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**BREASTFEEDING IN LEBANON:
BARRIERS AND POLICY DYNAMICS**

CHAZA AKIK

**Thesis submitted in accordance with the requirements for the degree
of Doctor of Public Health**

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LONDON SCHOOL OF HYGIENE & TROPICAL MEDICINE

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Not affiliated to any research group

Declaration of own work

“I, Chaza Akik, confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.”

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DATE: October 07, 2014

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Abstract

Breastfeeding practices in Lebanon fall short of international recommendations: despite high breastfeeding initiation, exclusive breastfeeding (EBF) rates are almost nil at 4-5 months. In the Lebanese context, health services are expected to have a large contributing role on early breastfeeding practices. This research aimed at identifying Lebanese stakeholders' perceptions of barriers to recommended early breastfeeding initiation and EBF till 6 months in the context of health services as well as the political dynamics around existing policies that if implemented would address these health system barriers.

A review of systematic reviews of the effectiveness of health services interventions to promote and support breastfeeding initiation and exclusivity revealed that a package of complementary interventions would be most effective. It would include applying maternity ward changes according to the Baby-Friendly Hospital Initiative, facilitating the formation of lay support groups, and tailoring education and support to the setting and needs of the population.

Semi-structured interviews were conducted with a purposeful sample of 59 Lebanese stakeholders in early breastfeeding. The framework approach was used for analysing data. Health services barriers included suboptimal antenatal preparedness to breastfeeding, detrimental hospital practices, medicalisation of childbirth, health professionals' knowledge and attitudes towards breastfeeding and aggressive marketing by breast milk substitutes companies. The socio-cultural context was depreciative of breastfeeding. Using the principles of stakeholder analysis, implementation of key policies endorsed by the Lebanese government was found to be hindered by the Ministry of Public Health's weak governance and commitment, the weak engagement of key international organisations and professional associations compounded by the financial interests of strong stakeholders in the health care system offered by breast milk substitute companies.

Key recommendations include the need for further commitment from government, grassroots advocacy to shift the culture towards demanding appropriate early breastfeeding practices, and implementation of several health services related programmes.

Integrating statement

In September 2010, I joined the Doctor in Public Health (DrPH) programme at the London School of Hygiene and Tropical Medicine (LSHTM). After completing a Master's of Science degree in Public Health Nutrition from this school in 2006, I returned home, to Lebanon and worked as a research assistant in the Faculty of Health Sciences at the American University of Beirut (AUB). Throughout the four years, what struck me most was the lack of knowledge translation; research projects were conducted and articles were published. However, results were generally not disseminated or shared with relevant actors such as health professionals and decision makers. This was compounded by a general lack of evidence-based health policy making in Lebanon.

Although my professional experience had thus far been limited to minimal project management at AUB and team management for a consultancy for an international non-governmental organisation, I aimed to widen my job prospects to include managerial and leadership positions at governmental and non-governmental organisations. The DrPH programme seemed to be an ideal programme for me to join to acquire analytical and practical skills that would be necessary for these next professional steps.

Each of the three components of the DrPH programme – the two compulsory taught courses, the organisational and policy analysis (OPA) and the research thesis – was challenging in its own way and completing one component at a time gave me a great sense of achievement.

The first of two compulsory courses, Evidence-Based Public Health Policy (EBPHP), was definitely an eye opener for someone with a limited background in policy-making. I learnt about the non-linearity of this process, the influence of evidence (scientific and otherwise) in decision-making, how to appraise the quality of research and particular findings, and the need for particular means of communication for different audiences including political decision makers, scientists, program implementers or lay people. The assignments - updating a systematic review, writing a policy brief, and developing an influencing strategy - were real hands-on experiences for applying the course material. The other compulsory course,

Leadership, Management and Personal Development (LMPD), provided core skills for understanding management and organisational theories, as well as skills for a deeper understanding of oneself in a managerial or leadership role. The personal development retreat was particularly useful in helping me identify strengths and weaknesses of my management and leadership styles. Using Myers-Briggs Type Indicator and the personal SWOT analysis tools, I reflected on my previous personal and professional experiences, considered my short, medium and long-term goals and, most importantly, envisioned and drew a road map on how to get there by acquiring the necessary skills. In addition to these compulsory courses, I took two optional MSc. modules: Qualitative Methodologies, to gain additional knowledge of qualitative method theories and their practical application, and Introduction to Health Economics, given its key relevance in the current worldwide struggle for finite resources.

I conducted my OPA at the National Social Marketing Centre (NSMC) in London. Established in 2006, the NSMC was a strategic partnership between the Department of Health (DH) and Consumer Focus. At the time, the NSMC was transitioning into a social enterprise at a time of high political endorsement by the Coalition government for the creation of social enterprises on the one hand and large scale spending cuts across the public sector on the other. The OPA aimed at identifying key aspects of the external environment and influencing stakeholders that the NSMC would need to account for when determining the organisation's strategic positioning now that the Centre was becoming fully self-sustainable. In this OPA, I learnt about the UK context of voluntary non-profit organisations and the increasingly competitive landscape between them, the public and private sectors. It was my first proper experience in conducting a management research analysis and using management tools such as the Political, Economic, Social, Technological, Legal and Ecological framework and stakeholders' analysis. I also learnt a lot about principles of social marketing, its application and the policy advice given by the NSMC to organisations or government departments to achieve their behavioural change objectives. Furthermore, I was initially interested in investigating retrospectively the role the NSMC played in implementing the National Social Marketing Strategy for Health, specifically in providing national strategic guidance to the DH. However, after getting approval for my proposal, I was asked to change the topic when I joined the NSMC.

This change despite months of preparation taught me about the need for researchers to adapt quickly to changing situations inside of health institutes we evaluate.

Once I submitted the OPA, I shifted my focus to the research thesis. I was interested in looking into barriers to proper breastfeeding practices in Lebanon at all levels including the public policy environment. I developed my research proposal based on new knowledge and skills I had acquired. For example, I referred to the EBPHP course extensively for conceptualisation of the research project in terms of analytical frameworks and tools. Once I passed the DrPH review, I started a systematic review on the effectiveness of health services interventions to promote and support breastfeeding initiation and exclusivity. This would have been much more difficult had I not done it previously as part of this course. The Qualitative Methodologies module was also very useful for developing the proposal and collecting and analysing data as my research was purely qualitative. The OPA work helped in recognising management issues in the assessed national programme and also kept me aware of potential management and logistical issues that may arise; this is especially true given that fieldwork was conducted at a time of political instability in Lebanon. Visits to health centres could not always be done and several interviews had to be postponed or cancelled. The research thesis was excellent practice, as this is the type of work I hope to continue doing in my future career. I was able to hone my qualitative research skills and understanding of why and how to conduct policy research including stakeholder analyses.

I have also been able to develop my oral and poster presentation skills. I attended and presented the preliminary results of the systematic review at the multidisciplinary scientific conference, Experimental Biology, in May 2013. I presented the results of my empirical research in a poster at LSHTM's Poster Day. I have also attended the International Congress of Nutrition in September 2013. These large hubs are ideal for research knowledge exchange and have helped me put my research into perspective, assess its relevance to current health and nutrition priorities and compare it to similar research conducted in different contexts.

Despite all encountered challenges throughout my four years as a DrPH student, the degree was definitely worth it. I have acquired a wide range of skills and gained

valuable knowledge in various subjects and I believe I am graduating from this programme equipped with exactly what I came for.

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The satisfactory completion of this thesis would not have happened without the invaluable support of a number of individuals. My thanks go

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And last but not least, to my family for their unconditional love, support and belief in me, without which I would never have made it this far.

Dedication

This thesis is dedicated to the memory of my father
Alexander Akik

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List of Acronyms and Abbreviations

AMSTAR	Assessment of Multiple Systematic Reviews
AUB	American University of Beirut
BFHI	Baby-Friendly Hospital Initiative
EBF	Exclusive Breastfeeding
GSYCF	Global Strategy for Infant and Young Child Feeding
ICMBS	International Code of Marketing of Breast-milk Substitutes
IYCF	Infant and Young Child Feeding
LAECD	Lebanese Association for Early Child Development
LMICs	Low and Middle Income Countries
LSHTM	London School of Hygiene and Tropical Medicine
MCH	Maternal and Child Health
MDG	Millennium Development Goal
MICS	Multiple Indicator Cluster Survey
MOPH	Ministry of Public Health
MOSA	Ministry of Social Affairs
NGO	Non-Governmental Organisation
Ob/Gyns	Obstetricians and Gynaecologists
PAPFAM	Pan Arab Project for Family Health
RCT	Randomised Controlled Trial
SES	Socio-economic status
SR	Systematic Review
SSC	Skin-to-Skin Contact
UNICEF	United Nations Children's Fund
USA	United States of America
UK	United Kingdom
WBTi	World Breastfeeding Trends Initiative
WHO	World Health Organisation

1 Preface

This DrPH thesis follows the research paper style; three manuscripts prepared for publication in peer-reviewed journals are integrated with the remaining material of the thesis with the aim of answering what the barriers are for early breastfeeding practices in the Lebanese context. Following this Preface, Chapter 2 provides background information on the public health relevance of breastfeeding, its determinants and its situation in the Lebanese context. Chapter 3 presents the study rationale, aim and objectives and Chapter 4 outlines the conceptual frameworks. Chapter 5 presents the first article for publication which is the systematic review of systematic reviews on the effectiveness of health services interventions to promote and support early breastfeeding initiation and exclusivity at 6 months, which will be submitted to *Advances in Nutrition*, and Chapter 6 details the field research methods: the analytical tool, data collection, data analysis, ethical considerations and the researcher's reflexivity. Chapters 7 and 8 include the results of the empirical research: the article on the barriers for early breastfeeding initiation and exclusive breastfeeding till 6 months in Lebanon in the context of health services will be submitted to *Maternal and Child Nutrition* journal and the article on political dynamics around the implementation of existing policies to promote, protect and support breastfeeding in Lebanon will be submitted to *Health Policy and Planning* journal. Chapter 9 is the Discussion section wherein overall findings are summarised, policy and programmatic implications are identified, study strengths and limitations are considered and further research to be addressed is proposed.

2 Introduction

Adequate nutrition plays a critical role in healthy growth, development and productivity of individuals and populations. There is increasing evidence that nutrition and growth in the first two years of life can have both short and long-term health consequences, and the thousand days from conception to 24-months have been described as a ‘critical window’ for nutritional interventions (1). Breast milk is the best source of nourishment for optimal infant growth and development (2). In addition to providing essential macro- and micronutrients, breast milk provides a range of immunological factors that play a role in protection from infections (2). The World Health Organisation (WHO) recommends exclusive breastfeeding (EBF) till 6 months with continued breastfeeding up to 2 years and beyond (3). This important recommendation has been taken up across the world, but it is being practiced to varying degrees since contexts are not always conducive to optimal uptake. Factors hindering or supporting proper practices are numerous and are found in the many settings in which mothers and infants find themselves. Therefore, worldwide breastfeeding practices fall short of recommendations and Lebanon is no exception: despite high breastfeeding initiation rates, EBF is almost nil at 4 to 5 months. Given the public health relevance of breastfeeding for infant morbidity and mortality and its increasing evidence for long- term benefits as detailed below, improving breastfeeding practices is necessary in this middle income country that faces the double burden of malnutrition with persisting stunting and increasing obesity rates.

2.1 Public health relevance of breastfeeding

Suboptimal breastfeeding practices have been associated with infection-related infant morbidity and mortality. Early breastfeeding initiation and EBF till 6 months can curb these numbers. There is also increasing evidence for breastfeeding on health outcomes in the long term.

Growth faltering which occurs most rapidly in the first 24-months of age worldwide highlights the urgent need for promoting optimal child health during this critical developmental window including the promotion of appropriate infant feeding practices (1). The 2013 Lancet Maternal and Child Nutrition Series was guided by a conceptual framework of the means to achieve optimum foetal and child nutrition, growth and development (4). It highlighted how dietary, behavioural and health

determinants that are affected by underlying factors can be changed to achieve these better outcomes (4). Suboptimal breastfeeding practices have been estimated to be responsible for over 800,000 deaths or 11.6% of all deaths of under-five year old children in the 34 countries with 90% of the global burden of stunted children in 2011 (4). Breastfeeding promotion ranked as the third individual intervention in saving deaths with an estimate of averting more than 250,000 diarrhoea and pneumonia-related deaths (5). Thus it is clearly important to adopt optimal breastfeeding practices, defined by the WHO as early initiation within the first hour of life, 6 months of EBF and continued breastfeeding up to two years and beyond (3). EBF is defined as excluding any other fluids or solids except for medicinal supplements (6) and complementary feeding as the process when other foods and liquids are introduced to meet the nutritional requirements of infants when breast milk alone is no longer sufficient (7).

2.1.1 Early initiation of breastfeeding

Early initiation of breastfeeding and EBF for 6 months can make a major contribution to reducing neonatal and early infant mortality and morbidity. The WHO recommends early initiation of breastfeeding whereby newborns are put to the breast within the first hour of life. A recent systematic review (SR) aimed to estimate the relationship between early initiation of breastfeeding defined differently from WHO as less than 24 hours after birth on neonatal (<28 days) mortality and morbidity (8). This study included a meta-analysis of three prospective cohort studies in low and middle income countries (LMICs) which revealed a 44% significant decrease in risk of all-causes of death and a 45% decrease in risk of infection-related deaths when breastfeeding is initiated within 24 hours of birth compared to breastfeeding initiation at or after 24 hours. Possible factors for this observed mortality reduction include: 1) displacement of pre-lacteals and thus a reduced risk of infections by decreasing the ingestion of infectious pathogens; 2) intake of colostrum which is rich in immunoglobulins and other immunoprotective or immunostimulatory factors; 3) promotion of development of the gastrointestinal tract which may decrease intestinal permeability and the risk of infectious pathogens' translocation (8). Once the analysis was limited to exclusively breastfed infants, there was no longer evidence for a protective effect of breastfeeding initiation within 24 hours of birth on all-cause mortality; for this analysis, data was obtained from two out of three studies and study-specific estimates were inconsistent.

It is suggested that breastfeeding initiation within the first 24 hours of life may increase EBF in settings where provision of prelacteal feeds may be the reason for not exclusively breastfeeding (8). For neonatal morbidity, the evidence for a protective effect of breastfeeding initiation within the first 24 hours after birth is limited with small study samples, lack of accounting for reverse causality or for other potential confounders, and retrospective data collection; high quality research is required (8).

2.1.2 Exclusive breastfeeding

The WHO recommendations for EBF are based on the scientific evidence of a SR conducted by Kramer and Kakuma that was recently updated in 2012 (2). The review, based on two small controlled trials and 21 observational studies, concluded that infants exclusively breastfed for 6 months had a lower incidence of gastrointestinal and respiratory infections than those who were mixed feeding as of 3 or 4 months, and had no adverse effect on their growth whether in developed or developing countries. Although the authors identified poorer iron status in infants exclusively breastfed for 6 months in settings where mothers and infants have suboptimal stores, iron supplementation was perceived as a better intervention to improve hematologic status than introducing complementary foods before 6 months.

When other health outcomes of EBF for 6 months were evaluated, the evidence from Finland, Belarus and Australia did not show a protective effect against atopic diseases whether in the short or long term (2). Kramer and Kakuma also found that the evidence on neuromotor development was insufficient to draw inferences as results from two Honduran trials were inconsistent in addition to the potential bias of maternal reporting (9). In terms of maternal outcomes, these two trials showed prolonged lactational amenorrhea duration and higher postpartum weight loss in mothers who exclusively breastfed for 6 months as compared to those who exclusively breastfed for at least 3 to 4 months with continued mixed breastfeeding till at least 6 months (9).

Kramer and Kakuma identified the need for further studies to rule out the risk of growth faltering in malnourished populations as the sample sizes of included studies were insufficient and judged the evidence to be inadequate to assess the risks of micronutrients' deficiencies other than iron (10). In their conclusion, authors reaffirmed the recommended duration of 6 months for EBF as a general policy and the

need to still manage each infant individually to avoid risks of insufficient growth or adverse outcomes (2).

Further evidence of a protective effect of EBF against gastrointestinal and respiratory infections and hospital admissions from developed countries was published (11-15). The United Kingdom's (UK) Millennium Cohort is described as the largest study of the effect of breastfeeding on hospitalization in a developed country with a cohort of around 19,000 infants born in the UK; it set out to measure the effects of partial and EBF on hospitalisation for diarrheal and lower respiratory tract infections. Population attributable fractions suggested that 53% and 31% of diarrheal hospitalisations could have been prevented each month by EBF and partial breastfeeding respectively; as well as 27% and 21% of lower respiratory tract infections respectively (14).

