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Postpartum Breastfeeding Support: Promoting Infant Health

GLENDA GAGANTE
ggagante@yahoo.com

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Glenda Gagante

Doctor of Nursing Practice

University of Massachusetts, Amherst

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Abstract

Health experts agree that breastfeeding provides essential nutrients to infants for optimal health. But despite the known benefits, breastfeeding rates remain low in the United States. Several strategies, including postpartum follow up phone calls and breastfeeding support groups, have been identified to improve breastfeeding rates. The *problem* is that postpartum follow up phone calls have been lagging for up to 3 months post discharge. The *purpose* of this quality improvement project was to conduct the postpartum phone calls within 10 days post discharge and to determine if the intervention increased breastfeeding rates. Methods of data collection were (1) follow-up postpartum phone call and (2) satisfaction survey. *Results*. A total of 25 mothers responded to the postpartum phone call, with 88% feeling good after discharge. Breastfeeding rate at discharge was 76% and 84% were breastfeeding at the time of the call. Among the breastfeeding population, 19% of the participants had already consulted a lactation consultant post discharge while 9.5% requested a referral to a lactation consultant. *Discussion*. Postpartum follow up phone calls assessed the condition of the mother and infant post discharge, answered questions and concerns pertaining to self-care, infant care and breastfeeding. Problems associated with postpartum depression and breastfeeding, including sore nipples and difficult latch, were identified and appropriate referrals were made.

Problem Identification and Evidence

Breastfeeding impacts the health of the general population. Short term and long term health benefits for breastfeeding mothers and their infants are well documented. Despite all known benefits of breastfeeding, rates remain low globally and in the United States. Globally, less than 40 % of infants under the age of 6 months are exclusively breastfed. In the United States, national breastfeeding data reveals that 76.9% are ever breastfed, 47.2% are breastfeeding at six months, 25.5% are breastfeeding at 12 months, 36.9% are exclusively breastfeeding at three months and 16.3% are exclusively breastfeeding at 6 months (Centers for Disease Control, 2012). In 2012, Rhode Island, data reveals 73.7% are ever breastfed which is 3% higher than the year before; 46.8% are breastfeeding at 6 months, 8% more than the previous year; 26.7% are breastfeeding at twelve months, 7% more than the previous year; 34% are exclusively breastfeeding at 3 months, 1% more and 16.9% are exclusively breastfeeding at 6 months, 4% more than the year before (CDC, 2012). Although there has been an increase in the number of breastfed infants, rates are still short of the Healthy People 2020 breastfeeding targets.

In Newport County, Rhode Island, the majority of infants are born in the local community hospital and the newborns are seen by a group of local pediatricians. The Birthing Center of Newport Hospital has an average of 600 deliveries a year and is a baby-friendly institution implementing the 10 steps to successful breastfeeding. Breastfeeding rates at discharge in 2012 ranged from 53% to 80% with a mean of 68.7%. As a follow up, postpartum phone calls are made to all of those who delivered at the Birthing Center. The postpartum phone call is intended to assess the general condition of the mother and newborn as well as feeding status during the first few days after discharge, before the first visit to the pediatrician's office. Postpartum follow up calls have been lagging, as evidenced by delayed postpartum phone calls

up to 3 months post discharge, because there is no specific person at responsible for the follow phone calls. The Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN) recommends evaluation of breastfeeding infants 3-5 days post discharge and 48 hours after discharge if infants are discharged prior to 48 hours after delivery (AWHONN, 2007). Upon discharge from the birthing facility, the majority of newborns are followed up by pediatricians affiliated with Newport Hospital. There is inadequate data on feeding assessment during well infant visits at the pediatrician's office as evidenced by no structured feeding assessments during the first 6 months of well infant visits. Breastfeeding assessments are important to identify any breastfeeding challenges or problems that the mother-infant dyad may experience and allows for appropriate intervention or referral.

Review of Literature

Breastfeeding is the best and natural way of nurturing infants since the beginning of time. The breast milk contains the right amount of nutrients that the infant needs to grow healthy and strong. It also helps protect the infant from common childhood illnesses and infection, hence, the World Health Organization (WHO) and Centers for Disease Control (CDC) and the American Academy of Pediatrics (AAP) recommend exclusive breastfeeding up to 6 months of age and breastfeeding at least up to 1 year of age with complementary feeding (American Academy of Pediatrics, 2012). Breastfeeding rates remain low despite recommendations from experts. To address this concern, strategies to improve breastfeeding have been developed. Breastfeeding education and support are some of the strategies utilized to improve breastfeeding initiation and duration.

