-efficacy (Henderson, Kitzinger, & Green, 2000; Brown & Peuchaud, 2008).

The introduction of breast milk alternatives for infant feeding directly affected the incidence and duration of breastfeeding, especially in the U.S. The availability of formulas, misleading advertising by formula companies, and decreased social acceptance of breastfeeding in the U. S. have all worked against self-efficacy and have decreased rates of breastfeeding. Despite continued efforts by formula companies to make infant formulas more like human milk, breastfeeding rates are slowly increasing (Breastfeeding Report Card, 2010). According to the 2007 National Health and Nutrition Examination Survey (NHANES), breastfeeding rates rose seventeen percent (17%) from 1993-1994 to 2005-2006 (Breastfeeding Report Card, 2010). The survey results indicate that breastfeeding initiation rates finally reached the Department of Health and Human Services (DHHS) Healthy People 2010 goal of seventy-five percent (75%) of infants being breastfed at birth. Yet this increase still falls below the new Healthy People 2020 guidelines of 89.1% (Healthy People 2020).

Recent studies have investigated the link between breastfeeding self-efficacy and breastfeeding outcomes. Many of these studies utilized the Breastfeeding Self-Efficacy Scale (BSES). The BSES was created by Cindy-Lee Dennis and Sandra Faux (1999). The purpose and intended use of the instrument is to measure breastfeeding self-efficacy in mothers in the postpartum period. The BSES is comprised of forty-three (43) items in questionnaire format. Structurally, items on the instrument are grouped into three main

content areas: technique, intrapersonal thoughts, and support. Following the model of Bandura's (1977) SCT, all questions on the scale are worded in a positive manner. Forty (40) question stems were generated by the authors, and the stems were reviewed by a panel comprised of both content and measurement experts (Dennis & Faux, 1999). The panel placed items into the three content areas designated by the authors (technique, intrapersonal thoughts, and support), and evaluated the content validity of the questions. After reviewing the panel's feedback, the authors added three (3) questions addressing breastfeeding comfort. The original scale of the instrument included four (4) possible responses in keeping with Bandura's (1977) suggestions for measuring self-efficacy. The final instrument allows for five (5) possible responses. The scoring of the instrument is based on a five-point Likert-type scale (1 = not at all confident to 5 = always confident). The total score on the BSES is a sum of the answers for all forty-three questions. Therefore, the scores can range from a low of 43 to a high of 215. Score interpretation for instrument is fairly straightforward. Low scores indicate low self-efficacy whereas higher scores indicate high self-efficacy.

Applications of the BSES: Importance of Self-Efficacy on Breastfeeding

The BSES has been used to measure postpartum breastfeeding self-efficacy in many different situations. Research applications have focused on the mother's self-efficacy after a learning module, the role of a breastfeeding journal, factors that affect a mother's breastfeeding initiation and duration (e.g. paternal involvement), and self-efficacy in non-North American populations. Hauck, Hall, and Jones (2007) found that self-efficacy and breastfeeding self-management were statistically significant influences

on breastfeeding duration, despite reports that the women received inaccurate or inappropriate information about breastfeeding. Blyth, Creedy, Dennis, Moyle, Pratt, and DeVries (2002) found that women with higher postpartum self-efficacy scores were more likely to continue breastfeeding through the middle of the infant's first year. McCarter-Spaulding and Kearney (2001) examined the role of self-efficacy, parity, age, and education in women's perceptions of breast milk adequacy. They reported that women's self-efficacy was positively correlated with maternal perception of breast milk supply adequacy. Each of these studies suggests that breastfeeding self-efficacy is positively related to breastfeeding initiation and duration.

Although breastfeeding rates are on the rise, the increased availability of and access to commercially-produced infant formulas have significantly affected breastfeeding initiation and duration over the long-term. Formula companies' false advertising, "hospital packs," and the mountain of coupons that new parents receive via mail, continue to work against women's beliefs in their ability to breastfeed and deteriorate the social support network of other breastfeeding moms (Brown & Peuchaud, 2008; Henderson; Kitizinger, & Green, 2000).

