AN ABSTRACT OF THE THESIS OF

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Abstract approved:

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Donna Champeau

Background: Breastfeeding has many benefits but many new mothers find difficulties when trying to breastfeed. This is a program evaluation of Baby Connection a feeding program for the first year. Baby Connection is a volunteer program in Lane County, Oregon. **Methods**: Records were analyzed during the first 15 months of Baby Connection. Microsoft Excel was used to analyze data. There were 224 families that brought their babies to Baby Connection with 228 babies weighed. There were two sets of twins. Of the 224 visits, 119 families came one time, 56 families visited 2-4 times, 29 families visited 5-9 times, 6 families visited 9-12 times and 14 families visited 13 or more times with 100 percent responses. Surveys (16) were sent to emails provided by mothers who had filled out slips to be part of further research, 5 surveys were returned. Surveys were handed out during Baby Connection on two separate days with a total of ten returned; for a total of 15 surveys. Two focus groups were also held and staff was interviewed via email. **Results**: At two weeks the average exclusively breastfed infant weighed 2.2 ounces less than the exclusively formula fed infant. The infant who was breastfed and formula fed weighed almost exactly 1 pound and .05 ounces less than an exclusively breast fed infant. At six weeks of age the average exclusively breastfed infant weighed 10 pounds and 4.4 ounces the same as the exclusively formula fed infant; while the infant fed both breastmilk and formula weighed 8.7 ounces less. At twelve weeks of age the exclusively breastfed infant

weighed 13 pounds and 2.3 ounces while the exclusively formula fed infant weighed 12 pounds and 5.3 ounces and the infant fed both weighs 12 pounds and 2.1 ounces. Themes were identified by both staff and mothers. **Conclusion**: Helping new mothers and less educated mothers to identify challenging situation and provide them with solutions to encourage exclusive breastfeeding and help them transition into their new role as a mother in the community can only benefit upcoming generations and our current community in Lane County, Oregon.

Baby Connection an Evaluation of a Feeding Program

By

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I understand that my project will become part of the permanent collection of Oregon State University, University Honors College. My signature below authorizes relaease of my project to any reader upon request.

Shawn D. Pattee, Author

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Baby Connection

In Lane County, Oregon a nonprofit community organization called Birth to Three has been improving the community parenting skills through education and community support for thirty years. Within Birth to Three, some volunteer RNs and an RN/ International Board Certified Lactation Consultant (IBLC) created Baby Connection (not affiliated with Birth to Three) to address the high infant mortality rate in Lane County. In 2007 the total births of Lane County were 3,776, of those births 66.7 of 1,000 births were low birth rate (DHS, 2008). Baby Connection has been serving the community for the last two years on Wednesday mornings. They hold a breastfeeding discussion group at 10 a.m. and from 11-12 a.m. mothers can come and sign up for their babies to be weighed and or have their feeding questions and concerns addressed by experienced feeding specialists. Breastfeeding difficulties can also be addressed by the lactation consultant; however they often refer to lactation consultant within the community for issues such as difficultly latching on. New mothers and even experienced mothers can experience breastfeeding difficulties such as latching on, milk supply, foremilk/hind milk problems, and the ongoing changes of feeding babies the first year. These mothers learn about Baby Connection through discharge paper work from the local hospitals and mothers who are targeted for being at risk for abuse and neglect, and first time mothers are directed from Healthy Start; a community program that helps new mothers transition into their new role to Baby Connection for ongoing community support.

Baby Connection Overview

"Less than one-third of infants are exclusively breastfeeding at 3 months of age and almost 80% of infants in the United States stop breastfeeding before the recommended minimum of one year" (Galson, 2009, p. 357). What is a new mother who wants to nurse to do? Go to a dirty