2.1.3 Long terms benefits of breastfeeding

Several SRs have been conducted to assess the effects of breastfeeding on long-term health benefits for the infant and mother (16-20). The most recent evidence is by Horta and Victora who were commissioned by the WHO to update a previous SR on the long term consequences of breastfeeding (16). Most of the evidence was observational with the exception of two randomised controlled trials (RCTs); the first was the follow-up of English preterm infants allocated to breast or formula milk in early life (21, 22), and the second was the Belarus PROBIT cluster-randomised trial where mothers delivered in hospitals that were randomised to receive the experimental intervention modelled on the Baby-Friendly Hospital Initiative (BFHI) or the control intervention (23). Meta-analyses calculating the effect of breastfeeding on the various outcomes pooled studies with a wide range for the age at assessment; for example the age at assessment for studies looking into the effect on total blood cholesterol levels ranged between 1 and 71 years.

When assessing the effect of breastfeeding on total blood cholesterol levels, the meta-analysis of higher quality observational studies found no association with a null pooled effect and the one trial that assessed it found a small protective effect (24); authors concluded that breastfeeding does not seem to protect against total cholesterol. The protective effect on blood pressure was small and residual confounding and publication bias could not be ruled out. The two trials also found no effect of breastfeeding on blood pressure (21, 25), thus, the authors judged the small effect not to be of public health significance. A meta-analysis of ten studies showed

that individuals who were breastfed were 33% less likely to develop type II diabetes; and the effect was stronger in studies involving adolescents compared to adults. Overweight/obesity seems to explain part of the association as the effect was smaller in studies adjusting for body mass index. The small number of studies and the significant heterogeneity among them require conducting further studies to assess the effect of breastfeeding on diabetes especially that neither of the two trials presented results on this outcome. For overweight/obesity, the PROBIT trial found no beneficial effect for prolonged EBF on body mass index or other measures of adiposity (25). The meta-analysis of studies of higher quality showed a smaller protective effect for breastfeeding than when all studies were pooled. Also, residual confounding could not be ruled out as most studies were conducted in developed countries where breastfeeding tends to be more frequent among women of higher socioeconomic status and education. For intelligence tests, breastfed subjects performed better with a mean difference of 3.45 intelligence quotient points. After adjusting for maternal intelligence quotient, breastfed subjects still performed better with 2.19 intelligence quotient points. The two RCTs also reported significant effects, suggesting a causal association (22, 26).

For maternal health outcomes, data from six case-control studies and four prospective cohort studies revealed no evidence of an association between life time breastfeeding duration and risk of fracture due to osteoporosis, yet authors caution in the interpretation of results as feeding history is subject to maternal recall bias and data on breastfeeding exclusivity was not provided thus the need for further studies with accurate breastfeeding data (17). Results from two cohorts in the United States of America (USA) revealed lower risks of developing type II diabetes with each additional year of breastfeeding among women without history of gestational diabetes; however, authors caution against the generalisation of these results given that they were cohorts of nurses. There is consistent evidence for an association between breastfeeding and reduced risk of breast cancer; breastfeeding was also associated with reduced risk of ovarian cancer but authors caution the interpretation of this association given analysis limitations (17).

2.1.4 Criticisms of the 6 months exclusive breastfeeding recommendations

WHO's 6 months policy for EBF has been challenged at several instances by researchers and professional societies as reported by Cattaneo et al. (27). In a

commentary on complementary feeding, the European Society for Paediatric Gastroenterology, Hepatology and Nutrition (ESPGHAN) recommended the introduction of complementary foods not before 17 weeks and not later than 26 weeks relying mainly on evidence of effects on allergy, celiac disease and type I diabetes mellitus (28). In a BMJ review, Fewtrell *et al.* suggested that the delay in introduction of solid foods till 6 months could lead to the possible non-diagnosis of iron-deficient infants especially in the UK as there are no screening programmes. They also suggested increased risks of allergic diseases caused by delay of exposure to allergens till after 6 months (29). Researchers, practitioners and professional organisations refuted these arguments (27, 30-32). Cattaneo *et al.* critiqued the evidence on which the ESPGHAN recommendations were based and judged it as weak (27). Renfrew *et al.* (30) mentioned that the Fewtrell *et al.* review resulted in confusion among families and health professionals around the world about the relative merits of breastfeeding and infant formula and that the review also failed to meet all quality criteria and authors disregarded the principles of systematic reviewing. Wright discussed that the reductions in infectious diseases associated with longer durations of EBF are more important than iron deficiency or celiac disease (32). Williams and Prentice, on behalf of the Scientific Advisory Committee on Nutrition, reconfirmed the advice for 6 months EBF and highlighted the evidence to be selectively assessed (31). The WHO also issued a statement following the publication of the BMJ review to confirm the 6-month recommendation (33).

In fact, the scientific debate around EBF for 4 vs. 6 months is at the edge of the problem. The real issue is whether women exclusively breastfeed at all or continue breastfeeding for more than a few months. Thus the 6 months of EBF recommendation is useful for policy purposes. This 6 months cut-off is relevant for the enforcement of the International Code of Marketing of Breast-milk Substitutes (ICMBS) that was adopted in May 1981, at the 34th World Health Assembly (34). The recommended duration of EBF is the period during which complementary baby food products cannot hold labels advertising for their consumption before this specific time period; thus the 6 months cut-off vs. 4 to 6 months is likely to delay the marketing of these products by two months. This cut-off point also leads to less ambiguity when translating the policy into health promotion programmes. Introduction of complementary foods at 6 months rather than within certain months of age constitutes

a simple message for health providers and community workers to convey and for caregivers to understand.

2.1.5 Breastfeeding on the international agenda

The vital role of appropriate feeding practices in optimising health outcomes has been reflected in international commitment over the last five decades to improve infant and young child feeding (IYCF) practices.

The most comprehensive international agreement is the Global Strategy for Infant and Young Child Feeding (GSIYCF), jointly developed by WHO and the United Nations Children's Fund (UNICEF) in 2002 and aimed at "improving - through optimal feeding - the nutritional status, growth and development, health and thus the survival of infants and young children" (3). The GSIYCF was built on "past and continuing achievements" particularly the ICMBS (1981), Innocenti Declaration on Protection, Promotion and Support of Breastfeeding (1990) and the Baby Friendly Hospital Initiative (1991). Its targets in addition to the 1990 Innocenti Declaration ones constitute the foundation for the 2005 Innocenti Declaration call for action (35). It was adopted by all WHO Member States at the 55th World Health Assembly in May 2002 and by the Executive Board of UNICEF in September 2002.

Recent evidence shows that the implementation of the GSIYCF is associated with improved EBF rates and probably with breastfeeding duration over a 10- to 20- year period (36). Results are based on a secondary analysis of Demographic and Health Surveys from 22 countries in Asia and the Middle East, Africa and Latin America that also carried out the World Breastfeeding Trends Initiative (WBTi), a tool that uses a set of 15 indicators addressing policies and programs as well as feeding practices. The higher the WBTi score, the more national policies and programs are consistent with the WHO/UNICEF recommendations. The median annual increase in EBF was 1.0% per year in countries in the upper 50th percentile of WBTi scores compared to 0.2% per year in countries with the lowest scores ($P = 0.01$). Maternal demographic factors, such as urban residence, paid maternal employment, maternal education, or gross national income, identified as potential confounders, were not associated with the annual increase in EBF. The median annual increase in breastfeeding duration in all countries was <0.1% per year and was not associated with adjusted WBTi scores,

although a non-significant increase in breastfeeding was observed among the six countries with a breastfeeding duration less than 15 months at baseline.

The WHO has also recently endorsed six global targets for maternal, infant and young child nutrition at the 65th World Health Assembly in May 2012 to highlight the key priority areas that need to be tackled to address the double burden of childhood malnutrition. Increasing EBF rates in the first 6 months of life to at least 50% by 2025 is the fifth target (37, 38).

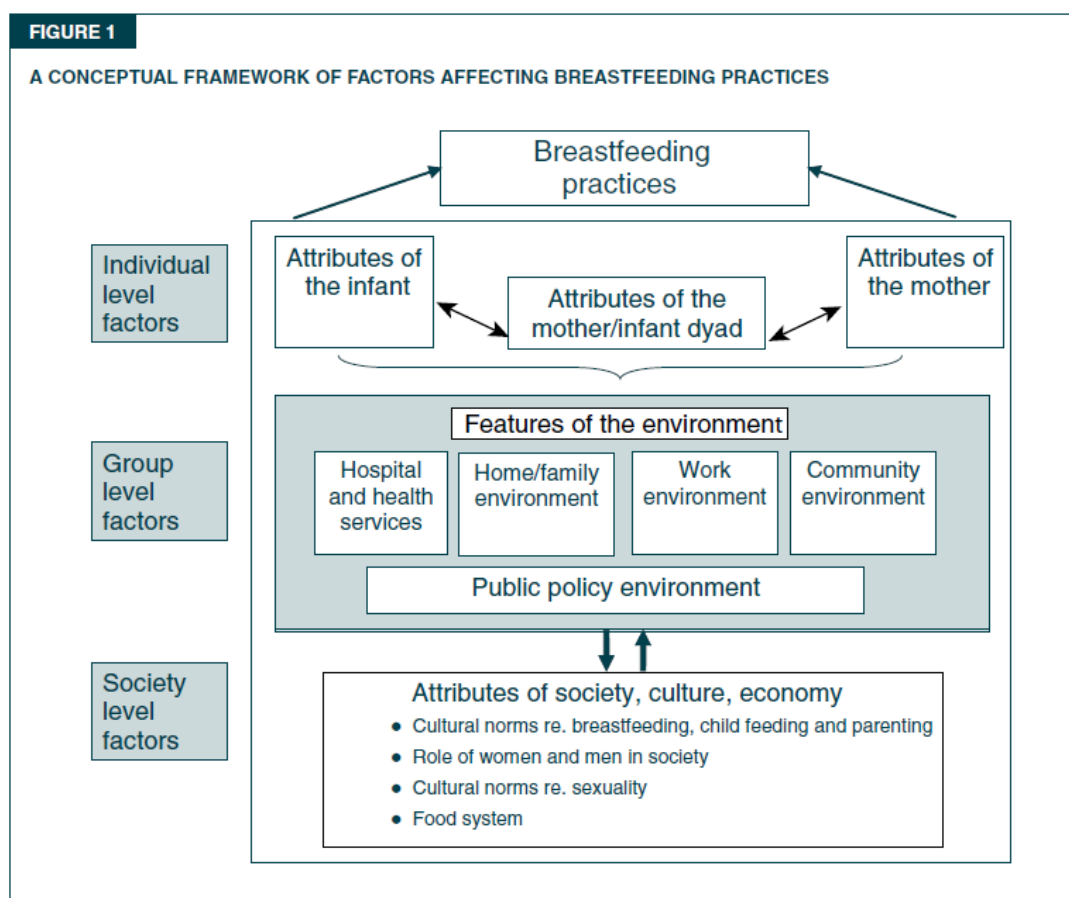
2.2 Determinants of breastfeeding

Many studies looking into breastfeeding determinants are based on interviews or surveys with mothers and have used conceptual frameworks based on individual level theories of health behaviour such as the Theory of Planned Behaviour (39, 40).

However, such research only reveals the tip of the iceberg for the reasons why women do not follow recommended practices and thus provides limited insight into the role of other social and structural influential factors (41). Two conceptual frameworks addressing breastfeeding determinants specifically from an ecological perspective were retrieved.

The first was developed by Hector *et al.* in order to help clarify the influences on breastfeeding (41) (shown in **Figure 2-1**). It is based on health promotion principles and frameworks, consideration of points of intervention and a grouping of the factors identified through an overview of the literature (Personal communication with Dr. Hector, D., 21-02-2012).

Figure 2-1 A conceptual framework of factors affecting breastfeeding practices



Source: Hector, D., King, L. *et al.* (2005). "Factors affecting breastfeeding practices. Applying a conceptual framework." *New South Wales Public Health Bulletin* **16**(4): 52-55.

This framework presents three levels of factors that influence breastfeeding practices: the individual, group and societal level factors. While the individual level accounts for the mother, infant and their relationship attributes, the group level reveals a wide array of environments in which mothers and infants find themselves: the hospital and health services, home/family, work and community environments, and the public policy environment that “modifies how each of these environments influences mother’s feeding decision” (41). The societal factors have an influence on the “acceptability and expectations about breastfeeding” and provide “the context in which mothers’ feeding practices occur”(41). The societal factors can influence the support provided at the group level and these two levels in turn can positively or negatively affect women’s decision to breastfeed. A description of the factors is shown in **Table 2-1**. Hector *et al.* cite socio-demographic factors (age, educational

level, place of residence, marital status, employment, income, housing, socio-economic status, parity) as risk markers, that is, factors that signal where a problem is happening but not directly contributing to it (41). One drawback of this framework as per Hector is that it does not illustrate how factors affecting breastfeeding change over time post-partum (Personal communication with Dr. Hector, D., 21-02-2012).

Table 2-1 Description of the individual, group and society level factors (adapted from Hector *et al.* (2005)(41))

Individual factors	
Attributes of the mother	Intention to breastfeed Knowledge, <i>beliefs</i> ² , attitude, skills Parenting experience, birth experience Health and risk status of mother (obesity, depression, mastitis, sore nipples)
Attributes of the infant	Health and risk status of infant (<i>Pre-mature infants, low birth weight infants</i>)
Attributes of the mother/infant dyad	Nature of early interaction between mother and infant
Group level factors	
Hospital and health facilities environment	Policies and practices such as rooming-in, postpartum skin-to-skin contact <i>Ten steps to successful breastfeeding</i> Professional support with breastfeeding technique difficulties <i>Existence of prenatal classes</i> ²
Home and family environment	Size of household, family circumstances, partner attitude and support, and peer support
Work environment	Policies, practices and facilities such as work hours, breastfeeding breaks, flexibility, on-site expressing and storing of breast milk
Community environment: <i>Indicator of the extent to which breastfeeding is perceived as the norm</i>	Facilities and policies in public places such as parenting rooms in shopping centres, “breastfeeding friendly” public transport, restaurants. <i>Community support</i> ² <i>Media advocacy</i> ² <i>Advertising</i>
Public policy environment	National official recommendations <i>Level of priority and financial support given to breastfeeding</i> ² Maternity and paternity leave benefits Childcare allowances Baby Friendly Hospital Initiative <i>Quality of pre- and in-service training of health workers</i> ² International Code for Marketing of Breast-milk Substitutes Surveillance systems
Society level factors	
Cultural norms regarding breastfeeding, child feeding and parenting	<i>Time of introduction of complementary foods</i> <i>Types of foods and liquids perceived as appropriate to give infants at different ages</i> <i>Role of grandparents as caregivers</i>
Role of women in society	How working outside the home is valued <i>Other responsibilities attributed to women by society such as household tasks</i>
Social role of men	Support for breastfeeding mothers
Cultural norms regarding sexuality	Exposure of the breasts for feeding
Food system	The economic importance of products such as breast milk substitutes and complementary foods in the food system

¹Factors in italic were added by the researcher based on other readings

²Determinants retrieved specifically from Cattaneo and Garofolo (42)

The second conceptual framework was developed by Labbock and Taylor in an attempt to identify interventions effective at improving EBF rates and relevant to the USA context. They used a conceptual framework that included the impact of three primary areas of influence on EBF and these are 1) health system and providers; 2) social, economic and political factors; and 3) media and marketing practices (**Figure 2-2**) (43). They also referred to eight potentially critical time periods based on a previous assessment of influences on breastfeeding by a Department of Health and Health Services expert committee. They examined each of these areas to assess the obstacles and constraints that occur at different critical time periods by conducting a review of the literature in developed countries. The impact of each primary area of influence may increase or decrease depending on the time period and thus actions would vary across the continuum as shown in **Figure 2-3**. In **Figure 2-2**, authors drew in heavier lines “the possibility that greater influence may be associated with successful interventions” and in bold the time periods that were addressed by programs at time of study in 2008.

This conceptual framework is appealing as it takes into account the factor of time and thus would reveal what barriers are most relevant at one point in time. However, authors did not specify how these primary areas of influence were identified or defined.