Breastfeeding and Social Support

As noted above, some women make a decision about how they are going to feed their infants even before conception (Dix, 1991). How a woman thinks or feels about breastfeeding is affected by many different factors (i.e. exposure to breastfeeding, education, etc.). Although education, SES, and ethnicity often negatively affect the initiation of breastfeeding within some populations (CDC Breastfeeding Report Card,

2011), there are other factors that may positively affect a woman's infant feeding choice. Location, social support, and family support all dramatically influence a woman's choice of feeding method (Hannan, Li, Benton-Davis, & Grummer-Strawn, 2005). First, there are regional influences in a woman's decision to breastfeed. Hannan, Li, Benton-Davis, and Grummer-Strawn (2005) noted that women living in the Mountain and Pacific regions of the U. S. expressed the most positive attitudes towards breastfeeding, demonstrated the most knowledge about breastfeeding benefits, supported breastfeeding at work, and had the most positive outlook on duration of breastfeeding. Some states offer breastfeeding women protection under the law, although enforcement is difficult. There are still a few states, such as North Dakota, that have laws declaring breastfeeding in public to be considered indecent, and therefore, criminal (www.llli.org, n.d.).

Breastfeeding and Father Support

Possibly more influential than any other social factor are fathers' attitudes and support of breastfeeding. Some studies suggest that fathers play an integral role in a woman's choice of feeding method. Rempel and Rempel (2004) noted that a strong positive correlation existed between a male intimate partner's ideas towards breastfeeding and the mother's intent to breastfeed. Scott, Binns, and Aroni (1997) suggested that a father's positive attitude towards breastfeeding could be an extremely influential factor in a woman's decision to breastfeed; likewise, there is a positive correlation between fathers' support of breastfeeding and both breastfeeding initiation and duration (Littman, Medendorp, & Goldfarb, 1994; Wolfberg, Michels, Shields, O'Campo, Bronner, & Beinstock, 2004). Scott, Landers, Hughes, and Binns (2001) believed that supporting the

role of the father in breastfeeding would improve breastfeeding rates and is positively correlated with higher rates of breastfeeding at the time of hospital discharge.

Studies have shown that breastfeeding education for men increases the percentages of women exclusively breastfeeding their infants at six months (Pisacane, Continisio, Aldinucci, D'Amora, and Continisio, 2005), and that support groups for fathers-to-be facilitated by fathers of breastfed babies increased breastfeeding initiation in the mothers-to-be (Stremmler & Lovers, 2004). A more recent study found that maternal, rather than paternal, attitudes about breastfeeding are the most influential in a woman's choice of feeding method (Scott, Shaker, Reid, 2004).

Overall, the importance of the role of the father in supporting successful breastfeeding outcomes cannot be denied. Fathers play a crucial role in the lives of their children. This begins before birth with involvement, either directly or indirectly, in infant feeding decisions. Providing support and education for the expectant father is just as important as supporting and educating the mother.

Fathers' Self-Efficacy in Their Support Role

Following the ideas outlined by Bandura's self-efficacy theory, it is reasonable to hypothesize that the self-efficacy of fathers is an important factor in his support or discouragement of his partner's breastfeeding initiation. Men who are comfortable with breastfeeding and have had some breastfeeding education will likely have higher breastfeeding support self-efficacy than those who have not; likewise, these high self-efficacy men will likely provide more support and encouragement to their partners.

Considering the importance of father's support of breastfeeding mothers, understanding if or how their own breastfeeding support self-efficacy may affect their partner's breastfeeding initiation, is important. The hypothesis for this thesis is that men with higher breastfeeding support self-efficacy will have partners with higher rates of breastfeeding initiation.

CHAPTER III

METHODS

A woman's choice of infant feeding and her ability to breastfeed successfully may be affected by multiple factors such as the baby's father's ideas, feelings, and opinions about breastfeeding. A few studies have examined the role of self-efficacy on the mothers' breastfeeding initiation and duration, yet they have not addressed the role of the father's support self-efficacy in these decisions. Based upon the findings in literature of the importance of the fathers' role in breastfeeding initiation and duration, it is important to examine fathers' breastfeeding support self-efficacy and how it may be associated with women's infant feeding method. Based on the review of the literature, the hypothesis for this thesis was that fathers' self-efficacy would be positively associated with the mothers' breastfeeding initiation and duration, as identified through fathers' reports.