restroom and sit on a toilet or stand in a corner for twenty or thirty minutes and feed her child? Due to these unaddressed issues in Lane County Baby Connection promotes healthy infant feeding practices, with a focus on recommended practices such as exclusive breastfeeding and support for new mothers wanting to breastfeed. Baby Connection focuses on a specific population in Lane County, Oregon, which is very vulnerable. It can be very difficult to make the adjustment of her new role of motherhood, especially for young mothers and uneducated women with little or no social support that may not be able to navigate the healthcare system. In addition to supporting new mothers; Baby Connection will provide follow up care between doctor visits to help the new mother transition into the community and to eventually build self efficacy and learn to seek out information. This is done through registered nurses (feeding specialists) who weigh and answer questions and help support the new mother in the community by helping new mothers adjust to their new role and the social situations of breastfeeding and caring for their newborn. By weighing their babies new mothers can be reassured that they are doing a good job (evidenced by weight gain) and that their babies are gaining weight between doctor visits. Lactation Consultants are able promote exclusive breastfeeding and address issues such as latching on, difficulties of decreasing milk due to lack of knowledge and the current hospital practices of feeding newborns formula prior to leaving the hospital which can promote problems such as nipple confusion and harm a mothers incoming milk supply. In Lane County, Oregon, local hospitals are including information regarding Baby Connection in discharge paper work to target new mothers and provide additional support for new mothers. However the program is open to any mother regardless of education, age, and socioeconomic status. In addition, Baby Connection can provide other sources of information such as parenting classes, child development education (e.g. changes the baby will go through as he/she grows), and other

community information mothers may not know about. Upon arrival at Baby Connection, mothers fill out a simple questionnaire that acts as intake paperwork, with questions the mother responds to in regards to mental health, birth weight, any last known weights and any concerns the mother may currently have regarding her baby and feeding for any stage. The mother then indicates if she just wants her baby weighed or if she has questions or concerns regarding her baby. She will then see one of the four feeding specialists or she will see the lactation consultant. When the baby is weighed the nurses record the weight on a nursing chart along with any subjects discussed and nursing comments. If the mother returns again at anytime the nurse can follow up and a history is created for the baby. After their baby is weighed mothers get a certificate signed by the feeding specialist of what her baby weighed that week and she can scrapbook it afterwards if she likes. While waiting mothers get to socialize with other mothers (some fathers come too) share the experience of having and taking care of their baby, problems/difficulties there may be having, and openly nurse their babies in the atrium of Birth to Three. Topics often discussed are when their babies started doing certain behaviors or actions, hand/electric pumps to help with breastfeeding, their birth experience, siblings and the introduction of a new baby to an already existing family even if it's the dog.

Theories

The two theories to be implemented into Baby Connection are the health belief model (HBM) and the health action process approach (HAPA). The HBM model is a value expectancy theory; and it is the most frequently used in health behavior applications. This model hypothesizes that a health related action is dependent on the occurrence of three classes of factors. First there needs to be sufficient motivation to make the health behavior salient or relevant. This motivation is newborn's weight gain, the self efficacy to take care of her newborn

and the ability to handle new situations. Second there also has to be the belief that one is vulnerable to the health problem and sees it as a perceived threat. The mother must learn and understand the risks of not breastfeeding her baby for herself and her newborn. And finally, the mother must believe that the health recommendation would be beneficial in reducing the perceived threat at an acceptable level of discomfort from the perceived barriers. This is when the mother understands the benefits of breastfeeding for herself and her newborn. “The model postulates that the following four conditions both explain and predict a health-related behavior: A person believes that his or her health is in jeopardy. For the behavior of seeking a screening test or examination for an asymptomatic disease such as tuberculosis, hypertension, or early cancer, the person must believe that he or she can have the disease yet not feel symptoms. This constellation of beliefs was later referred to generally as "belief in susceptibility." The person perceives the "potential seriousness" of the condition in terms of pain or discomfort, time lost from work, economic difficulties, or other outcomes. On assessing the circumstances, the person believes that benefits stemming from the recommended behavior outweigh the costs and inconvenience and that they are indeed possible and within his or her grasp. Note that this set of beliefs is not equivalent to actual rewards and barriers (reinforcing factors). In the health belief model, these are "perceived" or "anticipated" benefits and costs (predisposing factors). The person receives a "cue to action" or a precipitating force that makes the person feel the need to take action” (Health Belief Model, 2002).

The second theory is the HAPA model. This is a stage model that can be applied to all health-comprising and health-enhancing behaviors.

> “The Health Action Process Approach (HAPA) suggests that the adoption, initiation, and maintenance of health behaviors must be explicitly conceived as a process that consists of at least a motivation phase and a volition phase. The latter might be further subdivided

> into a planning phase, action phase, and maintenance phase. It is claimed that ***perceived self-efficacy*** plays a crucial role at all stages along with other cognitions. For example, ***risk perceptions*** serve predominantly to set the stage for a contemplation process early in the motivation phase but do not extend beyond. Similarly, ***outcome expectancies*** are chiefly important in the motivation phase when individuals balance the pros and cons of certain consequences of behaviors, but they lose their predictive power after a personal decision has been made. However, if one does not believe in one's capability to perform a desired action, one will fail to adopt, initiate and maintain it" (Schwazer, 2010).