Figure 2-2 Conceptual framework by Labbock and Taylor

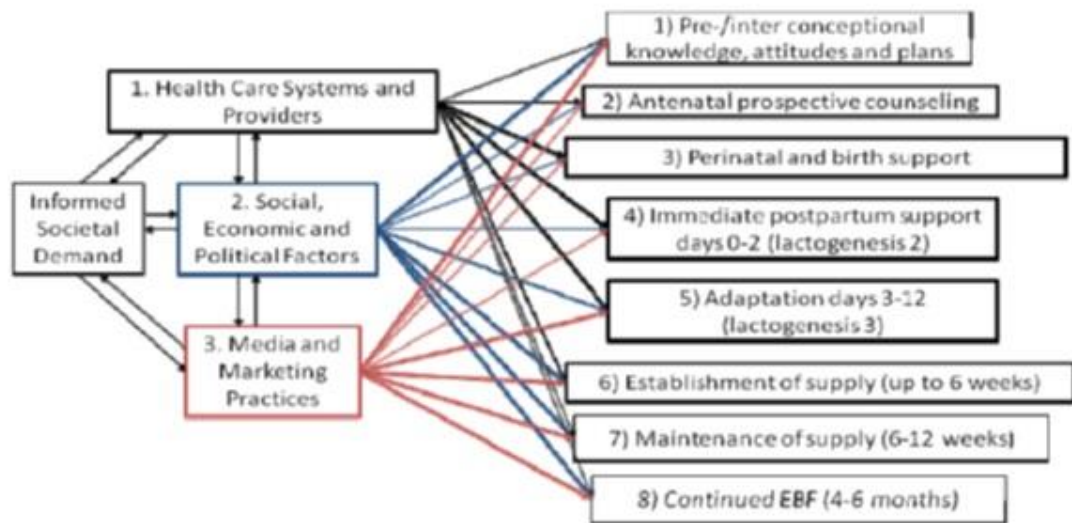
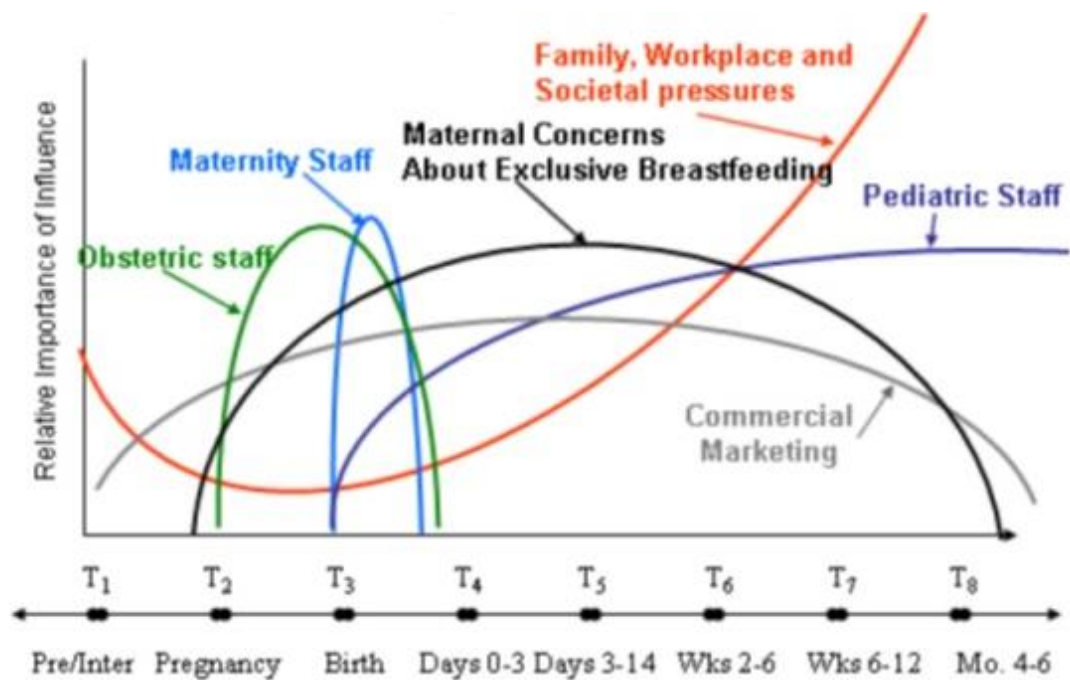


Figure 2-3 Potential obstacles or supports for exclusive breastfeeding by time period



Other published work presented a list of breastfeeding determinants (42, 44). With the aim of developing a framework of action in Europe, authors researched breastfeeding determinants by conducting an overview of the literature on the prevalence of breastfeeding in Europe as well as a database search. Factors identified in this list and missing from the Hector *et al.* literature overview were included in **Table 2-1** as to improve its completeness.

2.3 The Lebanese context

Protecting, promoting and supporting breastfeeding are relevant to Lebanon, a country where optimal breastfeeding practices have been on the decline, child under-nutrition persists and over-nutrition is on the increase.

2.3.1 Country description

Lebanon is a middle income country with a total estimated population of 4.1 million within an area of 10,452 km² bordering the Mediterranean Sea, Syria and Israel. A 15 years civil war (1975 - 1990) led to the end of prosperity and economic growth the country was witnessing since the 1950s and to catastrophic consequences on the public and private sectors (45). A period of prosperity followed, with infrastructure rehabilitation projects in different sectors including health facilities (45). Despite the official end of the civil war in 1990, Lebanon has witnessed intermittent periods of domestic unrest, and internal security breaches resulting in the failure of the establishment of a strong state. Indeed, the state remains overburdened with debts and in a constant political and economic struggle.

2.3.2 Relevant aspects of the Lebanese health system

Among the many challenges faced by the Lebanese state, health constitutes a major one with a fragmented health system and a double burden of disease within the population. The health system is very costly with a health bill accounting for 8.1% of the gross domestic product and higher percentages of income spent on health by poor households (45). Despite an expansion of the public sector with the opening of hospitals, 80% of health care services are still provided by private hospitals (45). In regard to maternal health, access to childbirth care is high (46) as shown in **Table 2-2** (Retrieved from DeJong *et al.* (47) using data from Tutelian *et al.* (46)).

Table 2-2 Nationally representative indicators on maternal health in Lebanon (46)

Indicator	Percentage (%)
Childbirth by skilled attendant	98.2
Place of childbirth:	
Private hospital	80.1
Public hospital	11.9
Private doctor	2.8
Home	2.4
Non-governmental health centre	1.2
General health centre	0.7
Had ≥ 5 antenatal care visits	70.5
Antenatal care by medical doctor	93.6
Antenatal care by nurse/midwife	2.2
Had at least one postnatal check up	51.6

Accreditation of hospitals

With the aim of improving the quality of care provided by hospitals and strengthening its regulation capabilities, the MOPH introduced the accreditation system in 2000 whereby quality of care is evaluated in terms of processes rather than outcomes. As it remains the main public financier of the private sector, the MOPH is using this “policy instrument” as an incentive where hospital payment rates are linked to accreditation scores (45, 48). Two national surveys have already been conducted in 2001-2002 and 2004-2005 for private hospitals; public hospitals had just started operating and were recruiting staff thus they were not included (45).

2.3.3 Infant and child health indicators

Infant and child health indicators have witnessed recent improvements: the under-five mortality rate declined from 33 to 19.1 per 1000 live births from 2000 to 2004¹; however it did not seem to be on target for reaching the Millennium Development Goals (MDG) 2015 of 12.0 per 1000 live births. Infant mortality rate dropped as well from 26 to 18.6 per 1000 live births in that same time period and also seemed to lag behind the MDG target of 10.0 per 1000 live births. Regional disparities in infant and under-five mortality rates also still exist (49).

¹The MDG report does not give explanations for the fast drop in under-five mortality rate. One can suggest that this was possibly due to differences in data collection between the surveys.

Recommended actions for achieving MDG4 included improving child nutrition through promotion of breastfeeding, proper use of complementary foods, and protection against iron and iodine deficiencies (49).

Anthropometric indicators collected by the Pan Arab Project for Family Health (PAPFAM) survey (46) (**Table 2-3**) revealed stunting, a process whereby children fail to reach linear growth potential due to suboptimal health and/or nutritional conditions (50), with percentages of 10.5% and 15.6% at 6 and 6-9 months respectively. When compared to the WHO classification, Lebanon has an acceptable nutritional level and is classified under countries of low malnutrition level with regard to the stunting and underweight indicators (the latter reflects body mass compared to age (50)).

Lebanon, like many countries of the Middle East and North Africa region, is facing the double burden of malnutrition with obesity on the other side of the spectrum. A 2003 study by Sibai *et al.* reported an 18.6% prevalence of overweight and obesity among children between the ages of 3 and 19 (51). A recent Lancet publication revealed higher estimates with a 33.1% and 29.8% prevalence of overweight and obesity among boys and girls under 20 respectively (52). These data reinforce the need to tackle early nutrition and feeding practices as research unfolds potential associations between nutrition in the first one thousand days of life and risk factors for chronic diseases (16).

Table 2-3 Anthropometric indicators from PAPFAM 2004 (46)

Anthropometric indicators	WHO definition (50)	Prevalence (%)	WHO classification of malnutrition severity^b(50)
Underweight	Weight-for-age less than -2 z-scores ^a	3.9	Low
Severe underweight	Weight-for-age less than -3 z-scores ^a	0.6	-
Stunting (children <5 years)	Height-for-age less than -2 z-scores ^a	11.5	Low
Severe stunting (children <5 years)	Height-for-age less than -3 z-scores ^a	4.0	-

^az-scores: number of standard deviations off the WHO Child Growth Standards median

^bLow prevalence of underweight if under 10%, low prevalence of stunting if under 20%

2.3.4 Breastfeeding practices and determinants in Lebanon

Breastfeeding practices

The most recent data on breastfeeding practices come from the Multiple Indicators Cluster Survey (MICS) –Round 3 (53), a nationally representative household survey conducted in 2009 by the Central Administration of Statistics (Lebanon) in collaboration with UNICEF.

As shown in **Figure 2-4**, more than 90% of infants were ever breastfed but other liquids or foods were introduced early on in life. Rates of EBF were at their highest for 0-1 month old infants at around 40% before dropping to 2% for 4-5 months old infants. Furthermore, over 40% of infants at 0-1 month were given infant formula in addition to breast milk. Complementary foods in addition to breast milk were only given to 41.8% of infants between 6 and 9 months. Rates of continued breastfeeding were limited to 37.5% and 14.6% of infants aged 12 to 15 months and 20 to 23 months, respectively.

These results are comparable to previous data published in the PAPFAM survey report executed by the league of Arab states (46). The PAPFAM 2004 reported similar patterns with high initiation breastfeeding rates (89% of infants having been ever breastfed) but low rates of EBF. Only 24.7% of those aged 0 to 3 months and 7.6% between 4 and 5 months were exclusively breastfed.

Breastfeeding determinants

Several research studies have examined patterns and determinants of breastfeeding initiation, exclusivity and termination in Lebanon.

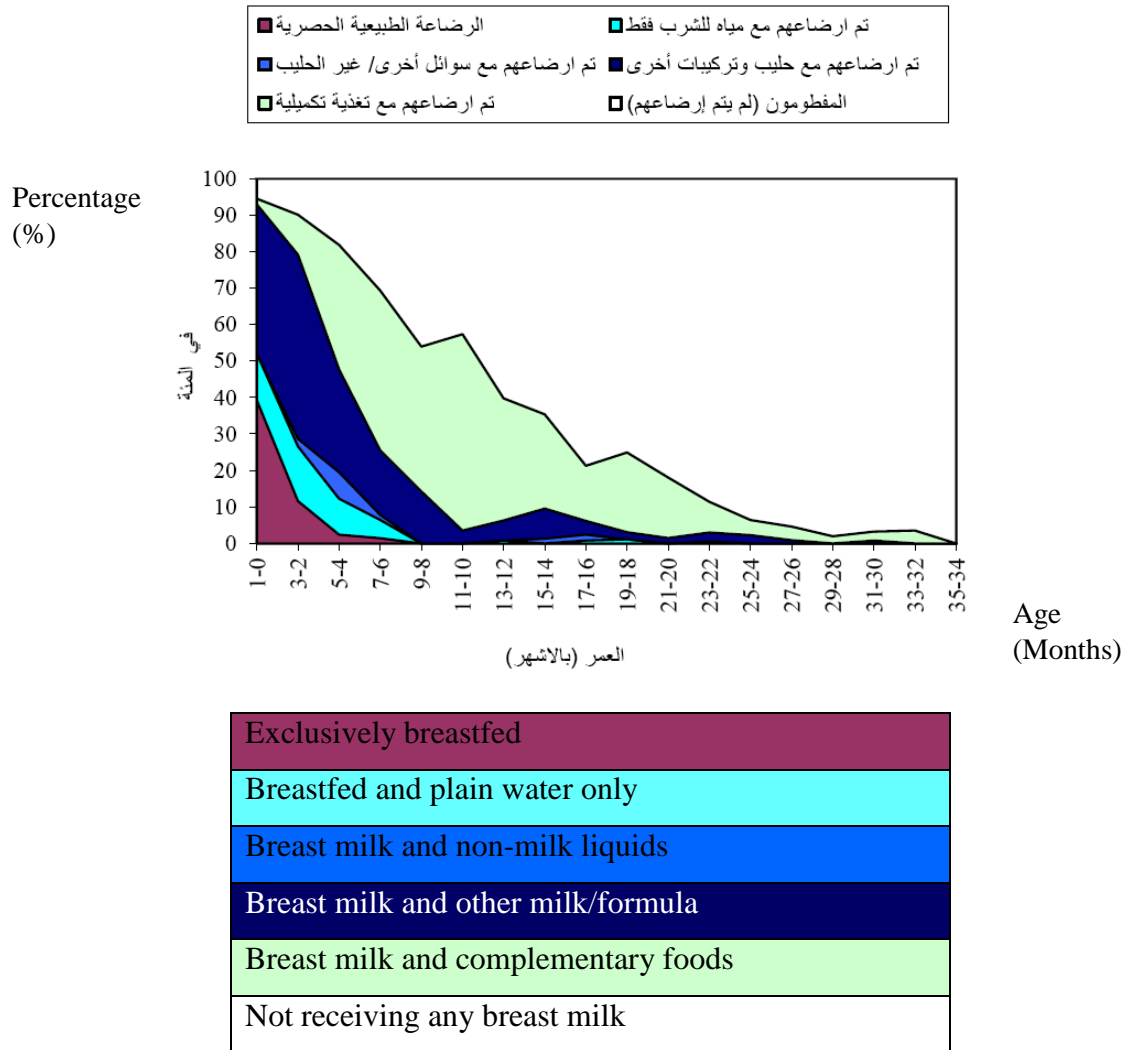
- *Breastfeeding initiation*

A study by Batal *et al.* randomly selected a sample of state-operated health centres to identify breastfeeding and feeding practices of infants and their determinants in Lebanon (54, 55). Only 18.3% of mothers initiated breastfeeding within the first half an hour after birth and 55.9% did within a few hours of birth. In fact, only 37.6% of infants had breast milk as their first food after birth; other first foods offered to newborns included infant formula and liquids such as sweetened water and herbal tea. The authors noted that the choice of first food was the hospital's according to 81.2% of respondents (55). Breastfeeding initiation within few hours after birth was

positively associated with hospital-related factors: rooming-in, bringing infants to mothers every 3 hours or less and for night feedings where 24-hour rooming-in was

Figure 2-4 Infant feeding practices by age: Percentage of children under 3 years by feeding type and age, Lebanon 2009 (53)

رسم بياني NU.3: أنماط تغذية الأطفال حسب العمر: التوزع النسبي للأطفال دون 3 سنوات حسب نمط التغذية وحسب الفئة العمرية، لبنان، 2009



not allowed. Older and more educated mothers and those who delivered vaginally received more encouragement to initiate breastfeeding, more information on the benefits of breastfeeding and were allowed to spend more hours with the infant (54, 55). Physicians were the most influential on women's decision to breastfeed (42.8%) followed by grandmothers (22.0%) and 7% of women were influenced by media (55).

- *Exclusive breastfeeding*

In line with MICS data, despite a high rate of breastfeeding initiation (95.4%), breastfeeding exclusivity at 6 months did not exceed 10% (54). In regard to demographic attributes, mothers residing in rural areas and those less educated were significantly more likely to exclusively breastfeed for 6 months. EBF for 6 months was in itself a determinant of longer periods of continued breastfeeding. Only 24.7% of urban primiparous mothers were EBF at 8- 12 weeks, 39.6% were giving both breast milk and infant formula and 33% were giving infant formula only (56). EBF was more frequent among these urban primiparous women who were not employed, those intending to exclusively breastfeed at time of delivery and those who received the hotline as part of an RCT assessing the impact of a 24-hour hotline service and postpartum support film on postpartum stress (56).

