Breastfeeding education experiences of mothers and health care providers: case studies from government health services in Lima, Peru

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ABSTRACT

In Peru, exclusive breastfeeding (EBF) before six months of age decreased in urban areas (from 64.5% in 2007 to 59.9% in 2010) and the coastal region (from 60.1% in 2007 to 52.8% in 2010) despite a national infant feeding policy to protect, promote and support breastfeeding (BF). Health care providers (HCP) play an essential role in influencing mothers' feeding decisions. This study examined infant feeding promotion and support provided by government health services in Lima. Semi-structured interviews were conducted with 16 HCP and 11 mothers of infants < 6 months of age. Seven mothers participated in two focus group discussions. The health service environment and educational activities were observed. A case study approach was used and patterns established using cross-case analysis. HCP gave advice via growth monitoring and medical visits, nutrition counseling sessions, home visits and group sessions. HCP recommended EBF for six months but did not provide practical and tailored support to address common problems. Barriers to providing BF counseling by HCP included heavy client load, inadequate in-service training, poor counseling skills, and formula industry influence. Barriers to implementing EBF among mothers included employment, perceived breast milk insufficiency and infant formula promotion. Improved training of HCP and stronger monitoring of compliance with the national infant feeding policy are needed in government health services to protect BF behaviors.

RÉSUMÉ

Au Pérou, les taux d'allaitement maternel exclusif (AME) chez les enfants de moins de six mois ont diminué dans les zones urbaines (de 64.5% en 2007 à 59.9% en 2010) et dans la région côtière du pays (de 60.1% en 2007 à 52.8% en 2010) malgré l'existence d'une politique nationale visant la protection, la promotion et le soutien de l'allaitement maternel. Les professionnels de la santé (PS) jouent un rôle essentiel en influençant les mères concernant l'alimentation de leurs enfants. Cette étude a examiné les conseils offerts par les services de santé gouvernementaux concernant l'alimentation des nourrissons dans une région périurbaine de Lima. Des entrevues semi structurées ont été menées avec 16 PS et 11 mères de nourrissons de moins de six mois. Sept mères ont participé à des groupes de discussion. L'environnement des établissements de santé ainsi que les activités éducatives qui s'y déroulaient ont été observés. Une méthodologie de type etude de cas a été utilisée et une analyse thématique a été adoptée pour analyser et comparer les cas. Les conseils ont été donnés aux mères lors des rencontres pour le contrôle de la croissance, des visites médicales et nutritionnelles, des visites à domicile ainsi que des sessions de groupe. Les PS recommandaient l'AME pendant six mois mais ne fournissaient que rarement des conseils pratiques et adaptés à chaque mère pour surmonter leurs problèmes d'alimentation. La surcharge de travail, une formation continue inadéquate et de faibles habiletés à conseiller ont été identifiées comme barrières à des recommandations en matière d'allaitement. Le travail des mères, leur perception d'insuffisance de lait maternel ainsi que l'influence de l'industrie des formules de lait constituaient les principales barrières à l'AME. Une meilleure formation des PS ainsi qu'un suivi plus serré de la conformité à la politique nationale de l'allaitement maternel au sein des services de santé gouvernementaux sont nécessaires afin de protéger l'allaitement maternel.

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CONTRIBUTION OF AUTHORS

The writing of the manuscripts included in this thesis was achieved through collaborative efforts from the co-authors. Both manuscripts were authored by Y. Fautsch Macías, G S. Marquis, D. Groleau, and M.E. Penny.

Y. Fautsch Macías developed the research questions, wrote the project proposal and conducted fieldwork in Peru from February to June 2011. She developed the semi-structured interview guides and the observations guide with the help of R. Bartolini. In the study area, she recruited and interviewed the participants, individually or as a group, and collected data through observations and documents. Y. Fautsch Macías also transcribed the interviews with the help of an intern, and managed and analyzed the qualitative data. Everything was accomplished with the support and guidance of the co-authors, G.S. Marquis, D. Groleau, and M.E. Penny, who edited the manuscripts.

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LIST OF ABBREVIATIONS

BF	Breastfeeding
BFHI	Baby-Friendly Hospital Initiative
BM	Breast milk
CF	Complementary feeding/food
CI	Confidence interval
DALY	Disability-adjusted life-years
HCP	Health care providers
ILO	International Labour Organization
INEI	Instituto Nacional de Estadísticas e Informática
IIN	Instituto de Investigación Nutricional
IYCF	Infant and young child feeding
EBF	Exclusive breastfeeding
MIMDES	Ministerio de la Mujer y del Desarrollo Social
MINSA	Ministry of Health of Peru
NGO	Non governmental organization
PAHO	Pan American Health Organization
PROBIT	Promotion of Breastfeeding Intervention Trial
RCT	Randomized controlled trial
RR	Relative Risk
SCT	Social Cognitive Theory
UN	United Nations
UNICEF	United Nations Children's Fund
USA	United States of America
WABA	World Alliance for Breastfeeding Action
WHO	World Health Organization
WIC	Special Supplemental Nutrition Program for Women, Infants and Child

1. INTRODUCTION

The prevalence of exclusive breastfeeding (EBF) before six months of age in Peru is one of the highest in Latin America (PAHO 2011). According to the Ministry of Health of Peru (MINSA), EBF rates increased from 52.7% in 1996 to 67.2% in 2000 to 68.5% in 2009 (MINSA 2010a). In 2010, the prevalence of EBF before the six months slightly decreased to 68.3%. The practice of EBF was more prevalent in rural areas (83.9%) than in urban areas (59.9%) (INEI 2010). An increase was reported in rural areas (from 76.5% in 2007 to 83.9% in 2010) and in the mountain range (from 72.4% in 2007 to 83.7%); this increase may be due to the results of existing initiatives to improve breastfeeding (BF) practices in rural areas (MINSA 2011). In contrast, there was a decrease of EBF in urban areas (from 64.5% in 2007 to 59.9% in 2010) and the coastal region (from 60.1% in 2007 to 52.8% in 2010) (INEI 2010).

The World Health Organization (WHO), that is the directing and coordinating authority for health within the United Nations (UN) system, defines BF as "the normal way of providing young infants with the nutrients they need for healthy growth and development" (WHO et al. 2008). EBF exists when the infant only receives breast milk (BM) without any additional solid or liquid, such as water, the only exception being oral rehydration solution, drops, and syrups containing vitamins and minerals, and medicines. WHO and the United Nations Children's Fund (UNICEF) recommend EBF for the first six months of life (180 days) followed with adequate complementary feeding (CF) that is nutritious and safe with continued BF up to two years of age and beyond (WHO and UNICEF 2003).

The first WHO systematic review on the optimal duration of EBF was conducted in 2002 to assess the effects of EBF for six months versus EBF for three to four months on child health, growth and development (Kramer and Kakuma 2002). The 2002 systematic review has been updated in 2004, 2007 and 2009 with no changes to the conclusions. The 22 studies selected were clinical trials and observational studies that were conducted in

both developed (n=11) and developing countries (n=11, two of which were separate randomized controlled trials (RCT) conducted in Honduras). Infants receiving EBF for six months experienced less gastrointestinal infections than those who received mixed BF (introduction of complementary liquid or solid foods with continued BF) at three to four months (Relative Risk (RR): 0.67; 95% Confidence Interval (CI): 0.46-0.97). Moreover, no deficits in weight or length gain were demonstrated among infants of developed and developing countries receiving EBF for six months. Evidence demonstrates no risk in recommending EBF for six months as a public policy in all countries. Decreased risks of morbidity and mortality support this recommendation. In effect, suboptimal BF, especially non-exclusive BF, was reported as being responsible for 1.4 million of child deaths and 44 million disability-adjusted life-years (DALY), representing 10% of disease burden in children younger than five years all over the world (Black et al. 2008). DALY combines years of life lost due to premature deaths and years of life lived with disabilities; one DALY can be considered as one lost year of healthy life.

Health services are key sites to promote the initiation and establishment of optimal BF practices as health care providers (HCP) play an essential role in influencing mothers' feeding decisions (WHO 2009). The following literature review examines the effectiveness of professional support in improving BF behaviors as well as factors that influence that support. Different approaches to nutrition education are also investigated. This thesis research builds on this literature review to examine the promotion and support of BF provided in government health services in a peri-urban area of Lima using qualitative methodology.

2. LITERATURE REVIEW

2.1. International strategies to protect, promote and support breastfeeding

2.1.1. International Code of Marketing of Breast-milk Substitutes

As early as 1939, Dr. Cicely Williams identified aggressive advertisement of powdered baby formula by the commercial food industry as a threat to BF and infant health (Labbok 2007; Williams 1939). During the 1970's, concerns about the marketing practices of the infant formula industry spread at the international level (Jelliffe 1972; Muller 1974). The promotion of infant formula in low-resource countries was considered detrimental to infant feeding and health because of its inferiority compared to BM and its inadequate preparation due to low incomes, poor sanitation and lack of maternal education. In response to this concern, WHO instituted the International Code of Marketing of Breast-milk Substitutes in 1981, referred as the Code (WHO 1981). Its aim is to contribute to safe and adequate nutrition for infants by protecting and promoting BF as well as by ensuring that BM substitutes are properly used when necessary. Some health conditions may justify the recommendation to replace BF with infant formula; for example, infants with classic galactosemia, maple syrup disease and phenylketonuria should not receive BM or any other milk except specialized formula (WHO 2009). Also, permanent avoidance of BF may be recommended to HIV-infected mothers if replacement feeding is acceptable, feasible, affordable, sustainable, and safe.

The Code applies to the marketing and distribution practices related to BM substitutes, including infant formula, milk products, foods and beverages when these are represented as suitable to replace BM. The Code imposes numerous restrictions to infant formula companies such as the prohibition of advertising the products directly to the general public, offering free samples to mothers or members of their families, including words or pictures idealizing artificial feeding, giving gifts or personal samples to health care workers and promoting products in health care facilities.

Since 1981, a total of 84 countries have adopted legislation or other legal measures to implement many or all of the provisions of the Code (UNICEF 2012). In 1982, the Peruvian government approved the *Reglamento de Normas de Alimentación Infantil-Decreto Supremo Nº020-82-SA,* the first national policy on infant feeding, becoming a leader in the implementation of the Code (PAHO 2011). It included regulations on infant and young child feeding (IYCF) from birth to two years in health services as well as regulations on marketing practices of BM substitutes. In 2006, the policy was revised and updated to adopt subsequent resolutions of the World Health Assembly relating to the Code (MINSA 2006; PAHO 2011). The objective of this policy is to ensure appropriate infant nutrition up to 24 months of age through actions that promote, protect and support BF and promote good CF practices. Any kind of promotion of infant formula is prohibited.

2.1.2. Innocenti Declaration on the Protection, Promotion and Support of Breastfeeding

The Innocenti Declaration on the Protection, Promotion and Support of Breastfeeding was adopted by participants of the WHO and UNICEF policymakers' meeting on "BF in the 1990s: A Global Initiative" held in Florence, Italy, in 1990 (UNICEF 1990). It was a call-for-action to protect BF by reinforcing the "BF culture" and defending against "bottle-feeding culture" to enable all women to practice EBF for four to six months. To reach this goal, many strategies were recommended such as making efforts to increase women's confidence in their ability to breastfeed and improve women's nutritional status. The targets to become operational by 1995 included the development of national BF policies by all governments, the set of appropriate targets to monitor progress, and the integration of BF policies with health and development policies, among others. Government policymakers from 32 countries, including Peru, adopted the Declaration (UNICEF 2006).

In 1991, the World Alliance for Breastfeeding Action (WABA) was formed to act on the Innocenti targets, specifically in increasing awareness about the mission of the Code, by

notifying governments of the Innocenti target date, calling them to introduce regulations based on the Code, and encouraging interest groups, professional organizations, and the general public to monitor the Code (Walker 2007). By 1994, 11 countries had passed legislation including all or almost all provisions of the Code and 36 countries had passed legislation including only some provisions. One of the large-scale social mobilization projects of WABA is the annual World Breastfeeding Week that is celebrated in more than 170 countries worldwide (WABA 2012). In Peru, the Breastfeeding Week is held every month of August by the Peruvian Ministry of Health (MINSA 2010a; 2010c). It aims to sensitize authorities, HCP and the population in general at national, regional and local level about the importance of protecting, promoting and supporting EBF through communication channels (television, radio), activities such as demonstrations, presentation of successful experiences, BF competitions and provision of technical assistance, among others.

2.1.3. Baby-Friendly Hospital Initiative

The Baby-Friendly Hospital Initiative (BFHI) was launched by UNICEF and WHO in 1992 to ensure that all hospitals with maternity wards become centers of BF support (UNICEF 1992). This initiative stresses the importance of appropriate BF management and skilled help. It was updated and expanded in 2009 to take into account new research and experience (WHO and UNICEF 2009). By 2009, approximately 20,000 maternal facilities in 156 countries around the world obtained the BFHI accreditation. In Peru, in the 1990's, 90 hospitals received this accreditation but nowadays only one has renewed it (MINSA 2010a). This initiative is based on the best practices model that consists of 10 steps to successful breastfeeding. To be BFHI-accredited, health care facilities are expected to undertake these 10 steps (UNICEF 1992):

1. Have a written BF policy that is routinely communicated to all health care staff;
2. Train all health care staff in skills necessary to implement this policy;
3. Inform all pregnant women about the benefits and management of BF;

4. Help mothers initiate BF within one half-hour of birth;
5. Show mothers how to breastfeed and maintain lactation, even if they should be separated from their infants;
6. Give newborn infants no food or drink other than BM, unless medically indicated;
7. Practice rooming-in, that is allowing mothers and infants to remain together 24 hours a day;
8. Encourage BF on demand;
9. Give no artificial teats or pacifiers (also called dummies or soothers) to BF infants;
10. Foster the establishment of BF support groups and refer mothers to them on discharge from the hospital or clinic;

Several studies conducted around the world demonstrated the effectiveness of this strategy in improving BF outcomes. Table 1 presents the effects of two interventions and one cohort study that included all or some steps of the BFHI.

Table 1: The effect of the Baby-Friendly Hospital Initiative on breastfeeding outcomes

Authors	Country	Type of study	Effect	Intervention group n= 8547*	Control group n= 7895*	Significance
Kramer et al., 2001	Republic of Belarus	Experimental intervention: PROBIT	Increased EBF[1] rates at 3 months	43.3%	6.4%	p<0.001
			Increased EBF[1] rates at 6 months	7.9%	0.6%	p =0.001
				Program Hospital n=236*	**Comparison hospital n=206***	
Lutter et al., 1997	Brazil	Prospective cohort study	Increased median EBF[1] duration	75 days	22 days	p<0.0001
				Trained nurses n=113	**Untrained nurses n=185**	
Owoaje et al., 2002	Nigeria	Experimental intervention: BFHI training for nurses	Higher knowledge[2] scores	11.9 ± 1.8	10.7 ± 2.4	p<0.01

*n = mother-infant pairs
1. The definition of EBF was consistent with the WHO definition (see section 1. Introduction)
2. Knowledge of advantages of EBF for the child and the mother. Responses were based on the BFHI 18-hour lactation management training course

In the study conducted in the Republic of Belarus, maternity hospitals and polyclinics were randomly assigned to receive the Promotion of Breastfeeding Intervention Trial (PROBIT; n=16), that consisted in applying the 10 steps of the BFHI, or to be part of the control group (n=15) (Kramer et al. 2001). Infants of the PROBIT clinics were more likely to be exclusively breastfed than infants in control clinics at three months and six months. In contrast, the study conducted in Brazil compared two cohorts: women who delivered at a hospital with an active BF promotion program (the program hospital) and women who delivered at a nearby hospital without a BF promotion program (the comparison hospital) (Lutter et al. 1997). The BF promotion program consisted of only five of the 10 steps of the BFHI: early initiation of BF (step 4); BF assistance and talks (step 5); BM only for newborns (step 6); rooming-in (step 7); and referral of mothers to BF postnatal support groups (step 10). In the comparison hospital only rooming-in (step 7) existed since they were mandated by the Brazilian law. Delivery in the program hospital was associated with a significant increased EBF duration of 53 days compared to the comparison hospital. In Nigeria, the nurses who had participated in the BFHI 18-hour lactation management training course had significantly more knowledge about some aspects of EBF (Owoaje et al. 2002).

In addition, a dose-response relationship was found between the number of 10 steps experienced by mothers and BF practice in an observational study carried out in Taiwan (Chien et al. 2007). Linear associations between levels of BF (none, partial, and exclusive) and number of the 10 steps practices were found to be significant during the hospital stay ($P < 0.001$), at one month ($P < 0.001$) and at three months after delivery ($P < 0.001$), no matter which steps were reported. EBF consisted of feeding of human milk, with no use of infant formula. Partial BF referred as feeding of human milk and formula.

2.1.4. Maternity Protection Convention – Employment Legislation

The International Labour Organization (ILO) is a UN agency that seeks the promotion of social justice and internationally recognized human and labour rights. The first convention on maternity protection was adopted in 1919 (Convention No 3) followed by Convention No 103 adopted in 1952 (ILO 2010). In 2000, during the General Conference of the ILO, the Governing Body of the International Labour Office revised and adopted the Maternity Protection Convention No 183 to promote further equality of all women in the work place, promote the health and safety of the mothers and their children, as well as the development of the protection of maternity in national laws and practice, among other things (ILO 2000). In this convention, ILO recognizes that women have the right to maternity leave and the right to breastfeed. The third article of this convention states that each member of ILO should adopt measures to ensure that pregnant and lactating women are not obliged to perform any work that could be detrimental to their health and that of their children. The fourth article of the Convention stipulates that women should have the right to at least 14 weeks of maternity leave. Maternity leave should include six weeks of compulsory leave after childbirth so as to protect the health of the mothers and that of their children. The tenth article concerning lactating mothers stipulates that they should have the right to have more daily breaks or a reduction of hours of work to breastfeed their children. These breaks and reduction of hours should be counted as working time and should therefore be remunerated.

By 2006, 59 countries had ratified at least one of the three conventions (UNICEF 2006). Although Peru did not ratify any of these, the country has a national maternity legislation (ILO 2010). Maternity leave is flexible; women can decide how to distribute their leave. The normal duration of maternity leave is 90 days from which the immediate 45 days postpartum constitute a compulsory period. The 45 days remaining can be taken before childbirth or added postnatally to the 45-day compulsory period. Employment during maternity leave is protected; dismissal is prohibited. In order to be entitled to maternity leave, a woman must be employed. Also, in 2006, a national legislation was approved so that public sector institutions were required to have a room conditioned to extract and

store BM during working hours if more than 20 child-bearing aged women were employed (MIMDES 2006).

2.1.5. The Global Strategy for Infant and Young Child Feeding

The Global Strategy for Infant and Young Child Feeding is a call-for-action with an aim to revive efforts to promote, protect and support appropriate IYCF practices (WHO and UNICEF 2003). It is the continuation of past initiatives such as the Innocenti Declaration and the BFHI. The strategy calls all governments to develop national policies on IYCF and review the progress concerning the national implementation of the Code. It recommends that all mothers have access to skilled support to initiate and sustain EBF for the first six months. Legislation should also include protection of BF rights of working women according to international labor standards.

In summary, the Code was instituted to protect BF worldwide. Continuation of the Code consisted in calls-for-action for governments to protect, promote and support BF. These gave rise to the adoption of national legislations on infant feeding, promotion activities, and the revision of the employment legislations protecting the rights of women to breastfeed. The BFHI, which is the standard for maternity care, was instituted in maternity hospitals worldwide to ensure that these are centers of BF support. This initiative was shown to be effective in increasing EBF rates and duration of BF as well as improving HCP' knowledge.

2.2. Education and counseling on breastfeeding in health services

WHO defines IYCF counseling as the process by which a health worker supports mothers and their babies to implement good feeding practices and overcome feeding difficulties (WHO 2009). Skilled support is also needed to correct wrong advice provided by friends or family. The following sections discuss the effectiveness of prenatal and postnatal BF education.

2.2.1. Professional prenatal breastfeeding education

Pregnant women should be informed about the benefits and management of BF and should be given information about what to expect (WHO 2009). The effect of prenatal BF education on BF outcomes was examined in different parts of the world but mainly in developed countries. Table 2 summarizes the effects of professional prenatal BF education on BF outcomes. Although several studies evaluated the effect of peer counseling on BF, these were not included as peer counselors provided mainly community-based support, such as prenatal and postnatal home visits and telephone calls (Dennis et al. 2002; Haider et al. 2000; Kistin et al. 1994; Morrow et al. 1999). A few studies included daily perinatal assistance from peer counselors during the postpartum hospitalization (Anderson et al. 2005; Chapman et al. 2004; Long et al. 1995) but this was provided in addition to conventional professional support, which is the focus of this study.

The studies were selected to represent populations with different socio-cultural backgrounds. Although three studies were conducted in the same developed country, the United States of America (USA), populations were different and included black low-income women (Kistin et al. 1990), white educated women (Wiles 1984), Hispanic women (Schlickau and Wilson 2005), and a mix of races/ethnicities (white, black, Hispanic and Asian) (Rosen et al. 2008). The other two studies were conducted among Asian (Lin et al. 2008) and Latin American mothers (Pugin et al. 1996).

Table 2: Effect of professional prenatal breastfeeding education on breastfeeding outcomes

Authors	Country	Type of study	Effect	Intervention group		Control group	Significance
				n = 20		n = 20	
Wiles, 1994	USA	Quasi-experimental intervention	Increased total BF[1] rates at 1 month	90%		30%	p<0.001
				n = 59		n = 363	
Pugin et al., 1996	Chile	Quasi-experimental intervention	Increased full BF[2] rates at 6 months (total)	80%		65%	p =0.0026
				n = 16		n = 126	
			Increased full BF[2] rates at 6 months (primiparous)	94%		67%	p<0.005
				n=43		n=237	
			Non significant increased full BF[2] rates at 6 months (multiparous)	76%		69%	p=0.6158
				n = 14		n = 7	
Schlickau and Wilson, 2005	USA	Experimental intervention	Non significant increased duration of BF[3] (over 45 days)	23.1		16.9	p =0.476
				n = 54		n = 46	
Lin et al., 2008	Taiwan	Quasi-experimental intervention	Higher prevalence of positive BF attitudes[4]	88.9%		79.8%	p<0.001
			Higher rate of rooming-in	87%		63%	p<0.001
			Higher EBF rates during hospital stay	79.6%		52.2%	p =0.004
			Higher EBF rates at 1 month	75.9%		34.7%	p<0.001
				Intervention 1[6] ; n = 75	Intervention 2[6]; n = 60	Controls n = 60	
Rosen et al., 2008	USA	Quasi-experimental intervention	Increased BF[3] rates at 6 months	67.6%	61.1%	43.5%	p =0.01
				Intervention 1[6]; n = 38	Intervention 2[6]; n = 36	Controls n = 56	
Kistin et al., 1990	USA	Quasi-experimental intervention	Increased BF[5] rates within 4 days before discharge	45%	50%	23%	p<0.05

[1] No definition for total BF. It is not clear if it means EBF
[2] Full BF is defined as EBF allowing two supplemental feeds per week
[3] Includes feeding with BM only or in addition to formula
[4] Breastfeeding attitudes were assessed with five-point scale containing questions on BF and the health of the babies, the advantages of BF and the possibility of replacing breast milk with formula milk
[5] BF is defined as one or more breast feedings per day
[6] Intervention 1: group classes; Intervention 2: one-to-one counseling session

Three studies were conducted among primiparous women only (Lin et al. 2008; Schlickau and Wilson 2005; Wiles 1984) while Pugin et al. (1996) analyzed differences by parity levels. Rosen et al. (2008) matched the participants of prenatal BF education to controls by parity, among other variables. In the study conducted by Kistin et al. (1990), the percentages of primiparous and multiparous mothers in the control and the two intervention groups were comparable and did not differ significantly. The quasi-experimental studies and the retrospective study did not use randomization. This is a concern for the validity of results since the association between BF education and BF outcomes could be biased if confounders were not equally distributed between both groups.