This model provides a description of the behavior change over time in two distinct phases. The first phase is the motivation to change and self regulatory processes. This happens in five stages. They are intention, planning, initiative, maintenance, and recovery. This is where self regulation actually leads to the actual health behavior change. This begins when new mothers become aware of the risks of not breastfeeding their newborns and understands the potential consequences and benefits of breastfeeding to her health and her newborns health. This is the outcome expectation and it is the most influential belief to be the motivation to change. While expecting certain results from a behavior change, the new mother must believe that she is capable of engaging in that behavior change. This is the perceived self efficacy, and is important when approaching difficult situations. If a new mother can perceive self efficacy and understand the risks of not changing through outcome expectations then with intention, planning, and initiative and maintenance the new behavior will become easier and permanent. Using the HBM model and the use of the HAPA model gives a solid framework to the implementation of the Baby Connection in Lane County, Oregon.

Health Benefits

There are many benefits for both the mother and child from breastfeeding both immediate and long term. Some of the immediate benefits for the baby are an increased resistance to

infections, earlier development of the infant immune system, a decreased risk of ear infections, a decreased risk of diarrhea, a decreased risk of Sudden Infant Death Syndrome, and less likely to be hospitalized secondary to a serious illness. The long term health benefits for breastfed babies is a decreased risk of childhood obesity, reducing the risk of some chronic diseases that develop during childhood (juvenile diabetes, childhood cancers, allergies and asthma). There is also an enhanced neurological development that may result in higher IQ's, and lastly the suckling promotes good jaw development and encourages the growth of straight healthy teeth (CDC, 2009). The mother also receives immediate benefits from breastfeeding her child. Her uterus returns to its normal size quicker and the mother has reduced blood loss. Exclusive breastfeeding delays the return of fertility in most women resulting in an increase in birth spacing, and breastfeeding reduces the need for insulin in diabetic mothers (CDC, 2009). Psychological benefits of breastfeeding are increased self confidence and enhanced bonding with her child, and it helps the mother get needed rest by requiring that she sit or lie down with the baby every few hours to feed (Weimer, 2001). The long term benefits for the mother who breastfeeds are a return to pre-pregnancy weight with no return of weight once weaning has occurred. There is also a reduced risk of breast, ovarian, and endometrial cancers and a reduced risk of osteoporosis and bone fractures (CDC, 2009).

"For the healthy, full term baby, breast milk is the only food necessary until the baby shows signs of needing solids, about the middle of the first year after birth" (Le Leche League (LLL), 2008-2009). Almost all children in the United States were breastfed up until 1950; then the trend became formula feeding due to marketing, manufacturing and changing social trends of women going to work rather than staying home. In the last fifty years with the current hospital practices and lack of breastfeeding knowledge, and the increase of working mothers there has been a

decrease in breastfeeding. Breastfeeding and working are believed to be incompatible. A breastfeeding mother must have a time and place to nurse her baby or express and store her milk for bottle feeding (Weimer, 2001). “Many workplaces seem not to support breastfeeding or extraction of breast milk in the workplace, inhibiting breastfeeding after women return to work” (Weimer, 2001). According to the Centers for Disease Control (CDC), “Breastfeeding rates have improved since 1999, but fall short of Healthy People 2010 objectives regarding duration and exclusivity” (CDC, 2009). The objectives of Healthy People 2010 is 40% of mothers exclusively breastfeeding at three months and 17% exclusively breastfeeding at six months (United States Breastfeeding Committee (USBC), 2008). In 2006, 74% of mothers initiated breastfeeding, with 43% still breastfeeding at 6 months and 23% at 12 months of age. Of that same year approximately 33% of infants were exclusively breastfed through 3 months of age and 14% were exclusively breastfed for 6 months (CDC, 2009). Human milk meets the specific needs of human babies and changes as the child grows; offering the best combination of nutrients to meets the child’s needs. For the state of Oregon, the CDC’s Breastfeeding Report Card shows that 56.6% mothers were exclusively breastfeeding at three month of age. At 6 months of age in Oregon 20.8% of mothers are still exclusively breastfeeding (CDC, 2009).