- *Breastfeeding termination*

When asked about the reasons for ceasing to breastfeed in the Batal *et al.* study, 26.2% of mothers said that they had insufficient milk, 20.9% that the child was old enough and 4% reported that it was based on the physician's advice (54). Two studies by Osman *et al.*(57) and Nabulsi (58) revealed that mothers held beliefs that may discourage them from breastfeeding. An insufficient quantity of milk produced was a main concern for mothers as infants continued to cry after feedings or because they no longer experienced breast engorgement. The quality of breast milk was another major concern: mothers were worried about harming their infants through their breast milk in case they had cracked or bleeding nipples, or continued breastfeeding while sick or taking drugs (57, 58). Family perceptions of breastfeeding seemed to influence mothers' decision to breastfeed as well (58), and when family support was provided, it acted as a promoter of breastfeeding along with maternal determination and preparedness for breastfeeding (58).

A cross sectional study of 802 Lebanese mothers by Saade *et al.* looked at the effect of early return to work on maternal and child health (59). A large percentage (72.8%) of mothers considered the length of maternity leave extending for 8.5 and 7 weeks for public and private sectors respectively at time of study, as being insufficient with more than half of them attributing it to its effect on the duration of breastfeeding (57.9%). Inadequate work schedule was reported by 36.2% of mothers who didn't

breastfeed (14.5% of total sample) as a reason for their decision not to breastfeed. Upon return to work, 46.3% of mothers discontinued breastfeeding mainly due to work schedule and breastfeeding being hard to keep up while working. A multivariate analysis showed no significant associations between duration of breastfeeding and mothers' educational level, field of work (health, education, services or business) and working hours. A significant association was obtained with the mother's professional category: while women from all different categories mainly breastfed for 2-4 months (ranging between 63.8% for executives to 96.2% for labourers), there was a trend among teachers and executives to breastfeed for longer periods of time (15.5% breastfed for 9-12 months).

- *Further evidence of the hospitals and health services environment effect on breastfeeding practices*

Studies looking into hospital practices in maternity wards (60) and women's experiences with childbirth (61) revealed further hospital factors that undermine breastfeeding practices such as a deficiency in provision of prenatal classes, absence of mother-infant contact within the first half hour of birth (60) and rooming-in in many hospitals (60, 61) as well as requesting parents to bring a bottle and infant formula during their stay (61). A 2006 study conducted by the Lebanese Association for Early Child Development (LAECD) in collaboration with the Ministry of Public Health (MOPH) and International Baby Food Action Network on monitoring of the ICMBS in Lebanon (62) revealed that all twenty surveyed hospitals (including three of the four which were previously designated baby-friendly) received donations or had an exclusive contract with formula companies. Further violations were also reported: these included posters advertising breast milk substitutes or health personnel receiving personal gifts. The number of violations was higher in teaching hospitals and those with higher loads of deliveries. Interviewed paediatricians reported receiving samples of breast milk substitutes as well as complementary foods from all companies in addition to equipment for clinics and funding to attend international conferences or free subscriptions to scientific journals. They also stated that free samples were given only to mothers who were reluctant to breastfeed, needy mothers or infants with specific medical needs (62). According to the Standard International Baby Food Action Network Monitoring, companies were committing a range of violations regarding promotional practices in health facilities, except for the direct

contact between company representatives and mothers in hospitals or clinics. Thus, it is reasonable to suggest that companies' major marketing strategy is to promote through the health care system (62).

- *The public policy environment*

The Lebanese MOPH endorsed the international GSIYCF in 2002 (63). The WBTi conducted in Lebanon in 2010 identified strengths and weaknesses in the ten areas of policies and programmes meant for implementing the GSIYCF (64).

- National breastfeeding committee and a national action plan

Since the country WBTi assessment (65), a National Committee for Ensuring Proper Nutrition for Infants and Young Children was created on December 23rd, 2011. The MOPH agreed to allocate part of its budget to fund the plan of action that was under development by the National Committee. It has a comprehensive agenda but excludes the implementation of the ICMBS as explained below. The National Committee developed an action plan for the different activities, and has formed five sub-committees to follow the work on 1) the BFHI, 2) Infant feeding in emergencies, 3) Media, promotion and education, 4) Mother support groups and 5) Pre-service and in-service training.

- BFHI

As shown previously and in the WBTi assessment (65), there was a need to revitalise the BFHI. With this aim, World Vision Lebanon, International Orthodox Christian Charities and LAECD conducted a reassessment of past private baby friendly hospitals and a training of trainers in public hospitals and a number of private hospitals that have shown interest.

- Implementation of the ICMBS

The law 47/2008 regulating the marketing of breast milk substitutes to newborns and infants was enacted in 2008 following a legislative decree first issued in 1983. A National Advisory Committee for the Promotion and Protection of Breastfeeding was created in March 2011 and is responsible for monitoring the implementation of the law.

- Maternity protection

Lebanon does not meet the recommendations of the International Labour Organization maternity protection legislation C. 183 of at least 14 weeks of paid leave and at least one breastfeeding break or daily reduction of work hours (66). The new draft law for the extension of maternity leave for 10 weeks got approved by the Parliament in April 2014. Maternity protection and HIV and infant feeding are unlikely to be addressed by the National Committee according to Dr. Ali El Zein, president of LAECD (Personal communication, Spring 2012).

- Health and nutrition care systems, mother support and community outreach, information support and monitoring and evaluation

The WBTi assessment also showed gaps in the health and nutrition care systems to protect, promote and support breastfeeding such as care providers' skills training, their pre-service education curriculum and lack of support for mother and breastfeeding birth practices. Mother support and community outreach systems were also assessed as inadequate. The evaluation also revealed that information, education and communication strategies for improving IYCF were available in some contexts and not adequately implemented. These would be addressed by the sub-committees of the National Committee. Monitoring and evaluation were also shown to be inadequate.

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3 Study rationale, aim and objectives

3.1 Rationale

As demonstrated in the previous section, breastfeeding practices in Lebanon fall short of WHO recommendations in terms of exclusive initiation, continued exclusivity till 6 months and prolonged breastfeeding up to two years and beyond. As shown in the MICS – Round 3, while breastfeeding initiation is high (>90%), other liquids or foods are introduced early on in life. Rates of EBF were at their highest for 0-1 month old infants at around 40% before dropping to 2% for 4-5 months old infants. Over 40% of infants at 0-1 month were given infant formula in addition to breast milk.

As shown in **Figure 2-1.**, breastfeeding practices are not only affected by maternal and infant attributes but also by environments in which mothers and infants find themselves and by societal factors. Several studies looked into breastfeeding determinants in Lebanon; most of these involved studying mothers' experiences. The literature showed that optimal early breastfeeding initiation and exclusivity were undermined by factors related to the mother, the hospital and health services, work, home environments and societal factors. Additionally, the recent WBTi assessment (2010) noted programmatic and policy gaps as obstacles to increasing breastfeeding in Lebanon such as the absence of a national plan of action and lack of funding for it, the need to revitalise the BFHI, and the lack of monitoring and enforcement of law 47/2008.

In the Lebanese context, it is likely that what happens within health services – which itself is affected by the public policy and societal environments – has a large contributing role on early breastfeeding practices. In Lebanon, access to childbirth care is high (1): most childbirths take place in hospitals with 80.1% of deliveries happening in private hospitals or clinics; and 93.6% of women seek antenatal care with medical doctors (1). In fact, the Lebanese health system is highly privatised (2) and medical doctors are highly respected and influential in that community. In an analysis of the environment encouraging caesarean section in Lebanon, authors found that women were not involved in the decision-making process due to the total trust they accord to their individual obstetricians (3). There is also some evidence that physicians were the most influential on women's decision to breastfeed (4).

At the policy level, the issue of breastfeeding has received further attention from policymakers since the WBTi 2010 and a National Committee for Ensuring Proper Nutrition for Infants and Young Children was created in 2011. The National Programme for Promoting and Supporting Infant and Young Child Feeding has a comprehensive agenda including the revitalisation of the BFHI, previously initiated in early 1990s and 2007-2008.

Given the public health relevance of early breastfeeding initiation and EBF until 6 months to child health, this research will focus on these two indicators. The importance of longer breastfeeding duration is recognised but this will not be addressed in the present study. Breastfeeding duration is likely to increase if early breastfeeding practices are improved (5, 6) and different factors are likely to affect it such as return to work and breastfeeding in public (7).

3.2 Aim and objectives

This research aims to identify Lebanese stakeholders' perceptions of barriers to recommended early breastfeeding initiation and exclusive breastfeeding till 6 months in the context of health services as well as the political dynamics around existing policies that if implemented would address these health system barriers.

Objectives:

- 1) To conduct a systematic review of systematic reviews on the effectiveness of health services interventions to promote and support early breastfeeding initiation and exclusivity of breastfeeding at 6 months;
- 2) To identify Lebanese stakeholders' perceptions of barriers to implementing recommended practices in regard to early breastfeeding initiation and exclusivity;
- 3) To examine the political dynamics around the existing policies.

As informed by the conceptual framework on factors affecting breastfeeding (**Figure 2-1**), a wide array of actors – individuals or institutions – in addition to mothers are involved in this issue and have an impact on breastfeeding practices.

By assessing the perceptions of a spectrum of stakeholders from mothers to policymakers passing by health providers and others, as well as political dynamics,

the present study will describe a more comprehensive picture of the situation and accordingly lead to opportunities for engaging the relevant stakeholders in order to contribute to the current national efforts for improving breastfeeding rates.

3.3 References

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4 Conceptual frameworks

The researcher used the two conceptual frameworks by Hector *et al.* (1) and Labbok and Taylor (2) on factors affecting breastfeeding practices and the Policy Analysis Triangle framework by Walt and Gilson (3) presented below to guide the analysis.

4.1 Conceptual frameworks of breastfeeding determinants

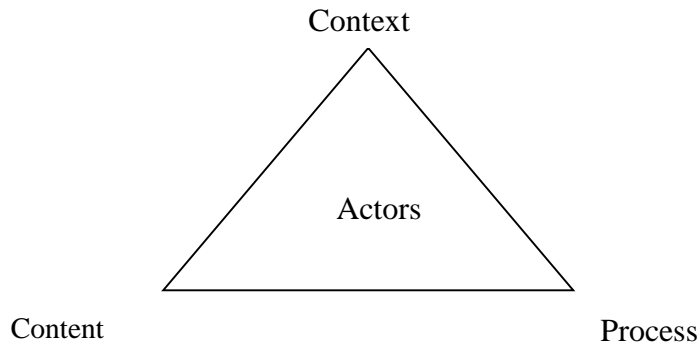
As shown in the previous chapter, the Hector *et al.* framework assisted the researcher in narrowing the scope of the study to focus on the context of health services, which itself is affected by the public policy and societal levels. Consequently, the framework guided the design of data collection instruments, informed initial data analysis plans and facilitated the presentation of results in a structured manner.

The Labbok and Taylor framework was used as well to specify the time periods at which these impeding determinants were most relevant when presenting the findings of the empirical research.

4.2 The Health Policy Triangle

The Policy Analysis Triangle framework by Walt and Gilson (**Figure 4-1**) (4) presents four inter-independent factors influencing policy. These are the policy context, content, and process in addition to the involved actors. Thus for example, actors are influenced by the context in which they are, such as the political or economic systems, social factors or, international agendas. The policy content and process are affected by the actors. In fact, actors are at the centre of the framework given their influence on the policy process. This influence is assessed by the power – actual or perceived – they exercise or can exercise. Actors could include the state, civil society organisations, pressure/interest groups, individual decision makers, the private sector, international organisations and the media (5).

Figure 4-1 The Policy Analysis Triangle framework by Walt and Gilson (1994)
(4)



Given our interest in exploring the political dynamics of existing policies, this study focused on understanding the actors' positions and influences in implementing these policies through a stakeholder analysis. The other factors – policy content, context and process – were accounted for to allow a better understanding of the situation. The topic guides for semi-structured interviews were then developed accounting for these factors.

4.3 References

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5 The effectiveness of health services interventions to promote and support breastfeeding initiation and exclusivity: a review of systematic reviews

5.1 Introduction

Numerous systematic reviews (SRs) have been conducted to assess the effectiveness of health services interventions on breastfeeding outcomes. This review was conducted to synthesize the evidence from prior SRs on health services interventions that have shown to be effective in improving early breastfeeding initiation and exclusivity at 6 months. It was conducted to inform the empirical research as well as to recommend effective interventions based on the analysis of the barriers in health services in the specific Lebanese policy and societal context. The review was written in the format of a peer-reviewed article and will be submitted to *Advances in Nutrition*.

The supplementary material (**Appendix 5.1**), additional results not included in the article (**Appendix 5.2**), databases' searches (**Appendix 5.3**), screening flowchart (**Appendix 5.4**), detailed description of the quality assessment tool (**Appendix 5.5**), detailed quality assessment of retrieved reviews (**Appendix 5.6**), and sample data extraction sheets (**Appendix 5.7**) are also included.

5.2 Article to be submitted for publication

Article cover sheet

1. For a 'research paper' already published

1.1. Where was the work published?

1.2. When was the work published?

1.2.1. If the work was published prior to registration for your research degree, give a brief rationale for its inclusion

1.3. Was the work subject to academic peer review?

1.4. Have you retained the copyright for the work? Yes / No

If yes, please attach evidence of retention.

If no, or if the work is being included in its published format, please attach evidence of permission from copyright holder (publisher or other author) to include work

2. For a 'research paper' prepared for publication but not yet published

2.1. Where is the work intended to be published? Advances in Nutrition journal

2.2. Please list the paper's authors in the intended authorship order

Akik, C; Safieddine, B.; Ghattas, H; Knai, C; Filteau, S.

2.3. Stage of publication – Not yet submitted

3. For multi-authored work, give full details of your role in the research included in the paper and in the preparation of the paper. (Attach a further sheet if necessary)

I developed the review's proposal in collaboration with Prof. Suzanne Filteau and Dr. Cécile Knai. I conducted the databases' searches and led the process of independently screening title, abstracts and full texts, conducting the quality assessment and data extraction (with Batoul Safieddine). I drafted the paper and incorporated feedback from supervisors and advisory committee.

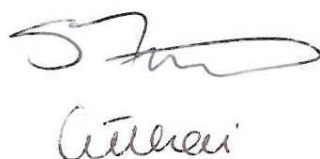
NAME IN FULL: CHAZA AKIK

STUDENT ID NO: 097447

CANDIDATE'S SIGNATURE

Date 30 July 2014

SUPERVISOR/SENIOR AUTHOR'S SIGNATURE



Effectiveness of health services interventions to promote and support breastfeeding initiation and exclusivity: A review of systematic reviews

5.2.1 Abstract

Introduction: Health services interventions are at the core of policies and programmes aiming to promote and support breastfeeding. This review systematically synthesized the evidence from systematic reviews on the effectiveness of health services interventions on improving early breastfeeding initiation and exclusivity at 6 months.

Methods: Systematic reviews were considered if published between 1992 and 2012 in English or French; assessed the effectiveness of any health services intervention that promotes or supports breastfeeding at the ante-partum, intra-partum or post-partum phase; pertained to adult pregnant women or healthy mothers of healthy full term infants; included interventions initiated within health services and targeting pregnant women/mothers, health professionals or systems; and assessed breastfeeding initiation, early breastfeeding initiation, exclusive breastfeeding (EBF) initiation and at any time period until 6 months as primary or secondary outcomes. Seven databases were searched and two reviewers independently conducted quality appraisal and data extraction.

Results: Twenty reviews of mixed quality contributed data. Reviews showed that education alone is unlikely to improve breastfeeding initiation or EBF rates. There is good evidence for the effectiveness of the baby-friendly hospital initiative (BFHI) on breastfeeding outcomes including the specific steps of rooming-in and training of health professionals using the World Health Organisation/United Nations Children's Fund course and the need to ban commercial discharge packs. Other characteristics of effective support interventions on EBF were ones conducted by lay support or in combination with health professional support, face-to-face, with frequent postnatal contacts and counselling provided in groups. Multifaceted interventions were shown to be effective. Therefore we recommend implementing a package of complementary interventions by applying maternity ward changes according to the BFHI, facilitating the formation of lay support groups, and tailoring education and support to the setting and needs of the population.

Keywords: effectiveness, health services interventions, breastfeeding promotion, breastfeeding support

5.2.2 Introduction

Adequate nutrition plays a critical role in healthy growth, development and productivity of individuals and populations (1). The thousand days from conception to 24 months have been described as a ‘critical window’ for nutritional interventions (2). Breast milk is the best source of nourishment for optimal infant growth and development (3). In addition to providing essential macro- and micronutrients, it provides a range of immunological factors that play a role in protection from infections (3).