Study Design

The purpose of the study was to examine the role of breastfeeding support self-efficacy of fathers and how their support self-efficacy related to the mothers' breastfeeding initiation rates. The survey was accessible to the participants online and privately, in an effort to increase study participation and encourage frank answers. The survey took approximately 5-10 minutes to complete.

A modified version of the BFSE scale (Wells, 2006) addressed the fathers' breastfeeding support self-efficacy, or their confidence in their ability to support their breastfeeding partners. In addition to the father's self-efficacy scores, demographic information about the father, as well as information regarding the mother's method of infant feeding, was collected in an effort to examine any possible relationships between father's self-efficacy and the mother's decision's about breastfeeding.

Participants

The sample was composed of fathers, 21 years of age or older, who had at least one child who was under the age of three (the target child). Participants in the study did not need to be married to the mother of the target child or be the biological father of the target child; however, they had to have been in a relationship with the mother of the target child during her pregnancy and during the child's infancy (up to one year). Additionally, participants were the current caregiver, primary or secondary, of the infant or toddler. Any university students, faculty, and staff, as well as a convenience sample of men on blogs and social networking sites (e.g. facebook®), who fit the criteria, were included in the sample.

Recruitment and Data Collection

Participants were recruited primarily through The University of Akron ZipMail and The University of Akron faculty e-mail digest and facebook®. Participants were also recruited through parenting blogs and email invitations from people who saw the survey link posted on facebook® and twitter®. Participants were asked a few screening questions (such as their gender, their caregiver status, and the age of the target child).

Those who met all study criteria were allowed to enter the survey; those who did not received no further questions and were thanked for participating. The survey was left up and available until an acceptable number of complete responses (n=174) were received.

Measures

To ensure the appropriateness of the survey questions for this population, the survey was piloted (in paper form) with two fathers. Based on their feedback, the wording of the survey was modified slightly to make the statements more applicable to fathers and more readable (i.e. “I can support my partner breastfeeding around people we do not know” was reworded to read “I can support my partner breastfeeding in public.”). Additionally, the statement “I can schedule my day around my partner’s breastfeeding” was deleted; feedback from the fathers who piloted the survey indicated that they felt that statement was inapplicable to them. The CheckBox® on-line version of the survey was piloted with two fathers before the link was made available to the study participants.

Data were collected during the summer of 2011 using a modified version (see Appendix A) of Wells’ (2006) prenatal breastfeeding self-efficacy (BFSE) scale online via CheckBox®, an online survey tool available at the University of Akron. Wells’ BFSE scale was designed to be used prenatally with mothers so the wording of the statements addressed the mother’s breastfeeding self-efficacy; the modified scale was reworded to address father’s breastfeeding support self-efficacy (e.g. “I can make time to breastfeed even when I feel busy” was re-worded to read “I can make time to support my breastfeeding partner even when I feel busy”), and two additional questions regarding the fathers’ ability to support breastfeeding were added. The modified scale also included

demographic information, including whether or not the father himself was breastfed as an infant, which may correlate with his support self-efficacy.

Wells' (2006) prenatal BFSE scale was reworded and modified for use with fathers. The modified scale was piloted with two fathers, which led to further modification, before being put online for survey participant access. The results of the data analysis will be discussed in Chapter IV.

CHAPTER IV

RESULTS

An overview and analytical assessment of the results from the online survey are included below. Demographic data are included in table format, and the statistical analysis is also presented in tabular form. Any surveys in which most or all of the questions were not answered were excluded from analysis.

One hundred seventy-four (174) fathers of children aged thirty-six months or under participated in the study. Fathers were recruited via social media, such as Facebook® and Twitter®, and the University of Akron faculty email digest. The survey was accessible online via CheckBox®. Only the data from 174 surveys, either complete or missing only one or two pieces of data, were analyzed using SPSS.

Participant Demographics

As shown in Table 1, the average age of the fathers in the study was thirty-four years, and the average age of the infants about which the survey questions were asked was fifteen months.