Social and Economic Benefits

There are also social and economic benefits for families, employers, and health systems. “A minimum of $3.6 billion would be saved if breastfeeding were increased from current levels (64 percent in-hospital, 29 percent at 6 months) to those recommended by the U.S. Surgeon General (75 and 50 percent)” (Weimer, 2001). This figure is underestimated of the total savings; it represents cost savings of treatments of only three childhood illnesses: otitis media, gastroenteritis, and necrotizing enterocolitis (Weimer, 2001). Families save several hundred

dollars breastfeeding when compared to artificial formula. Employers benefit with less absenteeism and sick day for the care of their children when sick. There are reduced health care costs since breast fed babies usually require fewer sick care visits, prescriptions, and hospitalizations. Breast milk is convenient because breast milk is always available at the right temperature, and requires no mixing (Weimer, 2001).

Many new mothers want to breastfeed but the current society in the United States does not support nursing mothers. A survey taken by the CDC finds that in 2007 35.8% of people felt that nursing mothers should do so in private. However, 52.0% of people feel nursing mothers have the right to breastfeed in public that is a large portion of the population that does not support nursing mothers feeding their children in public, yet no lactation rooms are provided in most malls, schools, community building, churches or workplaces (CDC Breastfeeding Data, 2009). "Despite recent progress, gaps still persist between current breastfeeding practices and national breastfeeding objectives" (Galson, 2009, p. 357). Women who are new mothers with low socioeconomic status and less educated tend to wean earlier then women of higher socioeconomic status. "Compared with white children, breastfeeding rates are about 50% lower among black children at birth, 6 months of age, and 12 months of age, regardless of family income or educational status" (Galson, 2009, p. 357).

Even with all these benefits for mother and baby, many women who choose to breastfeed still face obstacles within the community and negative reactions socially. There is legislation protecting breastfeeding in public and there are laws mandating support for breastfeeding mothers who return to work. Majority of states have some kind of legislation regarding these

issues to protect the basic human rights of mothers who choose to breastfeed (CDC Breastfeeding Data, 2009).

Current Breastfeeding programs

La Leche League

There are some programs to educate and support mothers who choose to breastfeed, preferably exclusive breastfeeding. The most well known and oldest breastfeeding program is the La Leche League (LLL), established by seven women in a living room 1956, wanting to promote the art of breastfeeding. It is now an international with 25 organizations in Oregon, with local meetings in Eugene, Oregon. During meetings discussion topics include the benefits of breastfeeding, the birth of your baby and the first few weeks, the "how to's" of breastfeeding, needs as your baby grows, and nutrition to name a few. LLL mission is to help mothers' worldwide to breastfeed through mother to mother support, encouragement, information, education, and to promote a better understanding of breastfeeding as an important element in the health and development of the baby and mother relationship (LLL, 2008-2009). There philosophy is that breastfeeding is the most optimal way of feeding your baby, it is important for mother and baby to bond early and establish a satisfying relationship and an adequate milk supply which needs to be utilized early to breastfeed adequately. In the early years the baby has an intense need to be with his mother which is as basic as his need for food and breast milk is the superior infant food. The fathers are encouraged to support the mother so she can fully tend their new baby in a mothering way (LLL, 2008-2009). LLL does not have any goals, only their philosophy and mission and meetings.

California State

The state of California has also implemented a breastfeeding program. They found 43% of California newborns were exclusively breastfed in the early postpartum period. They found that few hospitals had effective policies that promoted and protected breastfeeding, and that few health care professionals had received training or kept current regarding the science of lactation. They also found that communities in California had few places that supported nursing mothers. "Due to the lack of social and professional support, mothers have little confidence and fear attempting to breastfeed" (California Department of Public Health (CDPH), 2009). Their goal is for breastfeeding to be the community "norm" in California for at least the first year of life so that all infants have a chance for optimal growth and development and mothers and their infants are protected from the many diseases now linked with not breastfeeding (CDPH, 2009). The program activities include expanding resources available to provide breastfeeding promotion, education and support through all Maternal, Child and Adolescent (MCAH) Branch programs. By promoting the development of healthcare policies, training, and guidelines to all programs; health care providers and hospitals can support breastfeeding families, and in collaboration with the WIC program, and to promote the increase the level of community knowledge about breastfeeding utilizing the home visitor and peer education models. "Breastfeeding mothers are eligible to participate in WIC longer than non-breastfeeding mothers" (WIC, 2005). Other activities include engaging experts while using breastfeeding epidemiological information obtained from the Newborn Screening Form to maintain a breastfeeding webpage with current evidence based up to date information while collaborating with Medi-Cal and its managed care plans to improve access to equipment and support for the breastfeeding mother and baby (CDPH,