Prenatal BF education using educational material (such as flip charts, a breast model and a baby-sized doll), whether provided on an individual basis or in group sessions, was effective in increasing BF rates (Kistin et al. 1990; Pugin et al. 1996; Rosen et al. 2008; Wiles 1984). In the study conducted in Chile, the rate of BF at six months among primiparous mothers who received the intervention was significantly higher compared to the control group whereas there were no significant differences among multiparous mothers (Pugin et al. 1996). The authors concluded that primiparous mothers were more sensitive to the education provided. In the study conducted by Schlickau and Wilson (2005), the educational strategy did not reach statistical significance. The authors explained that the study was underpowered in terms of number of subjects (n=30) and that statistical significance may have been reached with a larger sample. In contrast to other educational strategies, the BF education program used in Taiwan did not use direct support from HCP but consisted in distributing booklets on BF benefits to mothers, showing a videotape on difficulties and solutions with rooming-in and EBF followed by two follow-up telephone calls to remind them to read and practice the material contents. The intervention still had a positive effect on BF attitudes, rates of rooming-in and EBF rates (Lin et al. 2008).

In summary, prenatal BF education was found to increase the prevalence and duration of BF, rates of rooming-in, EBF rates during the hospital stay and at one month among

primiparous mothers as well as improve attitudes about BF. All the authors concluded that prenatal BF education is a "form of anticipatory guidance" that provides the information needed to start and establish BF. Pugin et al. (1996) added that prenatal BF group education that included the sharing of knowledge of mothers' experiences and emphasizing BF skills is an effective approach in increasing BF duration.

2.2.2. Professional postnatal breastfeeding education

In the postpartum period, continuous and skilled help is recommended to encourage BF and prevent difficulties that could arise, and overcome them once they exist (WHO 2009). This is most important in the first few days to make sure that the mother is able to position and attach her baby correctly to the breast. There is a need for follow-up support for BF after discharge from the hospital. Table 3 summarizes the results of studies that examined the effects of professional postnatal BF education on BF outcomes. Studies were selected to represent low-resource countries in different regions of the world. As in the previous section, studies evaluating the effect of peer counseling were not included.

Table 3: Effect of professional postnatal breastfeeding education on breastfeeding outcomes

Authors	Country	Type of study	Effect	Intervention	Control	Significance
				n = 54	n = 53	
Pérez-Escamilla et al., 1992	Mexico	RCT	Increased BF[1] rates at 4 months among primiparous	Log-Rank $X^2 = 4.9$		p<0.05
				n= 36	n = 65	
Prasad and Costello, 1995	India	Quasi-experimental intervention	Increased rates of BF[2] within 12 hours	78%	11%	p<0.001
			Decreased use of prelacteal feeds[3]	58%	3%	p<0.001
				Study Cohort n = 243	Comparison Cohort n =71	
Albernaz et al., 1998	Brazil	Retrospective cohort study	Increased EBF rates at 3 months	56.8%	12.7%	p<0.001
				n = 87	n = 49	
Aidam et al., 2005	Ghana	RCT	Increased EBF rates at 6 months	39.5%	19.9%	p =0.02

[1] Any BF indicated that the infant received only BM or BM supplemented with formula.
[2] Type of BF not defined
[3] Other liquids given previous to BM

The interventions conducted in Mexico (Pérez-Escamilla et al. 1992), Brazil (Albernaz et al. 1998) and Ghana (Aidam et al. 2005) consisted in providing BF support to mothers peri- and postnatally using educational material. In addition, the Brazilian study included support from the telephone, involvement of the partner of the mother and additional educational material, such as video demonstrations (Albernaz et al. 1998). In comparison, the intervention in the study conducted in India (Prasad and Costello 1995) consisted in training health professionals. BF education during the hospital stay and follow-up visits were found to be effective in increasing BF rates at four months among primiparous mothers, initiation of BF within 12 hours, as well as exclusivity of BF at three and six months. The decreased use of prelacteal feeds was another outcome of BF education in the postpartum period. Primiparous mothers were once again found to be more sensitive to the education provided. All interventions were statistically significant on BF practices except for multiparous women (p=0.100) (Pérez-Escamilla et al. 1992). The authors explained that primiparous mothers might be more sensitive to the HCP advice and more responsive to a BF guidance intervention because of their lack of caretaking and feeding experience. The same conclusion was also reported by Pugin et al. (1996) in their study in prenatal BF education (see section 2.2.1.).

2.2.3. Breastfeeding education from a qualitative perspective

The effectiveness of professional prenatal and postnatal BF education on improving quantitative outcomes has been shown. Qualitative studies also have examined BF education provided in health services by interviewing mothers and HCP and by observing their interactions in the health service environment. The following section will present BF education from the views of mothers, HCP, and the observer researchers. Perceived appropriate approaches to and positive experiences of BF education will be presented first, followed by approaches that have generated negative experiences, comments and emotions.

2.2.3.1. Positive experiences of breastfeeding education: tailored, encouraging, supportive and confidence-building

Individual consultation, group classes and use of educational material, such as brochures or displays of pictures with BF mothers, are different approaches to promote and support BF. Among those, individual counseling including educational material allowing the mother to ask questions seems the best strategy to promote BF and offer tailored support to the mothers' needs. For instance, interviewed Puerto Rican nutritionists working at the community level in the Special Supplemental Nutrition Program for Women, Infants and Children (WIC) reported that a one-to-one consultation allowed them to determine the cause of cessation of BF and offer ideas to overcome problems to better help the mother (Varela Ruiz et al. 2011). In Brazil, low-income mothers of premature babies seemed to appreciate this kind of support by reporting that they overcame the problem of insufficient BM in the neonatal intensive care unit when HCP focused their efforts on increasing their BM production (Groleau and Cabral 2009). In the same way, educated mothers from different ethnic origins and nurses recruited at a community hospital in the USA agreed that appropriate methods of providing BF support included giving written and verbal information, giving advice, answering questions and providing demonstrations showing the mother how to position their infant (Gill 2001). Mothers preferred midwives to show them how to breastfeed instead of telling them how to do it. Similar results were found in a study conducted in the United Kingdom in which low-income white primiparous mothers preferred to be shown skills rather that to be told how to do them (Hoddinott and Pill 2000).

The way the communicated information is provided is important to mothers. This is clearly illustrated by Ugandan mothers who reported preferring peer counselors to health workers because of their friendly approach. They also preferred being given support in a familiar and relaxed way (Nankunda et al. 2010).

Encouragement and emotional support are also crucially important to mothers and may have an impact on the relationship developed with HCP and on the mothers' confidence

in BF. Dykes (2005) interpreted through observations of encounters between mothers and midwives in maternity units in Northern England that a relationship of trust was built when midwives strengthened the mothers' confidence in BF by providing reinforcements such as "That's good!" or "You're doing fine". In the study conducted by Gill (2001), mothers reported that they would have liked nurses to encourage their BF effort although nurses did not identify encouragement necessary for lactation support as they did not want to pressure the mothers. White English low-income mothers commented that words were not enough and valued more the time spent by a midwife with whom they had developed a personal relationship (Hoddinott and Pill 2000). In that case, mothers were more positive about the support provided and seemed more able to access the support they needed. Similar results were found in Brazil where low-income mothers of premature babies reported that doctors, nurses and nutritionists were important resources to help them gain confidence and increase their BM production (Groleau and Cabral 2009). In Spain, from 20 mothers interviewed, those who maintained BF for longer were those who perceived more empathy from HCP of the pediatric unit and described having a good relationship with them (Almiron et al. 1996). A prospective cohort study reported that educated mothers from different ethnic origins in the USA were less likely to discontinue BF if they reported encouragement from their clinician (a doctor, a nurse or a BF consultant) (Odds Ratio: 0.6; 95% CI: 0.4- 0.8) (Taveras et al. 2003). Mothers were not the only ones experiencing positive experiences concerning their relationship with HCP. English midwives working in maternity hospitals reported to have experienced happiness and satisfaction in supporting mothers to breastfeed (Furber and Thomson 2008).

2.2.3.2. Negative experiences of breastfeeding education: Intrusive, stressful, insufficient, unhelpful, conflicting and pressuring

Although some approaches to BF education are appreciated by mothers others are seen as intrusive and stressful. That was the case of eight Swedish mothers who were interviewed about their experiences in the early postpartum period (Weimers et al. 2006). Mothers reported the need of assistance and support when breastfeeding their infant, such as to

hold the baby and offer the breast, but were not positive about the use of hands-on assistance. The hands-on approach was seen as unpleasant and sometimes brutal. These mothers felt it as a violation of their integrity. Low-income British mothers also perceived this approach as an invasion to their privacy (Hoddinott and Pill 2000). Some of them experienced distress by exposing their breasts and being touched by HCP. The interaction with HCP was also perceived as the primary source of stress by Swiss mothers in the early postnatal period when they minimized difficulties encountered by mothers and provided contradictory information (Razurel et al. 2011). Similarly, low-income Brazilian mothers reported that being watched and monitored by HCP in maternity wards was perceived as a source of stress and anxiety (Groleau and Cabral 2009).

Lack or insufficient support was another common complaint of mothers. That was the case of Spanish mothers who reported that HCP only verified that the BF technique was correct the first time but the subsequent breast feedings were not observed (Almiron et al. 1996). They also considered that HCP have little influence on their feeding decisions, as the information provided was scarce or inexistent. In the same way, Groleau and Rodriguez (2009) noted a clear difference between low-income French-Canadian mothers who stopped BF within the first week and those who breastfed for longer; mothers who abandoned BF reported not having received sufficient support from nurses. In Brazil, low-income mothers of premature babies reported nervousness, distress and anxiety due to a lack of clinician support after discharge (Groleau and Cabral 2009). This contributed to a decrease in mothers' confidence in feeding adequately their babies. Similar results were found among low-educated mothers from sub-urban Dar es Salaam in Tanzania who reported that HCP often lacked full explanations about BF, were too general in providing recommendations that were not always feasible (Omer-Salim et al. 2007). In Niger, observations permitted to note that BF support was almost inexistent in maternity wards and outpatient clinics in public health care facilities in the urban community of Niamey (Moussa Abba et al. 2010b). After informal conversations with HCP, the researcher found that HCP were not motivated to promote about BF since they received little funding to attend continuing education sessions

Information received in the prenatal period is not always perceived as helpful. Educated Swiss mothers commented that they did not put into practice the information obtained in prenatal classes as they did not retain it at that time (Razurel et al. 2011). Other mothers reported that the information was not helpful in the way that information about possible future difficulties and ways to overcome them was not provided. The same mismatch between antenatal expectations and reality was reported among low-income British mothers that subsequently experienced a loss of confidence in their ability to breastfeed (Hoddinott and Pill 2000).

Lack of information was not the only aspect of the education that led to a loss of confidence in mothers. In effect, conflicting or inconsistent advice was reported in many cases as damaging the mothers' self-confidence in their BF practices. Educated English primiparous mothers expressed how they felt confused by getting different opinions from the HCP (Simmons 2002). The researcher suggested that many women inherently lack confidence in their ability to breastfeed and seek expertise and reassurance from others; inconsistent advice reinforces the lack of confidence. In Brazil, the same phenomenon was reported by low-income primiparous mothers who commented having received inconsistent advice from health professionals, which made them feel insecure about their BF practices (Nakano et al. 2007). Conflicting advice was not only problematic to mothers but also to HCP. For example, in the United Kingdom, midwives working in maternity hospitals reported to feel annoyance and indignation when pediatricians contradicted their decision-making concerning infant feeding and when their knowledge differed from that of their peers (Furber and Thomson 2008).

Besides the communicated information, the pressuring and blaming ways of providing it were also reported as damaging the mother-HCP relationship. For instance, dissatisfaction was created among low-income British mothers who commented how they were pressured to breastfeed against their own wishes (Hoddinott and Pill 2000). They reported that they lied to the HCP to maintain control of decision-making. Similar results were found in Quebec, Canada, where low-income French-Canadian mothers reported that they

felt pressured by nurses to adopt BF rather than encouraged and supported (Groleau and Rodriguez 2009). This approach as well as blaming and a lack of encouragement from HCP was a factor found to cause insecurity and low confidence in Tanzanian mothers about their ability to breastfeed (Omer-Salim et al. 2007).

In summary, the BF education provided may meet the mothers' expectations if it is tailored to their needs. Encouragement from HCP to mothers is needed to develop a relationship based on trust. A positive mother-HCP relationship is essential when BF support is provided as it has the potential to increase mothers' confidence to breastfeed and decrease BF discontinuation through an encouraging and friendly approach. On the other hand, mothers may feel an invasion from HCP, pressure to breastfeed or receive insufficient, unhelpful or conflicting advice and perceive that their needs are not met. This in turn will decrease their confidence in BF.

2.2.4. Factors influencing professional breastfeeding education

According to WHO (2009), HCP have a critical role in providing support to mothers and families to help initiate and maintain appropriate IYCF practices. For that reason, understanding factors affecting HCP knowledge, skills and practices related to BF is imperative. These factors constitute their professional training, as well as the environment in which they work.

2.2.4.1. Education and training of health care providers

WHO (2009) considers that IYCF is not well addressed in the training of HCP. Due to a lack of appropriate knowledge and skills, HCP can become a barrier to optimal feeding practices by not knowing how to help mothers initiate and maintain EBF, by recommending the introduction of CF before the age of six months or by promoting infant formula when BF problems arise. Education and training is expected to improve BF knowledge, attitudes, skills and practices of university students as well as in-service HCP.

2.2.4.1.1. *Academic training*

In a qualitative study carried out in Australia, researchers investigated through semi-structured interviews what factors, in relation to the BFHI 10 steps to successful BF, influenced the development of BF support practices for beginning practitioner midwives students (Reddin et al. 2007). The students reported outdated practices by senior midwives and passive resistance to the BFHI 10 steps that negatively affected their commitment to the 10 steps. In other words, the quality of the clinical experience gained by these students was influenced by the practices of the midwife supervisors. The authors suggested that the gap between expected and actual experiences could do an "immense harm" in the clinical setting since inexperienced staff are more impressionable and can easily adopt such practices. The authors concluded that staff unwilling to change outdated practices undermined BFHI steps practices of students.

2.2.4.1.2. *Continuing in-service training*

Continuing education has the potential to integrate BF information into the counseling of HCP. In Niger, nurses, midwives, social workers, physicians, and pediatricians working in public health facilities of Niamey identified training as essential to improve their attitudes and practices towards EBF. They saw continuing education not only as an opportunity to increase their knowledge but also as a source of motivation to include BF messages into the information provided to mothers (Moussa Abba et al. 2010a). However, sustainability of the provision of BF messages is a concern as pointed out by Prasad and Costello (1995) who carried out an intervention consisting on a 10-day training on BF given by a health education doctor to staff of maternity wards. Before the training none of the mothers recruited reported that they had received health education. Immediately after the intervention, 100% (n=195) of mothers reported having received health education ($p<0.0001$). However, six months after the training of key staff members the number decreased to 36% (n=36) of mothers who reported to have received health education

($p<0.0001$). The authors suggested that the trained health staff reacted positively to the intensive training and disseminated health messages effectively immediately after the training. Nevertheless, the training effect was short since six months after the training the prevalence of mothers who received health messages decreased dramatically. The "dilution effect" of training was attributed to staff movement, loss of interest, and new staff the maternity ward that had not been trained. These findings clearly showed that one BF training intervention on health staff is not sustainable and refresher trainings on BF is needed.

On the other hand, although necessary, regular continuing education does not always improve the HCP confidence in their ability to promote and support BF. Interviewed health visitors and midwives working in a hospital trust in Northern England reported having completed their professional training and the BF updates provided by the hospital, but they expressed a lack of confidence in their BF knowledge and skills (Simmons 2002). The author suggested that questions needed to be raised about the adequacy of the continuing education provided to HCP to improve their BF knowledge and skills, in particular, the problem of individual experiences that could bias the BF support they provide was identified.

2.2.4.2. Environmental factors of health institutions

Health services are key sites to promote the initiation and establishment of optimal BF practices (WHO 2009). The organizational culture of a health care facility includes values, beliefs and assumptions of organizational members and can create a positive or negative environment to support BF practices (Denison 1996; Dykes and Flacking 2010). Dykes and Flacking (2010) emphasized the importance of organizational culture in understanding BF practices. The organizational culture influences the attitudes and actions of health care staff and this will in turn influence the information, support and care provided to mothers. For example, it is expected that HCP working in a BFHI hospital have positive attitudes towards the 10 steps. However, a positive organizational

culture to BF should not be taken for granted to positively affect BF support practices as seen in the study conducted by Reddin et al. (2007) where students adopted outdated practices by senior midwives. Similar results were found among interviewed midwives working in maternity hospitals on Northwest England (Furber and Thomson 2008). They described how they were intimidated when using research-based feeding practices that were not used by the other midwives. Perceiving the threat, they changed their practices to those of the dominant culture of the working place.

A heavy workload, paper work and time pressure were identified as factors of the clinical working environment that affected the HCP BF support practices in health services in the United Kingdom, Australia and Niger (Dykes 2005; Moussa Abba et al. 2010a; Reddin et al. 2007; Simmons 2002). HCP did not sit and take the time to listen and counsel mothers; rather, they gave rushed prescriptive advice in an authoritative manner. This lead to a lack of interpersonal communication with mothers who felt that their needs of support were unmet. HCP interviewed in Niger suggested to increase the number of HCP and designate a HCP specifically for BF communication and promotion purposes (Moussa Abba et al. 2010a).

In summary, university and in-service trainings are key for the adoption of positive BF support practices by inexperienced university students and working HCP. Students can easily adopt their supervisors' practices. BF education courses clearly have a positive impact on knowledge, attitudes and practices of HCP as well on BF outcomes; however, to be sustainable, regular refresher courses are needed. These courses have the potential to increase the motivation of HCP to promote BF although their adequacy should be reviewed to help HCP identify possible biases that could hinder their practices. Finally, environmental factors, such as the organizational culture and the clinical working environment, can positively or negatively affect BF support practices.

2.3. Nutrition education approaches

As seen previously, professional BF support has the potential to modify mothers' BF practices and improve BF outcomes. The next sections discuss different approaches to nutrition education to modify these practices.

2.3.1. Participatory approach to nutrition education

In developing countries, the predominant approach used in nutrition education is the transmission-persuasion model (Aubel et al. 2004). This approach involves a directive pedagogical approach that is unidirectional and message-based; short messages are provided and intended to persuade people to adopt certain health or nutrition behaviors. By following this approach it is then assumed that participants will acquire information and adopt the practices taught. The transmission-persuasion model also involves a reductionist approach of individual behavior change in which the socio-cultural and environmental contexts are not taken into account. This approach tends to ignore other household level actors that could influence practices.

An alternative to this approach is the participatory communication/empowerment education approach that involves participatory and dialogical methods through which participants are challenged to integrate health or nutritional concepts. The dialogical method involves dialogue and open communication among participants and the educator who are in a mutual learning process (Shor and Freire 1987). The participatory communication/empowerment education approach was integrated in the nutrition education strategy carried out by Aubel et al. (2004) in Senegal that consisted in strengthening the role of grandmothers at household and community levels to promote optimal infant feeding practices. This approach used typical and problematic situations in nutrition that challenged grandmothers to develop their own solutions. The "grandmother strategy" consisted in an intervention that used participatory education activities such as songs, stories and group discussions. Songs and stories were traditional and socio-culturally appreciated activities in the communities. In intervention villages, initiation of

BF in the first hour postpartum was significantly increased in comparison to intervention villages (57% vs 98%; $p<0.0001$). EBF rates at 5 months were also significantly increased (35% vs 93%; $p<0.0001$). The authors concluded that the nutrition education strategy had a positive and significant effect in improving BF.

2.3.2. Nutrition education through different channels using multiple opportunities

WHO recommends that any contact of mothers and infants with health services should be an opportunity for supporting feeding practices no matter which health worker is involved (WHO 2009). The following studies show evidence about the effectiveness of frequent encounters through different communication channels in improving BF practices.

A RCT conducted in rural Haryana, India, to promote EBF established a relationship between intensity of counseling and behavior change (Bhandari et al. 2005). Different health and community workers were trained to counsel mothers at multiple contacts through already existing services on EBF for four to six months: in the immediate postpartum period; during home visits once a month for one year; during weighing sessions every three months; at immunization clinics; and finally at sick child visits. The prevalence of EBF at three months increased with the number of counseling channels passing from 70.8% with zero channels to 81.3% with one or two channels, to reach 93.6% with counseling with three channels or more ($p=0.002$). The same relationship was found at four months of age ($p=0.001$). The researchers concluded that it is critical to reach a target audience frequently enough to encourage a lasting behavior change. Counseling at different opportunities is essential to reach high coverage and adoption of the recommended feeding practices.

Multiple encounters can also come from other sources outsides health services. This is shown in a community-based study conducted in a relocated slum of Delhi, India, were negative infant feeding practices were identified and addressed through a nutrition

education intervention (Sethi et al. 2003). A "communication mix" of channels and participatory learning methods were used. Infant feeding messages were provided to mothers through focus group discussions, individual counseling sessions, home visits, workshops as well as street plays, stories and songs. Initiation of BF within the first hour improved from 23% pre-intervention to 100% post-intervention ($p<0.0001$); the prevalence of women giving colostrum increased from 20% to 100% ($p<0.0001$); EBF rates among babies from birth to six months increased from 30% to 86.6% ($p<0.0001$); and the prevalence of mothers not giving prelacteal feeding increased from 20% to 96.6% ($p<0.0001$). No information was given about the decision of having a sample size of 30 mothers.

The participatory communication/empowerment approach to nutrition education, opposite to the transmission-persuasion model, actively involves participants during the educational process in an open dialogue and communication with the educator. This approach was found to improve early initiation of BF and BF rates. In addition, the participatory approach to education provided at different opportunities by multiple actors improves mothers' BF practices and other BF outcomes and increases the rates of EBF.

3. METHODOLOGY

3.1. Study rationale

EBF for the first six months of life is recommended for optimal infant growth and development (WHO and UNICEF 2003). HCP play an essential role in influencing decisions about infant feeding among mothers and families (WHO 2009). The BFHI, a WHO/UNICEF program to support BF globally in health services, is the standard for maternity care (UNICEF 1992). Important components of this initiative are pre- and postnatal professional promotion and support to ensure that BF is initiated and fully established. These are effective when tailored to the mothers' needs (Gill 2001; Hoddinott

and Pill 2000; Varela Ruiz et al. 2011) and provided frequently through different education channels using a participatory approach (Aubel et al. 2004; Bhandari et al. 2005; Sethi et al. 2003). In addition to the communicated information, a positive mother-HCP relationship is essential as it has the potential to increase mothers' confidence to breastfeed and decrease BF discontinuation (Almiron et al. 1996; Dykes 2005; Groleau and Cabral 2009; Nankunda et al. 2010; Taveras et al. 2003). The professional promotion and support to BF is affected by the training received to HCP (Moussa Abba et al. 2010a; Owoaje et al. 2002; Prasad and Costello 1995; Reddin et al. 2007; Simmons 2002), as well as by environmental factors of the health institutions, such as the organizational culture and the clinical working environment (Dykes 2005; Dykes and Flacking 2010; Furber and Thomson 2008; Moussa Abba et al. 2010a; Reddin et al. 2007; Simmons 2002). In Peru, EBF rates are decreasing in urban (from 64.5% in 2007 to 59.9% in 2010) and coastal areas (from 60.1% in 2007 to 52.8% in 2010) despite a legal framework and activities to protect, promote and support BF (INEI 2010).

To date, no studies have examined the actual practices in health services and the role that these play in promoting and supporting BF in coastal and urban areas of Peru. Further research is needed to investigate the factors affecting practices related to the infant feeding promotion and support for the first six months of life in health services in Peru. A better understanding of the experiences of mothers and HCP will provide insights into the decline of EBF seen in those areas. Ultimately, understanding the factors affecting BF promotion and support in health services has major implications for the health of Peruvian infants. Lessons learnt will contribute to the improvement of programs and future policy decisions.

3.2. Research questions

- What are the experiences of mothers in relation to infant feeding promotion and support from government health services in Lima, Peru?

- What are the experiences of health care providers in providing infant feeding promotion and support to mothers through government health services in Lima, Peru?

- What are the actual observed practices related to promotion and support of infant feeding in government health services in Lima, Peru?

3.3. Qualitative research

3.3.1. Rationale for the qualitative methodology

Qualitative research is designed to explore a phenomenon and provide insights on human behavior (Green and Thorogood 2009; Guba and Lincoln 1994). In qualitative research, the researcher is the instrument of data collection by interviewing people about their experiences, opinions, feelings and knowledge; by observing people's activities, behaviors, actions, interpersonal interactions and organizational processes; and by gathering documents such as written materials and photographs (Patton 2002c). Data generated is then analyzed inductively while focusing on the meaning given by the participants.