Although breastfeeding is natural, it is also a learned behavior. Many experts, caregivers and breastfeeding advocates are helping to initiate, support and sustain appropriate breastfeeding

practices. Maternity care practices influence breastfeeding initiation and later infant behavior (CDC, n.d.). Maternal experiences of breastfeeding during antenatal, intrapartum and postpartum affect the breastfeeding attitudes and practices. Breastfeeding assessment, teaching and support are continuous processes that occur during prenatal, labor, delivery, postpartum, home visits and clinic visits. Every moment in these encounters is a window of opportunity for mothers and health professionals to discuss breastfeeding.

The United States Preventive Services Task Force (USPSTF) recommends efforts in improving breastfeeding rates should focus on both pre and postnatal interventions. This recommendation is based upon systematic review findings of 25 randomized trials where interventions were made at some point during pregnancy, birth and infancy. The intervention group is found to be more likely to breastfeed exclusively than those who did not receive any intervention (Hill, 2009). In addition, Keister, Roberts & Werner (2008) state that successful breastfeeding involves education and support during the antenatal, intrapartum and postpartum period. Providing structured antenatal and postnatal education and support are the most effective means to breastfeeding success.

Family support and professional support for breastfeeding has a positive impact in breastfeeding initiation and duration. Breastfeeding support can start from the antenatal period to postpartum period and beyond. This can be given by a professional or a peer in the form of reassurance, praise or positive reinforcement, information, and the opportunity to discuss and to respond to a mother's questions. Breastfeeding education and support from lactation consultants and peer counselors shows a positive impact on initiation and continuation of breastfeeding (Imdad, Yakoob & Bhutta, 2011). A meta-analysis done in 10 countries found that professional support is beneficial for all breastfeeding women. Lay support is also effective in promoting

exclusive breastfeeding (Renfrew, McCormick, Wade, Quinn & Dowswell, 2012). A systematic review by Hannula, Kaunonen & Tarkka (2008) found that home visits by lactation consultants and professional support with combined access to peer support groups were effective postnatal breastfeeding interventions. The studies mentioned above agree that support affects maternal mood. Provision of consistent, relevant and useful advice with regards to breastfeeding is important (Hector & King, 2005). Also, providing consistent supportive messages may influence normative beliefs and facilitate breastfeeding initiation (Dodgson, Duckett, Garwick & Graham, 2002).

Mothers should learn to recognize infant's feeding cues such as rooting, lip smacking, sucking on fingers and putting hands to the mouth and offer the breast at this time. Late hunger cues such as fussing and crying makes latch more difficult (Walker, 2011). Help the mother recognize infant satisfaction and satiety cues that include gradual decrease in the number of sucks during feeding, pursed lips pulling ways from the breast and releasing the nipples, relaxed body, extended legs, absence of hunger cues, sleep and small amount of milk seen in the mouth. Mothers who perceive that their infants are satisfied with breastfeeding are more likely to breastfeed longer (Cooke, Sheehan & Schmied, 2003).

Breastfeeding infants should be evaluated and seen by a health care provider 3-5 days after discharge from the hospital or birth center. Weight loss, number of feedings in 24 hour period, number of wet diapers and jaundice should be assessed during this period. Lactogenesis is usually between 72-96 hours postpartum. Infant weight loss of greater than 10% may indicate suboptimal feeding or inadequate milk transfer (Walker, 2011). Mothers may experience common breastfeeding problems such as engorgement, sore nipples, plugged ducts and mastitis after discharge from the hospital. Education and support is important at this time. La Leche

League International (LLLI), a non-profit organization, provides information through their website and also provide telephone support and monthly meetings for breastfeeding mothers locally. It is important to follow through with education and support to breastfeeding mothers. In a study by Khresheh, Suhaimat, Jalamdeh & Barclay (2011), postnatal breastfeeding education and support programs significantly improved breastfeeding knowledge.

It is important that breastfeeding mothers know where to go, or whom to call if they have problems or questions with breastfeeding. Agostino (2012) found that providing structured telephone support decreases the risk of early weaning. It also helps mothers to overcome breastfeeding challenges. Availability of community resources is an important part of discharge instructions.

Conceptual Framework

Social support that includes family support, peer support and professional support plays a major role in breastfeeding behaviors. Researchers used social science theories to further explain the role of social support in increasing breastfeeding rates and duration.