2009). This program is much more structured than the LLL by also addressing the public institutions to provide support for breastfeeding mothers.

Breastfeeding Taskforce of Greater Los Angeles

In Los Angeles, a Breastfeeding Task Force of Greater Los Angeles has been established. Originally formed in 1994 by volunteers, its mission is to improve the health and well being of infants and families through education, outreach, and advocacy to promote and support breastfeeding in the greater LA area. There goals and objectives are to facilitate the acceptance of breastfeeding, create a supportive public environment for breastfeeding, and capacitate the healthcare system to effectively support exclusive breastfeeding while establishing themselves as a trusted and reliable place for information and resources. On their webpage they have a section on how to get involved and support breastfeeding and list their network of people and fellow organizations (Breastfeeding Task Force of Greater Los Angeles, 2009). This program is much more organized on a community level.

Each of these programs has the same common thread to create a supportive community for breastfeeding and to help support and educate the breastfeeding mother and family. LLL is a mother to mother organization and holds meetings and free classes for their members. The state of California has implemented reform that includes breastfeeding and is trying to promote its practice in Californian hospitals immediately from birth and they are now trying to promote exclusive breastfeeding. The LA based task force is community based and oriented to and promotes education and support with information and resources within the community.

Methods

Process evaluation: The first 15 months of records were evaluated on Microsoft Excel spreadsheet to record the data and analyze it. I interviewed staff (lactation consults and registered nurses) informally to get feedback to better serve participants and make for a better program. Program participants were also interviewed through informal focus groups and use of a survey handed out to provide feedback to improve this evaluation and to use the same information to better serve, encourage and inform new mothers. **Evaluation design**: Is non experimental due ethical considerations. Baby Connection is educating the participants and giving them skills to implement exclusive breastfeeding into their daily activities and help them to transition into motherhood. **Instrumentation**: Pre-test through intake documentation, post-test through paper survey documentation, staff interviews via email, and focus groups.

To record the weights of babies in pounds and ounces were the written weights from the documentation that they had been using were converted to ounces and then the results were reconverted afterwards into pounds and ounces. The birth weights of the babies seen at Baby Connection (with 100 percent responses) were categorized in ranges. They are less than 6 pounds 5 ounces were 42 babies adjusted 18.8% of babies seen and weighed. Babies weighing between 6 pounds 6 ounces and 7 pounds and 5 ounces were 68 babies adjusted of 30.5%. Babies weighing between 7 pounds 6 ounces and 8 pounds 5 ounces were 72 babies and adjusted 32.3%. Babies weighing between 8 pounds 6 ounces and 9 pounds 5 ounces were 28 babies and adjusted 12.6%. Babies weighing between 9 pounds 6 ounces and 10 pounds and 5 ounces were 11 babies and adjusted 4.9%. Babies weighing greater than 10 pounds 6 ounces were 2 babies and adjusted .9%.

To obtain the quantitative data the documentation varied throughout the first 15 months in style, the same questions were asked and information recorded but not always in the same spot, or with the same room. As time passed it improved however some records were difficult to find the information and read. To make this evaluation consistent weights and current feeding practice were recorded onto the excel program only at two weeks, six weeks, twelve weeks, and sixteen weeks. Since some mothers came every week and other only came in one time and not within a timeframe (age by week) it was included; otherwise it was left blank and considered a no response.

To obtain qualitative data 16 surveys were sent to emails provided by mothers who had filled out slips to be part of further research, 5 surveys were returned. Surveys were handed out during Baby Connection on two separate days with a total of ten returned; for a total of 15 surveys. The average age of the mothers who participated in the survey was 27.8 years old from varied socioeconomic backgrounds. To help obtain more qualitative data in regards to what Baby Connection offers mothers that they do not get from other community services two focus groups were held. The same questions were asked as on the survey with possibly a little more prompting to get more information. The first focus group had seven mothers with their babies and the second focus group had three mothers with their babies. Both the focus groups were tape recorded and listened back to identify recurring themes then compared to the paper survey responses. I also sent out a small questionnaire to the four feeding specialist and the two RN, IBLC with one response back.