In health research, qualitative methodology is used to investigate health, illness and health services from the perspective of patients and health professionals who provide health services for them (Green and Thorogood 2009). This study focuses on the experiences of mothers and HCP in relation to promotion and support of BF in health services; qualitative methodology is well suited to analyze them.

3.3.2. Research paradigm

According to Lincoln and Guba (1994), a paradigm is defined as a set of basic beliefs that must be accepted simply on faith and their truthfulness cannot be established. A paradigm represents a worldview. Many paradigms exist but for this qualitative research constructivism is a reasonable option. The comparison between constructivism and its opposite paradigm, positivism, makes this choice clear. Constructivism is generally defined as the study of multiple realities that people create and the implications of these for their lives and interactions with other people (Patton 2002f). Its aim is to explore and understand human behavior; the products obtained will come from human intellect (Guba and Lincoln 1994). On the contrary, the inquiry aim of positivism is to explain a phenomenon, physical or human, by defining hypotheses and creating objective and numerical data that will be analyzed with statistical tests.

3.3.3. Reflexivity: the researcher's position

According to constructivism, the researcher is part of the research setting (Guba and Lincoln 1994). For that reason, it is essential when collecting and analyzing qualitative data that the researcher uses reflexivity, including self-awareness, consciousness about one's political, cultural, social, linguistic and ideological origins, and ownership of one's perspective (Patton 2002b). All qualitative researchers, as research instruments, need to consider the perception of the participants about them and the effects of their characteristics (such as sex, race, and social status) on data collection (Britten 1995). By being reflexive, a researcher involves consideration of his/her role in all the aspects of the research process, including fieldwork and analysis (Green and Thorogood 2009).

In doing this data collection and analysis, the researcher was self-aware and conscious about her perspective, professional background and preconceptions and how these could affect the data collection and analysis (Patton 2002e). Although she was a HCP herself, her cultural and social origins were different from those of the participants. She critically observed herself during fieldwork and recorded in a field diary on a daily basis her

thoughts, feelings and observations about how participants behaved in her presence and how behaviors changed over time. The researcher acknowledges that findings were shaped by her point of view during data collection and analysis.

3.3.4. Methodological design: Case studies

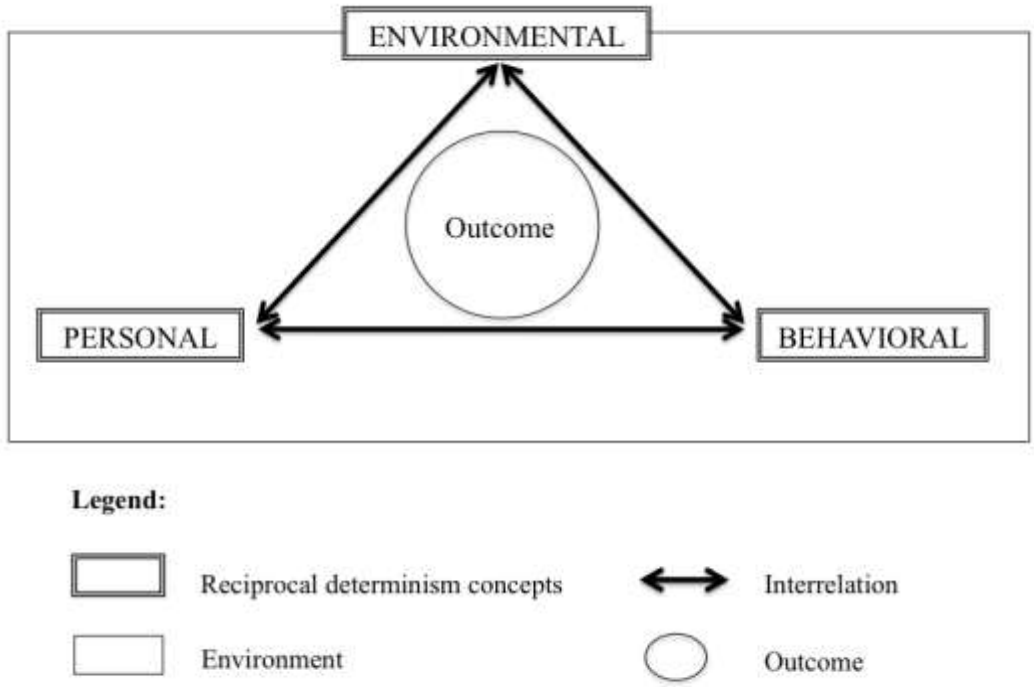
In this research, a multiple case study design was used, in which cases, or units of analysis, were specific mothers and HCP observed and interviewed within their real life context where the researcher had no control over events. This approach allowed the researcher to capture the meaningful and holistic characteristics of real-life events. (Yin 2009) A combination of individual cases (embedded cases) produced project site case studies. Cases were meant to be compared between them to extrapolate patterns.

3.4. Theoretical framework

In this study, the Social Cognitive Theory (SCT) was used as a theoretical framework for identifying factors that influence BF promotion and support in health services. It was chosen as it is a comprehensive health behavior model that takes into account the characteristics of a person, the behavior of that person, the external environment within which the behavior is performed as well as the dynamic and bidirectional interaction between those, which is called reciprocal determinism (Bandura 1986; Baranowski et al. 1997; Redding et al. 2000). The concept of person includes personal characteristics (such as sex, ethnicity, education) and involves human cognitive capacities such as knowledge, beliefs, thoughts, attitudes, motivations and skills. It is associated with constructs that influence behavior; for example, the knowledge and skill to perform a given behavior (behavioral capability), the estimate that a given behavior will lead to certain outcomes (outcome expectation), the value of a particular outcome that will regulate behavior (expectancy or incentive), and the persons' confidence in performing a behavior (self-efficacy). The concept of environment refers to factors physically external to the person

and involves physical, social, cultural, economical, and political factors that can affect a person's behavior. The habitual patterns of interaction between people are another aspect of the environment (Baranowski et al. 1997). A situation represents the person's perception of the environment. The framework adapted from Bandura (1986), Baranowski et al. (1997) and Redding et al. (2000) (Figure 1) shows how an outcome, in this case the promotion and support of BF, is influenced by personal, behavioral, and environmental factors.

Figure 1: The Social Cognitive Theory representing the personal, behavioral and environmental factors affecting the outcome, adapted from Bandura (1986), Baranowski et al. (1997), and Redding et al. (2000)



For instance, a nurse (personal) will evaluate infant feeding practices (behavioral) during growth monitoring sessions in order to provide tailored infant feeding education/recommendations (outcome) if she believes that her recommendations will be tailored and adequate (outcome expectation) and will meet the mother's expectations (expectancy or value). For the nurse to correctly evaluate infant feeding practices she

must know what should be evaluated and how; in other words, she should have the knowledge of the behavior and the skills to perform it (behavioral capability). In addition, the nurse will evaluate infant feeding practices if she feels competent in evaluating them (self-efficacy). Aspects of the health service environment (environmental), such as the time availability, will influence the behavior. The nurse will feel that she has time to perform the behavior (situation).

3.5. Study site

The present study took place in a peri-urban community of low socioeconomic conditions in metropolitan Lima, the capital of Peru, with a population approaching one million inhabitants. The community is situated in the desert and is characterized by limited water supply and sanitation. Most residents are first or second generation of migrants from rural areas of Peru. This community was chosen because it is situated in an urban setting in the coastal region of Peru, the region that is experiencing a decrease in EBF. The study was conducted in coordination with the Instituto de Investigación Nutricional (IIN), a non-governmental organization (NGO) that has been conducting research in the community for more than 30 years, making the setting favorable to carry out the study. Data collection was conducted from February to June 2011.

3.6. Approvals

Ethical approval was obtained from the Review Board Committee of the Faculty of Agriculture and Environmental Sciences of McGill University, from the IIN and the regional health authority. The local network of health facilities and the government hospital authorized the study.

3.7. Pilot project

A pilot project was conducted to test the study interview and observation guides and determine if the questions were clear and understandable to the respondents (Gill et al. 2008). Two mothers and one HCP were individually interviewed and a group of mothers were invited to participate in a focus group. The guides were modified according to reactions and responses of the participants and to specific aspects of health services identified during observations.

3.8. Recruitment of health institutions

In Peru, different levels of health services exist. Health institutions were recruited by heterogeneity sampling (Patton 2002a), within a group a health institutions already identified as typical in providing health services to mothers and their infants. Heterogeneity sampling was used to select health institutions as different as possible from each other for documenting uniqueness as well as yielding shared patterns that cut across cases.

At the beginning of the study, five institutions were identified from three categories of government health services, a social security hospital, and a NGO offering health services to mothers and their infants. As approvals were not obtained to conduct the study in two of those settings (the social security hospital and the NGO) and taking into account the resources available for the study, only three government health institutions were used for the study, one institution from each of the three categories: a health post, a health center and a hospital.

Table 4 presents the characteristics of the government health institutions selected for the study in relation to the services available for mothers and their infants.

Table 4: Characteristics of government health services selected for the study

		Health post	Health center	Hospital
	MINSA category	I-2	I-3	II-1
	# of institutions per category in study area	9	10	1
	Working hours	8.00 am - 2.00 pm	8.00 am - 8.00 pm	8.00 am - 8.00 pm*
Assigned Population	Infants 0-1 year	983	1025	NA
	Pregnant women	1167	1217	NA
One-to-one outpatient services	General medicine	X	X	X**
	Pediatrics			X
	Midwifery/Family planning	X	X	X
	Growth monitoring	X	X	X
	Nutrition		X	X
In-patient services	Maternity ward			X
	Pediatrics			X
Group sessions	Prenatal preparation for childbirth	X		X
	Early stimulation	X		X
	Nutrition		X	

X= services available
*Except for in-patient services
** General medicine in the hospital was not included in the study as it only provided services to adults

Source: MINSA (2011)

The number of patients assigned to a specific health institution is determined by the regional health office of the Ministry of Health according to the geographical area in which it is situated within the study district. The health post and the health center were selected based on the highest number of assigned population per institution to avoid difficulties in recruiting participants. The hospital was selected since it is the only government hospital in the area. Government health services in Peru generally serve low-income populations who do not have access to the social security hospitals because they have an informal job with no benefits or they are unemployed.

3.9. Data collection methods

3.9.1. Observations

3.9.1.1. Recruitment

The researcher developed techniques to recruit participants. In effect, recruitment was difficult when HCP were directly approached in their office. Despite a letter of permission from the director of the institution, HCP were reticent initially to give their consent to participate in the study by allowing the researcher to make observations. The problem was overcome by having the researcher be introduced first by their superior, which facilitated trust towards the researcher. The same problem was seen with mothers when they were directly approached to participate in the waiting room. Mothers were more willing to be observed and interviewed if the researcher was introduced by a HCP, introduced herself to the mother, and presented the oral consent. As the participants could have felt pressured to participate by their superior or by the presence of the HCP, during the presentation of the oral consent the researcher emphasized to HCP and mothers that participation was completely voluntary, that declining to participate would not affect their employment or the services they received, and that they could withdraw from the study at any time by asking the researcher to leave the room. Therefore, the researcher made sure that she was introduced to participants before recruiting them.

3.9.1.2. Procedures

Observations consist of detailed descriptions of people's activities, actions, behaviors and discussions in their natural settings (Mays and Pope 1995; Patton 2002c). The interactions between mothers and HCP were observed in the three government health institutions selected during counseling sessions and educational group sessions. A sensitizing framework, also called observations guide, was developed based on the SCT concepts to orient observations by identifying central elements that should be observed and recorded. In that way, the focus of observations was narrow in recording interactions and discussions between mothers and HCP but broad enough to take into account the context

and observe the environment (see Appendix # 4). Informed verbal consent (see Appendix #1) was obtained from study participants, mothers and HCP, before observations and recorded on the researcher's field notes.

Growth monitoring sessions, vaccination sessions, medical visits and early stimulation workshops were observed in the health post. In addition to these, nutrition talks were observed in the health center. In the hospital, observations took place in maternity wards, in the pediatric in-patient unit, in growth monitoring and vaccination clinics, in medical outpatient clinics, and during workshops, such as early stimulation and prenatal preparation for childbirth. Physical settings in which the observations took place were also observed. The social environment was recorded in one-to-one encounters, during workshop and talks, in waiting rooms and maternity wards. This involved recording frequency of interactions, the direction of communication between people, and the way they organized themselves into groups. While recording the environment, the researcher conducted short informal conversational interviews among staff to understand the functioning of the health care setting. The researcher took care to inform these people about the research and its purpose and obtained the consent about taking notes of the conversation.

Overt observations were used, meaning that participants were not deceived about the purpose of the research. People observed and aware of the research may behave differently when they know they are being observed (Mays and Pope 1995; Patton 2002b). To overcome this problem, the researcher took the time to stay in the setting long enough to be considered part of it. Multiple observations took place over several months allowing for this; over time participants got to know the researcher on a personal level and tend to judge her as a person being part of the setting studied and not as an external evaluator.

Data generated consisted of field notes of detailed description of events including the context within which the observations were made. Field notes were taken immediately after an event occurred by keeping a field diary in which the researcher recorded in detail

what happened, her personal reactions to events as well as changes in her views over time. The impressions and feelings of the observer become part of the data and allow him/her to have a more comprehensive view of the setting being studied and the people who inhabit it (Mays and Pope 1995; Patton 2002b).

3.9.2. Interviews

Interviews permit the researcher to explore the views, experiences, beliefs and motivations of individual participants on specific matters to provide deep understanding about social phenomena (Gill et al. 2008). An interview consists in listening attentively to what participants have to say to acquire more knowledge about a topic.

3.9.2.1. Recruitment

Primiparous and multiparous mothers with infants aged less than six months of age were recruited from each of the three government health institutions to participate in an individual semi-structured interview. Participants were selected by purposeful sampling. Emergent sampling, a type of purposeful sampling (Patton 2002a), was used to recruit two mothers from a focus group as the researcher felt that she could obtain more information from specific participants. Emergent sampling involves on-the-spot decisions about sampling to take advantage of new opportunities during data collection.

HCP were also recruited by using purposeful sampling. Any HCP who provided any health services to mothers and infants aged less than six months of age were eligible to participate. Table 5 presents the participants who were recruited from the three health institutions as well as the duration of the focus groups and interviews.

Table 5: Participants and duration of focus group discussions and individual interviews per health institution

Participants	Duration of interviews (minutes)	Health post	Health center	Hospital	Total
Focus group participants	90				
Group 1: Mothers of infants < 6 mo		4			
Group 2: Mothers of infants < 6 mo			3		
Interview participants	30 - 90				
Primiparous mothers		1	1	3	5
Multiparous mothers		2	3*	1	6
Total mothers					11
Nurses		2	0	2	4
Midwives		1	0	1	2
Nutritionists		0	2	1	3
General practitioners		1	2	0	3
Pediatricians		0	0	4	4
Total health care providers					16

*Two mothers interviewed from the health center were recruited from the respective focus group

The sample size was directed by the research questions and the point of information saturation (Green and Thorogood 2009; Pope et al. 2000). The researcher's intention was to keep sampling participants and make observations until new information was no longer obtained. However, recruitment and observations were limited by outpatient clinics that ceased operating due to vaccination campaigns that took place at short notice. Although, the point of information saturation was not reached for all the areas explored, the researcher had a clear understanding of experiences of mothers and HCP in government health services.

3.9.2.2. Procedures

The loose and flexible structure of semi-structured interviews was used to let the researcher diverge to pursue an idea in more detail (Britten 1995). The interview guides consisted of a practical display of open-ended questions in form of a table that defined the areas to be explored. The interview guides were revised with a local experienced anthropologist (Appendices #5, #6, #7 and #8).

Informed written consent was obtained for all participants interviewed (Appendices #2 and #3). Individual interviews with mothers lasted up from 30 to 90 minutes and addressed the mother's experiences related to promotion and support of BF and how these have affected her BF practices. Interview guides also focused on the socio-environmental factors affecting infant feeding practices. Notes were taken after each interview to record the background, the facial expressions, and other non-verbal features, as done elsewhere (Furber and Thomson 2008). Participants were informed that the research was not intended to be therapeutic (Richards and Schwartz 2002). The views of different professions in health services were also explored. Individual interviews with HCP lasted from 30 to 90 minutes. Questions addressed the health care professionals' experiences related to providing information on infant feeding, their actual practices related to infant feeding. Notes were also taken after each interview.

Interviews were conducted at times and locations most suitable for participants. Mothers were interviewed in their home except for one participant who wanted to be interviewed during her break at work. Interviews with HCP were conducted at their convenience and took place during their break at the cafeteria of the working institution or in their office. Audio-taping was used for most participants. Only three HCP refused tape-recording, one general practitioner and two pediatricians, and written notes were taken. Immediately after the interview, the researcher completed the notes she took to add more details. Participants were thanked for their participation and given a small gift that consisted in rattles for mothers and notebooks for HCP.

Socio-demographic information was obtained from participants before interviews and focus groups to help bring context to the study findings. A questionnaire was used to ask the participants about their age, marital status, parity, occupation, area of origin, level of education and household characteristics. HCP were also asked about their sex, profession and working experience.

3.9.3. Focus group discussions

A focus group is a group interview that capitalizes on communication and interaction between participants to generate data (Kitzinger 1995). Participants are encouraged to talk to one another, ask questions, comment on others' experiences and points of view, and exchanging anecdotes. The group discussion is guided, monitored and recorded by a researcher to explore and gain knowledge on a particular topic (Gill et al. 2008). In this study, two focus groups were conducted with mothers recruited from the health center and the health post.

3.9.3.1. Recruitment

To recruit mothers for focus groups, the researcher aimed at using a homogeneous sampling technique that involves bringing together a small homogeneous group of people with similar backgrounds and experiences to participate in a group interview (Patton 2002a). The idea was to recruit a group of mothers and interview them about the experiences they had in the same health institution. The original plan to recruit mothers was to approach them after observations and invite them to a focus group; however, grouping mothers with similar characteristics for focus groups was difficult because of the wide range of different characteristics they had in age, parity, child's age, socioeconomic status, and availability. Mothers were finally recruited from pre-existing groups of lactating mothers with infants aged less than six months of age that used to meet at regular intervals in the health institutions to receive talks or participate in workshops.

For the first focus group, mothers were recruited from a nutrition talk about anemia given in the health center to a group of lactating women. This group of mothers was part of an assistance program of the Peruvian government that provides non-perishable food and nutrition education to lactating mothers living in poverty. From approximately 15 mothers who were invited to participate, six were interested but finally only three were present during the focus group.

For the second focus group, mothers were recruited from the health post, specifically from two pre-existing groups since groups were small. Five eligible mothers attending a talk about CF were invited to participate; only two accepted. One of these mothers invited a friend, another eligible mother who was not present at the moment (snowball sampling technique). Four other mothers were approached and invited to participate from the early stimulation workshop; one accepted to participate. This gave a total of four mothers to participate in the focus group. The assistance program for lactating mothers was not available in the health post. For more information about the participants and the sample size of focus groups, refer to section 3.9.2.1.

The only pre-existing group in the hospital was the early stimulation workshop but this could not be used to recruit mothers as only two mothers were participating. Only one of them agreed to participate and was individually interviewed.

3.9.3.2. Procedures

Specific aspects of each health institution were identified during observations and interviews and explored in focus groups. This allowed for a better understanding of the participants' experiences in a specific health institution while clarifying and extending data collected through other methods (Gill et al. 2008). A new semi-structured interview guide was developed for that purpose (Appendices #9 and #10).

Socio-demographic information was obtained from participants of the focus groups after informed written consent was obtained (see section 3.9.2.2. for more details). The focus group interview focused on discussions regarding mothers' experiences with promotion and support of BF in a specific health care setting. As focus groups were only carried out with pre-existing groups of mothers in the health post and the health center, the experiences of mothers during childbirth were not explored. It would have been ideal to also conduct focus groups with HCP; this was not possible because of their limited availability.

Focus groups took place in a room in the IIN's office where refreshments were served. To minimize the risk of personal or sensitive information revealed during the focus group discussions in the presence of other participants, confidentiality was encouraged among them but could not be guaranteed (Richards and Schwartz 2002). The group discussions were tape-recorded with the consent of the participants and lasted about 90 minutes. Photographs were also taken of mothers who gave their consent. Two observers, who were not part of the group of participants, observed and took notes about the interactions of the group. At the end of the focus groups, the researcher and the observers discussed about the interactions of mothers as well as their own feelings and impressions about the focus group. This discussion was taped recorded and is part of the data analyzed.

3.9.4. Documents

To better understand the environment of health institutions, data were also collected through documents. These included the forms used by HCP during consultations to record patient information, educational material, and photographs of the physical environment.

3.10. Data analysis

The tape-recorded information obtained from interviews and focus groups was transcribed verbatim into Microsoft Word. Data were then analyzed by the researcher and organized using ATLAS.ti version 6.2.27 (ATLAS.ti Scientific Software Development GmbH, Berlin), a software for qualitative analysis. Analysis was done in Spanish and findings were reported in English.

In this study, framework analysis was used for analyzing data and consisted in a five-step analytical process (Green and Thorogood 2009; Pope et al. 2000). The first step is familiarization with the raw data. The researcher listened to tapes and re-read interview and focus group transcripts and field notes until reaching familiarity with the entire data set. She listed key ideas and recurrent themes. A thematic content analysis is the second step that consisted in analyzing the content of transcripts and field notes to code the recurrent or common themes. A coding scheme, also called thematic framework, was developed from that process (see Appendix #11). The third step consisted in coding all transcripts and field notes with the coding scheme, a process called indexing. The coding scheme was updated and revised throughout the descriptive analysis. Codes referring to similar ideas or phenomena were grouped together to form a category. Once the coding process was finished, a case study approach was used for organizing and reporting qualitative data, the fourth process of framework analysis called charting (Patton 2002d; Yin 2009). Case study reports were developed to summarize data for each participant and showed reduced, focused, and organized information under themes for each individual participant and health institution (Miles and Huberman 1994). Case study reports allowed the researcher to see the range of data under themes, per case, and across cases. The analysis began by individual case studies followed by a thematic cross-case analysis to establish patterns. Interpretation, the fifth and final step, was guided by the SCT and consisted in elucidating linkages between personal, behavioral, and environmental factors and outcomes consisting types of infant feeding promotion and support.

As data generated through focus groups are the result of group interactions, some authors suggested that those interactions and the social contexts[1] should be analyzed and reported (Duggleby 2005; Gill et al. 2008; Hollander 2004; Kitzinger 1995) and this was done from field notes and transcripts. Mothers' interactions, emotional charge, power dynamics within the groups, and areas of disagreement and agreement in focus groups were examined. Finally, document analysis consisted in studying the descriptions of and excerpts from documents and linking them to other sources of data, including individual and group interviews as well as observations (Patton 2002c).

[1] Social contexts are defined as "the relationships among participants and between the participants and the facilitator, as well as the larger social structures within which the discussion takes place."

4. MANUSCRIPT 1: Role of the health care providers' infant feeding advice in government health services in Lima, Peru: practical and tailored support is needed to stop the decline in exclusive breastfeeding

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4.1. Abstract

Background/aim: In Peru, exclusive breastfeeding (EBF) before six months of age decreased in the coastal region from 60.1% to 52.8% between 2007 and 2010. Health care providers (HCP) play an essential role in influencing mothers' infant feeding decisions. This study examined the experiences of mothers and HCP in relation to infant feeding promotion and support from health services in a peri-urban area of Lima.

Methods: Participants were recruited from three government health institutions. Semi-structured interviews were conducted with 16 HCP and 11 mothers of infants < 6 months of age. Seven mothers participated in two focus group discussions. The health service environment and educational activities were observed. Documents, such as educational material and forms used by HCP, were collected. A framework analysis approach was used. Interpretation was guided by the Social Cognitive Theory (SCT).

Results: Promotion of benefits of breastfeeding (BF) was provided in group sessions and talks. Individual support was provided via growth monitoring and medical visits, nutrition counseling sessions, maternity wards, pediatric in-patient units, and home visits. HCP recommended EBF for six months but did not provide practical or tailored support to address common feeding problems. Bottle-feeding mothers were not supported. Insufficient evaluation of feeding practices was a key factor leading to the provision of general standard recommendations that were not always helpful or sufficient for the adoption of optimal feeding practices. Barriers to providing adequate BF counseling by HCP included heavy client load, inadequate in-service training, and poor counseling skills.