The World Health Organisation (WHO) recommends exclusive breastfeeding (EBF) initiation within the first hour of life and EBF until 6 months of age; where any other fluids or solids are excluded except for medicinal supplements. Introduction of complementary foods is recommended at 6 months with continued breastfeeding up to 2 years and beyond (4). Breastfeeding initiation within 24 hours after birth is associated with 44% and 45% significant decreases in risks of all-cause and infection-related neonatal deaths respectively (5). This protective effect is likely due to reduced consumption of prelacteal feeds in settings where EBF is hampered by this practice; this in turn lowers risk of ingesting infectious pathogens and thus lowers mortality risk (5). Evidence from developing and developed countries reveal a lower incidence of gastrointestinal and respiratory infections and hospital admissions among infants exclusively breastfed for 6 months (3, 6-10). For maternal outcomes, EBF for 6 months is associated with prolonged lactational amenorrhea duration and higher postpartum weight loss (3).

Despite these numerous benefits, worldwide breastfeeding practices fall short of international recommendations. A review of EBF initiation in industrialized countries revealed the highest prevalence in Norway, Denmark and Japan at 99%, 99% and 98% and the lowest in the United Kingdom (UK), United States of America (USA) and France at 70%, 70% and 63% (11). USA national rates of EBF drop to 36% at 3 months and 16% at 6 months (12) and in the UK, EBF rates drop to 45% at week 1, 21% at 6 weeks and are negligible at 6 months at less than 1% (13). Similar trends are observed in a number of other European countries (14). In the developing world, one out of three children is exclusively breastfed for the first 6 months of life with considerable variation across regions (15). Although percentages continue to be low,

data from 66 countries covering 74% of the developing world population revealed an increase in EBF prevalence among infants younger than 6 months from 33% to 39% between 1995 and 2010 (16). The biggest improvements were in West and Central Africa where EBF doubled between 1995 and 2010 from 12% to 28%; Eastern and Southern Africa also made improvements with an increase from 35% to 47% in that same time period followed by South Asia where EBF increased from 40% to 45%. Data were lacking for the Middle East and North Africa, Latin America and Caribbean and the Central and Eastern Europe regions (16). No causal inferences can be made but these improvements follow strengthening of policies and programmes promoting breastfeeding (16). The Global Strategy for Infant and Young Child Feeding, jointly developed by WHO and the United Nations Children's Fund (UNICEF) in 2002 is the most comprehensive international agreement aiming at protecting, promoting and supporting breastfeeding (4).

Health services interventions are at the core of these policies and programmes aiming to promote and support breastfeeding. Various systematic reviews (SRs) have looked into the effectiveness of these interventions on breastfeeding outcomes either by pooling them together or by assessing specific interventions such as breastfeeding education or support to mothers. Not all reviews were congruent; thus this review aimed to systematically synthesize the evidence from SRs on the effectiveness of health services interventions on improving early breastfeeding initiation and exclusivity at 6 months.

5.2.3 Methods

This review of SRs was undertaken in accordance with standard approaches (17).

Search strategy

A standardized search strategy was developed (**Table 5-1**) and applied to seven databases: Cochrane Database of Systematic reviews/ Cochrane Library, Medline, EMBase, Global Health, Popline, CINAHL, and Web of Science. A MeSH term or keyword related to the setting such as health facility, hospital or maternal health services was not added as several references found relevant in initial searches did not specify and thus the risk of excluding relevant papers was reduced.

Table 5-1 Search terms used to identify studies that reviewed the effects of health services interventions to improve breastfeeding initiation or exclusivity

Text/ abstract keyword	meta-analysis as topic/ or Meta-Analysis.pt. or meta-analysis.mp or ((systematic adj3 literature) or systematic review* or meta-analysis* or meta-analyses or meta-analysed or meta-analyzed or meta-analysing or meta-analyzing).ti,ab. or "cochrane database of systematic reviews".jn. or "research synthesis".ti,ab. or ((information or data or evidence) adj2 synthesis).ti,ab. or (data adj2 extract*).ti,ab. or review.pt
AND	Breast feeding/ or breast?fe*
AND	Health promotion/ or health education/ or health policy/ or promot* or educat* or polic*

Eligibility criteria

SRs were considered if they assessed the effectiveness of any health services intervention that promotes or supports breastfeeding at the ante-partum, intra-partum or post-partum phase; pertained to adult pregnant women or healthy mothers of healthy full term infants (adolescent mothers were excluded as they face further psychological challenges which may interfere with breastfeeding (18)) and included interventions initiated within health services and targeting pregnant women/mothers, health professionals or systems. Interventions that involved support to pregnant women/mothers had to be implemented by health professionals only or a combination of health professionals and lay people (including peer support which could be voluntary or remunerated) or by lay people only if interventions were initiated in the health care system. Reviews should have also assessed breastfeeding initiation, early breastfeeding initiation, EBF initiation or EBF at any time period until 6 months as primary or secondary outcomes; and were published between 1992 (when the Baby Friendly Hospital Initiative (BFHI) was launched) and December 2012 and in English or French. SRs addressing primarily the effectiveness of lay support were excluded.

Study selection and data extraction

Following database searches, all retrieved articles were imported into EndNote reference manager and duplicates removed. CA and BS conducted titles and abstracts screening followed by a full-text screening. Bibliographies of included articles were searched for potentially additional relevant articles and the automated weekly search alert was activated.

CA and BS conducted the data extraction and disagreements were discussed and agreed upon. Within SRs, results of interventions conducted by lay people outside the health care system or assessing non-relevant outcomes were not extracted. When SRs did not specify in their inclusion criteria if mothers were healthy or infants were full-term, results were included keeping in mind that reviews might have included studies with unhealthy or adolescent mothers or pre-term infants. When all types of interventions including lay support were pooled in meta-analyses, results were still reported (19-21). When a narrative summary of interventions did not differentiate between professional and lay education and/or support, or results were presented for a wider range of outcomes than our inclusion criteria, data extractors went back to the included single studies to confirm whether interventions by lay people were initiated within the health care system and if outcomes of interest were addressed to be able to include or exclude results (22-32).

Quality assessment

CA and BS conducted the assessment of the methodological quality of SRs using the Assessment of Multiple Systematic Reviews (AMSTAR) tool, consisting of an 11-item checklist (33). Studies were graded as good, fair and poor.

Data synthesis

No quantitative assessment was conducted due to studies' heterogeneity. Results are reported in a narrative form.

5.2.4 Results

Databases' searches retrieved 1957 results. Five additional papers were retrieved from hand-searches of bibliographies and one from automated search alert.

Figure 5-1 shows the study flow diagram. Out of the 1957 retrieved papers, 612 duplicates were excluded. The first screening of the remaining 1345 articles resulted in 1279 articles being excluded. The full texts of 61 out of the 66 articles included for second screening were retrieved. Five remaining articles could not be retrieved from the London School of Hygiene and Tropical Medicine, the American University of Beirut or the British Library databases. Corresponding authors were emailed but did not respond and thus these articles were excluded.

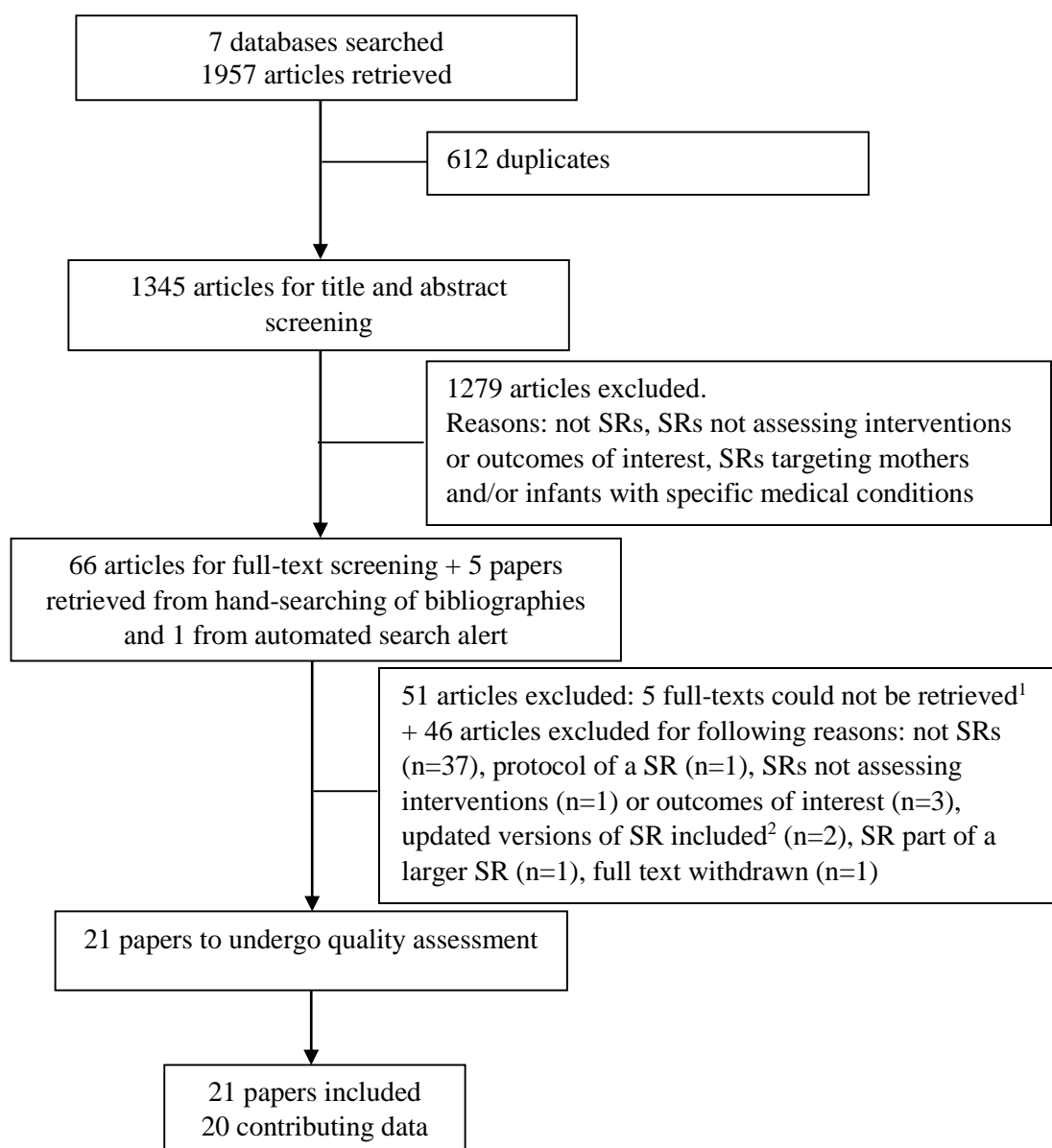
Quality assessment

The detailed quality assessment of each included SR found six reviews to be of poor quality with scores ranging between 1 and 4 out of 11 (22, 25, 26, 28, 29, 32). Most reviews conducted a comprehensive search, and may have included unpublished literature but all of them limited their search to one or more specific languages. Some assessed the quality of included studies and documented them, yet none of them took this into account in drawing conclusions.

Eight reviews rated as fair, scoring between 5 and 8 (19, 20, 23, 24, 30, 31, 34, 35). All of them conducted a comprehensive search yet two did not include grey literature (19, 35). All except for two (24, 30) reviews assessed the scientific quality of included studies and documented it using single scores. Yet, both of them used their evaluation of the study quality appropriately in formulating conclusions. On the other hand, three reviews did not use the assessment appropriately in formulating conclusions (19, 20, 34).

Cochrane reviews were the ones of good quality (21, 27, 36-39). These SRs met most criteria, except for assessing the likelihood of publication bias (21, 27, 36, 37) and the conflict of interest for each included study within SRs which none of the reviews met. Lee *et al.* (40) did not retrieve any results and thus did not contribute data, despite its good quality.

Figure 5-1 Flow diagram for the review of systematic reviews of the effectiveness of health services interventions to promote and support breastfeeding initiation and exclusivity



¹The full texts that could not be retrieved

1. Cochrane made simple. Support for breastfeeding mothers. *Practising Midwife*. 1999;2(9):10-
2. Anderson T. Support for breastfeeding mothers. *The practising midwife*. 1999;2(9):10-2.
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4. Ellis DJ. The impact of agency policies and protocols on breastfeeding. *NAACOGS Clin Issu Perinat Womens Health Nurs*. 1992;3(4):553-9.
5. Neil H. Effective breastfeeding support--an impetus to act. *Practising Midwife*. 2006;9(3):37, 9-40.

²CA could not obtain full-text articles of the reviews and thus could not compare methods in detail and relied on authors' reports of what they did.

Results of review

Description of studies

Of the 21 included papers, one did not contribute data. Lee *et al.* aimed to review the evidence on the effect of antenatal breast examination on breastfeeding initiation but authors did not retrieve any randomised controlled trial (RCT) meeting the inclusion criteria (40). Characteristics of the 20 papers contributing data are shown in **Table 5-2**.

Included reviews were conducted between 1998 and 2012, fourteen of which were published in or after 2008. Chung *et al.* updated Guise *et al.* review conducted for the USA Preventive Services Task Force in 2003 on effectiveness of primary care-based interventions in developed countries to improve breastfeeding outcomes. They were counted as two separate reviews as outcomes of interest and methods differed between the two (19, 35). Furthermore, Renfrew *et al.* (2012) stated that their review was an updated version of the Britton *et al.* one (21, 36). Yet they were considered to be two different reviews as inclusion criteria differed in terms of types of studies, interventions and outcomes. Renfrew *et al.* (2005) assessed the effectiveness of public health, public policy, clinical interventions and health professionals and lay breastfeeding educator/ counsellor training, education and practice change in one review and results were presented as a series of four linked SRs; three of which were relevant to this review. Authors conducted a single search strategy, quality assessment and data extraction. Inclusion criteria were adapted to each relevant section of the review and studies allocated accordingly (30). Tedstone *et al.* review was conducted in 1998 when international and UK recommendations for EBF were between 4 and 6 months (31).

Most reviews did not have a geographic focus except for five reviews where interventions were limited to ones conducted in developed countries (19, 26, 35) or the USA (28) or to Europe, North America, Australia or New Zealand (25). Imdad *et al.* compared outcomes between developed and developing countries; the countries' classification was done using the 2009 World Bank list of economies (20). Renfrew *et al.* (2005) and Ibanez *et al.* made particular reference to women from disadvantaged groups (26, 30).

Table 5-2 Characteristics of included systematic reviews on the effectiveness of health services interventions

Study details	Aim	Target participants	Outcomes*	Systematic review of **	Types of interventions
Beake <i>et al.</i> 2012	To assess whether a structured programme such as WHO/UNICEF BFHI implemented in maternity acute care settings is more likely to be associated with higher rates of initiation and duration of EBF than no structured programme	Pregnant women and mothers of newborn infants in hospital	Rates of breastfeeding initiation (1°) Duration of EBF (1°)	26 articles – one RCT, 2 controlled trials, 1 cross-sectional study, 2 descriptive studies, 15 cohort studies and 5 systematic reviews	A structured programme with all 10 steps of the BFHI or Selected components of the BFHI or A specifically developed local programme
Britton <i>et al.</i> 2007	To examine interventions that provide extra support for mothers who wish to breastfeed; and to assess their impact on breastfeeding duration and exclusivity and on health outcomes and maternal satisfaction (if reported by single studies)	Pregnant women intending to breastfeed, post-partum women intending to breastfeed and women breastfeeding their babies	Stopping EBF at different time periods (2°)	34 RCTs or quasi- RCTs	Support provided professionals or lay people
Chung <i>et al.</i> 2008	To examine the effects of primary care-initiated interventions to support or promote breastfeeding on child and maternal health outcomes and breastfeeding rates as reported in RCTs from developed countries	Healthy mothers and their healthy term or near-term infants.	Rate of EBF at different time periods Rate of breastfeeding initiation Rate of EBF initiation	38 RCTs: 32 parallel RCTs, 4 clustered RCTs and 2 quasi-RCTs	Formal or structured breastfeeding education Breastfeeding professional support at system and individual levels Lay support Other interventions: Motivational interviews, delayed or discouraged pacifier use and skin-to-skin contact

Study details	Aim	Target participants	Outcomes*	Systematic review of **	Types of interventions
De Oliveira <i>et al.</i> 2001	To evaluate primary care interventions conducted during the prenatal and postnatal (after hospital discharge) phases (excluding delivery care) to extend breastfeeding duration (exclusive, full, or any kind of breastfeeding)	Not specified	Percentage of EBF at different time periods	33 experimental and 31 quasi-experimental studies.	Interventions based in primary health care services, in community settings, or in hospital antenatal and/or postnatal services. Interventions included: Individual counselling, booklets, home visits, sessions at clinics, group sessions, phone calls and hospital sessions.
Dyson <i>et al.</i> 2005	To examine interventions which aim to encourage women to breastfeed, to evaluate their effectiveness in terms of changes in the number of women who initiate breastfeeding and to report any other effects (beneficial or adverse) of such interventions	Pregnant Women Mothers of newborn infants Women who may decide to breastfeed in the future	Percentage of breastfeeding initiation (1°)	11 RCTs – 3 studies not contributing data to the analysis due to methodological concerns	Health education of pregnant women Breastfeeding promotion packs Early mother-infant contact
Fairbank <i>et al.</i> 2000	To evaluate the effectiveness of interventions that encourage women to start breastfeeding and to breastfeed exclusively	Healthy pregnant women, mothers in the immediate postpartum period before the first breastfeed, any participant linked to pregnant women or new mothers, or any participant who may breastfeed in the future, or be linked to a breastfeeding woman in the future	Rate of breastfeeding initiation (1°) Rate of EBF at different time periods (2°)	59 studies: 14 RCTs, 16 non-RCTs and 29 before-after studies	Health education Health sector initiative (HSI) – general HSI – Baby Friendly Hospital Initiative (BFHI) HSI – training of health professionals HSI – social support from health professionals Multifaceted interventions