Roger's Vulnerability Framework (1997) illustrates the vulnerable population, including personal and environmental components of vulnerability. Both components can be modifiable and non-modifiable. Non-modifiable personal components may include age, gender, race and genetic disposition to illness. Modifiable personal components may include life experiences, learned abilities and coping skills. Non-modifiable environmental components may include pollution and temperature. Modifiable environmental factors include marital or family relationship, education and level of social support. All these components can influence and individual's health. Roger's Vulnerability Framework was used in a study by Dunn et al. (2006) to examine four modifiable factors (breastfeeding confidence, postpartum depression,

supplementation and perceived adequacy of support) in relation to breastfeeding duration. The study showed the relationship between the chosen modifiable vulnerability factors and breastfeeding duration. Specifically, the study showed that postpartum depression affects breastfeeding duration. Those who are depressed are more likely to stop breastfeeding before six weeks postpartum. Mothers whose infants have received any kind of supplementation in the first few days of life are more likely to wean their babies early. Self-efficacy was found to be the strongest predictor of breastfeeding behavior. Mothers with low levels of confidence are more likely to wean early than those who are confident with their breastfeeding skills. Dunn et al. (2006) added that nurses and physicians' knowledge and skills are found to be important factors in determining the quality of support that a breastfeeding woman would receive.

This project will focus on the modifiable environmental component, particularly social support. Postpartum women and infants are considered vulnerable population. According to Rogers (1997), changes in life situation may put an individual vulnerable. Postpartum women are considered vulnerable because of their change in role, particularly the parenting role. Professional social support in the form of a postpartum follow up phone call by a registered nurse will be made to all mothers of infants born at the Birthing Center during the specified time. The aim of the postpartum phone call is to assess mother baby condition post discharge prior to appointment with a practitioner. The follow up call is comprised of questions referring to postpartum mother's self-care, infant care and support system available. Adequacy of support will be evaluated by administering a random satisfaction survey and feeding survey that will be done during the initial visit at the pediatricians' office.

Postpartum phone call is part of postpartum support provided by the Birthing Center for a few years now. A questionnaire is currently being used to assess mother infant condition. During

staff meeting it has been reported that postpartum phone calls have been lagging up to 3 months. This called for plans to improve on the process of the postpartum phone calls. Models for improvement have been used to improve delivery of services in the health care system. According to Isixsigma (n.d.), FOCUS-PDCA model is used to improve existing processes to maximize the performance of these pre-existing processes. FOCUS-PDCA is an acronym to describe the components of improvement processes. F - Find an opportunity to improve, O - Organize a team who understands the process, C - Clarify the current knowledge of the process, U - Understand the cause of process variation, S - Select the process improvement; P - Plan the improvement, D - Do the improvement, C - Check the results and A - Act to hold the gain. Plans to improve the postpartum phone call will use the FOCUS PDCA model. F – It has been identified that changes should be made with regards to the timing of the postpartum phone calls. O – Conduct a meeting with the stakeholders and engage them to implement the project. C/U – Communicate with stakeholders the current process in implementing postpartum phone calls and present different strategies to improve the timing of the phone calls. S – Conduct meetings to choose the appropriate method to improve the timing of the postpartum phone calls. P – Plan with stakeholders the strategies that will be used to improve the timing of the postpartum phone call. The plan is to conduct the postpartum phone call within 10 days post discharge. D – Implement the plan to conduct postpartum phone calls within 10 days post discharge. C – Evaluate the project implementation by utilizing simple statistics to see what percentage of discharged mother-baby dyads has been called. A – A random satisfaction survey will be done during the initial pediatrician's visit.

Breastfeeding support has been found to be valuable in breastfeeding success. Continuous support for breastfeeding is beneficial to women from the time of the decision to breastfeed to

the time of complete weaning the child from the breast. Health professionals play a key role in breastfeeding education and support. Aside from giving validated information, the healthcare personnel should be able to assess and explore possible barriers that impede breastfeeding success and identify enabling factors that will help resolve any problems or continue with positive breastfeeding behaviors. Support from health professionals evolved from face to face, one to one counseling to the use of multimedia and the use of telephone and computer technology. These strategies help mothers to access information and support from lactation professionals and peers. Breastfeeding education and support are helpful in increasing maternal confidence and increasing breastfeeding rates and breastfeeding duration.