Conclusions: A careful evaluation of individual feeding practices and barriers to breastfeed was demonstrated as essential to provide mothers with practical and tailored support. Evaluation of the services provided should not only emphasize the number of patients encountered but also the quality of the consulation. To promote optimal infant feeding behaviors, training of HCP is needed in government health services to address knowledge gaps and poor counseling skills.

Key words: Infant feeding, breastfeeding support, breastfeeding promotion, nutrition counseling, health services, lactating, Peru

4.2. Introduction

The World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) recommend exclusive breastfeeding (EBF) for the first six months of life for the optimal growth and development of the infants (WHO and UNICEF 2003). EBF exists when the infant only receives breast milk (BM) without any additional solid or liquid, the only exception being oral rehydration solution, drops, and syrups containing vitamins and minerals, and medicines (WHO et al. 2008). Suboptimal breastfeeding (BF), especially non-exclusive BF, was reported as being responsible for 1.4 million of child deaths and 44 million disability-adjusted life-years, representing 10% of disease burden in children younger than five years all over the world (Black et al. 2008).

Health services are key sites to promote the initiation and establishment of optimal BF practices as health care providers (HCP) play an essential role in influencing mothers' feeding decisions (WHO 2009). Many qualitative studies have examined BF promotion and support provided in health services. These may meet the mothers' expectations if it is tailored to their needs (Gill 2001; Groleau and Cabral 2009; Hoddinott and Pill 2000; Varela Ruiz et al. 2011; Whelan and Lupton 1998). Emotional support and encouragement from HCP is particularly important to lactating mothers and is needed to develop a relationship based on trust (Gill 2001; Hoddinott and Pill 2000). A positive mother-HCP relationship is essential as it has the potential to increase the mothers' confidence to breastfeed and the BF duration through an encouraging and friendly approach (Almiron et al. 1996; Dykes 2005; Groleau and Cabral 2009; Nankunda et al. 2010; Taveras et al. 2003). Although some approaches to BF education seem appropriate for mothers, others are seen as intrusive as is the case for the hands-on approach that mothers described as a violation of their integrity and their privacy (Hoddinott and Pill 2000; Weimers et al. 2006). Stress and anxiety were reported by mothers when HCP did not give importance to their BF difficulties (Razurel et al. 2011) or when they felt watched and monitored in maternity wards (Groleau and Cabral 2009). Lack or insufficient support and conflicting advice are other common complaints of mothers that are associated to a decreased confidence in feeding adequately their baby and to BF

discontinuation (Almiron et al. 1996; Groleau and Rodriguez 2009; Nakano et al. 2007; Omer-Salim et al. 2007; Razurel et al. 2011; Simmons 2002). Blaming and pressuring ways of providing it also creates insecurity among mothers concerning their ability to breastfeed (Omer-Salim et al. 2007) as well as dissatisfaction leading them to lie to the HCP to maintain control of decision-making (Hoddinott and Pill 2000).

The professional promotion and support to BF is affected by the training received by HCP (Moussa Abba et al. 2010a; Owoaje et al. 2002; Prasad and Costello 1995; Reddin et al. 2007; Simmons 2002). Environmental factors of the health institutions, including working patterns, workload and time availability also affect the professional promotion and support to BF (Dykes 2005; Dykes and Flacking 2010; Furber and Thomson 2008; Moussa Abba et al. 2010a; Reddin et al. 2007; Simmons 2002).

In Peru, the prevalence of EBF before six months of age is one of the highest in Latin America (PAHO 2011). This prevalence of BF increased from 52.7% in 1996 to 67.2% in 2000 to 68.5% in 2009 (MINSA 2010a). Although the national prevalence rate only slightly decreased in 2010 to 68.3%, there was a large decrease of EBF in urban areas (from 64.5% in 2007 to 59.9% in 2010) and the coastal region (from 60.1% in 2007 to 52.8% in 2010) (INEI 2010).

To date, no studies have examined BF promotion and support in health services in Peru and the factors and processes affecting it. There is a need to better understand the role of health professionnals in the decline of EBF. The present study aimed to examine the actual practices related to the infant feeding promotion and support for the first six months of life in health services in the coastal city of Lima. Qualitative methods were used to explore and gather comprehensive information on the experiences of mothers and HCP in relation to promotion and support of BF in health services and analyze the personal, behavioral, and environmental factors that influenced these experiences.

4.3. Methods

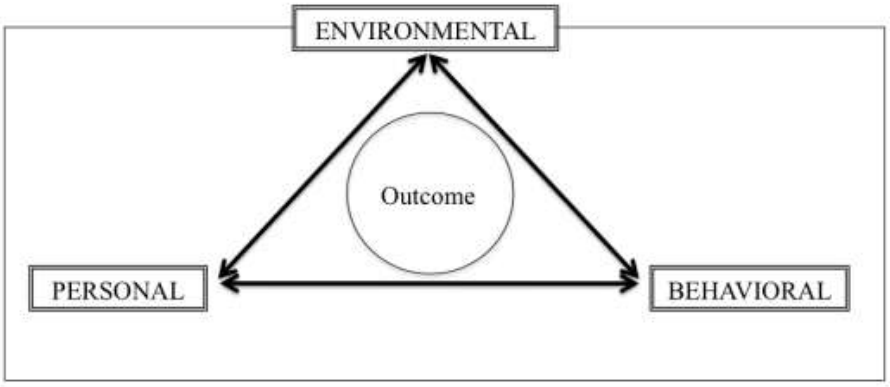
4.3.1. Study location

The present study took place in a community of low socioeconomic conditions, situated on the outskirts of Lima, the capital of Peru. Most residents are first or second generation migrants from rural areas of Peru. This community was chosen because it is situated in an urban setting in the coastal region of Peru, a region that is experiencing an important decrease in EBF.

4.3.2. Study design

The qualitative methodology used for data collection and analysis was guided by the Social Cognitive Theory (SCT); personal, behavioral, and environmental factors affecting infant feeding promotion and support were explored (Figure 2) (Bandura 1986; Rosenstock et al. 1988). Triangulation of perspectives of infant feeding promotion and support were obtained from different data sources: HCP, mothers, and the researcher (Keen and Packwood 1995; Patton 2002f). Methodological triangulation was obtained by combining interviews, focus groups, observations, and documents.

Figure 2: The Social Cognitive Theory representing the personal, behavioral and environmental factors affecting the outcome, adapted from Bandura (1986), Baranowski et al. (1997), and Redding et al. (2000)



4.3.3. Sample

Health institutions were recruited by heterogeneity sampling (Patton 2002a), within a group of health institutions identified as providing health services to mothers and their infants aged less than six months of age. Participants were recruited from three government health care institutions: a health post, a health center and a hospital. The health post and the health center offered the same outpatient services; the latter offered in addition nutrition services. The selected health post and the health center had the highest number of assigned population per institution to avoid difficulties in recruiting participants. The hospital was the only government hospital in the area and the only institution selected offering inpatient services. Government health services in Peru generally serve low-income populations who do not have access to the social security hospitals because they have an informal job with no benefits or they are unemployed.

Participant mothers and HCP were recruited by using purposeful sampling to participate in an individual semi-structured interview. Any HCP who provided health services to mothers of infants aged less than six months of age was eligible to participate. Sixteen HCP and eleven primiparous and multiparous mothers with infants aged less than six months of age eleven were recruited and interviewed. Sampling through pre-existing

women's groups was done to recruit mothers for focus groups who knew each other to foster a fluent conversation among them (Gill et al. 2008). Eligible mothers were women with infants aged less than six months of age who used to meet at regular intervals in the health institutions to participate in workshops. Two focus groups were conducted with mothers (n=7), one included women recruited from the health post and the other from the health center. The only pre-existing women's group in the hospital had only two eligible women and therefore was not used. Emergent sampling was used to recruit two mothers from a focus group as the primary researcher felt that she could obtain more information from these specific participants. Socio-demographic information was obtained from participants before interviews and focus groups to help bring context to the study findings (see Table 6 and 7). For additional information see Appendix #12.

Table 6: Demographic and socio-economic characteristics of health care providers who participated in interviews and focus groups (n=16)

	Mean ± SD	
Age (y)	39.8 ± 9.2	
Parity (#)[1]	1.1 ± 0.9	
Age of youngest child (y)[2]	6.5 ± 3.7	
Work experience in this profession (y)	13.2 ± 8.6	
Work experience in the respective health institution (y)	6.6 ± 6.6	
	n	%
Sex		
Female	10	62.5
Male	6	37.5
Area of origin		
Metropolitan Lima	11	68.8
Coast/Other regions	3	18.8
Sierra/Mountain range	2	12.5
Profession		
Nurses	4	25.0
Midwives	2	12.5
Nutritionists	3	18.8
General Practitioners	3	18.8
Pediatricians	4	25.0

[1] n=10; only women included

[2] n=6; only women

Table 7: Demographic and socio-economic characteristics of mothers who participated in interviews and focus groups (n=16)

	Mean ± SD	
Age (y)	29.5 ± 5.4	
Parity (#)	2.2 ± 1.2	
	n	%
Area of origin		
Metropolitan Lima	5	31.2
Sierra/Mountain range	7	43.8
Jungle	4	25.0
Education		
Primary incomplete	2	12.5
Primary complete	4	25.0
Secondary complete	7	43.8
Higher education complete	3	18.7
Marital status		
Single	2	12.5
Married/living with partner	13	81.2
Separated/divorced	1	6.3
Employment		
Housewife	7	43.8
Seamstress	2	12.5
Maid/domestic servant	2	12.5
Shop assistant	3	18.7
Beautician	1	6.3
Company/private sector	1	6.3
Worked in the postpartum period		
Yes	6	37.5
No	10	62.5
Principal economic support		
Mother/herself	2	12.5
Partner	9	56.2
Mother and partner	3	18.7
Parents/extended family	1	6.3
Family in-law	1	6.3

4.3.4. Ethical approval and informed consent

Ethical approval was obtained from McGill University, the Instituto de Investigación Nutricional, and the regional health authority. The local network of health facilities and the hospital authorized the study. Verbal informed consent was obtained for observations, and written informed consent was obtained before interviews and focus groups.

4.3.5. Data collection

The first author conducted data collection from February to June 2011. Interview and observations guides were pretested. The interactions between mothers and HCP were observed during growth monitoring sessions, vaccination sessions, medical visits, and early stimulation workshops. Nutrition workshops were also observed in the health center. In the hospital, observations took place in maternity wards, pediatric in-patient units, growth monitoring and vaccination clinics, medical outpatient clinics, and during workshops. All participants were aware of the purpose of the research.

Semi-structured interviews with mothers lasted up from 30 to 90 minutes and addressed the mothers' experiences related to promotion and support of BF and how these have affected their BF practices. Interviews with HCP addressed the health care professionals' experiences related to providing information on infant feeding and their actual practices related to infant feeding education. Interviews were conducted at times and locations most suitable for participants. Audio-taping was used for all but three HCP who refused tape-recording and written notes were taken. Immediately after the interview, the researcher completed the notes she took to add more details. Participants were thanked for their participation with a small gift.

New semi-structured interview guides were refined to explore specific aspects of the health post and the health center. Focus groups took place at the field office. The group discussions lasted about 90 min. They were tape-recorded and two observers took notes about group interactions. Focus groups with HCP were not possible because of their limited availability. To better understand the environment of health institutions, data were also collected through documents including a description of the forms used by HCP during consultations to record patient information and written educational material.

4.3.6. Data analysis

The tape-recorded information obtained from interviews and focus groups was transcribed verbatim into Microsoft Word. Data were organized using ATLAS.ti version 6.2.27 and analyzed by the first author. In this study, promotion of infant feeding referred to the promotion of the benefits or disadvantages of specific feeding practices, while support of infant feeding referred to use of educational materials, verbal recommendations, or physical demonstrations to teach specific feeding techniques.

The framework analysis that was used consisted of a five-step analytical process: familiarization with the raw data, identification of a thematic framework, application of the thematic framework to the whole data set using codes (indexing), rearrangement of the data according to the appropriate part of the thematic framework (charting), and mapping and interpretation (Green and Thorogood 2009; Pope et al. 2000). Interpretation was guided by the SCT and consisted in elucidating linkages between personal, behavioral, and environmental factors and outcomes consisting of types of infant feeding promotion and support (Green and Thorogood 2009; Pope et al. 2000). Table 8 presents principal codes that were used to analyze transcripts by thematic analysis.

Table 8: Principal codes from the thematic framework

Codes
evaluation_feeding practices
recommendation_BF
recommendation_formula
recommendation_primiparous vs multiparous
recommendation_personal experience
recommendation_erroneous
recommendation_conflicting
nutrition counseling
physical support
educational material
mother-HCP relationship
home visits
group sessions
environment_health services
HCP_continuing education
HCP_reference document
HCP_workload

Document analysis was linked to the other data sources (Patton 2002c). The first author was reflective during fieldwork and recorded in a field diary on a daily basis her thoughts, feelings and observations about how participants behaved in her presence and how behaviors changed over time. She acknowledged that findings were shaped by her point of view during data collection and analysis.

4.4. Results

In the three government health institutions, contacts between mothers with young infants and HCP typically happened in group sessions, outpatient and inpatient services, and home visits. Outpatient services included growth monitoring, vaccination, family planning, general medicine and nutrition clinics. Inpatient services included maternity wards and pediatric inpatient units. The promotion and support of infant feeding provided through these channels differed due to the diversity in the environment, the HCP, their training and experiences.

4.4.1. Availability and use of educational material

Material provided by the Ministry of Health of Peru (MINSA) was limited and included family planning flipcharts that included information about EBF as a contraceptive method, flipcharts of BF, and posters of BF in emergencies (environmental factor). Written material was available but scarce as the ministry only provided them in August for the Breastfeeding Week. Educational material could become available if elaborated or obtained by the HCP (behavioral factor). The development of educational material depended on the commitment of BF of the HCP and on their motivation to educate mothers (personal factors). For example, hospital nursing university students were asked by a senior nurse to elaborate material for the BF talks. Two nurses and a nutritionist reported that they elaborated their own material.

Nurse (P2): When I started working in the growth monitoring office, I started developing my own materials (...) I make what I use.

According to the HCP interviewed, educational material was mainly used in group sessions; for example, nutritionists used flipcharts on BF during the Breastfeeding Week held in August. A breast model and posters elaborated by the nutritionists were used in workshops provided to low income mothers as part of an assistance program of the Peruvian government that provides non-perishable food and nutrition education to pregnant and lactating mothers living in poverty. This was corroborated by observations and interviews with mothers and nutritionists. In contrast, no visual educational material was used during individual consultations in inpatient and outpatient clinics, as reported by all mothers but one. Written material was not distributed to any of the mothers interviewed.

Even when educational material was available, there was no guarantee that it would be used. High workload was an environmental factor that negatively affected the use of educational materials, as explanations given to the mother usually took longer. A nurse reported that she could not use these materials with all the mothers, just with those who really needed it:

Researcher: When do you use it (the breast model)? With all the mothers?
Nurse (PS4): No, only with primiparous, with the new ones and in special cases, but not always because, as you can see, sometimes we have many patients, I have to determine priorities

4.4.2. Different types of promotion and support

4.4.2.1. General and standard support

General and standard information on BF was provided through group sessions and consisted in promotion of benefits of BF: physical and psychological benefits and duration of BF, the importance of EBF, BF on demand, the need to give BM from the two breasts, and the position of the baby. Promotion against infant formula during the same group sessions included disadvantages of formula and health problems of bottle-feeding infants. Nutritionists also emphasized the importance of maternal nutrition for BM production. Frequency varied from once a week to once a month. Observations, three HCP, two mothers and a focus group corroborated this information.

In the majority of individual encounters observed and reported by mothers, consultations started with a short evaluation of feeding practices with closed yes/no questions related to BF or with questions giving the mother feeding options. Evaluations did not comprise observation of BF, or questions related to BF difficulties and mothers' barriers to breastfeed. In rare cases, mothers were given space to express their feeding practices in their own words. Consequently, HCP were not able to provide recommendations tailored to the mothers' needs and offer strategies to overcome barriers. Instead, general standard recommendations were provided while dismissing the mothers' point of view and difficulties. Similar experiences were reported by mothers interviewed individually (4/11) and during a focus group.

> *Nurse: At this moment, are you giving your breast or formula as well?*
> *Mother: Only my breast*
> *Nurse: Exclusive breastfeeding until he's six months old, ok?*
> *(Consultation observed in the growth monitoring clinic of the health post)*

Mother 1-Growth monitoring clinic: She [the nurse] only told me: "You have to give your breast, no other kinds of milk". Yes but, I told her that sometimes little boys need a lot [of breast milk], I told her that. "No" she told me "if he cries, it doesn't only mean he wants more, he may cry for other reasons" and that "[breast milk] will help him to grow." That's the only think she told me.

Mother 7- Maternity ward: [The mother told the nurse]:"Miss, my baby is crying." I wanted to give him [my breast], but he couldn't take it. [The nurse told her]: "Just give him your breast and he will take it, that is the way he will take your milk"

Evaluation of feeding practices by using closed questions (behavioral factor) could be explained by an environmental factor. HCP evaluated the patient by recording information on standard forms created by MINSA that included a short questionnaire of closed questions or predetermined categories to evaluate feeding practices. HCP had the place to write one or two words or to insert a specific code depending on the intervention made. There was no space to include details about the actual feeding practices, feeding problems, the mother's barriers to breastfeed, and specific interventions or recommendations made. The following is an excerpt of one of the forms used:

Evaluation of the child's feeding practices:
Infant < 6 months old receives EBF?
*Yes □: if he/she receives EBF: How many times per day?*_____
No □: if he/she does not receive EBF, specify the type of food:
_____

High workload and time pressure were other environmental factors hindering the evaluation of feeding practices and subsequent provision of recommendations, as reported by 10 out of 16 HCP. The ministry imposes a fixed number of encounters per shift in outpatient services; the performance of HCP is evaluated in a monthly basis. While trying

to reach MINSA targets, HCP felt pressure to finish one consultation to pass to the next one. In inpatient services, such targets were inexistent but the same environmental factors were perceived.

> *Pediatrician (PS11): Instead of disseminating breastfeeding, they [nurses] are required to see 20 patients, 25 patients [per shift]. And 25 patients for a growth monitoring clinic, it will never be adequate to carry out adequately a growth monitoring session*

> *Nurse (PS16): Sometimes, for time reasons [the consultation] has to be stopped in the middle and you have to attend the next patient … unfortunately that's the way it is*

> *Nurse (PS10) – Maternity ward: You do what you can, you see? Because sometimes you have many patients, a lot of patients and … time is limited [to help the mother to breastfeed], so it depends on the time you have*

Time pressure was perceived during consultations observed when a HCP was in charge of all the patients in a specific service. However, in many cases HCP took the time to chat with their colleagues, use their cell phones or receive private company representatives during consultations. This information was corroborated by a mother and the focus group of mothers recruited from the health center.

4.4.2.2. Tailored verbal and physical support

Tailored support was possible when time pressure and a high workload were not perceived by HCP. That was the case of nutritionists who were not mandated by MINSA to reach a minimum target number of patients per shift. Nutritionists interviewed did not report time pressure as a barrier as their nutrition counseling could last up to 30 minutes to evaluate and recommend feeding practices. The service of nutrition was a "support service" that received patients referred from general practitioners, pediatricians and

nurses. Nutritionists commented that nurses were the responsible for the promotion and support of BF among mothers of infants aged less than six months; infants were only referred to them when problems arose (e.g. underweight, stunting and anemia).

Although nutrition counseling sessions with infants of this aged could not be observed, nutritionists' responses (3/16) indicated that they made exhaustive evaluation of the BF practices by observing a feed or by inquiring the BF technique with a breast model. Nutritionists also evaluated aspects that could potentially interfere with the mother's production of BM, such as the mothers' nutrition, employment and type of childbirth. Questions on the area of residency and resources available were also included as part of the evaluation. This kind of detailed evaluation of BF practices and mothers' nutrition allowed the nutritionists to give tailored support. Physical demonstrations were used to teach specific BF techniques.

> *Nutritionist (PS5): I observe a breast feed, during this time she [the mother] sits and she breastfeeds, so I observe the position and how she is breastfeeding (…) I show her how she should place his [the baby's] head and that [to get] breast milk … the baby needs to take all the areola*

In inpatient services, pediatricians provided tailored verbal and physical support after evaluating feeding practices by observing the baby suckling at the mother's breast. This kind of evaluation was only made when problems arose (e.g. loss of weight, hypoglycemia). Nurses provided the same kind of support when mothers' perceived insufficient BM, as reported by a nurse and seen during observations. However some mothers contradicted this information (see section 4.4.2.3.). A mother reported how helpful was the tailored support she received in response to her perception of BM insufficiency:

> *Mother 13: I felt happy because I knew how to express my milk, how to stimulate [the breast], because the doctor had told me how to do it, and each time I did it [stimulate the breast], I washed my breast and did like that [the mother was showing how to express BM], and I drank more liquids and now I have milk.*

4.4.2.3. Support based on personal beliefs and experiences

Personal factors, such as beliefs or experiences, were also found to bias infant feeding support. Some HCP (4/16) reported that the support provided was not the same for primiparous and multiparous mothers. Primiparous mothers usually received more support than multiparous as HCP had the belief mothers knew how to breastfeed because they had already had this experience in the past; consequently, the feeding practices were not evaluated. Four out of six multiparous mothers perceived that insufficient information was provided to them in comparison to primiparous mothers. One primiparous mother reported that she did not receive any support from HCP in the maternity ward.

> *Nurse (PS4): Growth monitoring clinic: If the mother is primiparous, if she's a first time mother, then I emphasize a little bit more, I take a little more time to teach her the BF technique, I see if the baby is suckling and also I explain the growth curve, right? I take a little more time, but for other mothers who have three or four children, or their second child within the last two years, then no [she does not support the mother] since the mother already has this knowledge.*

> *Mother 13 – Maternity ward: They [nurses] told me: "You, as you already have four children, you know how to do it [breastfeed]" and as I already had three children I knew how to do it but anyhow my child couldn't take the breast, because he has a problem inside the mouth*

Mother 13 reported that her baby experienced BF problems and could not breastfeed. As the mother was multiparous, the HCP assumed that the mother knew how she should breastfeed her infant and did not evaluate BF practices nor provide any recommendations. As a result, the infant had a poor intake and developed malnutrition.

Other HCP (3/16) based their recommendations on their personal experience. A midwife reported to recommend infant formula when the mother had to work as she had the same

experience in her own life. Similarly, a female general practitioner explained that she recommended infant formula when problems arose as she had the same experience; a pediatrician had recommended formula to her when glucose levels of her child were low. A nurse working in growth monitoring clinics described that her own mothering experience helped her to provide recommendations to mothers.

> *Nurse (PS16): This [having children] helps me in the consultation, the mother develops more trust, because besides being a professional you have children and know more or less how to feed your baby, you always keep that in your mind, that helps you.*

4.4.2.4. Erroneous and conflicting support

The great majority of mothers (8/11) reported to rely more on HCP that any other source of information on infant feeding (family, friends or television). However, half of them (6/11) reported erroneous recommendations from HCP related to feeding practices and maternal nutrition. Erroneous recommendations were also corroborated by observations.

> *Mother 1: The nurse [in the growth monitoring clinic], I asked her what I could give to him [the child] when he has colic. "You can give him anise water", she told me*

Some HCP interviewed (5/16) were found to provide erroneous recommendations to mothers concerning infant feeding. For example, a general practitioner reported to advice mothers to limit BF as it was the cause of health problems among infants aged less than six months.

> *General practitioner (PS7): The thing is that mothers breastfeed too much, they breastfeed too much, they do it because they are anxious. They breastfeed too frequently. This generates vomit, diarrhea, and colic*

Other HCP recommended a schedule for BF instead of BF in demand, the introduction of CF and liquids before the age of six months. Erroneous recommendations also generated conflicting advice, as reported by four mothers. Conflicting advice mainly happened when HCP recommended formula while others recommended BF and when recommendations from general practitioners contradicted those of the nutritionists. This created confusion among mothers. One of them reported to perceive fear, as she was afraid to eat something damaging for her child's health.

> *Mother 10: The other day, my baby was sick because he had too much diarrhea and I told him [the general practitioner]: "My baby is crying too much, why is my baby like that?" Then he told me: "What do you eat?" And I told him: "Well, I eat what the nutritionist tells me to eat, in nutrition, I eat this [beans and fish], but why is my baby like that?" I asked him, you see? (...) "You should not be eating those things because they are too heavy for the baby." (Other possibility: "You should not be eating those things because they can cause harm to the baby."*

Erroneous and conflicting recommendations reflected the poor BF knowledge and management skills of HCP (personal factors). Although the majority of HCP received continuing education (12/16), it was difficult to assess if specific trainings about BF were provided. Nutritionists were the only ones to receive continuing education from MINSA about counseling skills among other themes.