Table 1

Demographics of Study Participants, Continuous Variables

	M	SD
Fathers' Mean Age (years)	34	6
Infants' Mean Age (mo)	15	10

As shown in Table 2, the overwhelming majority (91%) of the participants were Caucasian, married fathers living in the same household as the child about whom they answered based on, and the majority (64%) had a college-level education or higher. Thirty-five percent (35%) of survey participants were recruited through email, forty percent (40%) through facebook®, six percent (6%) through twitter®, two percent (2%) through a parenting blog, and eighteen percent (18%) via an unknown source.

Table 2

Demographics of Study Participants, Categorical Variables

Marital Status	<i>n</i>	Percentage
Married	159	91%
Cohabiting	7	4%
Separated	1	1%
Single	7	4%
Living in the Same Household as the Child		
Yes	170	98%
No	4	2%
Ethnicity		
Caucasian	159	91%
Hispanic	6	4%
African-American	3	2%
Asian	2	1%
Other	3	2%

Table 2 (continued)

Demographics of Study Participants, Categorical Variables

Level of Education		
< High School	2	1%
High School/GED	11	6%
Some College	50	29%
Bachelor's Degree	61	35%
≥ Master's Degree	50	29%
How Father Heard About the Survey		
Email	61	35%
Facebook®	69	40%
Twitter®	10	6%
Parenting blog	3	2%
Other	31	18%

As Table 3 shows, the fathers were involved in the infant feeding decision. Forty-six percent (46%) of mother attended a breastfeeding class while twenty-eight percent (28%) of the fathers attended a breastfeeding class with their child's mother. Fifty-eight percent (58%) reported that they were "extremely" involved in the feeding decision,

while only one percent (1%) reported that they were uninvolved in the decision making process. The participants were active in the breastfeeding decision-making process.

Table 3

Breastfeeding Education Demographics, Categorical Variables

Mother Attended Breastfeeding Class

Yes	80	46%
No	90	52%
Unsure	4	2%

Father Attended Breastfeeding Class

Yes	49	28%
No	30	17%

*79 respondents did not respond

Father Involvement in Feeding Choice

Extremely	100	58%
Somewhat	72	41%
Not at all	2	1%

The fathers' own breastfeeding experiences and those of their infants are summarized in Table 4. Fifty-one percent (51%) of the participants were breastfed as infants themselves. An overwhelming ninety-one percent (91%) of infants whose fathers

responded were breastfed, with sixty-four percent (64%) of the breastfed infants being breastfed for at least six months.

Table 4

Fathers' Breastfeeding Experience, Categorical Variables

Father Breastfed as Infant		
Yes	88	51%
No	57	33%
Unsure	28	16%
Father's Infant Ever Breastfed		
Yes	159	91%
No	15	9%
How Long Was Infant Breastfed		
<6 weeks	16	10%
6 weeks – 3 months	23	15%
4 months – 6 months	16	10%
>6 months	101	64%

*Missing 1% of respondents were never breastfed

As shown in Table 5, of the infants who were breastfed, eighty percent (80%) were exclusively breastfed at some point. Sixteen percent (16%) of the infants were breastfed for 6 weeks – 3 months, twenty-eight percent (28%) were breastfed for 4 months – 6 months, and forty-six percent (46%) were breastfed for at least 6 months.

Table 5

Infants' Breastfeeding Exclusivity, Categorical Variables

Child Exclusively Breastfed		
Yes	127	80%
No	31	20%
Length of Breastfeeding Exclusivity		
<6 weeks	11	9%
6 weeks – 3 months	20	16%
4 months – 6 months	36	28%
>6 months	58	46%
Don't know	2	2%

Fathers' Support Self-Efficacy and Infant Breastfeeding Initiation

The hypothesis proposed in Chapter III was as follows: the higher the father's breastfeeding support self-efficacy scores, the higher the rates of breastfeeding initiation and duration. Because the variables were categorical rather than continuous, Spearman's rho was used to determine whether there was a significant correlation between these two variables. The analysis of fathers' breastfeeding support self-efficacy and mothers' breastfeeding initiation shows that there was a statistically significant correlation between the two variables. (Spearman's $\rho = -0.192$, $p = 0.014$, $\alpha = 0.05$). While the Spearman's rho was negative, the correlation is actually positive. Breastfeeding initiation was coded as "1." As the fathers' breastfeeding support self-efficacy scored increased (Likert scale with "1" being the lowest, "5" being the highest), the breastfeeding initiation rates (coded as "1") increased. Since correlation is positive as the relationship between the two variables both increase, the Spearman's rho appeared negative since self-efficacy increased numerically and breastfeeding initiation numerically "decreased." From here on, the correlation will be referred to as positive. The fathers who responded to the survey had high breastfeeding support self-efficacy scores and high rates of infant breastfeeding initiation and duration, unlike those represented in the general population.