Project Description, Implementation and Monitoring

Setting. Newport County is composed of six towns in the state of Rhode Island. It includes Jamestown, Newport, Middletown, Portsmouth, Tiverton and Little Compton. It had an estimated population of 82,695 in 2011. Newport Hospital is one of the hospitals of Lifespan Heath System that serves the majority of the population in Newport County. The Birthing Center, Newport Hospital is a Baby Friendly and Magnet designated facility that caters to maternity care services. Services provided include prenatal visits with affiliated board certified obstetricians and midwife, birthing classes, sibling classes, breastfeeding classes, lactation support, postpartum follow up phone calls, postpartum support group, breastfeeding support group and breastfeeding warm line. Lactation consultants are available during hospital stay and on appointment outpatient. The Birthing Center approximately has 550 deliveries annually, mostly composed of white non-Hispanic females. Age range is 14-48 years of age.

Target population. The target population for the project included 30 mother and infant dyads, 0-10 days post discharged from the Birthing Center, Newport Hospital in a 4 week time

frame. A mailed in satisfaction survey was also done and included all 25 new mothers who responded to the postpartum phone call.

Project goals. This is a quality improvement project to improve follow up post hospital discharge. The goal was to call 100% of mother infant dyads within 10 days post hospital discharge during the project duration of 4 weeks.

Data collection and methods of evaluation. A postpartum data sheet that contains the patient demographic data was filled out upon patient's discharge from the hospital and kept on a folder at a restricted area in the nurse's station. More demographic data was collected by the DNP student prior to conducting the postpartum phone call. Chart review was also done so that the DNP student is familiar with the patient's hospital course or experience. Postpartum phone calls were conducted 2 days a week, Mondays and Thursdays. All discharged postpartum mothers were contacted within 10 days post discharge for a period of 4 weeks. Initial postpartum phone calls were done with mothers 3-4 days post discharge. If unable to contact during the first attempted call, a voice message was left and another phone call was placed in the next 3-4 days, ensuring that the second attempt to call was still within the 10 day period. If still unable to contact, a voice message on the phone was left and a mail was also sent to the patient's registered address. A follow up satisfaction survey was conducted after the postpartum phone call. All the contacted participants were sent a survey form. Enclosed with the survey form was a stamped return envelope the participant can use to send their response. A $5 gift card was offered to those who responded to the satisfaction survey.

Key stakeholders. Key stakeholders included the administration, middle management, lactation consultants, physicians and staff of the Birthing Center, Newport Hospital. They were supportive of the project from beginning to end. An agreement was signed prior to

implementation of the capstone project. It stipulated that the DNP student was given access to medical records and/or patient records during the period of project implementation.

Description of restraints to project implementation. Involvement of the key stakeholders in the project planning and implementation ensured the sustainability of the project initiated by the DNP student. Almost half of the participants were not reached during the first call, however, they were contacted with a second phone call attempt within the next 3-4 days. A message was left in the voicemail of those who were not contacted the first time. There were still some who were not reached with the follow up call, a letter was sent to the participant's registered address.

Internal Review Board (IRB) approval and ethical considerations. This is a quality improvement project and it did not require IRB approval from the University of Massachusetts IRB, Newport Hospital IRB and Lifespan IRB. All patient information was protected through careful data management according to Newport Hospital confidentiality policy and the Health Insurance Portability and Accountability Act (HIPAA). This included password protected electronic records and data storage in semi-restricted area and locked cabinets.

Data Analysis

PASW Statistics 18 was used for data analysis. Descriptive data analyses including frequency, mean, range and cross tabulations were used to describe the results of the project.

Results

Roger's Vulnerability Framework was used in this project. According to this framework, new parenting role may be overwhelming or stressful for some postpartum mothers which make them vulnerable because of these changes in their lives. To provide support and decrease vulnerability, the postpartum phone call reviewed with the new mothers post natal professional

social support including postpartum phone call, breastfeeding support group, the warm line and availability of lactation consultants. It also looked into family support at home during the postpartum period.

Demographic Data. A total of 30 participants received a postpartum phone call within 10 days post discharge with a mean of 5.63 days. The participants were discharged from the hospital between March 23 and April 13, 2013. Thirteen participants or 43.3% who were 0 to 7 days post discharged were contacted on the first call attempt. For those participants that were not reached during the first call, a phone message was left to let them know that another phone call will be made 3-4 days after the initial call. With the second attempt, 40% of the participants were contacted. They were between 4 to 10 days post hospital discharge. With the second attempt, 13.7% of the participants were not reached, a brief message and a letter was sent to these participants.