Lack of attendance to continuing education on BF (behavioral factor) was affected by an environmental factor. Compulsory continuing education and regular refresher courses on BF for HCP providing services to mothers and infants were not mandated by MINSA. Lack of references on infant nutrition (environmental factor) could also explain the poor BF knowledge and support practices of HCP as they did not have access to sources of information about BF: nine of them did not have any, four relied on the internet to obtain information, and only the three nutritionists had the guidelines on maternal and child nutrition.

4.4.2.5. Recommendation of infant formula and support of bottle-feeding mothers

HCP regularly recommended formula when mothers perceived insufficient BM (8/16), mothers had to work (7/16), the infant was underweight or stunted (4/16), mothers experienced health problems (3/16; HIV infection, nipple problems, epilepsy); and when HCP perceived that the mother would not follow the BF recommendation (2/16). Only two reported not recommending formula ever.

> *General practitioner (PS3): My first consideration [to recommend infant formula] is that the mother does not have endogenous production [of breast milk]. In case mothers work, formula also can be suggested*

> *Nutritionist (PS6): If after one month I realize on his curve, right? That the baby is loosing weight, definitely before he loses more, this [infant formula] is the last option, but I always emphasize to her [the mother] that it should be mix-feeding at least*

Five mothers interviewed and two mothers from focus groups reported to bottle-feed their infant because of work or a perception of BM insufficiency. They reported that no HCP had evaluated their bottle-feeding practices and supported them. Instead, they were advised to decrease formula use and prefer BM. Similar situations were observed in outpatient services in the three health care institutions. A nurse who had recommended formula admitted not having the knowledge about the preparation of infant formula. This presupposed that the nurse was not able to evaluate the adequacy of the bottle-feeding practices and provide advice about formula preparation.

An environmental factor affecting HCP support practices was the promotion of infant formula in health services. Three HCP reported to distribute infant formula samples provided by company representatives to low-income mothers if they felt it was necessary.

General practitioner (PS3): There are many mothers that cannot pay their milk [infant formula] and here we give them this milk in extreme cases, you see?

The presentation of the features of the products and provision of samples to HCP may lead them to recommend infant formula and give samples to the mothers as a solution to overcome BF problems. Although the primary researcher did not witness any recommendation of formula, mothers gave an account of nurses suggesting the use of infant formula to them or other mothers in maternity wards.

4.4.3. Challenges in providing support

4.4.3.1. Developing trust for a good communication

The establishment of a good mother-HCP relationship was found to be crucial to communicate during encounters. The level of trust with the HCP seemed to have an effect on the amount of information revealed by mothers as well as on the mothers' participation. Participant mothers and HCP indicated that mothers felt more confident in asking questions and expressing their doubts, ideas, stories and difficulties when HCP had a patient, friendly and respectful approach with them, such as greeting with a kiss, smiling, and calling them by their name. During group sessions observed, eye contact with the mothers and the use of humor allowed mothers to be more participative and expressive. Mothers seemed to prefer a relaxed environment as indicated by the reported experiences of two nutritionists during home visits.

Midwife (PS14): When I talk, talk, talk, and talk, then I inspire them [the mothers] trust and they ask questions, but if you speak quickly "You have to give him [the baby], this, this, this" then they don't ask anymore "Oh, ok, ok!" they tell you and nothing more (...) [It is needed to] talk a little bit more, you see? More time

Mother 8: There are some [HCP] that are more accessible, they give you the confidence to unfold, talk, have a conversation, ask questions and they respond to you in a good manner, but there is one or two that you ask him/her a question and your question stays without response, you don't know if he/she [the health worker] heard you, he doesn't respond so you don't feel like asking anymore

While most HCP participants reported to try to inspire trust to mothers so that they feel confident in expressing themselves easily, one nurse gave an account about how she tried to frighten and mislead mothers so that they follow her recommendations. Interpretation of her responses indicated that she was judgmental, blaming and authoritative towards the mothers. Although she was conscious that some mothers were angry after having received this treatment, she explained that her strategy had given her positive results as the mothers really changed their practices.

Nurse (PS16): I have to be harsh sometimes and tell her [the mother]: "How is that possible! Is it your son or not?" And she tells me: "Yes, it's my son"; "So you don't love your child! Because a mother who loves her child wants the best for her baby and has to give only breast milk (…)" So they [mothers] start giving breast milk.

Responses of mothers and HCP indicated that some mothers hid information from HCP as they did not want to be blamed. This was interpreted as a lack of trust in the HCP; the information obtained from mothers would not be accurate and subsequent recommendations would not address the mothers' reality. Mothers interviewed in one focus group preferred not to come back in consultation with the HCP if they felt blamed.

General practitioner (PS3): Often moms, for dread of being censured, they don't tell you [how they feed their baby], they hide this information, but you realize that when you evaluate [the baby] and find rice on his clothes or you find stains of something that is not breast milk, so you detect [that the mother is hiding information]

Mother 13 – Pediatric inpatient unit: [The pediatrician told the mother]: "Give him, give him [the breast to the baby]" and the next day he came back: "Madam, how's your baby?" he tells me and as I already knew [the response she had to give to the pediatrician] "Hmmm, the breast"; "And are you sure you're only giving the breast?" And then I didn't lie to him anymore "No, he was crying too much in the night and I gave him the bottle, but only once; "Oh ok, you better!" he told me.

Measures had already been taken by the MINSA to counteract the bad treatments towards the patients. Throughout the health institutions, stickers were placed on doors to remind the HCP to always smile, be kind and patient, and help people that require help. A pediatrician commented that stickers were produced based on the patients' complaints.

4.4.3.2. Helping the mother to assimilate the information and adopt feeding recommendations

Seven out of sixteen HCP expressed that mothers experienced difficulties in understanding, retaining, and following the BF recommendations because of their low educational level. Low educational level was closely related to the mothers' ignorance and myths concerning infant feeding and was cited as barriers to EBF (10/16). Other HCP indicated that the mothers' lack of understanding was translated by following their family's advice instead of theirs. This phenomenon seemed to be a challenge for participant HCP who indicated that they had to repeat several times the same recommendations but mothers were not able to understand. From the point of view of other participants (3/16) and one mother, this problem was in fact a lack of attention due to the mothers' stress and concerns during the consultation. Mothers were described as pressured to go back to their home to cook and look after other children. Two HCP agreed that mothers seemed to be more relaxed and better assimilate information during home visits. On the mothers' side, there seemed to be a consensus among mothers (7/11)

that information or recommendations received was scarce and they would have liked the HCP to provide more information and always repeat their recommendations while being specific towards their feeding difficulties.

> *General practitioner (PS3): The first challenge is the mothers' idiosyncrasy. If the mom is a person with low education she is more difficult to convince because it is not a question of being the super specialist or the doctor that knows a bit or a lot, it is not a question of the health professional, it's a question of our population, eminently ignorant that definitively believes more on family members*

> *- Mother 7: [The nurse told me] no to give him [the baby] liquids, but I think that liquids won't harm him*
> *- Researcher: And did he/she explain why liquids were not good?*
> *- Mother 7: No, he/she didn't explain. They [HCP] tell you like that, for that reason I tell you that they have to be more explanatory, more specific*

4.5. Discussion and conclusions

In this study, a careful evaluation of individual feeding practices and barriers to breastfeed was demonstrated as essential to provide mothers with practical and tailored support. Mothers might not request other alternatives than the provision of more information to express the lack of guidance addressing their specific concerns and difficulties. A similar situation was found in the United Kingdom where midwives delivered information to mothers without ascertaining their understanding before and after providing it; consequently, mothers felt that they did not receive sufficient information on BF (Dykes 2005). Other studies in the United Kingdom and Tanzania have reported that linear and directive transmission of predefined information on BF were not helpful as they were not always feasible and led to misunderstandings (Dykes 2005; Omer-Salim et al. 2007; Simmons 2002).

WHO recommends that HCP listen, build confidence, assess the child's growth and health as well as the mother's health, take a feeding history and observe BF (WHO 2009). In this study, the use of closed questions such as "EBF, right?" may lead the mothers to give the answer they think the HCP would like to hear. Time pressure and workload were also identified in health services in the United Kingdom and Niger as environmental factors affecting the evaluation of feeding practices (Dykes 2005; Moussa Abba et al. 2010a; Simmons 2002). Because of these pressures, HCP did not sit and take the time to listen and counsel mothers; rather, they gave rushed prescriptive advice leading to a lack of interpersonal communication with mothers who felt that their needs of support were unmet. On the contrary, in studies conducted in Uganda, Sweden and the United Kingdom, time spent with mothers, interactive discussions and practical advice on BF provided in a friendly manner were appreciated by mothers and reported as being more helpful than guidance provided in a didactic style (Dykes 2005; Hoddinott and Pill 2000; Nankunda et al. 2010; Weimers et al. 2006).

Two HCP were found to provide recommendations on infant feeding based on their personal experiences. Studies in the United States of America, the United Kingdom and Nigeria identified personal experiences as subjective points of view leading to biased information not based upon evidence (Gill 2001; Sadoh et al. 2011; Simmons 2002). Whereas Sadoh et al. (2011) suggested empowering female medical doctors to carry out optimal feeding of their infants to increase their ability in supporting BF, Simmons (2002) raised the need to assist female HCP in identifying individual experiences that could bias the BF support they provide and training them to provide mothers with information based on evidence. This phenomenon should be considered a concern as recommendations might vary by HCP and could potentially lead to conflicting advice. In some studies, conflicting advice was found to undermine women's self-confidence in BF (Nakano et al. 2007; Simmons 2002) and cause annoyance and indignation among HCP when their knowledge differed from that of their peers who contradicted their decision-making concerning infant feeding (Furber and Thomson 2008).

The great majority of HCP regularly recommended formula when mothers perceived insufficient BM, mothers were working, and the infant was underweight or stunted. In qualitative studies conducted in Puerto Rico, Brazil and the United Kingdom, infant formula was mainly prescribed in situations where the mothers were struggling with BF, perceived insufficient BM, or when the infant was not gaining weight as desired or had other health problems, such as jaundice (Furber and Thomson 2006; Groleau and Cabral 2009; Varela Ruiz et al. 2011). Recommendations of infant formula did not come with explanations about its preparation and use, as HCP did not have this knowledge. Lack of support to bottle-feeding mothers can put the infants' health at risk as mothers may use contaminated water for washing or preparing formula, make errors in mixing formula or diluting it to make it last. A study conducted in Brazil found that HIV-positive mothers were not informed about the safe preparation of bottle-feeds when pediatricians recommended infant formula (Rea et al. 2007). In the United Kingdom, midwives had the impression that discussion about formula and practical aspects of bottle-feeding was forbidden because of a positive environment towards BF (Jones and Stoppard 2011).

In-service training can greatly improve infant feeding knowledge and management skills. Studies in India and Niger found that BF continuing education had a positive impact in the support provided to mothers and on the HCP motivation to provide information on BF (Moussa Abba et al. 2010a; Prasad and Costello 1995). However, to make this effect sustainable, refresher trainings are needed to take into account staff movements and loss of interest. In this study, nutritionists seemed to be the most prepared in themes of infant nutrition and counseling skills because of the regular courses they took.

Peru is well equipped to address the knowledge gaps and poor counseling skills of HCP. The Baby Friendly Hospital Initiative (BFHI), which is the standard for maternity care, was revised, updated and expanded in 2009 to take into account new research and experience (WHO and UNICEF 2009). The revised package of BFHI materials was adapted to Peru in the same year by MINSA and UNICEF producing a technical document on BF promotion, management and support in maternity facilities (UNICEF and MINSA 2009). In the same way, a technical document was developed by MINSA in

2010 to establish a standard methodology to carry out counseling on maternal and child nutrition, including infants aged less than six months (MINSA 2010b). Counseling steps and adequate counseling skills are addressed. The guidelines of maternal and child nutrition published in 2004 are a good reference document serving as a source of information on this theme (MINSA 2004).

MINSA should not only evaluate the number of patients encountered but also the quality of the consultation. Infant feeding evaluation forms should take into account the child's growth and health, the feeding history (including the introduction of foods and liquids), frequency of BF, observation of BF, bottle-feeding practices if needed, the mother's difficulties and barriers to breastfeed, and the type of support provided by the health professional (verbal recommendations and physical positioning of the infant). Enough space should be provided to record this information. MINSA and the directors of health institutions should take advantage of the existence of technical documents on the promotion, management and support of BF in maternal facilities and on counseling guidelines to train at regular intervals all levels of HCP who have contact with mothers and infants to improve their practices. Guidelines on maternal and child nutrition should be accessible to all of them. While promoting formula, the needs of support of bottle-feeding mothers should not be neglected; mothers should be taught about correct preparation of feeds and hygiene elements.

This study involved participants recruited from three health care institutions and their personal experiences cannot be said to be representative of all mothers and HCP across Peruvian health services. This study does not aim to generalize findings to the entire population but to indicate common links between the settings being studied and similar settings (Mays and Pope 1995). Specific professional practices were identified in context and thus contribute to inform programs and future policy decisions to better promote and support BF in health services and stop the decline in EBF.

5. BRIDGE

Suboptimal BF practices may hinder child growth and development and increase the risk of morbidity and mortality. BF promotion and support in health care facilities may be affected by personal and behavioral factors of HCP as well as environmental factors of health institutions; these were examined in Manuscript 1. To my knowledge, the first manuscript is the first to report factors affecting BF promotion and support in health services in Peru. Manuscript 2 examines further the influence of the infant formula companies on the health services environment and especially on HCP practices related to infant feeding. To my knowledge, this second manuscript is the first to report an analysis of mothers and health care providers' experiences of promotion of infant formula in health care settings through triangulation of qualitative methods and data sources.

6. MANUSCRIPT 2: Promotion of infant formula in government health care facilities in Lima, Peru: Experiences of mothers and health care providers

Manuscript in preparation for the journal *Revista Panamericana de Salud Pública / Pan American Journal of Public Health*

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6.1. Abstract

Background: Despite a national infant feeding policy to protect, promote and support breastfeeding (BF), Peru is experiencing a decrease in exclusive breastfeeding (EBF) before six months of age in urban areas (from 64.5% in 2007 to 59.9% in 2010) and the coastal region (from 60.1% in 2007 to 52.8% in 2010).

Objective: Describe and analyze the experiences of mothers and health care providers (HCP) in relation to promotion of infant formula in government health services in a peri-urban area of Lima.

Methods: Triangulation of experiences was obtained by analyzing semi-structured interviews with mothers of infants aged less than six months (n=11) and HCP (n=16), two focus group discussions (n=7), and observations of the health service environment and mother-HCP encounters during inpatient and outpatient services. Data were coded and analyzed using ATLAS.ti.

Results: Participants reported that infant formula representatives provided promotional material and samples, financial and material inducements for promotional purposes, free supplies of infant formula to mothers, and direct promotion to mothers in maternity wards and through educational activities. Promotion of infant formula was also present in scientific conferences and continuing education courses.

Conclusions: The adoption of national policies restricting promotion of infant formula in health services is not a sufficient measure to protect EBF. Improved training of HCP and stronger monitoring of compliance with the national infant feeding policy are needed to protect BF behaviors.

Keywords: Breastfeeding, infant formula, infant feeding policy, marketing, Code, Peru

6.2. Introduction

As early as 1939, Dr. Cicely Williams identified aggressive advertisement of powdered baby formula by the commercial food industry as a threat to breastfeeding (BF) and infant health (Labbok 2007; Williams 1939). During the 1970's, concerns about the marketing practices of the infant formula industry spread at the international level (Jelliffe 1972; Muller 1974). The promotion of infant formula in low-resource countries was considered detrimental to infants' feeding and health because of its inferiority compared to breast milk (BM) and its inadequate preparation due to poor sanitation conditions and low maternal education. In response to this concern, the World Health Organization (WHO) instituted the International Code of Marketing of Breast-milk Substitutes (the Code) in 1981 (WHO 1981).

The Code imposes restrictions to infant formula companies, including prohibition of (i) advertising products directly to the general public, (ii) offering free samples to mothers or family members, (iii) including words or pictures that idealize artificial feeding, (iv) gifts or personal samples to health care workers, and (v) promotion of products in health care facilities. In 1982, the Peruvian government approved a national policy on infant feeding to implement the Code (PAHO 2011). It included regulations on infant and young child feeding in health services and on marketing practices of BM substitutes. In 2006, the policy was revised and updated to adopt subsequent resolutions of the World Health Assembly relating to the Code (MINSA 2006; PAHO 2011). Today, any promotion of infant formula is prohibited.

In Peru, the prevalence of exclusive breastfeeding (EBF) before six months of age is one of the highest in Latin America (PAHO 2011). EBF rates increased from 52.7% in 1996 to 67.2% in 2000 to 68.5% in 2009 (MINSA 2010a). Although the national prevalence rate only slightly decreased in 2010 to 68.3%, there was a large decrease of EBF in urban areas (from 64.5% in 2007 to 59.9% in 2010) and the coastal region (from 60.1% in 2007 to 52.8% in 2010) (INEI 2010). The Ministry of Health of Peru associated this decline to the incorporation and reincorporation of women in the labor market and to promotion of

infant formula in television, radio, pharmacies, supermarkets as well as private and government health services (MINSA 2010a). However, in its report the Ministry did not provide evidence of the promotion of infant formula in health services. Therefore, the objective of this qualitative study was to explore the experiences of mothers and HCP in relation to promotion of infant formula in health services and provide scientific evidence of its occurrence, the channels through which it is done, and the impact it has on mothers and HCP.

6.3. Methods

The present study took place in a district of low socioeconomic conditions within metropolitan Lima, the capital of Peru. Ethical approval was obtained from McGill University, the Instituto de Investigación Nutricional and the Ministry of Health office for the district. Approvals to conduct the research in the health institutions were obtained from the local network of health facilities and the government hospital.

The data collection took place between February and June 2011. Participants were recruited by purposeful sampling from three institutions of different levels of the government health services: a health post, a health center and a hospital. The health post and the health center offered the same outpatient services including growth monitoring, vaccination, family planning and general medicine. The health center offered in addition nutrition services. Both institutions were selected based on the highest number of assigned population per institution to avoid difficulties in recruiting participants. The hospital was the only institution selected offering inpatient services.

Triangulation of perspectives and methods was obtained by combining semi-structured interviews with mothers of infants aged less than six months (n=11), nurses (n=4), midwives (n=2), nutritionists (n=3), general practitioners (n=3), pediatricians (n=4), observations of encounters and interactions between mothers and health care providers (HCP) during inpatient and outpatient services, and a collection of documents. Two focus groups were conducted with mothers (n=7), one included women recruited from the

health post and the other from the health center. HCP who provided health services to mothers and infants aged less than six months of age were eligible to participate. Focus groups and interviews were tape-recorded and lasted from 30 to 90 minutes. Only three HCP refused tape-recording and thus written notes were taken. Additional notes were taken immediately after to avoid loss of information. Observations were recorded in field notes. Documents consisted in photographs of the physical health service environment. While verbal consent was obtained for observations, written consent was obtained before interviews and focus groups. Interview and focus group participants received a small thank you gift for their collaboration.

Data were analyzed by using the thematic analysis (Green and Thorogood 2009). The first author coded and analyzed data using ATLAS.ti version 6.2.27, qualitative data analysis software. Case study reports were used for to organize and compare data for each individual participant and health institution by showing reduced, focused, and organized information under themes (Miles and Huberman 1994). Documents (photographs) were analyzed to examine in further detail the environment of health institutions. Descriptive data are means (M).

6.4. Findings

Sixteen women ranging in age from 20 to 38 years (M= 36.2) participated in the study. Most women had one or two children, but parity ranged from one to four children. Most participant mothers had completed primary (n=4) and secondary school (n=7) while two did not complete primary school. Only three had completed higher education. Sixteen HCP whose age ranged from 26 to 57 years (M= 39.8) participated in the study. Ten of them were female and their parity ranged from zero to two children.

The findings reported in this article reflect the major category of themes that emerged from the thematic analysis and consisted in promotion of infant formula in health services. The themes of this category were organized in four sections: 1) Promotional material in health services; 2) Promotion directed to HCP; 3) Promotion in scientific

conferences and continuing education courses; and 4) Promotion directed to mothers.

6.4.1. Promotional material in health services

Promotion of infant formula in health services by infant formula companies was mainly done through company representatives. Twelve out of sixteen HCP received them in outpatient clinics and maternity wards, sometimes in front of patients. Frequency of encounters varied from twice a year for nutritionists to daily for pediatricians. Company representatives provided documentation on scientific studies comparing the composition of formula and BM. They also provided promotional material for the health service environment consisting of calendars, self-adhering notepads, pens, mats, and posters of psychomotor development featuring the name, brand, and logo of the infant formula company. For example, in the health post, a large sticker in the form of a formula can was posted on the wall showing the logo of the product. Other stickers took the form of humanized animals dressed like doctors, engineers, or astronauts (Figure 3). In the hospital, an infant formula company decorated the waiting room of the growth monitoring clinics and the logos were painted on the walls. Equipment to prepare formula, including thermos and pitchers, was also offered to the neonatal unit.

> *Nurse (PS10)- Hospital: Here, a pharmaceutical [infant formula] company came and equipped us with small thermos and pitchers to prepare infant formula and [showed us] how to prepare it, how to store it, you see?*

Figure 3: Promotional stickers of infant formula in the health post

In addition to material for preparation of formula and decoration purposes, there were promotional materials that were provided to HCP to be distributed to the mothers, such as written information about different infant formula, balloons, crowns in cardboard, and bibs for the children with the brand and logo of the companies, as well as samples of infant formula. This was seen in observations and reported by HCP. Samples were

usually called “milk donations” and were meant to be distributed to families that had limited financial resources.

> *Nurse (PS2) – Health post: I was in the [growth monitoring] clinic once and a very thoughtful lady came and introduced herself, right? she was from [name of the infant formula company] and she came to offer new products for the babies, you see? She explained me the properties and left some materials. Materials to be distributed to mothers (…) Pamphlets with the milks [infant formulae] they offer, their products, a catalogue let’s say … of products*

Among the mothers recruited for interviews and focus groups, only one reported to have noted promotional material on the walls. While some did not report any, others did not remember the environment of the health institutions. A mother noted promotion against formula in the health center as she noted an image of a bottle with an X on it.

6.4.2. Promotion of infant formula directed to health care providers

6.4.2.1. Incentives

Company representatives developed a personal relationship with HCP by providing incentives to encourage them to prescribe infant formula. The value or the number of the incentives, also called “awards”, “grants”, and “offers”, depended on the amount of infant formula prescribed by the HCP. The number of prescriptions was counted by a system of vouchers that HCP handed in to the company representatives.

Pediatrician (PS9) –Hospital: They [infant formula company representatives] get in touch with people who are in contact with newborns and they incite them to prescribe [infant formula] with a … let's say, awards, if they reach specific quotas. The more they prescribe, the more awards they get (…) They invite you … they offer you a pass to… a complete day in a luxurious hotel and even trips abroad, but for that, you would need to have prescribed much more.

Nurse (PS10) - Hospital: Lately, as pharmaceutical [infant formula] companies are bringing these offers, health professionals often fall for that and often they say: "Why should I care about breastfeeding? What I want is to travel, to get an award, to get a gift for me, I prefer that." So, they forget about breastfeeding.

Pediatrician (PS11) - Hospital: The dissemination [of information about breastfeeding] has decreased a lot because of the marketing of infant formula companies, all these things, especially because of the offers they [company representatives] make. Everybody has the right to receive them but being influenced by them is another thing, right?

More than half of HCP (9/16), eight from the hospital and one from the health post, had been offered incentives to prescribe infant formula. A nurse and two pediatricians working in the hospital explained that the influence of these attractive incentives on the practices of their peers was tremendous and HCP were inclined to prescribe infant formula more than promote and support BF. A pediatrician that had worked in the hospital for 19 years commented that he had seen a decrease in the promotion of BF due to the influence of infant formula companies. A HCP described how incentives created a feeling of commitment towards the infant formula companies based his own experience:

Pediatrician (PS9) - Hospital: [Infant formula company representatives] give you attention in the hotel itself, they give you the best. At night they take you to go out, they invite you dinners, a series of stimuli during the congress. Therefore when you come back you feel, somehow, committed.