Survey Comments

Participants were provided the opportunity to provide open-ended comments. There were sixty-two survey comments which fell into four distinct categories: supportive of breastfeeding, distrustful of the intent of the study, study/survey design

improvement, and miscellaneous. One comment, which had nothing to do with the survey, did not fit into any category. Below are some examples of comments from the survey.

Supportive of Breastfeeding

“My wife has breastfed our children wherever we have been for 6 straight years, singly and tandem. I am extremely supportive of her doing so.”

“Everyone should at least attempt to try and breastfeed their children!!!!”

“Breastfeeding was her choice but I would not have been happy had she not chosen too [sic]. She works full time so she cannot do it for a whole year (work stress makes breastfeeding impossible after 5 months).

Defensive/Distrustful of or Assuming of the Intent of the Study

“There is a lack of scientific knowledge presented in breastfeeding. It’s more of [sic] indoctrination than out of scientific benefits which is disparaging.”

“As I completed your survey it seemed that there was a pro-breastfeeding bias. I am aware of the documentation on the benefits to keeping the mother and child together. In many cases, possibly most cases this is breastfeeding. In some cases, however, it is not.”

“I can support my partner’s decision not to breastfeed.”

“My partner does not breastfeed. This survey was presumptuous about that. It also doesn’t take into account economic factors.”

Study/Survey Design Improvement

“All your questions start with ‘I can....’ My first child is 2 years old and my other child is 4 months old. The tense does not make sense in my case. The sentences should rather start with ‘I did...’.”

“Spell check the previous page please. You want to present a professionally :) Add more options to the questions regarding how long the child was breastfed. You may jog people's perception if you include actual, not only the common, numbers in the options. Good luck with the work. :D”

Some of the comments could have fit into two categories but seemed to more appropriately fit into one category more than the other. Other comments did not contribute to the data or to the understanding of the data. The comments, while varied, were useful in interpreting why the data possibly presented as they did.

Overall, The hypothesis of higher father breastfeeding self-efficacy scores correlating with higher breastfeeding initiation rates was supported by the data. There was a positive correlation between fathers' breastfeeding support self-efficacy and breastfeeding initiation. The data provided some insight into the importance of father involvement in infant feeding decisions.

CHAPTER V

DISCUSSION

There are several reasons why study data presents as it does. How someone interprets a question, his or her own personal experiences, and his or her beliefs can all affect the survey responses. Also, one's self-efficacy may affect how he or she responds to questions. All of these, and other confounders, need to be considered when interpreting data. Even when the hypothesis is supported by the data, it is still necessary to consider the results within the context of the myriad of variables that may affect the perceptions of the participants in this study.

The study results were as hypothesized. Higher father breastfeeding support self-efficacy scores were positively correlated with an increase in breastfeeding initiation, and the relationship was statistically significant. Thus, fathers' breastfeeding support self-efficacy is positively correlated with breastfeeding initiation.

Due to convenience sampling, the demographics of the study participants were not representative of the general U. S. population. One hundred fifty-nine (91%) were Caucasian, sixty-one (35%) had a Bachelor's degree, and fifty (29%) had a Masters degree or higher. According to the U. S. Census Bureau (U. S. Census Bureau, 2013), only twenty-eight (28%) of the population (aged 25 or older) has a Bachelor's degree or higher. Likewise, a majority (58%) of their infants were breastfed for six months or

longer (42% of those being exclusively breastfed), higher than the national average of twenty-five percent (25%). This was predominantly a population of fathers who, from the beginning, valued breastfeeding and were supportive of their partner's decision to breastfeed. They were either already supportive of breastfeeding before the pregnancy, or they became more informed during the pregnancy of the mother's decision and supported her in that decision.