Table 1. Distribution of participants according to days post discharge

No. of days discharged	Number of attempts						Total	%Total
	1st attempt	Percent	2nd attempt	Percent	Unable to contact	Percent		
0-3 days	5	16.6	0	-	0	-	5	16.7
4-7 days	8	26.7	9	30.0	2	6.7	19	63.3
8-10 days	0	-	3	10.0	3	10.0	6	20.0
Total	13	43.3	12	40.0	5	16.7	30	100.0

A total of 25 participants were included in the project. The majority (44%) had spontaneous vaginal delivery while only 4% had vacuum assisted vaginal delivery. Fifty two percent of the participants had a cesarean section, 32% were repeat cesarean section while 20%

were primary cesarean section. Vaginal deliveries after cesarean (VBAC) is not practiced in this facility; this may attribute to high rates of repeat cesarean sections.

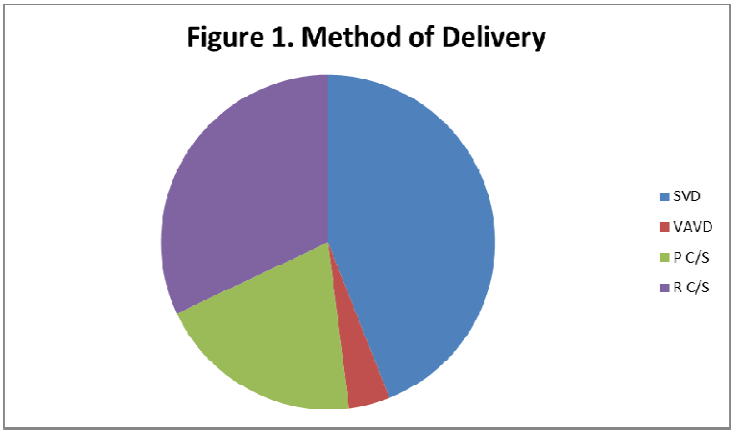

Table 2. Distribution of participants according to method of delivery and parity

Method of Delivery	Primigravida	%	Multigravida	%	Total	% Total
Spontaneous Vaginal Delivery (SVD)	5	20.0	6	24.0	11	44.0
Vacuum Assisted Vaginal Delivery (VAVD)	1	4.0	0	-	1	4.0
Primary Cesarean Section (P C/S)	5	20.0	0	-	5	20.0
Repeat Cesarean Section (R C/S)	0	-	8	32.0	8	32.0
Total	11	44.0	14	56.0	25	100.0

The participants were comprised of 44% primigravida and 56% multigravida as shown in table 2. The rates of spontaneous vaginal delivery are about the same for both primigravida and multigravida at 20.0% and 24.0% respectively. Primary cesarean section rate is 20.0% and repeat cesarean section is at 32.0%.

General condition, concerns and support. Table 3 shows that majority of the participants were feeling good post discharge, although 16.0% has felt some depression in the last 7 days. Eight percent who felt good but felt depressed in the last 7 days have either have talked to a psychologist or have resolved their concerns. The participant who felt not so good but was not depressed stated having experienced stress related to readmission to the hospital and recent surgery of infant. Most participants stated that they are tired but generally in a good mood and condition. Some participants felt overwhelmed with breastfeeding and infant care, especially those who are first time mothers.

Table 3. General condition and feelings of depression

General Condition	Feeling depressed	Not Depressed	Total
Good	8.0	80.0	88.0%
Not so good	8.0	4.0	12.0%
Total	16.0	84.0	100.0%

Most mothers admitted that feeding the infant is one of their primary responsibilities in taking care of the newborn. Breastfeeding rate at the time of discharge was 76% and it was slightly increased to 80% at the time of phone call. Formula feeding slightly increased from 12% to 16% while using both feeding methods decreased from 12% to 4%. According to mothers who were formula feeding and breastfeeding in the hospital, there is no need for them to supplement formula since they are now producing adequate amounts of breast milk to satisfy the newborn.

Table 4. Feeding Status

Feeding Method	Feeding Method at Discharge	Current feeding method
Breast	76.0 %	80.0 %
Formula	12.0%	16.0%

Both breast and formula	12.0%	4.0%
Total	100.0%	100.0%

Instructions and education of mothers with regards to postpartum self-care, infant care and breastfeeding were given prior to discharge from the hospital. However, some mothers have admitted that there are still some questions that they did not think about while they were in the hospital. Table 5 shows that first time mothers have more questions with regards to self-care at 20.0% and infant care at 8.0% as compared to multiparous women at 8.0% and 4.0% respectively.