6.3.2.2. Requests from health care providers

In addition to the provision of incentives, HCP could request materials from infant formula companies for the health service, such as decorations or samples of infant formula, or even birthday cakes for the staff.

- Researcher: Then, they [company representatives] come and leave infant formula [samples]?
- General practitioner (PS3)- Health post: Yes, on my request, you see? Hmmm… of course, on my request. These formulas are directed to children that really need them y that it has been objectively demonstrated that they require them.

Pediatrician (PS9)- Hospital: For example, there is an activity in the service, someone's birthday, they [health professionals] call [the company representative] and tell him: "Hey, can you bring us a birthday cake?" and then he comes with the cake … or he can bring sandwiches for a birthday etc.

Similarly, the director of the health post commented that he was planning a training directed to HCP in collaboration with an infant formula company. The manager of the service of physical therapy made a similar request. In an informal conversation made during observations, she explained that she had planned a talk on nutrition for infant and young children aged 0 -3 years for mothers attending early stimulation workshops. As there was no funding for this activity, she requested a private company or "collaborator" to come to the hospital and give the talk. The manager also requested products to be distributed to the mothers; she stated that mothers usually liked to receive products.

The personal relationship between one HCP and a company representative was observed in one growth monitoring clinic, when a representative entered the clinic between two patients and greeted the nurse with a kiss, a smile, and a hug. The nurse asked for mirrors and images to decorate the room.

6.4.3. Promotion of infant formula in scientific conferences and continuing education courses

Promotion was also made during scientific conferences or refresher courses directed to HCP. In the environment of the hospital, posters directed to HCP informing about scientific conferences and continuing education courses were posted on the walls. A poster promoted a congress on pediatrics in which specific infant formula companies were scheduled to talk about the following themes: "Nutrition of the premature baby" and "Infantile colic". In addition, infant formula companies developed and organized their own courses or conferences directed to HCP, as reported by a nurse. A pediatrician stated that infant formula companies influenced the HCP by providing information about the products and justification to prescribe them.

> *General practitioner (PS3) – Health post: [In a scientific congress of pediatrics] intervention protocols are presented, all the novelties and obviously there are companies that provide guidance, mainly those working in research, guidance on their infant formulae or medicines.*

> *Pediatrician (PS9) - Hospital: Pharmaceutical companies that have milks [infant formula] are always around this theme [infant and young child nutrition in scientific conferences]. It's another form of introduction, they present the benefits of specific ingredients of breast milk and once they finish explaining that, they tell you: "Look, my milk has something similar to that." Then, it's done, he gave you the talk but he told you how to justify and then it's easier [to prescribe formula].*

6.4.4. Promotion of infant formula directed to mothers

Infant formula representatives also had direct contact with mothers to promote their products in the health services. When asked about nutrition talks directed to mothers with young children in the hospital, the nutritionist indicated that usually these were programmed by nurses in the waiting room of the growth monitoring clinic. Nurses allowed the infant formula companies to give the talk, have direct contact with the mothers to promote their products, and provide samples of infant formula. The nutritionist in chief corroborated this during an informal conversation. On the contrary, another nurse reported being protective of BF against the formula companies by regulating the information provided to mothers via talks.

> *Nutritionist (PS12) - Hospital: They [company representatives] have been just there, in the waiting room, sometimes they come and they give them [to mothers] freely [infant formula], with prize draw, they give them!*

> *Nurse (PS16) Hospital: When they are going to give a talk, they told us [nurses] what they want to do, we tell them: "No, first of all you have to tell us the talk and then we'll see what you are going to tell the mothers." Because, no, it's fine they are private companies and want to support, but they are not going to tell the patient in favor of their milk [infant formula].*

Direct promotion of infant formula was also made in maternity wards as witnessed by three out of eleven mothers interviewed. A mother witnessed when a company representative entered the maternity ward to provide documentation about infant formula to the pediatrician and had conversations with mothers. Written promotional material was also given to the mothers who requested it. Two mothers witnessed the promotion of formula in form of "special offers" by company representatives accompanied by a HCP; if the mothers bought the big box of formula, they would receive the small one for free.

Mother 6 – Hospital: I don't know the name of this box, a pink one, because if you bought a big one, they would give you the small one. Because of that, mothers, one day before I entered there [maternity ward], they had already bought. And they had also given a box to the nurse to give to the babies. A pediatrician entered the ward with the one who sells this milk [infant formula].

Mother 11 – Hospital: She [the nurse] brought it [infant formula]. She practically sold it in the hospital. She sold one and gave one [to the mother], to the other the same, she sold one and gave one.

Direct promotion of infant formula to mothers was contradicted by two pediatricians who stated that promotion was only directed to them. None of the mothers reported promotion of formula in the health post and the health center. Direct promotion to mothers was not seen during observations in any of the health institutions selected.

6.5. Discussion

The present study examined promotion of infant formula in health services as an environmental factor affecting the professional practices of HCP and feeding practices of mothers. The results of this qualitative study showed that different forms of promotion of infant formula might lead HCP to prescribe formula in the detriment of promotion and support of BF. Mothers might also introduce formula instead of BM when direct promotion is made to them as happened in the 1970's when infant formula company representatives dressed like nurses directly promoted the products to new mothers and offered free samples of infant formula with scarce information about its preparation and use (Rovenpor 1996). This caused death, malnutrition and other diseases due to dilution of formula to make it last and use of contaminated water.

The practices of HCP and infant formula representatives were incompatible with the articles of the Code (WHO 1981) and those of the Peruvian infant feeding policy

(MINSA 2006) relating to restrictions of promotion of infant formula in health services. The violations included:
(1) educational material referred to specific infant formulae and featured the brands, names and logos of these products;
(2) financial and material inducements for promotional purposes were offered to HCP who accepted them;
(3) free supplies of infant formula were offered to HCP;
(4) HCP gave free samples of infant formula to mothers;
(5) maternity wards were used as points-of-sale of infant formula and places for the purpose of direct promotion to mothers; and
(6) company representatives performed educational activities directed to mothers and provided them with samples.

Participants reported financial and material inducements to HCP as the most influential strategy of infant formula promotion due to the appealing personal benefits they provided. These findings resonate with those of a study conducted in Brazil that reported the promotion of infant formula companies on pediatricians by the provision of written material, samples, gifts and support for participation in event including meals, registration fees, airplane tickets and hotel fees (Rea et al. 2004). A trend of more prescriptions of infant formula after the company representative visited the doctor was noted. Only 10% of the pediatricians interviewed (n=360) knew about the existence of the Brazilian Code of Marketing of BM Substitutes. Violations to the Code have also been documented in other countries (Aguayo et al. 2003; Taylor 1998) where promotional material were present in health care institutions, free supplies were provided to mothers and HCP, and gifts were donated to HCP for personal use. In Niger, a qualitative study documented the strong influence of infant formula company representatives who tried to convince HCP about the need to use infant formula when problems, such as insufficient BM, arose (Moussa Abba et al. 2010b). HCP were influenced by the representatives and recommended the promoted formula. Other qualitative studies conducted in Niger and Philippines reported direct promotion from company representatives to mothers through

the provision of reading materials and provision of samples in group sessions (Moussa Abba et al. 2010a; Sobel et al. 2011).

A possible explanation of the deviant practices might be the little knowledge of HCP about the national infant feeding policy and the possible sanctions that could be made against them. Although the Peruvian infant feeding policy stipulates that sanctions could be made against individuals who breach it, the nature of the sanctions is not described. The positive culture of health institutions towards promotion of infant formula might lead HCP to easily adhere to the prohibited but accepted practices of this culture. Another reason might be the poor knowledge of some HCP about the disadvantages and dangers of formula feeding, mainly in context of poverty.

Among mothers interviewed in the focus groups, none of them reported any kind of promotion of infant formula in the health center and the health post. This finding could suggest that although promotion is done at the level of the health institutions and health workers, mothers were not receptive to it. A study carried out in Philippines also found that distribution of samples and advertising of infant formula had a little impact on mothers' feeding decisions (Stewart et al. 1991). This can also be explained by the commitment of some HCP that despite promotion of infant formula in their facilities, they continued promoting and supporting BF.

Promotion of infant formula was almost absent from the health center in comparison to the health post and the hospital. No promotional materials were seen during observations. A general practitioner reported not to have received any company representative to her office, explaining that she received patients of all ages and that the market for the companies would be very small. A second general practitioner and a nutritionist reported that they received information about formula and samples a few times a year but no incentives. The low influence of infant formula companies in the health center was corroborated by two mothers who were referred by a nurse and a general practitioner to the nutritionist to be prescribed the right formula. The promotion of infant formula in the health center might be countered by the presence of nutritionists who were committed to

BF and actively promoted against infant formula. Another explanation could be the commitment of the director of the health center towards BF in contrast with the directors of the health post and the hospital who might be aware of the promotion of infant formula in their respective health institutions and permitted it.

In Peru, written admonitions have already been given in the past to infant formula companies and monitoring reports have been sent to health institutions asking for explanations and corrections (PAHO 2011); however these measures do not seem to be enough to counteract the promotion of infant formula in health services. Fines and temporal or definitive suspension of commercialization of the products are stronger sanctions established by the national infant feeding policy that should be considered. PAHO (2011) recommends making public the infractions made by companies; the deterioration of their image may be more influential than the amount of a fine.

In summary, the adoption of policies restricting promotion of infant formula in health services is not a sufficient measure to protect EBF. MINSA should stipulate specific sanctions for HCP and head of institutions and inform them about the consequences of policy infractions. Continued training on the risks of not breastfeeding and the dangers of formula-feeding in context of poverty may be beneficial to sensitize HCP about the importance to promote and support BF. Regular and surprise monitoring activities should be carried out in health care facilities to document infractions made by the HCP, heads of health institutions, and infant formula companies and actions should be taken as necessary. Stronger policy compliance is needed for infant formula companies; suspension of commercialization of products and making their infraction public may be more effective measures to limit promotion in health services than written admonitions.

7. GENERAL CONCLUSIONS AND POLICY IMPLICATIONS

In the early 1980's, Peru was considered a leader in the implementation of the Code by becoming the first Latin American country to implement it through a national infant feeding policy (PAHO 2011). In this policy, MINSA included the majority of the Ten Steps to successful BF of the BFHI except step 1 (written BF policy), step 2 (BF training for all HCP), and step 9 (no baby bottles or pacifiers) (MINSA 2006). Peru also signed the Innocenti Declaration on the Protection, Promotion, and Support of BF that was translated in BF promotional activities all over the country, especially during the Breastfeeding Week held in August (MINSA 2010a; 2010c).

This study demonstrated that although Peru is seen as a leader in protecting and promoting BF, in reality policies and promotional activities are not sufficient to protect mothers and their families from aggressive marketing and distribution practices of infant formula companies. An intensification of monitoring activities for better compliance is needed. MINSA would gain by adding steps 1 and 2 of the BFHI to subsequent versions of the infant feeding policy so that all HCP working with mothers and young infants are aware of the infant feeding policy and consequences of infractions to it and are required to complete regular BF training. In the meantime, program managers and directors of health institutions should take advantage of already existing technical documents on the management of BF in health institutions and BF counseling to train HCP and improve their BF and infant formula feeding knowledge and management skills. A participatory training including a role-play and recorded video scenarios was effective in improving counseling skills of medical students in Pakistan (Ahsen et al. 2010). Such a strategy may be incorporated in the training of HCP to teach and assess their communication skills. Refresher courses may also be beneficial. Without training, the HCP will only be able give general and standard recommendations.

Support for mothers of infants less than six months should consider the mothers' needs of knowledge, barriers to breastfeed exclusively, and BF difficulties. Participatory group sessions provided pre- and postnatally as well as written and visual material constitute

good channels to build and/or strengthen the mothers' general knowledge about BF. During individual encounters, specific steps to infant feeding counseling should be followed to provide tailored support to the mother's needs: 1) assess infant's growth and health; 2) evaluate infant feeding practices by asking open questions about the feeding history and observing BF as well as by inquiring about the mother's barriers and difficulties to breastfeed; 3) explain to the mother the situation encountered; 4) reinforce good practices and involve the mother in finding possible solutions to address BF barriers and difficulties; 5) provide practical recommendations based on the solutions selected; 6) check the mother's understanding and encourage her to ask questions if she needs further clarification; and 7) record all previous steps and schedule a follow-up visit. Infant feeding counseling should take into account the mothers' point of view and should be provided through a kind and respectful approach. Nutritionists or other HCP should not only provide infant feeding counseling when problems arise. HCP and program managers should take advantage of all points of contact with mothers and their infants to provide infant feeding counseling and ensure an adequate intake and optimal growth. These points of contact include growth monitoring visits, vaccination visits, sick-child visits, family planning visits, home visits and medical inpatient visits in pediatric units and maternity wards.

In conclusion, practical support tailored to the mothers' realities might be the most helpful strategy to support infant feeding for the first six months of life. Improved training of HCP and stronger monitoring of compliance with the national infant feeding policy are needed in government health services to protect BF behaviors.

7.1. Study strengths

In this study, triangulation of data and methods was used to increase the validity of the research findings (Keen and Packwood 1995; Patton 2002f). The limitations of one method were minimized by using other methods (Patton 2002b). Different perspectives of the same phenomenon, infant feeding promotion and support, were obtained from a wide

range of HCP (nurses, midwives, nutritionists, general practitioners, pediatricians), primiparous and multiparous mothers, and the researcher, allowing to validate the results and bring to light areas of conflicting data.

Observations permitted the establishment of sufficient rapport and empathy with participants and had a positive effect on the subsequent development of the interview (Gill et al. 2008; Mays and Pope 1995). The identification of participant mothers and HCP was done by the researcher and not by the nursing staff or the HCP's superior. This avoided a bias that could have been introduced by the HCP choosing their favorite mothers or only those exclusively breastfeeding, and by the superior choosing his/her favorite HCP. Participants were informed of the study before observations were started. Mothers were interviewed in their home environment with which they were familiar. This might have resulted in a more productive interview as they might feel more relaxed than in an external environment (Gill et al. 2008).

Concerning focus groups, sampling through pre-existing groups was done to recruit participants that already knew each other to foster a fluent conversation among them (Gill et al. 2008). This had positive results for the focus group of mothers recruited from the health center since the discussion was fluent and all participants expressed their opinions. In addition, focus groups might have helped participants to explore and clarify their views by facilitating the expression of ideas and experiences that might be underdeveloped in an interview (Kitzinger 1995). Focus groups were conducted in a way to encourage interaction among mothers, which enabled the researcher to observe the group dynamics.

As far as the qualitative analysis is concerned, the case study methodology allowed for a holistic and context sensitive analysis. The use of case study reports of each individual case allowed for a practical cross-case analysis. The researcher was reflexive, meaning that she accounted for her role in the research. To increase validity of findings, deviant cases and disconfirming data were taken into account in the analysis (Green and Thorogood 2009). In writing the manuscripts, enough evidence and context was provided for interpretations made. Also, frequency counts of key themes were provided to defend

against anecdotalism and give an idea about how frequent were particular kinds of perspectives and experiences.

7.2. Study limitations

In this study, the choice of the health post and the health center might have influenced the results as they were selected based on the largest population coverage among those in the community. This might have contributed to the high workload reported by the participants; the reality might be different in institutions with a smaller population coverage. Furthermore, participants were aware of the purpose of the research, which can be considered as a limitation for observations since people may behave differently when they are aware of being observed (Mays and Pope 1995; Patton 2002b). Even when the researcher aimed to stay long enough to be part of the setting studied to decrease her influence on the participants' behavior, she might have not completely avoided that influence.

Observations and recruitment of participants was limited when outpatient clinics ceased operating due to unexpected vaccination campaigns. Limitations of individual and group interviews included distorted responses of participants due to personal bias, anger, anxiety or other emotional state that could have affected them at the moment of the interview while remembering their personal experiences (Patton 2002b). Reactivity of the participant to the researcher might also have affected the answers provided. Also, three HCP refused tape-recording and written notes were taken instead. Although detailed notes were added immediately after the interview, there was an increased risk of errors from recall in comparison to verbatim transcriptions of tape-recorded interviews. Even if the interviews were meant to be conducted individually to reduce the possibility of influences of others, during one interview the sister's mother was present, which might have influenced the participant's responses. In addition, for one focus group, discussion, interactions, and group dynamics among mothers were very limited. After analyzing the social contexts of focus groups (Hollander 2004), differences in socio-economic backgrounds were identified as the possible limitations of group discussions which might

have affected the quantity and quality of data generated. Limitations concerning reliability include the use of only one analyst/coder, which might have increased the risk of misinterpretation (Green and Thorogood 2009; Richards and Schwartz 2002).

7.3. Recommendations for future research

Further studies should:

- Examine with a larger sample and quantitative methods the associations between BF promotion and support provided through health services and changes in mothers' BF knowledge, attitudes and practices to confirm the findings of the present study;
- Examine infant feeding promotion and support in social security hospitals and private clinics, that were not included in the present study since approvals were not obtained in time;
- Implement BF training to improve infant feeding knowledge and management skills of HCP and evaluate its effectiveness and sustainability;
- Enhance the quality of BF support provided in health services in Peru and evaluate its effect on mothers' feeding behaviors and child's growth and nutrition outcomes;
- Examine the influence of infant formula promotion through mass media advertisements (TV, radio), print advertising, pharmacies and supermarkets on infant feeding decisions.

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APPENDICES

Appendix 1: Informed verbal consent for observation

Consentimiento Oral
Observaciones de madres y profesionales de la salud

Buenos días/tardes, mi nombre es Yvette Fautsch Macías, soy estudiante de maestría y estoy realizando una investigación respecto a la educación sobre la alimentación del niño pequeño en establecimientos de salud en Perú. El estudio cuenta con el apoyo del Instituto de Investigación Nutricional que es una institución que trabaja para mejorar la salud y nutrición de madres y de sus hijos.

Me gustaría pedirles a ustedes su consentimiento para que mi asistente Yessenia Barios y yo estemos presentes y observemos como se desarrolla la consulta. Durante la observación vamos a tomar notas que nos servirán para recordarlo.

Su participación es completamente voluntaria y puede decidir no ser observado, en ese caso me retiraré del lugar. No existen riesgos para usted por participar en este estudio. Que usted decida si o no participar en el estudio no afectará su empleo o los servicios que recibe de parte de los establecimientos de salud.

Lo que diga o haga no será asociado a usted o a su nombre. Toda información documentada durante las observaciones será completamente confidencial y no será compartida con los administradores del establecimiento de salud en el que trabaja o con el Ministerio de Salud.

¿Tiene alguna pregunta?

¿Da usted su consentimiento a ser observado durante la consulta?

SI _____ / NO _____

Gracias por haber aceptado participar en este estudio.

Appendix 2: Informed written consent for mothers

Hoja de Información y Consentimiento
Madres

Titulo del estudio:

Educación sobre la nutrición infantil en establecimientos de salud en una comunidad peri-urbana de Lima, Perú

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Introducción

El instituto de Investigación Nutricional es una institución que ha venido trabajando en Perú por mas de 50 años dirigiendo proyectos para mejorar la salud y nutrición de madres y sus hijos. Este es un proyecto que esta siendo dirigido en colaboración con el instituto.

Usted está invitada a participar en el proyecto intitulado:
Educación sobre la nutrición infantil en establecimientos de salud en una comunidad peri-urbana de Lima, Perú

Lea atentamente este formulario de consentimiento para asegurarse que quiere participar en el estudio. Si tiene preguntas sobre el estudio, no dude en hacerlas en cualquier momento. Usted obtendrá una copia de este formulario.

¿De qué se trata el estudio?

El propósito de este estudio es de analizar el rol de los establecimientos de salud en relación a la educación sobre la alimentación del niño pequeño durante los 6 primeros meses de vida. El estudio ayudará a entender los factores afectando las intervenciones de educación nutricional en establecimientos de salud en áreas urbanas a través de las experiencias de madres y profesionales de la salud.

¿Quiénes pueden participar en el estudio?

Si usted es una mujer que tiene por lo menos 18 años, tiene por lo menos un hijo/a menor de 6 meses de edad y recibe servicios de salud en hospitales o centros de salud, usted puede participar en este estudio.

¿Qué se me pedirá que haga si participo en este estudio? ¿Cuánto tiempo dura mi participación en el estudio?

Usted está invitada en participar en un grupo focal, es decir una discusión de grupo formado por madres de niños/as menores de 6 meses. El grupo focal durará aproximadamente 2 horas. Durante la discusión de grupo, se le pedirá compartir las experiencias que usted tuvo en establecimientos de salud en relación a la educación sobre la alimentación del niño pequeño y cómo estas experiencias impactaron sobre la forma de alimentar a su bebé. Se harán también preguntas sobre otras influencias que hayan impactado la alimentación de su bebé.

Algunas madres también serán invitadas en participar en entrevistas individuales que durarán aproximadamente una hora. El grupo focal y las entrevistas no serán hechas el mismo día.

La discusión de grupo y las entrevistas serán grabadas. Las cintas de audio solo permitirán recordar la discusión. Usted está en su derecho de no aceptar ser grabada o pedir que la grabación sea parada en cualquier momento. Por otro lado, se tomarán fotografías durante el grupo focal. Las fotografías serán usadas para describir el estudio y la comunidad en la cual el estudio se llevo a cabo. Usted puede aceptar o no que se le tomen fotografías.

¿Existen riesgos para mí por participar en el estudio?

No hay riesgos para usted por participar en este estudio.

¿Tendré algún beneficio por participar en el estudio?

Usted no recibirá un beneficio directo por participar en este estudio. Sin embargo, la información obtenida a través de este estudio beneficiará a las comunidades y establecimientos de salud puesto que brindará un mejor entendimiento sobre la disponibilidad, la calidad y el uso de la educación sobre la alimentación del niño pequeño.

¿Tendré alguna compensación por participar en el estudio?

Los participantes no serán compensados por su participación. Sin embargo, un pequeño regalo será entregado a los participantes, refrigerios serán servidos durante la discusión de grupo y los costos relacionados con el transporte le serán reembolsados.

¿Me puedo retirar en cualquier momento?

Si. Su participación es completamente voluntaria y usted puede decidir de no responder a alguna pregunta o de retirarse del estudio en cualquier momento. Que usted decida si o no participar en el estudio no afectará los servicios que usted recibe en cualquier establecimiento de salud.

Confidencialidad ¿Quién va a saber que yo estoy participando en el estudio?

La información que usted brindará no será asociada a usted o a su nombre. Toda información que la identifique o documento que contenga información sobre usted será mantenido confidencial en todo momento y no se hará público. Para garantizar la confidencialidad, se le dará un número de código único, y este código será utilizado en lugar de su nombre sobre los formularios. Sólo los investigadores del estudio (nombres listados en la página 1) tendrán acceso a los registros que identifican su código con su nombre. Los documentos serán almacenados de forma segura en el instituto y todos los archivos de la computadora serán protegidos con contraseña que también será mantenida en reserva. Al finalizar el estudio, todos los archivos que permitan la identificación entre su código y su nombre serán destruidos. En la eventualidad que los resultados del estudio sean publicados, su identidad se mantendrá confidencial. Las fotografías tomadas de usted, con su aprobación, en ningún caso contendrán su nombre o de la comunidad asociada a ella. Las cintas de audio y las fotografías serán destruidas después de la publicación de los resultados del estudio.

Limitaciones de la confidencialidad dentro de la discusión de grupo (grupo focal): La confidencialidad será fomentada durante la discusión de grupo pero no podrá ser garantizada. La información que usted compartirá durante la discusión de grupo será a su discreción.

¿A quién llamo si quiero hacer preguntas sobre el estudio?

Si usted tiene preguntas sobre este estudio o desea obtener más información sobre esta investigación, por favor comuníquese con:

Yvette Fautsch al 392-9568 yvette.fautschmacias@mail.mcgill.ca

Rossina Pareja al 392-9568 rpareja@iin.sld.pe (Perú)

La Dra. Grace Marquis al 1-514-398-7839 grace.marquis@mcgill.ca (Canadá)

¿A quién llamo si quiero hacer preguntas sobre mis derechos como participante en este estudio?

Si usted tiene preguntas o dudas sobre su bienestar o sus derechos como participante en este estudio, puede contactar a Hilary Creed-Kanashiro M.Phil, Presidente y persona de contacto para Sujetos Humanos del Comité de Ética del Instituto de Investigación Nutricional, quien está designada a responder preguntas de los participantes al Teléfono: 349 6023.