Limitations

The limitations of this program evaluation include a very small particiapant group. Weekly participation ranges from three or four mothers per week in the beginning to twenty eight to thirty eight women after two years of community involvement. Other limitations are non comprehensive documentation, inability to contact mothers due to no contact information, the sporadic participation of mothers reflected by high percentages of no response in evaluation of records. Difficulties in obtaining qualitative information from mothers due to logistics of motherhood (sleep deprivation, crying babies, nursing/preoccupied mothers, background noise making focus groups more difficult, varying socioeconomic backgrounds) and the volunteer status of the registered nurses running the program.

Results

Quantitative data

Records were analyzed for the first 15 months of Baby Connection through an Excel program. There were 224 families that brought their babies to Baby Connection with 228 babies weighed due to two sets of twins. Of the 224 visits, 119 families came one time, 56 families visited 2-4 times, 29 families visited 5-9 times, 6 families visited 9-12 times and 14 families visited 13 or more times with 100 percent responses.

At two weeks, there were 98 no responses of 228 babies seen, 43.0% no response. Of the responses 87 mothers were exclusively breastfeeding with an average weight of 8 pounds 3.9 ounces. After adjusting for the no responses this was 66.9% of the total. Exclusively formula fed babies were 4, with an average weight of 8 pounds and 6.1 ounces. After adjustment for no responses this was 3.1% of mothers. At two weeks 39 mothers were feeding both formula and

breastfeeding their babies with an average weight of 7 pounds and 3.4 ounces. After adjustment this was 30.0% of the mothers.

At six weeks there were 122 no responses of the 228 babies seen, 53.5% no response. Of the mothers still exclusively breastfeeding, 66, with an average weight of 10 pounds and 4.4 ounces, 62.3% of the respondents'. Of the exclusively formula fed babies were 6, with an average weight of 10 pounds and 4.4 ounces. After adjustment this was 5.7% of mothers. Of the 34 mothers who were both breastfeeding and formula feeding at six weeks had an average weight of 9 pounds and 5.7 ounces an adjustment of 32.1% of mothers.

At twelve weeks there was 129 no responses of the 228 babies seen, 74.1% did not provide this information. Of the mothers still exclusively breastfeeding 34 mothers were with an average weight of 13 pounds and 2.3 ounces an adjusted 57.6% of the respondents'. Exclusively formula feeding mothers were 3 with an average weight of 12 pounds and 5.3 ounces an adjusted 5.1% of mothers. Of the mothers who were both breastfeeding and formula feeding were 22 with an average weight of 12 pounds and 2.1 ounces; a rate of 37.3% of mothers.

At sixteen weeks there were 180 no responses of the 228 babies seen. A rate of 78.9% no response. Of the mothers still exclusively breastfeeding, 32 mothers were with an average weight of 14 pounds and 2.2 ounces an adjusted 66.7%. Of the mothers exclusively formula feeding, 3 were an adjusted rate of 6.3% with an average of 10 pounds and 8.8 ounces. Of the mothers still both breastfeeding and formula feeding were 13 an adjusted rate of 27.1%; with an average weight of 13 pounds and 6.0 ounces.

Qualitative data

Themes identified while obtaining qualitative data were "….being comfortable to nurse their and being able to talk with other moms and share experiences." "Feels like a safe place" "…helped me introduce solid foods and what to try. "Has given me lots of reassurance as a new mother" "Weights are very helpful; it's good to know how much she gains."

"…It is someplace to go to get away a few hours a week; and you can talk to someone other than your baby. It is like you feel your IQ dropping."

> "There can be a long time between your well baby check up and your next check up with your pediatrician. You can call and ask questions of your pediatrician but they are so busy. The hospital can't take the time it requires to help you learn the skills you need. I didn't even know what I was doing enough to have questions yet. Lots of things can change between week one and week three."

> "Here they can answer your questions and you feel supported. And it is great to talk with other moms and here their experiences. I have made a couple of friends from here and we hang out with our babies at the park and our families (husbands) have even gotten together. It has made the whole experience (being a mother) way better."