Study details	Aim	Target participants	Outcomes*	Systematic review of **	Types of interventions
Guisse <i>et al.</i> 2003	To evaluate the effectiveness of counselling, behavioural and environmental interventions to improve breastfeeding	Not specified	Percentage of breastfeeding initiation	22 RCTs, 8 non-RCTs and 5 SRs	Education Support
Hannula <i>et al.</i> 2008	To examine the effectiveness of interventions that provide professional support and education in breastfeeding during pregnancy, in maternity hospitals and post-natally	Healthy mothers and infants	Breastfeeding initiation EBF	31 original studies and 5 literature reviews (4 of which are SRs)	Prenatal education Professionally mediated peer support Primary care based interventions Breastfeeding support by health professionals BFHI Multifaceted interventions
Hatem <i>et al.</i> 2009	To compare midwife-led models of care with other models of care for childbearing women and their infants such as obstetrician-provided care, family doctor-provided care and shared models of care.	Pregnant women classified as low and mixed risk of complications	Percentage of breastfeeding initiation	11 RCTs	Midwife-led model of care
Ibanez <i>et al.</i> 2012	To identify effective programmes that can be implemented by GPs for promoting breastfeeding in low-income women	Either pregnant women intending to breastfeed their child or women already breastfeeding	Breastfeeding initiation EBF initiation	10 RCTs	Multiple visits or appointments Brochure Telephone support Video
Imdad <i>et al.</i> 2011	To evaluate all studies which investigated the impact of breastfeeding promotion interventions on exclusive and any breastfeeding rates at 4-6 weeks and at 6 months	Women in the prenatal and/or postnatal period	EBF rates at 4-6 weeks and at 6 months postpartum	53 randomised and quasi-randomised trials	Breastfeeding education and/or additional support given to mothers through counsellors (doctors, nurses, midwives, lactation consultants or peer counsellors) in individual or group sessions

Study details	Aim	Target participants	Outcomes*	Systematic review of **	Types of interventions
Jaafar <i>et al.</i> 2012	To assess the effects of the practice of routine separation of mothers and babies, compared with the practice of routine rooming-in, on the breastfeeding duration	All mothers who have given birth and able to care for their normal newborn infants whether or not they initiated breastfeeding	Mean duration of EBF (1°) Proportion of infants being exclusively breastfed at 6 months of age (1°) Rate of EBF on discharge from hospital (2°)	1 RCT	Separate care‡
Lumbiganon <i>et al.</i> 2012	To assess the effectiveness of antenatal breastfeeding education for increasing breastfeeding initiation and duration To compare the effectiveness of various forms of education such as educational programme, peer support, workshops, or a combination of these interventions to increase breastfeeding initiation and duration To assess the effects of antenatal breastfeeding education on other maternal and infant outcomes	Pregnant women	Duration of EBF Proportion of mothers exclusively breastfeeding at 3 and 6 months Breastfeeding initiation rate	Of 19 RCTs, 16 contributed data for analysis vs. 3 that met the inclusion criteria but did not report data of outcomes of interest	Routine breastfeeding education, formal breastfeeding education, printed information, video, peer counselling and lactation consultation
Moore <i>et al.</i> 2012	To assess the effects of early skin-to-skin contact for healthy newborn infants compared to standard contact	Mothers and healthy full term or late preterm newborn infants	Breastfeeding rates/exclusivity at hospital discharge up to two weeks post birth (2°) EBF at 3 and 6 months post birth (2°)	34 RCTs	Early SSC for term or late preterm infants

Study details	Aim	Target participants	Outcomes*	Systematic review of **	Types of interventions
Mushtaq <i>et al.</i> 2008	To review the literature published in USA that addresses women in the USA and Canada, assessing the effects of breastfeeding education and support provided by lactation consultants and peer counsellors on the initiation and continuation of breastfeeding among various groups of women	Various groups of women in the USA and Canada	Breastfeeding initiation	14 single studies and 1 SR	Breastfeeding education Education and support Support targeting individuals
Pate <i>et al.</i> 2009	To locate and analyse the existing evidence on effectiveness of using the Internet to promote successful breastfeeding outcomes and to compare this pooled measure of effect to provider-based methods of breastfeeding education and support	Not specified	EBF initiation Breastfeeding initiation EBF duration	21 single studies: 15 RCTs and 6 non-randomised trials	Education and/or support offered by health professionals and/or lay people
Renfrew <i>et al.</i> 2005	To systematically review interventions relevant to (i.e. affecting positively or negatively) the continuation of breastfeeding, including promotion, protection and support, and with particular reference to interventions that will work with women from disadvantaged groups	Pregnant and postpartum women from all groups, with a special interest in women from disadvantaged groups	EBF up to 6 months	37 studies	Public health interventions: education, support by professionals and/or peers, multifaceted interventions
		Pregnant women, women in labour/at birth, breastfeeding mothers of healthy babies	Duration of EBF	28 studies	Clinical interventions: antenatal practices, prevention of clinical problems Kangaroo care and skin-to-skin contact, methods of giving supplementary fluids
		Health professional and lay breastfeeding educator/counsellor working with pregnant/postpartum	Duration of EBF(1°), breastfeeding initiation (2°)	9 studies	Health professionals training and education

Study details	Aim	Target participants	Outcomes*	Systematic review of **	Types of interventions
		women			
Renfrew <i>et al.</i> 2012	To examine interventions that provide extra support for mothers who are breastfeeding or considering breastfeeding To assess their impact on breastfeeding duration and exclusivity and on health outcomes and maternal satisfaction (when recorded)	Healthy women breastfeeding their babies.	Stopping EBF before 4 to 6 weeks postpartum (1°) Stopping EBF before 6 months postpartum (1°) Stopping EBF before 2 and 3 months postpartum (2°)	Of 67 studies that met inclusion criteria, only 52 contributed data 44 individually-randomised trials and 8 cluster-randomised trials	Support by an individual or individuals Training of staff to improve support offered to women
Tedstone <i>et al.</i> 1998	To review the interventions promoting healthy feeding of infants under 1 year of age with the aim of identifying the most effective promotional methods that can be used to bring about the dietary changes prioritised by Department of Health-UK	Women during the prenatal and/or postnatal period	Breastfeeding initiation and/or EBF for infants aged 0-4 months	20 studies	Breastfeeding education, postnatal support
Ward <i>et al.</i> 2011	To analyse the effects of educational interventions on breastfeeding aimed at already practicing health professionals, particularly nurses and midwives	Already practicing health professionals	Breastfeeding initiation EBF	15 studies - 5 RCTs, 6 quasi-experimental studies, 4 non-experimental quantitative studies with a pre-test/post-test design	Continuing breastfeeding education

*Outcomes are reported as primary (1°) or secondary (2°) if specified by authors ** Systematic reviews may include interventions and outcomes that are beyond the scope of this review. The total numbers of studies included in the systematic reviews are reported and not limited to the ones relevant to this analysis. ‡In this review, separate care is the intervention while rooming-in is the standard of care

Reviews assessed breastfeeding initiation, EBF initiation and duration or rates, yet none looked at early breastfeeding initiation as shown in **Table 5-3**. None of reviews specified a time period to define breastfeeding initiation except for Chung *et al.* who defined it as breastfeeding at discharge or up to two weeks of delivery (19) and Pate that purposively used Chung *et al.*'s exact definitions. For EBF, several reviews did not specify a definition and thus included single studies with various definitions (19, 21, 22, 27, 30-32, 36); others used the WHO's definition (20, 23, 38).

Reviews also assessed different types of interventions: breastfeeding education, breastfeeding support targeting systems (including the BFHI Ten Steps to Successful Breastfeeding and training of health professionals), breastfeeding support targeting individuals (one-to-one support provided by health professionals or lay people), combined breastfeeding support targeting systems and individuals, multifaceted interventions (such as education and support) and all breastfeeding interventions pooled together. Results of reviews are presented by types of interventions.

Table 5-3 Included systematic reviews on the effectiveness of health services interventions by types of interventions and outcomes

	Breastfeeding outcomes			Interventions					
	Initiation	EBF initiation	EBF	Breastfeeding education	Breastfeeding support targeting systems	Breastfeeding support targeting individuals	Breastfeeding support targeting individuals and systems	Multifaceted interventions	Any breastfeeding intervention
Beake <i>et al.</i> 2012	X		X		X				
Britton <i>et al.</i> 2007			X		X		X		
Chung <i>et al.</i> 2008	X	X	X	X	X	X			X
De Oliveira <i>et al.</i> 2001			X	X				X	
Dyson <i>et al.</i> 2005	X		X	X	X				
Fairbank <i>et al.</i> 2000	X			X	X	X		X	
Guisse <i>et al.</i> 2003	X			X		X		X	
Hannula <i>et al.</i> 2008	X		X	X	X	X		X	
Hatem <i>et al.</i> 2008	X				X				
Ibanez <i>et al.</i> 2012	X	X						X	
Imdad <i>et al.</i> 2011			X	X		X	X	X	X
Jaafar <i>et al.</i> 2012			X		X				
Lumbiganon <i>et al.</i> 2012	X		X	X					
Moore <i>et al.</i> 2012			X		X				
Mushtaq <i>et al.</i> 2008	X			X		X			
Pate 2009	X	X	X						X
Renfrew <i>et al.</i> 2005	X		X	X	X	X		X	
Renfrew <i>et al.</i> 2012			X				X		
Tedstone <i>et al.</i> 1998	X		X	X				X	
Ward <i>et al.</i> 2011	X		X		X				

Breastfeeding education

Eleven SRs assessed the effect of breastfeeding education (19, 20, 23-25, 27, 28, 30, 31, 34, 35) (**Table 5-4**). In Guise *et al.*, educational interventions were associated with a significant increase in breastfeeding initiation with some evidence of a higher impact in populations with a pre-intervention breastfeeding rate less than 50% (35). Chung *et al.* found no statistically significant increases in any outcome when comparing the education component of multifaceted interventions to usual care (19). A meta-analysis of five trials on health education conducted among low-income pregnant women in the USA found a significant increase in breastfeeding initiation (34). Subgroup analyses found a statistically significant increase in breastfeeding initiation among women given repeat, informal education personalised to women's needs and delivered by breastfeeding experts/professionals (Risk Ratio=2.40 [1.57, 3.66] (N=2)) and a non-statistically significant increase among women given generic, formal, single education sessions (Risk Ratio=1.26 [1.00, 1.60] (N=3)). Tedstone *et al.* also found statistically significant increases in breastfeeding initiation among low income women in developed countries (31) yet authors did not conclude on specific characteristics of education because of the small number of included studies and their methodological limitations. A review of specific components of educational interventions by Fairbank *et al.* revealed that small, informal group sessions appeared to improve rates in developed countries whereas breastfeeding literature alone or health education given in a formal non-interactive way did not (24). The variation in participants' characteristics, outcome measurement and intervention characteristics led the authors to conclude that health education alone was unlikely to improve breastfeeding initiation. Hannula *et al.* retrieved one prenatal educational intervention where low income women who received four individual antenatal visits were more likely to initiate breastfeeding (25). In Mushtaq *et al.*, five out of seven studies showed increases in breastfeeding initiation when health professionals including lactation consultants provided education (28). Only Lumbiganon *et al.* compared between types of antenatal education interventions in addition to routine care (27). None of the studies assessing the effectiveness of formal education interventions such as breastfeeding education workshops, practical skills education, attitudes education, group training programmes or prenatal structured group education targeted to mothers

Table 5-4 Effectiveness of breastfeeding education interventions on breastfeeding outcomes

Outcomes	Effects (N)	Source
EBF initiation	Rate Ratio= 1.09 [0.90, 1.33]‡ (N=4)*	Chung <i>et al.</i> 2008
Breastfeeding initiation	Evidence for statistically significant increase (N=4 of 4)	Tedstone <i>et al.</i> 1998
	Some evidence for statistically significant increase (N=4 of 14)	Fairbank <i>et al.</i> 2000
	Difference=0.23 [0.12, 0.34] (N=8)*	Guise <i>et al.</i> 2003
	Risk Ratio= 1.57 [1.15, 2.15], I ² = 53.4% (N=5)†	Dyson <i>et al.</i> 2005
	Rate Ratio=1.09 [0.98, 1.21] (N=7)‡*	Chung <i>et al.</i> 2008
	Statistically significant increase (N=1 of 1)	Hannula <i>et al.</i> 2008
	Increase in initiation (N=5 of 7)	Mushtaq <i>et al.</i> 2008
	No significant effects (N=6 of 6)	Lumbiganon <i>et al.</i> 2012
EBF at different time periods	Some evidence for statistically significant increase (N=2 of 3)	De Oliveira <i>et al.</i> 2001
	Some evidence for statistically significant increase (N=2 of 3)	Renfrew <i>et al.</i> (2005)
EBF at 4 to 6 weeks	Risk Ratio= 2.08 [1.46, 2.98] (N=6)	Imdad <i>et al.</i> (2011)
EBF at 6 months	Risk Ratio = 1.14 [0.80, 1.62] (N=3)	
EBF at 1 to 3 months	Rate Ratio= 1.16 [0.84, 1.59] (N=3)*	Chung <i>et al.</i> (2008)
EBF at 4 to 5 months	Rate Ratio= 0.97 [0.48, 1.95] (N=1)*	
EBF at 3 and 6 months	No significant effects (N=3 of 3)	Lumbiganon <i>et al.</i> (2012)
	Significant effect for one intervention comparing a video + booklet + lactation consultant intervention to video + booklet and to routine care on EBF at 6 months and 3 months respectively	

*Educational interventions in primary care settings of developed countries only

‡ Authors compared the breastfeeding education component of multifaceted interventions to usual care

† Interventions conducted among low-income women in USA

had a significant effect on breastfeeding initiation or EBF at 6 months when compared to routine care. There were no significant effects for studies comparing one form of formal education to another form of education or for interventions using multiple methods of education vs. a single method. When comparing between different combinations of multiple methods of providing education, one study looking at a breastfeeding booklet plus video plus lactation consultant vs. a breastfeeding booklet plus video found a significant effect on EBF of the former at 6 months (Risk Ratio=2.23 [1.01, 4.92]), but not at 3 months (Risk Ratio=1.29 [0.80, 2.06]). When

this same study compared the effect of multiple methods to no formal education, EBF at 3 months was significantly higher among women receiving the three component-intervention compared to those receiving routine care (Risk Ratio= 2.02 [1.16, 3.49]) but this was not the case at 6 months (Risk Ratio=2.11 [0.99, 4.52]). Authors emphasized that results are based on single studies for each type of educational intervention that also have significant methodological flaws and small observed effect sizes. Furthermore, they report a wide variety in routine care, if reported; and they identify the potential effect of routine intra-partum or post-partum support on breastfeeding. Thus they concluded that incomplete evidence prevents strong conclusions or generalisations on which antenatal interventions to recommend.

Imdad *et al.* sub-group analysis showed a statistically significant increase in EBF at 4 to 6 weeks but not at 6 months following educational interventions (20). Renfrew *et al.* (2005) also found that written material alone did not increase EBF among women from different income groups in developed countries. On the other hand, one high quality trial showed an increase in EBF duration at 6 weeks among low-income groups of nulliparous women who intended to breastfeed and who received antenatal group educational sessions on positioning and attachment of baby in Australia (30). In De Oliveira *et al.* (23), two out of three studies assessing education interventions showed an increase in EBF mean duration or prevalence at 2 months. Interventions consisted of a hospital session and individual counselling in the clinic or at home until 4 months or a hospital group session in addition to a 10-minutes video and a home visit at 5-7 days after discharge where a booklet was given to the mother.

Breastfeeding support interventions targeting systems

When pooled together, different types of breastfeeding support interventions targeting systems were not found to be effective in improving breastfeeding initiation (Rate Ratio=1.06 [0.95, 1.17] (N=2)) or exclusivity at 1 to 3 (Rate Ratio=1.89 [0.41, 8.79] (N=3)) or 4 to 5 months (Rate Ratio=0.97 [0.35, 2.69] (N=1)) (19). Other reviews assessed the effectiveness of specific interventions targeting systems (**Table 5-5**).