Table 5. Questions about self-care and infant care

	Questions about self -care	Questions about infant care
Primigravida	20.0%	8.0%
Multigravida	8.0%	4.0%

The most common questions with regards to self-care included care of perineum, lochia, blood clots, postpartum depression, breast care and scheduling follow up visit with obstetrician. Questions that pertained to infant care include skin rash, cord care, circumcision and infant bath. To answer the most common queries about self-care, infant care and breastfeeding, the Birthing Center offers the warm line, where mothers or infant care givers can call and ask questions. A nurse takes the call and if referral is necessary, the mother is given information on how to get in touch with appropriate person. A lactation consultant (LC) or a lactation counselor also answers questions related to breastfeeding issues. If no LC is available, the mother can be scheduled to see an LC the following day. Table 6 shows that 16.0% of the participants have used the warm line. Three questions are related to breastfeeding while another one is related to infant vomiting.

Even though, there was only a small percentage of postpartum mothers who used the warm line, all of the participants were aware of the warm line number and will use it if there is a need to.

Table 6. Use of warm line

	Frequency	Percent
Yes	4	16.0%
No	21	84.0%
Total	25	100.0%

Some questions or concerns cannot be answered through telephone conversations alone. In this case, referral to appropriate person or agency was done.

Table 7 shows that 12.0% of the participants were referred to appropriate experts to help them with their concerns. The most common concerns that needed referral are lactation problems and postpartum depression.

Table 7. Referrals made to address concerns

Referral to:	Frequency	Percent
Lactation support	2	8.0%
Psychologist	1	4.0%
Total	3	12.0%

However, 20.0% of the participants have already asked help from lactation experts at the time of call and 8.0% more have already seen a psychologist/psychiatrist.

Lactation support is available for breastfeeding mothers but among those who are breastfeeding, none has attended the breastfeeding support group but 40% said that they plan to attend it. Breastfeeding support group is held once a week. Since the postpartum phone calls

were placed within 0-10 days post discharge it is possible that those who were less than a week post discharge will only be able to attend the following week of the breastfeeding support group.

Aside from professional support that they can get from the hospital and support group, it is important for new mothers to have support at home.

Table 8. Help at home

	Frequency	Percent
Have help or support at home	24	96.0%
No available help at home	1	4.0%
Total	25	100.0%

At the time of phone call, 96% of the participants stated that they have help at home. Support mainly comes from husband or partner and parents. Siblings, extended family members and friends are also identified as support persons.

Table 9. Satisfaction to postpartum phone call

Very satisfied	3	60.0%
Satisfied	2	40.0%
Neither satisfied nor dissatisfied	0	-
Dissatisfied	0	-
Very Dissatisfied	0	-
Total	5	100.0%

A survey on feeding status and satisfaction regarding postpartum phone calls was done. The survey form was mailed in to the participant's registered address in the medical records. Enclosed in the form was a stamped return envelope. Incentives were offered to the participants

who responded to the survey. Only 20% responded to the survey. All the participants who responded were breastfeeding and infant age range was 16 days to 25 days with a mean of 20.6 days. Among the participants, 60% said that they were very satisfied with the follow up phone call and 40% said that they are satisfied with the call. All of them also said that all their questions were answered during the postpartum follow up call.

Among those who were breastfeeding, 30% of them have actually attended the breastfeeding support group while 25% have already consulted a lactation consultant. Most common breastfeeding problems included decreased milk supply and problems with latch. While 33.3% of breastfeeding mothers have experienced sore nipples, only 4% have seen a lactation consultant for this particular problem.

Discussion

The quality improvement project objectives were met. Postpartum follow up phone calls were made within 10 days post discharge. It also established that post natal professional support including the warm line, postpartum follow up phone calls, breastfeeding support group and lactation consults are available and that the participants are aware of these resources. The project also established that majority of the postpartum mothers have family support when they go home. Identified support person included the husband or partner, immediate family and extended family members. At the time of the follow up postpartum phone call, 80.0% of the mothers were breastfeeding, higher than the national average of 76.3% and Rhode Island average of 7.37% and slightly higher than the breastfeeding rates at discharge which was 76.0%.

Recommendations

It has been established that postpartum mothers are aware of the resources available to them during the postpartum period. The project did not look into the utilization of the resources

and its impact on breastfeeding. Recommended future quality improvement project that will look into other vulnerability factors including self-efficacy, learned abilities and coping skills. A longer time period for the project is also recommended to better assess breastfeeding duration and exclusivity.

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