> "Hospitals have certain guidelines they have to follow and it doesn't always coincide with your wishes for your baby and yourself, at times. It can be very intimidating and rushed."

The story of K.W.

This is an exception not the rule but it is an example of mothers who can fall through the cracks of our current healthcare system. She did everything right as a mother. She came to Baby Connection 11 days after birth of her baby with almost 10% weight loss. She had been a mother prior so many healthcare professionals just assumed she would have no problems while she was in the hospital. By day 14 her baby should be back up to birth weight. Baby Connection urged her to call her doctor, and she had an appointment for the following Monday. It was Wednesday and she had not been seen by any doctor, no advice, and no assessment due to scheduling of appointments. She had fallen through the cracks of the 24-72 hour assessment after birth. She came to Baby Connection due to feeding difficulties and Baby Connection further urged her to be seen sooner due to weight and feeding difficulties. She then called again with some "key words" (red flags for the receptionist at the doctors' office) from Baby Connection and got an appointment to be seen sooner by her doctor. The babies feeding difficulties and weight gain were addressed and the baby is doing well now.

After a small questionnaire was sent out to the staff of Baby Connection via email, this was the themes the staff identified. "I think moms who come regularly to Baby Connection gain confidence overtime. They get reassurance from peers as well as feeding specialists and positive weight gain in their baby is a great confidence builder."

"That most new moms have questions and concerns around feeding issues. We are not a society where breastfeeding is seen as the norm for every new baby."

Discussion

There are many benefits to breastfeeding including social and economic for mothers and their families. But there are problems encountered that if not addressed can hinder mother's breastfeeding and hinder them to breastfeed throughout the recommended first year of life. Problems encountered early on are often latching problems, nipple confusion, and establishment of a mother's milk supply. Often after a mother has good milk supply established, some mothers encounter foremilk/hind milk issues (also known as overactive letdown, OALD), mastitis (commonly known as breast infection), and anxiety and depression within the first year. Other issues are that Baby Connection addresses are safe sleeping, changing feeding patterns, starting solids, working and breastfeeding, gassy/fussiness, Candida, and growth spurts.

Often many mothers encounter situations where the baby seems unable or unwilling to latch on and breastfeed or falls asleep just after latching on as if the comfort of the breast and mothers smell lures the baby to sleep immediately after latching on. Some babies are reluctant to breastfeed and even resist the breast. Often the mother is in her own sleep deprived/hormonal changing state trying to take care of her newborn infant. The mother may feel that she is not a good mother or that her baby may not like to breastfeed. A mother may even feel selfish by continuing to try and breastfeed. Waiting to see if the infant latches on and feeds is okay the first 12 to 24 hours but after that the infant feeding needs to be resolved whether it is formula, finger feeding from the breast or pumping.

Latching problems or the inability to stay latched on can be addressed by a lactation consultant and is a skill many mothers must learn. There is also a problem of some babies getting

nipple confusion. Often these babies have been introduced to the breast and bottle and are confused as to how to get the milk since each requires different oral-motor skill sets of the baby sucking; often these babies eat less and are fussy. To help alleviate possible nipple confusion and reinforcement of breastfeeding the Academy of Pediatrics recommends, “For breastfed infants, delay pacifier introduction until 1 month of age to ensure that breastfeeding is firmly established” (Academy of Pediatrics, 2005). It can be difficult for new mothers to learn tricks to help the baby nurse. In the past these tricks were passed on between women but current cultural practices have decreased the knowledge of breastfeeding. Often the mother’s milk supply can be compromised as early as the hospital due to current health care practices.

“Milk supply is optimized when a healthy baby is allowed to nurse as often as he indicates the need. The milk-ejection reflex operates most strongly in the presence of a good supply of milk, which normally occurs when feeding on baby’s cue” (Marasco, 1998, p. 21). Research has shown that when a mother begins breastfeeding early and averages 9.9 times a day in the first two weeks her milk supply is greater. Milk supply declines when feeding are infrequent or restricted. The most common problems of poor milk supply are infrequent feeding, poor latch on/position, and suckling problems of the infant. Growth spurts and illness can temporarily change babies feeding patterns which can wreak havoc on a mother’s milk supply if she starts to take actions to “wean” her baby intentionally or not. Physiologically human babies are designed to feed often due to the smaller size of the protein molecules in human milk. Babies gastric emptying is 1.5 hours versus up to 4 hours of the formula fed baby (Marasco, 1998).