Declaración Voluntaria de Consentimiento Informado

Yo, después de haber sido informado(a) sobre todos los aspectos del proyecto descritos en este formato y de haber recibido respuestas satisfactorias a todas mis preguntas y dudas sobre este proyecto, acepto libre y voluntariamente que he tenido oportunidad de hacer preguntas sobre este proyecto; entiendo los procedimientos que se realizarán y que la información se tratará confidencialmente sin revelar la identidad de mi o de mi hijo(a) en informes o publicaciones con los resultados de estos estudios.

Doy consentimiento a ser grabada durante la discusión de grupo (grupo focal)

____SI ____NO

Doy consentimiento a ser fotografiada durante la discusión de grupo (grupo focal)

____SI ____NO

Las fotografías podrán ser usadas durante presentaciones de este estudio únicamente con su consentimiento. Su nombre no será asociado con la fotografía. Las cintas de audio y las fotografías serán suprimidas después de la publicación de los resultados del estudio.

Usted también podría ser invitada a participar subsecuentemente en una entrevista individual que durará aproximadamente una hora para saber mas sobre sus experiencias relacionadas con la educación sobre la alimentación del niño pequeño que usted recibió en establecimientos de salud. La entrevista puede llevarse a cabo en su casa o en un lugar que sea conveniente para usted.

Acepto participar en una entrevista individual

____SI ____NO

Acepto ser grabada durante la entrevista individual

____SI ____NO

_____ _____/_____/_____
Firma del Participante Fecha

_____
Nombre del Participante

_____ _____/_____/_____
Firma de la Persona del Proyecto que Fecha
Explica el Formato de Consentimiento

_____
Nombre de la Persona del Proyecto que
Explica el Formato de Consentimiento

En caso de participantes no letrados

El miembro del proyecto que firma este Formato de Consentimiento declara que ha explicado en detalle todos los aspectos de este proyecto, incluyendo sus propósitos, y los procedimientos que se realizarán, los riesgos y beneficios, así como la confidencialidad de la información y todos los aspectos descritos en este formato a los participante y que él/ella ha aceptado de manera totalmente voluntaria en participar en este proyecto. Todas las preguntas hechas por los participantes han sido respondidas satisfactoriamente. En conformidad, los participantes han estampado su huella digital en este formato.

Huella Digital Fecha: ___ / ___ / ___

Nombre de testigo _____

Firma de Testigo _____ Fecha: ___ / ___ / ___

Appendix 3: Informed written consent for health care providers

Hoja de Información y Consentimiento
Profesionales de la salud

Titulo del estudio:

Educación sobre la nutrición infantil en establecimientos de salud en una comunidad peri-urbana de Lima, Perú

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Usted está invitado/a a participar en el proyecto intitulado:
Educación sobre la nutrición infantil en establecimientos de salud en una comunidad peri-urbana de Lima, Perú

Lea atentamente este formulario de consentimiento para asegurarse que quiere participar en el estudio. Si tiene preguntas sobre el estudio, no dude en hacerlas en cualquier momento. Usted obtendrá una copia de este formulario.

¿De qué se trata el estudio?

El propósito de este estudio es de analizar el rol de los establecimientos de salud en relación a la educación sobre la alimentación del niño pequeño durante los 6 primeros meses de vida. El estudio ayudará a entender los factores que afectan las intervenciones de educación nutricional en establecimientos de salud en áreas urbanas a través de las experiencias de madres y profesionales de la salud.

¿Quiénes pueden participar en el estudio?

Si usted es un doctor, enfermero/a, obstetriz, nutricionista, técnico en enfermería, agente comunitario de salud u cualquier otro personal que trabaja en un hospital o centro de salud y recibe en consulta o tiene contacto con madres de niño/as menores de 6 meses, usted puede participar en este estudio.

¿Qué se me pedirá que haga si participo en este estudio? ¿Cuánto tiempo dura mi participación en el estudio?

Para comprender mejor su experiencia personal cuando imparte educación nutricional a madres, usted está invitado/a a participar en una entrevista individual que durará aproximadamente 1 hora. Las preguntas serán centradas en sus experiencias personales relacionadas a la educación sobre la alimentación del niño pequeño. Las preguntas también se centrarán sobre cómo evalua la educación nutricional en establecimientos de salud. La entrevista se llevará a cabo en un lugar tranquilo, cerca de su lugar de trabajo y que es conveniente para usted, al momento que a usted le convenga.

La entrevista será grabada. La cinta de audio será unicamente usada para recordar la entrevista. Usted está en su derecho de no aceptar ser gradado/a o pedir que la grabación sea parada en cualquier momento.

¿Existen riesgos para mí por participar en el estudio?

No hay riesgos para usted por participar en este estudio.

¿Tendré algún beneficio por participar en el estudio?

Usted no recibirá un beneficio directo por participar en este estudio. Sin embargo, la información obtenida a través de este estudio beneficiará a las comunidades y establecimientos de salud puesto que brindará un mejor entendimiento sobre la disponibilidad, la calidad y el uso de la educación sobre la alimentación del niño pequeño.

¿Tendré alguna compensación por participar en el estudio?

Los participantes no serán compensados por su participación. Un pequeño regalo les será entregado al terminar la entrevista.

¿Me puedo retirar en cualquier momento?

Si. Su participación es completamente voluntaria y usted puede decidir de no responder a alguna pregunta o de retirarse del estudio en cualquier momento. Que usted decida si o no participar en el estudio no afectará su empleo.

Confidencialidad ¿Quién va a saber que yo estoy participando en el estudio?

La información que usted brindará no será asociada a usted o a su nombre. Toda información que la identifique o documento que contenga información sobre usted será mantenido confidencial en todo momento y no se hará público. Para garantizar la confidencialidad, se le dará un número de código único, y este código será utilizado en lugar de su nombre sobre los formularios. Sólo los investigadores del estudio (nombres listados en la página 1) tendrán acceso a los registros que identificar su código con su nombre. Los documentos serán almacenados de forma segura en el instituto y todos los archivos de la computadora serán protegidos con contraseña que también será mantenida en reserva. Al finalizar el estudio, todos los archivos que permitan la identificación entre su código y su nombre serán destruidos. En la eventualidad que los resultados del estudio sean publicados, su identidad se mantendrá confidencial. Las cintas de audio serán destruidas después de la publicación de los resultados del estudio.

La entrevista no será compartida con los administradores del establecimiento de salud en el que trabaja o con el Ministerio de Salud. La información que usted comparta nunca será asociada a su nombre, será más bien parte de una presentación global de la educación sobre la nutrición infantil en establecimientos de salud. Sin embargo, dado que solo algunos hospitales y clínicas serán incluidos en el estudio, un anonimato total no será posible.

¿A quién llamo si quiero hacer preguntas sobre el estudio?

Si usted tiene preguntas sobre este estudio o desea obtener más información sobre esta investigación, por favor comuníquese con:

Yvette Fautsch al 392-9568 yvette.fautschmacias@mail.mcgill.ca

Rossina Pareja al 392-9568 rpareja@iin.sld.pe (Perú)

Dra. Grace Marquis al 1-514-398-7839 grace.marquis@mcgill.ca (Canadá)

¿A quién llamo si quiero hacer preguntas sobre mis derechos como participante en este estudio?

Si usted tiene preguntas o dudas sobre su bienestar o sus derechos como participante en este estudio, puede contactar a Hilary Creed-Kanashiro M.Phil, Presidente y persona de contacto para Sujetos Humanos del Comité de Ética del Instituto de Investigación Nutricional, quien está designada a responder preguntas de los participantes al Teléfono: 349 6023.

Declaración Voluntaria de Consentimiento Informado

Yo, después de haber sido informado(a) sobre todos los aspectos del proyecto descritos en este formato y de haber recibido respuestas satisfactorias a todas mis preguntas y dudas sobre este proyecto, acepto libre y voluntariamente que he tenido oportunidad de hacer preguntas sobre este proyecto; entiendo los procedimientos que se realizarán y que la información se tratará confidencialmente sin revelar mi identidad en informes o publicaciones con los resultados del estudio.

Doy consentimiento a ser grabado/a durante la entrevista

____SI ____NO

_____ _____/_____/_____
Firma del Participante Fecha

_____
Nombre del Participante

_____ _____/_____/_____
Firma de la Persona del Proyecto que Explica el Formato de Consentimiento Fecha

_____
Nombre de la Persona del Proyecto que Explica el Formato de Consentimiento

Appendix #4: Sensitizing framework/Observations guide (Part 1)

Tema	Subtema	Enfoque	Indicadores o ejemplos
Orientación o consejería nutricional	Incitación a dar de lactar al niño en la media hora del parto	PS	Durante el periodo neonatal
	Alojamiento conjunto (24 horas)	PS	Durante el periodo neonatal
	Posibilidad de lactancia materna a la demanda	M+PS	Durante el periodo neonatal
	Evaluación de la lactancia y/o otras prácticas de alimentación	PS	Evaluacion del crecimiento del niño y salud en general
			Historia de alimentación (incluyendo introducción alimentos prelácteos)
			Experiencias previas de la madre relacionadas con la alimentación del niño pequeño
			Observación LM: evaluación de la condición de los pechos, posición del bebé durante la lactancia, agarre de pecho, succión
			Indagación sobre: si recibe o no LM, técnica, frecuencia, duración de las mamadas, lactancia en la noche, LM a la demanda; extracción de leche materna; introducción de otros líquidos o sólidos, empleo de biberón (+como es limpiado)
			Salud de la madre: nutrición y medicamentos en periodos pre y postnatal
			Situación laboral y económica (afectan capacidad para cuidar al niño)
			Actitud de la familia frente a las prácticas de alimentación del niño
	Explicación sobre la situación encontrada	PS	Retardo de crecimiento, perdida de peso, pb de alimentación, mal agarre, LM no exclusiva, necesidad de referir a otro PS
	Información o consejos dados (que tenga impacto sobre la alimentación del niño pequeño)	PS	Referente a LM o a LME: beneficios, calostro, técnica (posición y agarre), frecuencia, contacto piel a piel, alojamiento conjunto, ofrecimiento de los 2 pechos, extracción manual de leche materna, leche el polvo
			Planificación familiar (método de lactancia y amenorrea)
			Salud y nutrición de la madre
	Comunicación: Manera de dar información/ tipo de consejos	PS	Tipo de lenguaje (sencillo o uso de términos técnicos); uso de preguntas abiertas ; cantidad de consejos; sugerencias/ordenes
	Ayuda directa a la madre para lactar	PS	Ayuda física, con modelo de pecho, con otra madre
	Material educativo de apoyo utilizado	PS	Laminado, afiche, rotafolio, folleto, tríptico, recetario, ejemplos
	Material de consulta utilizado	PS	Lineamientos de Nutrición Materno Infantil 2004, Guía de consejería nutricional, Otro
	Apunte de notas, registro de acuerdos tomados	PS	Tipo de formulario
	Seguimiento de acuerdos tomados anteriormente	PS	Tipo de formulario
	Actitud frente a un problema de lactancia	M+PS	Análisis de factores causales o riesgos, búsqueda de alternativas o solución para un mejor agarre, ayuda a la madre con problemas de alimentación o malas prácticas, referir a otro PS

Appendix #4: Sensitizing framework/Observations guide (Part 2)

Tema	Subtema	Enfoque	Indicadores o ejemplos
Relación madre - profesional de salud	Relación que se establece con la madre/trato	M+PS	Igualitaria, ser abierto, calido, humano, mirar a los ojos, tener actitud de escucha, hacer que el otro se sienta cómodo, verticalidad, empatía
	Reesfuerzo de actitudes positivas	PS	Elogio y alentación cuando la práctica es adecuada (por ejemplo capacidad de lactar)
	Verificación del entendimiento	M+PS	Preguntas de chequeo a la madre; parafrasea lo que dice la madre
	Grado de involucramiento de la madre durante la consejería	M+PS	Motivación, preguntas (abiertas) a la madre sobre lo que podría hacer en la situación, espacio para que la madre se exprese
	Comunicación verbal	M+PS	Preguntas, afirmaciones, exclamaciones, uso de palabras interpretativas: "suficiente, apropriado, equivocado, bueno, bien, que mal"
	Comunicación no verbal	M+PS	Gestos, postura corporal, emoción, empatia, demuestra interés (sonreir asentir con la cabeza),
	Turnos de diálogo	M+PS	Saber escuchar, saber tomar la palabra, saber mantener el uso de la palabra, sabe ceder la palabra, evita palabras juzgantes
Proceso	Lugar	[redacted]	Establecimiento, consultorio, colores, espacio
	Tipo de PS		Doctor, enfermera, obstetriz, nutricionista, técnico enfermería, agente de comunitario de salud
	Razón de la consulta/contacto M-PS		Control del niño sano, vacunas, enfermedad, visita de seguimiento u otro
	Contexto de la consulta/contacto M-PS		Primera consulta, consultorio CRED, ínter consulta, charla u otro
	Privacidad		Presencia de otras personas, puerta abierta
	Interrupciones		Razón
	Tiempo		Minutos, horas
	Momento		Periodo del día
	Presencia de familiares		Familiares presentes
Establecimiento de salud	Información brindada a la población	[redacted]	Afiches o pancartas, altoparlantes
	Consultorios		Número y tipo de consultorios
	Número y tipo de profesionales de la salud		
	Charlas		Temas, duración, lugar, número de personas presentes
	Interacción entre personas		Entre los pacientes, entre pacientes y PS, entre PS y PS

Appendix #5: Interview procedures guide for mothers

Guía de presentación – Entrevista con madre

1) Presentación

Antes de empezar, me gustaría agradecerle el que haya aceptado participar en esta entrevista. Ustedes están participando en un estudio sobre la educación sobre la alimentación de pequeños menores de 6 meses en establecimientos de salud.

Mi nombre es Yvette, y voy a hacerles preguntas sobre el tema. Mi asistente es Yessenia y va a estar con nosotras durante la discusión. Estaremos tomando notas sobre la discusión.

El objetivo de esta entrevista es de conocer las experiencias que usted ha tenido en establecimientos de salud en lo que se refiere a la alimentación del niño pequeño y las experiencias que han tenido alimentando a su niño/a. Les haré preguntas sobre estos temas. La información que se obtenga de esta entrevista proveerá recomendaciones sobre como mejorar la educación nutricional en establecimientos de salud. Su opinión es importante porque podría mejorar el servicio que usted recibe y que recibirán otras madres.

2) Explicación de la entrevista

Haré una serie de preguntas que usted podrá responder. Siéntase libre de expresar sus experiencias, pensamientos, creencias y opiniones. Si usted no quiere contestar a alguna de las preguntas, está en su derecho y no tiene que contestar. No dude en hacer preguntas si tiene dudas o si necesita que yo clarifique la pregunta.

Al final haremos un resumen de los puntos importantes de la entrevista. La entrevista será audio grabada. La grabación solo servirá para recordar nuestra conversacion. Nadie, fuera de los investigadores de este estudio (Yessenia, yo y otras personas trabajando para el instituto), tendrá acceso a las cintas de audio y yo no repetiré lo que usted me haya dicho fuera de este lugar.

Nota: Asegurarse que todas la madre haya llenado y entregado la hoja de consentimiento

3) Preguntas

¿Tiene preguntas antes de empezar?
Preguntas de la entrevista

4) Al final: resumen de los puntos clave discutidos

He acabado mis preguntas. Hagamos un resumen de los puntos clave de la entrevista.

5) Agradecer al participante

Gracias por haber participado en esta investigación. Para agradecer su participación en el estudio, le tenemos una regalito, una sonaja, puede escoger la que le guste mas.

Appendix #6: Interview guide for mothers (Part 1)

Guía de entrevista - Madres - Educación sobre la nutrición infantil en establecimientos de salud, Canto Grande

Periodo	Tema	Subtema	Preguntas	Indagación
Periodo neonatal: Primer contacto con el bebe	Descripción	Parto	¿Cuéntenme, cómo fue su parto? Como fue el primer contacto con su bebe?	Dónde
		Incitación a dar de lactar al niño en la media hora del parto (contacto precoz)	Una vez que nació el bebe, ¿que pasó después?, ¿Dónde quedó el niño? ¿Alguien la incito a darle el pecho al nino en ese momento?	
		Contacto piel a piel	Pusieron al niño a su costado? Dejaron que durmiera a su costado? En la misma cama? Por cuanto tiempo?	
		Alojamiento conjunto (24 horas)		
		Profesionales de salud	¿Me puede describir un momento específico en el que alguien en el establecimento de salud le ayudó a alimentar a su hijo? Quien más?	Quienes (color de chaqueta), dónde, en que momento
		Ayuda directa a la madre para lactar	¿Alguien tomó a su bebe y se lo puso en su contacto para ayudarla a lactar? Que hizo? Cómo lo hizo?	Quienes (color de chaqueta), en que momento; estimilacion de los pechos
		Posibilidad de lactancia materna a la demanda	¿Tenía usted la posibilidad de lactar en cualquier momento en el hospital?	
	Informacion recibida	Consejos recibidos	¿Cuando el personal de salud les habló sobre la alimentacion del niño, qué información le dio, que le dijeron?	Beneficios LM, contacto precoz piel a piel, inicio precoz de la LM después del nacimiento, LME, alojamiento conjunto,importancia del calostro, problemas que pueden surgir
		Material educativo de apoyo utilizado	¿Cuando el personal de salud le habló, les aconsejo cómo lo hizo? Solo le hablaron o usaron algo mas? Les dieron documentacion escrita?	Pancarta, rotafolio, folleto, contacto directo, otro
		Información sobre formula/leche maternizada	¿Han recibido alguna información sobre la leche maternizada/formula? ¿O alguien le recomendó que usara formula?	Quienes En que momento En que circunstancias Uso de material educativo Presencia de visitadores medicos
		Disminución de LM	¿El algún momento le han dicho que le diera menos LM a su niño?	
		Exposición al establecimiento de salud	¿Cuánto tiempo se quedó en el hospital?	
		Referencia a algún grupo de apoyo	¿Se le dio información sobre donde puede encontrar apoyo para alimentar a su niño fuera del hospital?	

Appendix #6: Interview guide for mothers (Part 2)

Periodo	Tema	Subtema	Preguntas	Indagación
Periodos pre y postnatal: Orientación o consejería nutricional	Tipo de consulta	Tiempo de espera	¿Cuanto tiempo espera antes de ser atendida?	
		Motivo de la consulta y descripción	Despues/antes del parto, asisten a consultas, y ¿que se hace en esas consultas? Para que son?	Donde, con quien, frecuencia, psicoprofilaxis obstetrica, estimulacion temprana, CRED, medicina, otro
	Evaluación de las prácticas de alimentación	Evaluación de la lactancia y/o otras prácticas de alimentación	¿El personal de salud le hace preguntas sobre como alimentan a su niño? Le pregunta si tiene problemas sobre como alimentar a su niño? Las observa cuando dan de lactar? Que les preguntan?	LM: si recibe o no, técnica, frecuencia, LM a la demanda; otros líquidos o sólidos
	Información recibida	Consejos recibidos en relación a la alimentación de su niño	¿Durante esas consultas, algún personal de salud le dio información especifica sobre como se debe alimentar a su niño?	Prenatal: beneficios LM, contacto precoz piel a piel, inicio precoz de la LM después del nacimiento, LME, alojamiento conjunto,importancia del calostro, problemas que pueden surgir Postnatal: beneficios LM, LME, tecnica, frecuencia, posicion, eliminacion de gases (prevencion colicos), fortalecer vinculo afectivo, importancia de involucrar al padre
		Información sobre formula/leche maternizada	¿Han recibido alguna información sobre la leche maternizada/formula? ¿O alguien le recomendó que usara formula?	Quienes En que momento En que circunstancias Uso de material educativo Presencia de visitadores medicos
		Disminución de LM	¿El algún momento le han dicho que le diera menos LM a su niño?	
		Material educativo de apoyo utilizado	¿Cuando el personal de salud le habló, les aconsejo cómo lo hizo?	- Descripción del consultorio - Recomendaciones orales - Material educativo: pancarta, rotafolio, folleto, contacto directo, ayuda directa, otro
		Consejos en la totalidad de las consultas	¿Esas *todas* consultas les han dado informacion sobre la alimentacion del niño? En cuales no?	
		Acudir a todas las consultas	¿Acuden ustedes a todas las consultas y controles?	
			¿En que momentos no ha podido atender las consultas?	Problema $, problema de seguro

Appendix #6: Interview guide for mothers (Part 3)

Periodo	Tema	Subtema	Preguntas	Indagación
Pre, neo y postnatal	Problemas relacionados con LM	Tipo de problema	¿Cómo les ha ido hasta ahora alimentado al niño? Hubo algún problema para alimentar al bebé?	Falta de leche, Dientes del niño (dolor)
		Ayuda recibida	¿Quien le ayudó con su problema?	PS, familiares, amigos, otro
			Como lo hicieron? Que les dijeron?	Consejos, extraccion LM
			¿Alguien converso con ustedes para saber como recibir apoyo de su familia, del establecimiento de salud o de la comunidad?	
	Relación madre - profesional de salud	Experiencia positiva	¿Alguna de ustedes me puede describir algún momento en el que le haya gustado el trato de algún profesional de salud y por qué?	Cuando, Quien En ese momento, se hablaba sobre nutrición infantil?
		Experiencia negativa	Ahora, ¿alguna de ustedes me puede describir un momento con el profesional de salud que no le haya gustado y por qué?	Que se hay sentido juzgada o mal comprendida; o le ha dado tiempo de hacer sus preguntas
		En general	¿En general, como se sienten cuando están con un profesional de salud?	Escuchadas, comprendidas y/o sienten que reciben una buen ayuda o no , les alentaba a continuar
Fuentes de información	En general	Fuentes de informacion	¿Alguien podria decir como aprendió a alimentar a su niño en los primeros meses? Quien? Donde?	Tipo de EESS, Familia, pareja, afiche, periodico, revista, TV, supermercado, otro
	Informacion contradictoria	Informacion contradictoria en general	¿Le has pasado que en algún momento alguien les da algun consejo sobre como alimentar a su niño y la otra persona dice algo muy diferente?	Quienes, que información
		Informacion contradictoria en PS	¿En algún momento han recibido información diferente de parte de diferentes PS?	Quienes, que información
		Mayor confianza	¿Que hacen en ese momento? A quien le van a creer mas?	PS, familia, pareja, amigos, vecinos, otras madres, TV, afiche, otro
	Ambiente del establecimiento de salud	Afiches y pancartas	En los establecimientos de salud, hay varias pancartas con información de todo tipo, tuberculosis, SIDA, planificacion familiar etc. ¿Recuerdan alguna vez haber visto una pancarta sobre la alimentación del niño pequeño?	Cuales, descripción, en sala de espera, en consultorio, en otro lugar
		Charlas (por promotores de salud)	Hay veces que en la sala de espera o el algun lugar del establecimiento de salud se den charlas sobre diferentes temas, dados por promotores de la salud. ¿Alguien ha estado presente durante alguna de esas charlas?	Lugar Momento Temas
		Incitación	¿Hay algo en el ES que le haya incitado a alimentar de cierta manera a su hijo?	

Appendix #6: Interview guide for mothers (Part 4)

Periodo	Tema	Subtema	Preguntas	Indagación
Pre, neo y postnatal	Prácticas	Prácticas basadas en diferentes tipos de de información	El mundo es diferente, cada quien vive en circunstancias diferentes y tomamos decisiones diferentes basadas en la información que hemos recibido. Y algo que es diferente entre las personas es la manera de alimentar a sus niños. Ustedes, cómo has decidido alimentar a su bebé?	Inicio, duracion, exclusividad, frecuencia, noche?, introduccion de otros liq o solidos, formula
		Facilitadores	Según su experiencia en que momento lactar es mas facil o posible?	Lactar exclusivamente?
		Barreras	¿Hay algo que les dificulte o les impida lactar?	Algo, alguien, en algun momento
	Apoyo familiar	Reacciones de la familia a la hora de alimentar al niño	¿Cómo reaccionan los familiares a la hora de alimentar a sus niños?	Las apoyan o no? Quienes? Que dicen?
	Opiniones/Sugerencias	En general	¿En un mundo ideal, qué cambiaría usted para mejorar la información que usted recibe en relación a la alimentación infantil?	Recursos materiales (material sobre la alimentación del niño); Recursos humanos (mas PS); mas tiempo; mejorar el trato que se le da, Otro
		Uso de buzones de sugerencia	¿En los EESS, hay buzones de sugerencias, los ha usado alguna vez?	