Recruitment of participants was done entirely through email and social media. This likely influenced the demographics of the participants. The posts on facebook® and twitter® likely attracted the attention of those interested in infant feeding and/or were shared with family members and friends who fit the demographic specifications and were willing to complete an online survey.

Fifty-two percent of the fathers in the study reported having been breastfed as infants themselves. Overall, the fathers' self-efficacy scores were quite high; this is most likely a result of the highly educated group of fathers who responded to the survey. Breastfeeding self-efficacy is highly correlated with maternal education (Blythe, et al., 2002). It logically follows, then, that successful partner support self-efficacy would be positively associated with paternal education.

Consistent with past research that indicates that parents with higher levels of education are more likely to breastfeed (U.S. Center for Disease Control, 2013), the participants in this study reported high rates of breastfeeding initiation, duration, and exclusivity. The data in this study are consistent with national trends; ninety-one percent of the infants in this study were initially breastfed, and the national breastfeeding

initiation rate in 2011 was 74.6%. The participants' previous breastfeeding experiences also likely influenced the data; some of the fathers indicated in their comments that they had older children and answered questions based on their older child even though questions were focused on the youngest child (under 36 months of age). This could indicate that some of the self-efficacy scale questions were difficult to answer while still in the process of establishing and/or maintaining breastfeeding; the question regarding length of breastfeeding may have been especially challenging for those fathers whose infants or young children still had not weaned. Also, some of the comments collected indicated that the youngest child was under 6 months of age, and therefore they answered the remaining questions based upon how long their partner was planning on breastfeeding. Additionally, a few participants commented that while their youngest child was under six months (which they used as the age of the child in months), they answered the survey using the information for their older child (who was still under 36 months). This could have affected the data and correlations because there would be inconsistency between the child's age and how long the child was breastfed.

Participants were invited to write open-ended comments at the end of the survey. The results reveal how the sociological context of childrearing influences how caregivers think about infant feeding. The "I can" statements of the support self-efficacy portion of the survey were intended to be innocuous, yet they evoked both supportive and defensive comments. Breastfeeding, in and of itself, is both political and polarizing (Tucker, 2007). Breastfeeding can evoke strong reactions, both positive and negative. Public health organizations and government agencies view breastfeeding as an important health topic; they have dedicated time and money to advocating for breastfeeding. The World Health

Organization, Woman2Woman, the American Academy of Pediatrics, the Centers for Disease Control, the National Institutes of Health, and several others have created health promotion tools for parents about the benefits of breastfeeding (AAP, 2005; CDC, 2011, Healthy People 2020, WHO, 2009). However, the decision of whether or not to breastfeed is highly personal.

Often parents who have chosen to formula-feed their infants, for whatever reason, respond defensively when breastfeeding is discussed. This may stem from guilt over the decision to formula-feed, or it may be a reaction to the idea that they are being judged. It can be difficult to ask questions about breastfeeding, however innocuous, without inflaming someone. This is most likely why some of the comments were defensive or even attacking the study or its intent. Three comments in particular seemed to demonstrate this defensiveness to varying degrees: “There is a lack of scientific knowledge presented in breastfeeding. It’s more [of] indoctrination than out of scientific benefits which is disparaging;” “As I completed your survey it seemed that there was a pro-breastfeeding bias. I am aware of the documentation on the benefits to keeping the mother and child together. In many cases, possibly most cases this is breastfeeding. In some cases, however, it is not;” and “I can support my partner’s decision not to breastfeed.”

Also it should not be surprising that men, like women, express strong and diverse views about breastfeeding. The comments collected during this study indicate that men also have thoughts and opinions about breastfeeding—both positive and negative. Some of the fathers’ comments were highly supportive of breastfeeding, almost to the point of

being judgmental about those mothers who chose to formula feed. These two comments demonstrate this: “I feel that breastfeeding is one of the most important things we can do for our infants. And I think the whole concept, act, sacrifice of breastfeeding is a beautiful thing. I am happy to do all I can to support my wife in breastfeeding our child.” and “Breastfeeding is far more healthy than formula, and the marketing for formula is false and designed to make the companies more money. Also there is the attachment and bond formed between mother and child that come from breastfeeding which is crucial to child development.”