Overactive let down and foremilk/hindmilk problems can also create problems for the mother and the baby. Overactive letdown makes it difficult for babies to nurse due to the flood of

milk from full breasts; and can be uncomfortable for the mother with overfull breasts. For an exclusively breastfed baby higher than normal weight gain is good as long as the baby is happy and feeds easily. However some babies do not get enough milk due difficulties in handling the strong flow of milk and may need supplemental feedings of expressed milk until the mother's milk supply can be adjusted. Often signs of over milk supply is baby cries a lot, baby may gulp or sputter, bite or "clamp" the nipple, sore nipples, arching or holding him/herself stiffly, short feedings, a "love-hate" relationship with the breast, burping or passing of gas more frequently, frequent plugged ducts that can lead to mastitis. Foremilk is high in lactose, which is normal and necessary but can make a baby feel gassy and uncomfortable with green, watery or foamy stools. At times this can be misdiagnosed as a food allergy. It is also the thinner milk the baby gets first which is lower in fat. The hindmilk is the high fat, creamier milk that follows. The milk is the same but the fat content is dependent on how long the milk has been sitting in the ducts and how much of the breast gets drained. Normally the mixture of the two is perfect, the foremilk quenches the babies thirst and the hindmilk fills the baby up but if the supply is too much the baby may fill up in foremilk and get no hindmilk which results in gassiness and fussiness (West, 2009).

Another important area related to feeding babies is safe sleeping habits of mother and baby. "Physiologic sleep studies of infants' demonstrate that breastfed infants are more easily arousable than their formula-fed counterparts during sleep, which may explain a possible protective effect against SIDS" (American Academy of Pediatrics, 2005). Closely related to safe sleeping habits is the presence of anxiety and depression. These feelings are common among mothers and Baby Connection also hands out pamphlets to help inform mothers of possible feelings they may encounter and sources to WellMama, a not for profit organization. WellMama

helps mothers to identify their feelings and gives mothers resources to help them with their many feelings they may encounter and the highs and lows of motherhood. Often dealing with feelings of anxiety and depression is easier early on rather than later and it can impede the bond between a mother and her baby.

Conclusion

There are many benefits to breastfeeding for both the mother and the baby long and short term. Economically families save money and the health care system and workforce are less taxed due to healthier children in the upcoming years of childhood. Since breastfeeding has become a lost art and is not an activity that is community friendly; many women need help and encouragement to learn how to breastfeed, what to do when the baby won't latch on and what their options are if they get sore nipples or an infection while breastfeeding.

Quantitative results found in this program evaluation were at two weeks the average exclusively breastfed infant weighed 2.2 ounces less than the exclusively formula fed infant. The infant who was breastfed and formula fed weighed almost exactly 1 pound and .05 ounces less than an exclusively breast fed infant. At two weeks mismanagement of the mother's milk supply can be an issue. At six weeks of age a mother's milk supply should be adequate and possible nipple confusion may have contributed to lower weights of the infants fed both breastmilk and formula. However at twelve weeks of age the exclusively breastfed infant weighs 13 pounds and 2.3 ounces while the exclusively formula fed infant weighs 12 pounds and 5.3 ounces and the infant fed both weighs 12 pounds and 2.1 ounces. By 16 weeks the exclusively breast fed infant weighed 14 pounds and 2.2 ounces, the exclusively formula fed infant weighs 10 pounds and 8.8

ounces, while the infants fed both formula and breast milk weighed 13 pounds and 6.0 ounces. The results at 16 weeks may not be fully accurate due to the 78.6% of no response.

Qualitative results were common themes identified by mothers and how they felt Baby Connection supported them in ways that mothers may not be supported in the current community and by current hospital practices. “Social approval has been shown to help sustain breastfeeding, and this is reflected in the value women placed on reassurance and encouragement” (Graffy et al., 2005, p. 185). Reassurance that their experiences are considered normal also helps many women adjust to their new role.

Helping new mothers and less educated mothers to identify challenging situations and provide them with solutions to encourage exclusive breastfeeding and help them transition into their new role as a mother in the community can only benefit upcoming generations and our current community in Lane County, Oregon.

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