Appendix #7: Interview procedures guide for health care providers

Guía de presentación – Entrevista con profesional de la salud

1) **Presentación**

Antes de empezar, me gustaría agradecerle el que haya aceptado participar en esta entrevista. Usted está participando en un estudio sobre la educación sobre la alimentación de niños pequeños en establecimientos de salud.

El objetivo de esta entrevista es de analizar las experiencias personales que usted tuvo en relación a la educación sobre la alimentación del niño pequeño. Le haré preguntas sobre sus experiencias y prácticas sobre este tema.

2) **Explicación de la entrevista**

Le haré una serie de preguntas que tendrá que responder. Si no quiere contestar a alguna de las preguntas, está en su derecho y no tiene que contestar. No dude en hacer preguntas si tiene dudas o si necesita que clarifique la pregunta. Al final haremos un resumen de los puntos importantes de la entrevista. La entrevista será audio grabada. La grabación solo servirá para recordar la discusión. Nadie, fuera de los investigadores de este estudio, tendrá acceso a las cintas de audio.

Antes de empezar, le quisiera pedir que responda a algunas preguntas socio demográficas para conocerlo mejor a usted. Este cuestionario será mantenido confidencial. Nadie, fuera de los investigadores de estudio, tendrán acceso a los cuestionarios.

Nota: Asegurarse que el participante entregó su hoja de consentimiento.

3) **Preguntas**

¿Tiene preguntas antes de empezar?

Preguntas de la entrevista

4) **Al final: resumen de los puntos clave discutidos**

5) **Agradecer al participante**

Gracias por haber participado en esta investigación. Para agradecer a nuestros participantes, les tenemos un regalito. Aquí tiene un pequeño cuaderno.

Appendix #8: Interview guide for health care providers (Part 1)

Guía de entrevista- Profesionales de salud - Educación sobre la nutrición infantil en establecimientos de salud, Canto Grande

Tema	Subtema	Preguntas	Indagación
Rol de los profesionales de salud	Descripción del día de trabajo	¿Podría usted describirme un día tipico de trabajo desde que empieza el día hasta que acaba?	Ocupación, Contacto con las madres Trabajo de campo Capacitaciones, charlas dadas
	Descripción de un encuentro con madre	¿En que momento ve a usted madres con niños menores de 6 meses? Madres gestantes?	
		¿Me podría describir un encuentro/consulta que haya tenido con madres con niños menores de 6 meses? Con una madre gestante?	Periodo perinatal y postnatal Presencia de familiares
	Uso de formularios	He visto que los PS tienen muchos documentos o formularios que llenar. ¿Para que son esos documentos? ¿Que se escribe dentro? *Obtener copia en blanco de los formularios*	Descripcion de los documentos Utilidad
	Visitador medico	¿Durante su dia de trabajo, ha recibido a visitadores medicos? ¿Que productos promueven?	Entrega de formulas, folletos o material educativo?
Orientación oconsejería nutricional	Evaluación de las prácticas de alimentación	¿Cómo evaluan lo que la madre le da al niño? ¿Qué le preguntan?	Formulario Que evalúan? (si recibe o no, tecnica, frecuencia, otro tipos de liquidos o alimentos)
	Consejos/información/educación brindada	¿En que momento da usted información sobre la alimentación del niño pequeño?	
		¿Cómo aconseja a la madre a alimentar a su niño?	Menores de 6 meses; exclusividad, duración, frecuencia, contacto directo
	Uso de material educativo	¿Usa usted algún material educativo durante la consulta/contacto con la madre?	Afiche, imagen, rotafolio, folleto que entregar (obtener uno)
	Perdida de la exclusividad	¿Cuándo la madre no lacta exclusivamente, que hace en ese momento? ¿Cómo reacciona?	
	Disminución de LM	¿En que momentos sugiere usted el uso de la formula/leche materna?	
	Formula/leche maternizada	¿En que momentos sugiere usted el uso de la formula/leche maternizada?	
	Problemas frecuentes	¿Cuáles son los problemas frecuentes que se encuentran en la población en térmios de alimentación del niño menor de 6 meses?	Prematuros, bajo peso, rechazo al pecho, separación de la madre y el bebé, insuficiencia percibida, baja de la producción de leche, pechos llenos, baja ingesta de leche del pecho, problema de pezones
	Ayuda brindada a la madre	¿Cómo ayuda usted a la madre a resolver esos problemas?	
	Referencia	¿En algun momento refiere a la madre a otro PS? (interconsutla a otro PS)	Por que motivo, en que momento
	Tiempo	Normalmente, ¿tiene usted tiempo de dar todas la recomendaciones que usted huibera querido dar en términos de nutrición?	En que momentos hay menos tiempo, frecuencia de esos momentos

Appendix #8: Interview guide for health care providers (Part 2)

Tema	Subtema	Preguntas	Indagación
Establecimiento de salud	Capacitaciones, o charlas	He visto en los establecimientos de salud que se dan charlas o capacitaciones a algunos pacientes, sobre temas como prevencion de la tuberculosis o alimentacion complementaria. Existen capacitaciones para las madres sobre lactancia materna?	Quien las da? Frecuencia
Relación con la madre	Participacion de la madre	¿Durante la consulta/contacto con la madre, la madre se expresa, hace preguntas?¿Que dice? ¿Cuáles son las preguntas mas frecuentes?	
	Sentimiento del momento	Cómo se siente usted dando consejería a la madre? Hay algo que le agrade? Hay algo que le moleste?	
	Desafíos, retos	¿Cuáles son los desafios que tiene que enfrentar a la hora de dar informacion nutricional a la madre?	
Influencias sobre la LME	Barreras a la LME	¿Que impide, según usted, establecimiento de la LME durante los primeros 6 meses de vida? ¿Cuales cree que sean las causas? ¿Existen mitos?	Factores fisiologicos, Factores sociales Factores sicologicos, culturales Factores relacionades con en establecimiento de salud o el personal de salud
	Facilitadores a la LME	¿Que ayuda, según usted, establecimiento de la LME durante los primeros 6 meses de vida?	
Formación	En general	¿En donde aprendió sobre los requerimientos nutricionales del niño pequeño?	Universidad, capacitaciones, lectura, otro
	Universitaria	Cuando hizo estudios universitarios, ¿llevo usted cursos sobre la nutrición del niño pequeño?	Cuantes cursos, por cuanto tiempo, que temas
	Capacitaciones/ Cursos de actualización	¿Desde que ha comenzado a trabajar, a recibido capacitaciones?	Cuantas, por cuanto tiempo, frecuencia, temas: LM? Buen trato?
	Documento de referencia	¿Tiene usted algún documento de referencia sobre la nutrición infantil?	Documento tecnico del MINSA (Consejería nutricional en el marco de la atención de salud materno infantil), Lineamientos de nutrición infantil
	Evaluación	He escuchado que el MINSA hace evaluaciones de consejería nutricional en nutricionistas. ¿Ha tenido usted alguna evaluación similar?	
Opiniones - Sugerencias		En un mundo ideal, ¿cuáles serían las mejores estrategias para mejorar el apoyo a la LME en establecimientos de salud?	

Appendix #9: Focus group procedures guide

Grupos focales – Presentación a madres

1) Presentación

Antes de empezar, me gustaría agradecerles a todas el que hayan aceptado participar en este grupo focal. Ustedes están participando en un estudio sobre la educación sobre la alimentación de bebés menores de 6 meses en establecimientos de salud.

Mi nombre es Yvette, y voy a hacerles preguntas sobre el tema. Mi asistente es Yessenia y va a estar con nosotras durante la discusión. Estaremos tomando notas sobre la discusión. El objetivo de esta discusión es de analizar las recomendaciones que ustedes recibieron en establecimientos de salud en lo que se refiere a la alimentación del niño pequeño. Haré preguntas sobre las experiencias personales que ustedes tuvieron en (nombre del establecimiento de salud). La información que se obtenga de este grupo focal proveerá recomendaciones sobre como mejorar la educación nutricional en establecimientos de salud. Su opinión es importante porque podría mejorar el servicio que usted recibe y que recibirán otras madres.

2) Introducciones

Antes de empezar, me gustaría que se presentaran brevemente, únicamente diciendo su nombre, el nombre de su bebé y su edad.

3) Explicación del grupo focal

Haré una serie de preguntas que podrán responder. Todas podrán responder a las preguntas. Siéntanse libres de expresar sus experiencias, pensamientos, creencias y de comentar sobre las respuestas o comentarios de las demás pero siempre respetando la opinión de cada una.

Si alguna de ustedes no quiere contestar a alguna de las preguntas, está en su derecho y no tiene que contestar. No duden en hacer preguntas si tienen dudas o si necesitan que yo clarifique la pregunta. Todas sus opiniones son importantes para este estudio, entonces aunque su opinión sea diferente a la de los demás, siéntanse libres de expresar sus propias opiniones. Después de la discusión, algunas de ustedes serán invitadas a participar en una entrevista individual para saber mas de sus experiencias propias.

Al final haremos un resumen de los puntos importantes de la entrevista. La entrevista será audio grabada. La grabación solo servirá para recordar las conversaciones. Nadie, fuera de los investigadores de este estudio (Yessenia, yo y otras personas trabajando para el instituto), tendrá acceso a las cintas de audio.

En este lugar, no hay nadie que trabaje en establecimientos de salud. Todo lo que se diga en este lugar, quedará únicamente entre nosotras. Yo no repetiré lo que ustedes me hayan dicho fuera de este lugar y espero también que ustedes mantengan toda la información confidencial.

Después del grupo focal, contactaré a algunas de ustedes para entrevistarlas individualmente para saber mas sobre su experiencia propia.

Nota: Asegurarse que todas las madres han llenado y entregado la hoja de consentimiento

4) **Preguntas**

¿Tiene preguntas antes de empezar?

Preguntas del grupo focal

5) **Al final: resumen de los puntos clave discutidos**

6) **Agradecer a las participantes**

Gracias por haber participado en esta investigación. Para agradecer su participación en el estudio, les tenemos una regalito, una sonaja, pueden escoger la que les guste mas.

Appendix #10: Focus group interview guide

SESIONES DE GRUPO

1) Programa integral de salud (solo para el centro de salud)

- De que se trata? Que es ese programa?
- De que tratan las sesiones?

  Indagación:
  - Lactancia materna
  - Formula
  - Alimentación de la madre

- Quien da las sesiones?
- Se usa algún material educativo?

  Indagación:
  - Folletos
  - Rotafolios
  - Pancarta/afiche

2) Otras charlas

- Charlas en la sala de espera?

  Indagación:
  - Temas
  - Horas

- Taller de estimulación temprana (enfermería)

- Psicoprofilaxis obstetrica (obtetricia)

======➔ Información sobre la alimentación del bebé?

Indagación:
- Lactancia materna
- Formula
- Introducción de líquidos otros alimentos

CONSULTAS: PERIODO POSTNATAL

1) Descripción de la consulta: Después del parto asisten a consulta con los profesionales de salud. Para que son esas consultas? Que se hace?

Indagación:
- Enfermería/CRED
- Medicina general
- Obstetricia
- Nutrición

2) Descripción de consultorio

Indagación:
- Rotafolios
- Pancarta/afiche
- Ruidos

3) Evaluación de la lactancia o practicas de alimentación: El personal de salud les hace preguntas sobre como alimentar a su hijo?

Indagación:
- Lactancia materna
- Formula
- Introducción de líquidos otros alimentos
- Problema para alimentar al bebe
- Observación de lactancia

4) Explicación sobre la situación encontrada: El profesional de salud le ha dicho como está su bebé de salud?

Indagación:
- Está creciendo bien o no?
- Que consejos le dan en ese caso?
- En caso en que haya un problema con la alimentación del bebé, como reaccionan los profesionales de salud?
  - Ejemplo: No tienen mucha leche

5) Consejos recibidos: Durante esas consultas, les han dado información especifica sobre como debe alimentar a su bebé?

Indagación:
- Lactancia: LME, técnicas, problemas que pueden surgir, frecuencia, posición, eliminación de gases (botar el chanchito)
- Introducción de otros líquidos o alimentos
- Recomendación de formula? Por qué?

6) Material educativo: Cuando el profesional de salud le habló, le aconsejó sobre la alimentación de su bebé/lactancia, usó algún material educativo?

Indagación:
- Modelo de pecho
- Rotafolio
- Imágenes, afiches
- Folleto
- Le dieron documentación escrita?

RELACIÓN MADRE-PROFESIONAL DE SALUD

En general como se sienten en consulta con los profesionales de salud? Como las tratan?
======➔ Enfermería, Obstetricia, Medicina general, Nutrición

Indagación:
- Se sienten escuchadas, comprendidas?
- Se sienten juzgadas, no comprendidas?
- Han tenido una experiencia positiva con algún PS?
- Han tenido una experiencia negativa con algún PS?

FUENTES DE INFORMACION

7) Alguien me puede decir como aprendió a alimentar a su niño en los primeros meses?

Indagación:
- Quien?
- Donde?
- Entorno familiar
- Medios de comunicación: lactancia, promoción de formula

8) Información contradictoria:

Indagación:
- Profesional de salud vs profesional de salud
- Familiar vs profesional de salud
- Familiar vs familiar
- Que hace en ese momento?
- A quien se fía mas?

PRACTICAS

9) Como saben cada quien vive en circunstancias diferentes y tomamos decisiones basadas en la información que hemos recibido, y algo que es muy diferente es la manera de alimentar a sus niños. Ustedes como han decidido alimentar a su bebé?

Indagación:
- LME
- Lactancia mixta
- Solo formula (Quien la recomendó?)
- Alimentación complementaria

10) Facilitadores: Según su experiencia, en que momento lactar es mas fácil o posible?

11) Barreras: Hay algo que les impida o les dificulte lactar?

OPINIONES – SUGERENCIAS

12) En un mundo ideal, que cambiarían ustedes en los establecimientos de salud para mejorar la información/el apoyo que usted recibe en relación a la alimentación de su bebé?

Indagación:
- Recursos materiales (por ejemplo material educativo)
- Recursos humanos (personal)
- Tiempo de consulta
- Trato que reciben

Appendix #11: Coding scheme used for qualitative analysis

Code-Filter: All

HU: QR Peru 2011
File: [C:\Users\grace\Desktop\Atlas.ti project folder\QR Peru 2011.hpr6]
Edited by: Yvette Fautsch
Date/Time: 2012-03-01 20:41:51

ES1.A.

ES1.A.consejeria nutricional
ES1.A.cuotas de produccion
ES1.A.falta personal
ES1.A.seguros de salud
ES1.A.visitas domiciliarias

ES1.AMBIENTE ---
ES1.ambiente_charlas
ES1.ambiente_CRED
ES1.ambiente_medicina
ES1.ambiente_pancartas
ES1.ambiente_sala de espera

ES1.ENFERMERIA ---
ES1.enfermeria_ M_PS relacion
ES1.enfermeria_carga de trabajo
ES1.enfermeria_diferencia primipara - multipara
ES1.enfermeria_estimulacion temprana
ES1.enfermeria_interconsulta
ES1.enfermeria_material educativo
ES1.enfermeria_orientacion
ES1.enfermeria_orientacion nutricion madre
ES1.enfermeria_recomendacion formula

ES1.MEDICINA ---
ES1.medicina_M-PS relacion
ES1.medicina_orientacion
ES1.medicina_orientacion nutricion madre
ES1.medicina_recomendacion formula

ES1.OBSTETRICIA ---
ES1.obstetricia_carga de trabajo
ES1.obstetricia_labor administrativa
ES1.obstetricia_M-PS relacion
ES1.obstetricia_material educativo
ES1.obstetricia_orientacion
ES1.obstetricia_psicoprofilaxis obstetrica
ES1.obstetricia_recomendacion formula

ES2.A

ES2.AMBIENTE
ES2.ambiente_charlas
ES2.ambiente_CRED
ES2.ambiente_obstetricia
ES2.ambiente_pancartas
ES2.ambiente_sala de espera
ES2.ambiente_visitadores medicos

ES2.ENFERMERIA ---
ES2.enfermeria_estimulacion temprana
ES2.enfermeria_M-PS relacion
ES2.enfermeria_material educativo
ES2.enfermeria_orientacion
ES2.enfermeria_recomendacion formula

ES2.MEDICINA ---
ES2.medicina_carga de trabajo
ES2.medicina_diferencia primipara-multipara
ES2.medicina_interconsulta
ES2.medicina_M-PS relacion
ES2.medicina_material educativo
ES2.medicina_orientacion
ES2.medicina_recomendacion formula
ES2.medicina_visitas domiciliarias

ES2.NUTRICION ---
ES2.nutricion_carga de trabajo
ES2.nutricion_consejeria
ES2.nutricion_recomendacion formula
ES2.nutricion_interconsulta
ES2.nutricion_M-PS relacion
ES2.nutricion_material educativo
ES2.nutricion_orientacion
ES2.nutricion_sesion demostrativa
ES2.nutricion_sesion educativa
ES2.nutricion_visitas domiciliarias

ES2.OBSTETRICIA ---
ES2.obstetricia_material educativo
ES2.obstetricia_orientacion
ES2.obstetricia_psicoprofilaxis obstetrica

H1.A

H1.AMBIENTE ---
H1.ambiente_charlas
H1.ambiente_consultorios externos pediatria
H1.ambiente_CRED
H1.ambiente_hospitalizacion pediatrica
H1.ambiente_pancartas
H1.ambiente_sala de espera CRED
H1.ambiente_sala de espera de consultorios externos
H1.ambiente_sala de puerperio
H1.ambiente_visitadores medicos

H1.CRED ---
H1.CRED_carga de trabajo
H1.CRED_charlas
H1.CRED_consejeria nutricional
H1.CRED_interconsulta
H1.CRED_labor administrativa
H1.CRED_material educativo
H1.CRED_orientacion
H1.CRED_recomendacion formula
H1.CRED_relacion M-PS
H1.CRED_vacunas

H1.GINECOLOGIA ---
H1.ginecologia_orientacion
H1.ginecologia_relacion M-PS

H1.HOSPITALIZACION PEDIATRICA ---
H1.hospitalizacion pediatrica_carga de trabajo
H1.hospitalizacion pediatrica_material educativo
H1.hospitalizacion pediatrica_orientacion
H1.hospitalizacion pediatrica_recomendacion formula
H1.hospitalizacion pediatrica_relacion M-PS

H1.NEONATOLOGIA ---
H1.neonatologia_orientacion

H1.NUTRICION ---
H1.nutricion_charlas
H1.nutricion_consejeria
H1.nutricion_interconsulta
H1.nutricion_material educativo
H1.nutricion_recomendacion formula
H1.nutricion_relacion M-PS

H1.OBSTETRICIA ---

H1.obstetricia_carga de trabajo
H1.obstetricia_charlas
H1.obstetricia_material educativo
H1.obstetricia_orientacion
H1.obstetricia_orientacion
H1.obstetricia_orientacion
H1.obstetricia_orientacion
H1.obstetricia_planificacion familiar
H1.obstetricia_psicoprofilaxis obstetrica
H1.obstetricia_recomendacion formula
H1.obstetricia_relacion M-PS
H1.obstetricia_relacion M-PS

H1.PEDIATRIA CONSULT EXTERNOS ---
H1.pediatria consult ext_carga de trabajo
H1.pediatria consult ext_interconsulta
H1.pediatria consult ext_material educativo
H1.pediatria consult ext_material educativo
H1.pediatria consult ext_orientacion
H1.pediatria consult ext_orientacion
H1.pediatria consult ext_orientacion
H1.pediatria consult ext_recom formula
H1.pediatria_relacion M-PS
H1.emergencia
H1.estimulacion temprana

H1.SALA DE PUERPERIO ---
H1.sala de puerperio_carga de trabajo
H1.sala de puerperio_charlas
H1.sala de puerperio_ primipara vs multipara
H1.sala de puerperio_interconsulta
H1.sala de puerperio_material educativo
H1.sala de puerperio_orientacion
H1.sala de puerperio_recom contradictoria
H1.sala de puerperio_recomendacion formula
H1.sala de puerperio_relacion M-PS

MADRE.A.
madre.a.quien se fian mas
madre.estrategias para mejorar apoyo LME
madre.experiencias anteriores
madre.primeriza
madre.recomendaciones contradictorias
madre.relacion con PS

PS.A
PS.Cursos de actualizacion
PS.Documentos de referencia
PS.Educacion universitaria
PS.Estrategias mejorar apoyo LME
PS.Evaluacion en consulta
PS.Experiencia propria
PS.Fuentes de informacion sobre LM
PS.Recomendaciones erroneas

PROMOCION FORMULA
Promocion formula_a madres
Promocion formula_a PS
Promocion formula_busqueda apoyo de parte de PS
Promocion formula_capacitaciones a PS
Promocion formula_incentivos
Promocion formula_instalacion de equipo
Promocion formula_material promocional
Promocion formula_muestras medicas
Promocion formula_propaganda
Promocion formula_relacion con PS
Promocion formula_compromiso hacia laboratorios

AMBIENTE SOCIO CULTURAL
ambiente socio cultural.ambiente laboral
ambiente socio cultural.entorno familiar
ambiente socio cultural.medios de comunicación
ambiente socio cultural.nivel economico

BARRERA.LME
barrera.LME_demas hijos
barrera.LME_desconocimiento
barrera.LME_dolor de parto
barrera.LME_enfermedad madre
barrera.LME_estres
barrera.LME_facilidad para dar formula
barrera.LME_falta de informacion de parte de PS
barrera.LME_falta de liderazgo en ES
barrera.LME_madre ocupada
barrera.LME_mitos
barrera.LME_nutricion madre
barrera.LME_percepcion poca leche
barrera.LME_pezones no preparados
barrera.LME_promocion formula
barrera.LME_trabajo

BARRERA.M.CONSULTA
barrera.m.consulta_$
barrera.m.consulta_mala relacion con PS
barrera.m.consulta_tiempo de espera
barrera.m.consulta_trabajo

BARRERA.M.INFO
barrera.M.INFO_creencias
barrera.M.INFO_estres
barrera.M.INFO_nivel educativo
Campanas de vacunacion

FACILITADOR.LME
facilitador.LME_apoyo economico a madres
facilitador.LME_apoyo familiar
facilitador.LME_bebe esta tranquilo
facilitador.LME_comodidad
facilitador.LME_consistent advice
facilitador.LME_cultura
facilitador.LME_deseo de continuar
facilitador.LME_diversos
facilitador.LME_educ prenatal
facilitador.LME_liderazgo jefatura
facilitador.LME_produccion LM
facilitador.LME_promocion LM
facilitador.LME_ conciencia LME
facilitador.LME_relacion madre-bebe
facilitador.LME_tiene mas tiempo
facilitador.LME_tiene mas tiempo
facilitador.LME_tiene mas tiempo
facilitador.LME_tiene mas tiempo
farmacia_recomendacion formula

Appendix #12: Additional demographic and socio-economic characteristics of mothers and household characteristics

	Mean ± SD	
Age of youngest child (months)	2.5 ± 1.6	
Infant birthweight (Kg)	3.3 ± 0.7	
Amount of time living in the community (y)	10.2 ± 8.1	
Number of people living in the household (#)	5.5 ± 1.9	
Rooms in the house (#)	2.8 ± 1.7	
Total weekly food expenditure ($ CAD)[1,2]	38.5 ± 19.4	
	n	%
Delivery		
Vaginal	10	62.5
Cesarean	6	37.5
Health insurance		
None	5	31.3
Public/governmental insurance	8	50.0
Social security	3	18.8
Economic support from partner		
Yes	14	87.5
No	2	12.5
Owner of household		
Mother/her household	5	31.3
Rent	3	18.8
Parents/Extended family	2	12.5
Family in-law	6	37.5
Floor material		
Dirt	1	6.3
Unfinished cement	2	12.5
Finished cement	13	81.3
Main wall material		
Non-permanent (straw/mat or cardboard)	1	6.3
Semi-permanent (triplay/wood)	5	31.3
Permanent (bricks/cement whether finished or not)	9	56.3
Electricity in house		
Yes	14	87.5
No	2	12.5
Household possessions		
Refrigerator	9	56.3
Blender	11	68.8
Television	15	93.8
Radio	12	75
Computer	2	12.5
Microwave	2	12.5
Washing machine	1	6.3
Sewing machine	2	12.5
Main cooking fuel		
Gas	16	100

[1] n=14; two participants did not know their weekly expenditure

[2] 1 Canadian Dollar = 2.68 Peruvian Soles