Some participants suggested that fathers should be supportive of their partners not breastfeeding. A few comments stated that the survey was biased towards breastfeeding, yet others suggested that the respondent tried to intuit the purpose of the study to be different than what was intended: “This is essentially a one-question survey, ‘Do you support breastfeeding?’” The purpose of the study was focused more on a father’s breastfeeding support self-efficacy rather than if he simply supported breastfeeding.

All of these comments, both supportive and defensive, indicate that men do have influence on the decision to breastfeed, whether directly or indirectly. Perhaps one of the most important contributions of the study is what it demonstrates about fathers’ interest in decisions regarding infant feeding. These fathers were involved and engaged—all of them—whether the infants were breastfed or bottle-fed. This is not a decision just left up to the mother that the father plays no direct part in. The men in this study were not passive or neutral on this subject. If there was any previous thought that men do not truly care about breastfeeding, these data demonstrate otherwise.

Suggestions for Further Research

There is a need for further research on fathers and breastfeeding. There are several different aspects that could be examined. The data suggest that fathers play a role in infant feeding; however, it is not clear how direct the role may be. While there was a positive correlation, it is impossible to show causality or know the mechanism by which fathers are influential. This study intentionally focused on the fathers and not the mothers of the infants in the study. It is likely, that if measured, the mothers' BFSE scores would likely have been high. Whether the fathers' support self-efficacy scores were influenced by the mothers' BFSE scores or independently high cannot be determined given this particular data set. Future research is needed to address the possible relationship between mothers' BFSE scores and fathers' BF support SE scores. Longitudinal research that follows a couple from conception through infancy and early childhood may help to shed light on the nature of the relationship between paternal support SE, maternal SE, and actual breastfeeding outcomes.

Another interesting avenue of further research to pursue would be to develop qualitative studies on men and breastfeeding, especially how their beliefs about breastfeeding developed. Since breastfeeding is such a polarizing topic and fathers do play a role in the decision-making process, it would be interesting to look at the communication between mother and father during the decision making process (e.g. which aspects of breastfeeding – health, social, economic, developmental, etc. are more important to mother and father/which are more influential on the decision-making process).

As mentioned above, due to the population demographics, it would be interesting to repeat the study with a more representative and diverse sample to see if the results can be replicated. Would a more demographically representative population produce the same results? Likewise, the instrument in this study is general enough that it could be used with other support people (e.g. grandmothers, grandfathers, same-sex partners) to examine how their support affects breastfeeding. More insight into the social support that breastfeeding mothers receive could be helpful in creating more appropriate curricula and public health campaigns.

Several factors may affect the outcome of a study: education, demographics, support, and many others. The participants in this study were uncharacteristic of the general population; however, that does not mean that the survey results cannot be generalized to the general population. A person's self-efficacy for a given task, in this case supporting a breastfeeding partner, is internal. While it may be influenced by outside factors, in the end it is the person's own belief in his, or her, ability to complete a task that ultimately matters. The information gathered in this study advances the understanding of the role of fathers in breastfeeding.

There could be practical applications for the further development of this instrument. Educational and supportive programs should be developed specifically for fathers. Another avenue for examination would be a study design consisting of a pre-test, education module, and post-test evaluation of the fathers' breastfeeding support self-efficacy scores, which may allow for the development of better breastfeeding education and research.

While it is only one piece of a complex sociobiological puzzle, the results from this study help to provide a better understanding of the role of support self-efficacy in the breastfeeding decision-making process. While infant feeding decisions are complicated, sometimes polarizing and political, one would be remiss to overlook the role of fathers in decision-making. As suggested by Bandura's (1998) health decision-making self-efficacy research, increased paternal breastfeeding support self-efficacy was positive correlated with mothers' increased breastfeeding initiation rates. The results from this study indicate that fathers also have strong and diverse views on breastfeeding, and that they do have influence – directly or indirectly – on decisions about breastfeeding. Men do care about breastfeeding, and they are either supportive or discouraging. Fathers play a vital role in the lives of their children, and this role likely begins during the pregnancy and includes decisions about infant feeding.