Table 5-5 Effectiveness of breastfeeding interventions targeting systems on breastfeeding outcomes

Outcomes duration	Effects (N)	Source
The BFHI or components of it or a specifically developed local programme		
Breastfeeding initiation	Significant increase (N=1 of 1)	Renfrew <i>et al.</i> 2005
	Significant increase (N=1 of 1)	Hannula <i>et al.</i> 2008
	Significant increase (N=7 of 9)	Beake <i>et al.</i> 2012
EBF rates	Significant increase (N=1 of 1)	Renfrew <i>et al.</i> 2005
	Significant increase (N=1 of 1)	Hannula <i>et al.</i> 2008
	Significant increase (N=12 of 13)	Beake <i>et al.</i> 2012
EBF duration	Significant increase (N=4 of 4)	Beake <i>et al.</i> 2012
Post-partum clinical interventions		
<i>Kangaroo mother care</i>		
EBF	No significant increase (N=1 of 1)	Renfrew <i>et al.</i> 2005
<i>Skin-to-skin contact</i>		
Breastfeeding initiation	Risk Ratio= 1.05 [0.94, 1.17] (N=1)	Dyson <i>et al.</i> 2005
EBF at hospital discharge	Risk Ratio= 0.99 [0.66, 1.47], (N=2)	Moore <i>et al.</i> 2012
EBF at 3 to 6 months	Risk Ratio= 1.97 [1.37, 2.83], (N=3)	
Index of Breastfeeding Status* at 1 month	mean difference= 0.86 [-0.73, 2.44] N=3, I ² = 90%	
<i>Rooming-in</i>		
Breastfeeding initiation	Significant increase (N=2 of 2)	Fairbank <i>et al.</i> 2000
<i>Separation</i>		
EBF on day 4 postpartum	Risk Ratio= 0.58 [0.42, 0.81] (N=1)†	Jaafar <i>et al.</i> 2012
<i>Additional fluids for breastfed babies</i>		
EBF	Significant decrease (N=1 of 1)	Renfrew <i>et al.</i> 2005
<i>Methods of giving supplementary fluids (cup vs. bottle)</i>		
Duration of EBF	Significant increase (N=1 of 1)	Renfrew <i>et al.</i> 2005
<i>Pacifier use</i>		
EBF	No significant effect (N=1 of 1)	Renfrew <i>et al.</i> 2005
Commercial marketing of breast milk substitutes		
EBF at all times	Decrease (N=1)	Renfrew <i>et al.</i> 2005
Training of health professionals		
Breastfeeding initiation	No statistical significant increase (N=2 of 2)	Fairbank <i>et al.</i> 2000
	No effect or no statistical significant increase (N=4 of 4)	Ward <i>et al.</i> 2011
EBF	Risk Ratio=0.69 [0.52, 0.91], I ² =97.9% (N=6)	Britton <i>et al.</i> 2007
	Significant increase (N=4 of 4)	Ward <i>et al.</i> 2011
Breastfeeding outcomes	Inconsistent results (N=6)	Renfrew <i>et al.</i> 2005
Midwife-led model of care		
Breastfeeding initiation	Risk Ratio=1.35 [1.03, 1.76] (N=1)	Hatemet <i>et al.</i> 2008

*Index of breastfeeding status: single indicator consists of full breastfeeding which is divided into EBF and almost EBF, partial breastfeeding divided into high, medium and low and token breastfeeding.

†Separate care is the intervention while rooming-in is the usual care

The BFHI

All reviews assessing the BFHI found it to be effective in improving breastfeeding initiation and exclusivity (22, 25, 30). Renfrew *et al.* (2005) retrieved one study where interventions for two cohorts of mothers and infants were adherence to steps 3-8 of the ten baby friendly initiative steps in 1995 and steps 3-9 in 1999 as reported by mothers at 1 month postpartum. Results showed improved breastfeeding initiation and EBF at discharge, 4 and 6 months, but not at 1 month. Predictors of exclusivity were higher educated mothers, non-smokers and reported adherence to steps 6 and 9. Predictors of initiation were the same maternal characteristics and mothers' reported experience of hospital's adherence to baby friendly initiative standards. Beake *et al.* compared the effectiveness of a structured programme such as the BFHI implemented in maternity acute care settings to non-structured programmes (22). Structured programmes were found to improve breastfeeding initiation (N=7 of 7) and EBF rates (N=12 of 13) and duration (N= 4 of 4). Authors noted that not all ten steps of the BFHI may be needed since locally developed programmes that did not reflect the BFHI content or introduced specific BFHI steps were effective as well. Yet, the effect of single steps is still unclear. The review also could not conclude if implementation of the BFHI would lead to a sustained increase in EBF till 6 months (22).

Post-partum clinical interventions

Kangaroo mother care

Renfrew *et al.* (2005) assessed the effectiveness of kangaroo mother care defined as skin-to-skin contact (SSC) between mother and newborn, frequent and exclusive or nearly EBF, and early hospital discharge. The only retrieved trial showed no significant EBF increases yet this lack of significance may be due to the low risk of breastfeeding difficulties among the studied population and the intervention taking place in a baby-friendly hospital (30).

Skin to skin contact (SSC)

In Dyson *et al.*, one trial conducted in Nicaragua where contact between mother and infant happened immediately after birth and were later separated for the rest of the day found no significant effect on breastfeeding initiation (34). Moore *et al.* reviewed the effectiveness of SSC starting less than 24 hours after birth for term or late preterm infants on EBF outcomes (39). The evidence is conflicting: early SSC was associated

with improved EBF at 3 to 6 months but not at hospital discharge up to two weeks post birth. The lack of effect was also observed using the index of breastfeeding status at one month. Authors request caution in interpretation of results given the small number of studies included and the mixed quality of trials.

Rooming-in/Separation

Fairbank *et al.* retrieved two trials in Thailand and Nicaragua where rooming-in was administered as a stand-alone intervention. Statistically significant breastfeeding initiation improvements rates were seen; however authors cautioned regarding interpretation of results given methodological flaws in these trials. Jaafar *et al.* assessed the effect of routine separation of mothers and babies compared to routine rooming-in on breastfeeding outcomes (38). Infants in the separate care group were less likely to be exclusively breastfed on day 4 postpartum before hospital discharge compared to those in the rooming-in group. However, the intervention had two components: separate care with a fixed feeding schedule vs. rooming-in with demand feeding, thus limiting the attributable effect of rooming-in or separate care on assessed outcomes (38).

Additional fluids for breastfed babies, methods of giving supplementary fluids and pacifier use

Renfrew *et al.* (2005) (30) retrieved one trial assessing the effect of these three interventions on EBF. Supplementing infants at hospital with fluids other than breast milk had a significant detrimental effect. The delivery of supplemental fluids by cup before hospital discharge was associated with a longer duration of EBF but this positive effect was only observed among women who delivered by caesarean section. Pacifier use had no significant adjusted effect (30).

Commercial marketing of breast milk substitutes

Renfrew *et al.* (2005) found two single studies that were also included in two of their retrieved reviews (30). The Donnelly *et al.* Cochrane review – excluded from this overview due to full-text withdrawal – found that commercial hospital discharge packs containing infant formula or other promotional material reduce EBF rates at all times (41).

Training of health professionals

Four reviews assessed the effectiveness of health professionals training (24, 30, 32, 36). None of the two studies reviewed by Fairbank *et al.* found a statistically significant increase in breastfeeding initiation following training consisting of seminars on breastfeeding advantages and methods to help mothers to breastfeed; and education training based on breastfeeding difficulties identified by women in a survey (24). Renfrew *et al.* (2005) identified six studies measuring outcomes of interest. Single studies varied in their interventions and resulted in contradictory effects which prevented reviewers from identifying one single way that would constantly achieve changes in professional practice which in turn could change breastfeeding practices (30). Britton *et al.* conducted a meta-analysis of six trials using WHO/UNICEF training that showed a significant effect in prolonging EBF with statistically significant heterogeneity between trials (36). Another review assessing the effectiveness of continuing breastfeeding education interventions to already practicing health professionals particularly nurses and midwives (32) found improved EBF but not breastfeeding initiation. These interventions included training of other health professionals; thus, one cannot determine whether training of nurses and midwives alone would improve breastfeeding practices. Effective interventions included sessions on counselling skills and reflection of personal breastfeeding experience to antenatal midwives and postnatal nurses; an 18-hour modified UNICEF course administered to all nursing staff; a 1.5 hour mandated session for all nursing staff with an optional self-paced tutorial; and attendance of a 3-week breastfeeding training course.

Midwife led model of care

Hatem *et al.* compared the midwife-led model of care to other models of care usually provided by obstetricians or family physicians or shared between the latter and midwives (37). One out of eleven trials assessed breastfeeding initiation: women randomised to midwife-led models of care were 35% more likely to initiate breastfeeding than those receiving other models of care.

Breastfeeding interventions targeting individuals

Seven reviews assessed the effectiveness of interventions targeting individuals (19, 24, 25, 28, 30, 35). Guise *et al.* review found no statistically significant increase in breastfeeding initiation following support offered by health professionals or lay people (Difference= 0.06 [-0.02, 0.15] (N=8)). Chung *et al.*'s sub-group analyses also found similar results for interventions by health professionals (Rate Ratio=1.04 [0.98, 1.10] (N= 9)) or by lay people (Rate Ratio= 1.09 [0.92, 1.28] (N=3)). Fairbank *et al.* had similar conclusions after retrieving one trial looking into these interventions; however, women included in that trial were of above average risk of having low birth weight infants (24). On the other hand, the two retrieved studies in Mushtaq *et al.* showed that support offered by peers or health professionals increased breastfeeding initiation rates.

Imdad *et al.* subgroup analysis revealed improved EBF rates at 4 - 6 weeks (Risk Ratio= 1.54 [1.12, 2.11] (N=9)) and at 6 months (Risk Ratio= 7.24 [1.54, 34.13] (N=2)) following lay support. Chung *et al.* subgroup analyses revealed greater effects for lay vs. health professional support on EBF initiation with a rate ratio of 1.39 [1.01, 1.92] (N=1) vs. 1.04 [0.98, 1.10] (N=9) and at 1 to 3 months with a rate ratio of 1.65 [1.03, 2.63] (N=4) vs. 1.79 [0.88, 3.65] (N=11). Hannula *et al.* retrieved one study where professionally mediated peer support was associated with improved EBF duration. Renfrew *et al.* (2005) found high quality evidence that both professional and peer support can be effective in supporting EBF if offered to relatively advantaged women who actively want breastfeeding support or have decided to breastfeed. There is also some evidence that to be effective breastfeeding support should be offered to women soon after birth without women having to ask for it (30).

Breastfeeding support interventions targeting individuals and systems

While two reviews (21, 36) assessed the effectiveness of support interventions targeting systems and individuals by health professionals and/or lay people, Imdad *et al.* limited individual support to health professionals (20). Women in the intervention groups were less likely to have stopped EBF by 6 weeks and before 6 months (**Table 5-6**). There was significant heterogeneity among studies for both time periods and in both Cochrane reviews which led Renfrew *et al.* (2012) to conduct a sensitivity analysis. Studies with low risk of bias for allocation concealment still favoured the

intervention groups but the effect sizes were much lower which suggests biased effects. For stopping EBF by 6 weeks, studies with low risk of bias had a risk ratio of 0.86 [0.75, 0.98] (N=14) vs. 0.59 [0.43, 0.80] (N=10) for studies with high risk of bias. For stopping EBF by 6 months, studies with low risk of bias had a risk ratio of 0.94 [0.90, 0.98] (N=19) vs. 0.63 [0.45, 0.89] (N=14) for studies with high risk of bias.

Table 5-6 Effectiveness of breastfeeding support targeting systems and individuals on EBF outcomes

	Risk Ratio [CI] (N)	Test for heterogeneity I ² (%)
Stopping EBF up to 4 to 6 weeks		
Britton <i>et al.</i>	0.67 [0.54, 0.84] (N=10)	p <0.00001, I ² =91.0
Renfrew <i>et al.</i> (2012)	0.74 [0.61, 0.89] (N=24)	p <0.00001, I ² = 98.0
Stopping EBF by last assessment up to 6 months		
Britton <i>et al.</i>	0.81 [0.74, 0.89] (N=20)	p <0.00001, I ² = 92.0
Renfrew <i>et al.</i> (2012)	0.86 [0.82, 0.91] (N=33)	p <0.00001, I ² = 97.0
EBF at 4 to 6 weeks		
Imdad <i>et al.</i>	1.14 [1.06, 1.22] (N=12)	
EBF at 6 months		
Imdad <i>et al.</i>	3.38 [1.21, 9.48] (N=7)	

Renfrew *et al.* (2012) conducted subgroup analyses by type of support, timing of intervention, intensity of the intervention and background breastfeeding initiation rate in study settings (21) (**Table 5-7**). Face-to-face interventions had higher effects on continuing EBF at both time periods than in telephone or combined types. The effect was only significant for face-to-face interventions and subgroup differences were statistically significant. No statistically significant subgroup differences were observed in effects for interventions implemented in the postnatal period alone compared to the ones with an antenatal component. Greater effects were observed for more intense interventions of 4 to 8 postnatal contacts and 9 or more contacts. Subgroup differences were statistically significant for stopping EBF before 6 months but not for the time period of 4 to 6 weeks. The effects of support interventions for EBF by 4-6 weeks and 6 months were also greater when initiation rates were higher. The tests for subgroup differences were statistically significant for both time periods assessed despite considerable within group heterogeneity. Also, the fact that greater effects were observed among studies at high risk of bias could potentially confound any differences between subgroups.

The two Cochrane reviews also reported greater effects on EBF for support interventions conducted by lay people compared to health professionals or a combination of them (**Table 5-8**). Renfrew *et al.* (2012) found a statistically significant difference between types of supporters for stopping EBF at both time periods; however they advised caution in interpretation of results given within-group heterogeneity.

Table 5-7 Sub-group analyses for effectiveness of breastfeeding support interventions targeting systems and individuals taken from Renfrew *et al.*(2012) (21)

	Risk Ratio [CI] (N)	Test for subgroup differences
TYPE OF SUPPORT		
Stopping EBF at up to 4 to 6 weeks		
Face-to-face	0.62 [0.51, 0.77] (N=12)	p< 0.001, I ² = 85.4%
Telephone	0.96 [0.68, 1.35] (N=2)	
Combination	0.94 [0.88, 1.01] (N=9)	
Stopping EBF by last assessment up to 6 months		
Face-to-face	0.81 [0.75, 0.88] (N=17)	p= 0.00001, I ² = 92.7%
Telephone	1.00 [0.99, 1.01] (N=2)	
Combination	0.98 [0.94, 1.02] (N=14)	
TIMING OF INTERVENTION		
Stopping EBF at up to 4 to 6 weeks		
Postnatal	0.68 [0.46, 1.02] (N=18)	p= 0.24, I ² = 28%
Postnatal with an antenatal component	0.88 [0.77, 1.01] (N=5)	
Stopping EBF by last assessment up to 6 months		
Postnatal	0.87 [0.81, 0.94] (N=21)	p= 0.22, I ² = 33%
Postnatal with an antenatal component	0.92 [0.87, 0.98] (N=11)	
INTENSITY OF INTERVENTION		
Stopping EBF at up to 4 to 6 weeks		
Unspecified or no direct contacts	0.91 [0.78, 1.06] (N=3)	p= 0.20, I ² = 35%
Fewer than 4 postnatal contacts	0.90 [0.84, 0.96] (N=9)	
Between 4 and 8 postnatal contacts	0.52 [0.31, 0.87] (N=5)	
Nine or more contacts	0.69 [0.28, 1.74] (N=7)	
Stopping EBF by last assessment up to 6 months		
Unspecified or no direct contacts	0.99 [0.88, 1.11] (N=2)	p= 0.02, I ² = 71%
Fewer than 4 postnatal contacts	0.92 [0.84, 1.01] (N=8)	
Between 4 and 8 postnatal contacts	0.71 [0.60, 0.84] (N=13)	
Nine or more contacts	0.88 [0.78, 0.99] (N=10)	
BACKGROUND BREASTFEEDING INITIATION RATES IN STUDY SETTINGS ¹		
Stopping EBF at up to 4 to 6 weeks		
High	0.61 [0.47, 0.80] (N=11)	p< 0.006, I ² = 80.5%
Intermediate	0.81 [0.68, 0.96] (N=6)	
Low	0.97 [0.86, 1.08] (N=5)	
Stopping EBF by last assessment up to 6 months		
High	0.83 [0.78, 0.89] (N=19)	p< 0.00001, I ² = 92.7%
Intermediate	0.89 [0.79, 1.01] (N=7)	
Low	1.00 [0.99, 1.01] (N=5)	

¹ High: 80% or more women initiating breastfeeding; intermediate: between 60 and 80%; low: fewer than 60%.