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APPENDICES

APPENDIX A

INSTITUTIONAL REVIEW BOARD APPROVAL



NOTICE OF APPROVAL

May 25, 2011

Sunny A. Carlisle
105 Kastlekov Drive
Lewis Center, Ohio 43035

From: Sharon McWhorter, IRB Administrator *SM*

Re: IRB Number 20110509 "Fathers and Breastfeeding: The Role of Paternal Breastfeeding Support
Self-Efficacy in Breastfeeding Initiation"

Thank you for submitting your Exemption Request for the referenced study. Your request was approved on May 25, 2011. The protocol represents minimal risk to subjects and matches the following federal category for exemption:

- ☐ **Exemption 1** – Research conducted in established or commonly accepted educational settings, involving normal educational practices.
- ☒ **Exemption 2** – Research involving the use of educational tests, survey procedures, interview procedures, or observation of public behavior.
- ☐ **Exemption 3** – Research involving the use of educational tests, survey procedures, interview procedures, or observation of public behavior not exempt under category 2, but subjects are elected or appointed public officials or candidates for public office.
- ☐ **Exemption 4** – Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens.
- ☐ **Exemption 5** – Research and demonstration projects conducted by or subject to the approval of department or agency heads, and which are designed to study, evaluate, or otherwise examine public programs or benefits.
- ☐ **Exemption 6** – Taste and food quality evaluation and consumer acceptance studies.

Annual continuation applications are not required for exempt projects. If you make changes to the study's design or procedures that increase the risk to subjects or include activities that do not fall within the approved exemption category, please contact me to discuss whether or not a new application must be submitted. Any such changes or modifications must be reviewed and approved by the IRB prior to implementation.

Please retain this letter for your files. This office will hold your exemption application for a period of three years from the approval date. If you wish to continue this protocol beyond this period, you will need to submit another Exemption Request. If the research is being conducted for a master's thesis or doctoral dissertation, the student must file a copy of this letter with the thesis or dissertation.

Cc: Pamela A. Schulze - Advisor
Cc: Stephanie Woods – IRB Chair

☐ Approved consent form/s enclosed

Office of Research Services and Sponsored Programs
Akron, OH 44325-2102
330-972-7666 • 330-972-6281 Fax

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APENDIX B

SURVEY INSTRUMENT

Age _____

Ethnicity (check one)

Caucasian African-American Hispanic Asian Other

Marital Status (check one)

Single Married Separated Divorced Cohabiting

Highest education level completed (check one)

High School Some college College Some graduate school

Graduate/professional school

Did you attend a breastfeeding class? Yes No

Did your partner breastfeed? Yes No

How long did your partner breastfeed? (check one)

<6 weeks 6wks-3mo 4mo-6mo >6mo

Did she breastfeed exclusively (nothing other than breastmilk was given) for some period?

If yes, for how long did she breastfeed exclusively? (check one)

>6mo

No

Partner Self-Efficacy Scale Questions

Please respond to the following statements where 1 = strongly disagree and 5 = strongly agree

1 2 3 4 5

I can make time to support my breastfeeding partner even when I feel busy.

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

I can support my breastfeeding partner when breastfeeding causes her mild discomfort.

1 2 3 4 5

1 2 3 4 5

1 2 3 4 5

I can find what we need to know in order for my partner to breastfeed our baby.

1 2 3 4 5

I can find information about problems that my partner may have while breastfeeding.

1 2 3 4 5

I know who to ask if I or my partner have any questions about breastfeeding

1 2 3 4 5

I can call a lactation counselor if my partner has problems with breastfeeding.

1 2 3 4 5

I can talk with my partner's health care provider if I have concerns about her
breastfeeding .

1 2 3 4 5

I can support my partner's breastfeeding while family and friends are present.

1 2 3 4 5

I can support my partner's breastfeeding in public.

1 2 3 4 5

I am comfortable with my partner breastfeeding in my presence.

1 2 3 4 5

I can support my partner's breastfeeding without feeling embarrassed.

1 2 3 4 5

I support my partner's breastfeeding even if she does not want to breastfeed.

1 2 3 4 5

I can support my breastfeeding partner even if our family does not want her to
breastfeed.

1 2 3 4 5

I can talk to my partner about the importance of breastfeeding our baby.

1 2 3 4 5

I can support my partner's breastfeeding for at least one year.

1 2 3 4 5