Table 5-8 Effectiveness of breastfeeding support interventions on breastfeeding outcomes by type of supporter

Breastfeeding outcomes	Effects by type of supporter (Risk Ratio)[CI](N))			Subgroup heterogeneity (p-value, I ²)
	Health professionals	Lay	Combined	
Stopping EBF by 4- 6 weeks				
Britton <i>et al.</i>	0.69 [0.51, 0.92] (6)	0.66 [0.46, 0.96] (4)	-	
Renfrew <i>et al.</i> (2012)	0.75 [0.57, 0.99] (15)	0.64 [0.45, 0.92] (7)	0.94 [0.89, 0.99] (2)	P=0.04, I ² = 68.9%
Stopping EBF by last assessment up to 6 months				
Britton <i>et al.</i>	0.91 [0.84, 0.98] (12)	0.72 [0.57, 0.90] (6)	0.62 [0.50, 0.77] (2)	
Renfrew <i>et al.</i> (2012)	0.93 [0.88, 0.98] (18)	0.74 [0.64, 0.87] (12)	0.76 [0.44, 1.32] (3)	P=0.02, I ² = 73.9%

Multifaceted interventions

Eight reviews assessed the effectiveness of multifaceted interventions (20, 23-26, 30, 31, 35). Tedstone *et al.* concluded that there is lack of good quality research and evaluation but there is some evidence in favour of interventions with multiple contacts and over an extended time period (31). Fairbank *et al.* were the only ones to assess multifaceted interventions with additional components such as media campaigns (24). Six out of eight interventions improved breastfeeding initiation; effective ones included media campaigns, sometimes peer support programs as well as health sector initiatives or health education activities. Renfrew *et al.* (2005) concluded that, due to a high quality trial showing the lack of effectiveness of combined antenatal education and limited postnatal phone support on breastfeeding initiation for women of high income and intending to breastfeed, further studies on this intervention and breastfeeding outcome were unnecessary (30). These reviews (24, 30, 31) do not specify which characteristics are responsible for success. In addition to the number of studies being limited, some of the many reasons noted as to why attribution of the effects to specific components of multifaceted interventions is difficult include that prior studies have had: small sample sizes; weak study designs; and heterogeneity in interventions, settings, definitions of routine care and target groups.

In Guise *et al.*, a meta-analysis of educational and support interventions found that the effect of combined interventions on breastfeeding initiation (Difference= 0.21 [0.07, 0.35] (N=2) was significantly higher than support provided alone (Difference= 0.06 [-0.02, 0.15] (N=8)) yet the difference was not larger than when compared to education alone (Difference= 0.23 [0.12, 0.34] (N=8)) (35). Imdad *et al.*'s subgroup analysis showed that interventions including education and professional support (Risk Ratio=1.34 [1.15, 1.55] (N=5)) or education and lay support (Risk Ratio=1.66 [1.14, 2.41] (N=2)) were effective in improving EBF at 4 to 6 weeks. For EBF at 6 months, only education and professional support had a significant increase (Risk Ratio=1.65 [1.04, 2.61] (N=4)). These results are limited by the small number of trials included in meta-analyses. Ibanez *et al.* looked at the effectiveness of primary care-based interventions that could be implemented by general practitioners to promote breastfeeding among low-income women in developed countries (26). Education alone or education plus support given on an individual and repeat basis were more likely to improve breastfeeding initiation (Relative risk =1.72 [1.34, 2.21] (N=4)) and

EBF initiation rates (Relative risk= 1.46 [1.03, 2.08] (N=7)) whereas the way the information was given out had little effect (26).

Hannula *et al.* (25) reported the results of one multifaceted intervention where a culturally sensitive programme for post-caesarean women increased EBF rates. The intervention included pre-delivery education if possible, bringing the infant to the mother in the recovery room for holding and/or breastfeeding, providing positioning, latching and continued support and assistance. Educational and support interventions improved breastfeeding initiation and EBF in the four articles retrieved by De Oliveira *et al* (23). Mothers who received individual prenatal sessions, were helped to initiate breastfeeding and secured a breast pump at hospital and received a postnatal home visit during the first week of life and followed up by phone by lactation specialists were more likely to initiate breastfeeding. However the study validity is limited by use of historical controls. Interventions effective in improving EBF at 3 months included a 20-40 minute hospital bedside session with phone calls until 3 months by a counsellor combined with a research discharge pack; an intensive support program including one hospital meeting with printed matter, 11 or more home visits intercalated with phone calls for a year; and the last one included information and motivation to breastfeed during antenatal visit, in hospital, at the 10th and 20th day after delivery and then monthly for the next 3 months as well as postnatal help if problems arose.

Pooled breastfeeding interventions

Three reviews pooled all interventions and assessed their effectiveness (19, 20, 29). Pate found a significant increase in breastfeeding outcomes by pooling breastfeeding education and/or support interventions (Odd Ratio= 1.4 [1.2, 1.5], Cohen's d= 0.18 (N=21)) (29). E-based interventions (Odds Ratio= 2.2 [1.9, 2.7], Cohen's d= 0.50, N=3) were also found to be twice as effective as provider-based ones (Odds Ratio= 1.1 [1.0, 1.2], Cohen's d=0.03). Chung *et al.* assessed the effects of primary-care initiated interventions in developed countries and two trials from Belarus and Brazil¹ (19); these interventions were associated with a small significant increase in breastfeeding initiation (Rate Ratio= 1.04 [1.00, 1.08] (N=18)), no significant increase in EBF initiation (Rate Ratio= 1.04 [0.98, 1.11] (N=13)) and a large significant

¹ The two trials from developing countries were included given the widespread interest in the BFHI as per the review's authors

increase in EBF at 1 to 3 months (Rate Ratio= 1.72 [1.00, 2.97] (N=17)). Once the two trials were excluded, the breastfeeding effect was no longer significant (data not shown in article) and the effect on EBF at 1 to 3 months was smaller (Rate Ratio= 1.28 [1.11, 1.48]). Imdad *et al.* pooled all interventions together and found significant increases in EBF at 4 to 6 weeks (Risk Ratio= 1.43 [1.28, 1.60] (N=35)) and at 6 months (Risk Ratio= 2.37 [1.33, 4.24] (N=18)) (20). Subgroup analyses revealed higher impacts for breastfeeding interventions in developing countries compared to developed countries for both EBF outcomes (**Table 5-9**). Interventions at all levels of care were effective at improving EBF at 4 to 6 weeks but not EBF at 6 months. Group counselling with or without additional individual counselling was more effective than individual counselling alone on EBF at 4-6 weeks but not for EBF at 6 months where only individual counselling was effective. The two reviews compared the effectiveness of pooled interventions by their timing of implementation (**Table 5-10**). Chung *et al.* found no significant effects for any interventions' timing on breastfeeding or EBF initiation (19). For EBF at 1 to 3 months, prenatal and postnatal interventions were effective but combinations of both were not. Imdad *et al.* found significant effects for interventions at all time periods (20).

Table 5-9 Subgroup analyses of effectiveness of breastfeeding interventions by developed vs. developing countries, level of care and type of counselling taken from Imdad *et al.* (20)

Outcomes	Risk Ratio [CI] (N)	Test for heterogeneity (I ² , p-value)
<i>Developed vs. developing countries</i>		
EBF at 4-6 weeks		
Developed countries	1.20 [1.11, 1.29] (N=24)	I ² =53%, p= 0.001
Developing countries	1.89 [1.50, 2.37] (N=11)	I ² =77%, p< 0.00001
EBF at 6 months		
Developed countries	1.30 [1.10, 1.53] (N=11)	I ² = 3%, p= 0.41
Developing countries	6.32 [3.35, 11.93] (N=7)	I ² =84%, p< 0.00001
<i>Level of care</i>		
EBF at 4-6 weeks		
Community	1.39 [1.11, 1.73] (N=9)	I ² = 93%, p< 0.00001
Facility	1.41 [1.19, 1.67] (N=12)	I ² =66%, p= 0.0006
Both	1.42 [1.16, 1.74] (N=13)	I ² =85%, p< 0.00001
EBF at 6 months		
Community	2.91 [0.98, 8.65] (N=5)	I ² =97%, p< 0.00001
Facility	2.10 [0.91, 4.86] (N=11)	I ² =96%, p< 0.00001
Both	1.37 [0.74, 2.54] (N=3)	I ² =0%, p= 0.77
<i>Type of counselling</i>		
EBF at 4-6 weeks		
Individual	1.38 [1.22, 1.56] (N=27)	I ² = 85%, p< 0.00001
Group ± Individual	1.67 [1.23, 2.26] (N=7)	I ² = 76%, p< 0.0001
EBF at 6 months		
Individual	2.60 [1.13, 5.96] (N=11)	I ² = 96%, p< 0.00001
Group ± Individual	2.03 [0.85, 4.85] (N= 6)	I ² = 91%, p< 0.00001

Table 5-10 Effectiveness of pooled interventions on EBF outcomes by timing of implementation

Breastfeeding outcomes	Timing of interventions			Source
	Effects (Rate Ratio/ Risk Ratio ¹ [CI] (N))			
	Prenatal	Postnatal	Combined*	
Breastfeeding initiation	1.03 [0.98, 1.08] (N=7)	0.97 [0.95, 1.00] (N=3)	1.09 [0.93, 1.27] (N=6)	Chung <i>et al.</i> 2008
EBF initiation	1.03 [0.93, 1.14] (N=6)	1.05 [0.96, 1.13] (N=3)	1.18 [0.94, 1.47] (N=4)	
At 1 to 3 months	1.52 [1.22, 1.90] (N=3)	1.19 [1.07, 1.33] (N=5)	2.14 [0.95, 4.81] (N=9)	
At 4-6 weeks	1.62 [1.25, 2.10] (N=6)	1.29 [1.15, 1.45] (N=15)	1.53 [1.20, 1.95] (N=13)	Imdad <i>et al.</i> 2011
At 6 months	1.41 [1.04, 1.90] (N=5)	2.35 [1.01, 5.46] (N=10)	6.53 [1.70, 25.25] (N=3)	

¹ Rate ratio for Chung *et al.* and Risk Ratio for Imdad *et al.*

5.2.5 Discussion

This review aimed to synthesise the evidence on effectiveness of health services interventions designed to improve early breastfeeding initiation and exclusivity at 6 months. Non- EBF duration was not assessed; it is likely to increase if early breastfeeding practices are improved (42-44).

The review highlighted the lack of evidence on early breastfeeding initiation defined by the WHO as initiation within one hour of birth (4) and limited evidence for EBF initiation. This can be potentially explained by the failure of single studies included in reviews in providing specific definitions of breastfeeding outcomes. Most reviews assessed breastfeeding initiation and EBF at different points in time.

Interventions to promote and support breastfeeding have generally proven to be effective. Several reviews pooled a wide variety of interventions together; the effects shown in these reviews were either non-significant or small accompanied by significant heterogeneity between studies. This led a number of them to conduct subgroup analyses to explain this heterogeneity. Reviews that were focused on a narrower range of interventions were more likely to present specific effective characteristics.

Breastfeeding education as a stand-alone intervention is unlikely to improve breastfeeding outcomes. While results overall were inconsistent, education seems to increase breastfeeding initiation among lower income women. It may improve EBF in the immediate postpartum period but not in the long run. Although one educational method cannot be recommended over another, there is some evidence that repeat, informal and group education that has been personalised to women's needs is more effective than generic, formal and individual education. Written material alone was shown not to be effective in developed countries.

There is evidence for the effectiveness of the BFHI. Rooming-in and training of health professionals using the WHO/UNICEF training course were found to be effective in improving breastfeeding initiation and EBF, whereas the evidence for SSC was limited. Commercial hospital discharge packs have detrimental effects on EBF at all times.

Support interventions targeting pregnant women or mothers such as counselling were not effective in improving breastfeeding initiation but they did improve EBF whether support was provided by health professionals or lay people. Support provided by lay people alone was more effective than that from health professionals alone or the combination. Although combined support is expected to be the most effective, current evidence does not confirm this, the small number of studies assessing effectiveness of interventions provided by both health professionals and lay people may be the reason. There is increasing evidence for the effectiveness of lay support and more specifically peer support on breastfeeding outcomes in the community and/or health services. One Cochrane review found a 36% increase in breastfeeding initiation and 178% increase in EBF following breastfeeding promotion given by lay persons; the statistical heterogeneity between trials was high for both meta-analyses which prompted authors to address it in their next update (45). Furthermore, three SRs addressing peer support interventions (46-48) including one specifically on interventions in low and middle income countries (LMICs) (48) showed improved breastfeeding initiation and EBF outcomes. One review found a smaller effect in settings where the community prevalence of infant formula feeding was moderate to high (>10%) (48); another one found higher impacts on EBF in LMICs when compared to high income countries which may be explained by the higher amount of postnatal support offered in higher income countries as part of routine care (46).

Support interventions conducted face-to-face and with frequent postnatal contacts and in countries with high background breastfeeding initiation rates were also effective. Face-to-face interventions were more effective than telephone interventions as well as those combining both types. This is possibly due to the small number of studies with telephone support only. There was also no consistent reporting on whether or not telephone support was offered proactively or not; if support was offered reactively, mothers may be reluctant to contact the supporter.

Interventions also seemed to be more effective in developing countries than in developed ones; possible reasons include differences in study methodologies, a lower baseline level of awareness and education among women in developing countries or less receptivity to breastfeeding promotion among women from developed countries for reasons such as early employment, the more ready availability of infant formula and different social milieu (20). Interventions were more effective in improving EBF in the first months of life when provided in the health care facility alone or in the community as well rather than in the community alone; and when combining group and individual counselling rather than individual counselling alone.

Several reviews also looked at timing of interventions; no consistent effect could be discerned. Interventions spanning the pregnancy and postnatal period did not seem to be more effective than interventions given at one period or the other. Potential explanations are that interventions extending over both time periods may be less intense in terms of number of contacts, there is greater time lag between visits or that the effect of education and/or support interventions is finite whether offered in the prenatal, postnatal or both periods. If that is the case, then further interventions may be needed such as policy changes (such as extension of maternity leave or implementation of the International Code of Marketing of Breast milk Substitutes (ICMBS)).

Evidence shows the effectiveness of multifaceted interventions that included breastfeeding education and support and sometimes additional components such as media programmes. However, interventions varied and the characteristics of successful interventions or their components could not be attributed to specific components as the effect of each component alone or in combination was not

assessed. There is also some evidence that e-based interventions may be an effective alternative compared to the expensive and time consuming provider-based ones.

Reviews were of mixed quality and their evidence quality is limited by the quality of included studies. Many single studies failed to provide specific definitions of breastfeeding outcomes, details of interventions or routine care, intervention setting and other potentially relevant aspects. Studies may have also suffered from design weaknesses such as bias in generating the randomisation sequence or in allocation concealment for RCTs. Only three of the included reviews specified in their inclusion criteria definitions for breastfeeding outcomes by using WHO definitions. Included reviews also suffered from heterogeneity in results given the diversity in interventions, timing of outcomes assessment, routine care, settings, population groups, study designs and risks of bias. This often led to sensitivity and subgroup analyses to attempt to explain the observed heterogeneity and identify effective characteristics of interventions. However, current results from subgroup analyses are based on indirect comparisons of different studies; future studies should compare between types of supporters or other variables among the same population. A number of reviews have also assessed the effectiveness of breastfeeding education or support by conducting subgroup analyses or meta-regressions of multifaceted interventions rather than grouping similar interventions and assessing their impact.

This reviews' inclusion criteria specified that support had to be given by health professionals or by lay people as long as support was initiated in health care services. It was not entirely possible to report on those initiated in health care services only as many of the included reviews did not distinguish between lay support initiated in health services and that in the community and results were pooled together.

This review also did not assess the effectiveness of interventions on other outcomes such as women or staff knowledge, attitudes and skills or experiences or hospital practices which may lead to breastfeeding practice changes.

An updated version of Imdad *et al.*'s review was published in 2013 after the closing date for inclusion in this overview (49). Unlike the previous SR, authors excluded breastfeeding support interventions targeting systems in their assessment of the effectiveness of education and/or support interventions given by health professionals or lay people. Interventions were associated with a significant increase in EBF at day

1, less than a month and 1 to 5 months and a significant decrease in no breastfeeding at these same time periods. Effects of interventions were higher in developing countries than in developed ones; combined individual and group counselling were more effective than each alone and all facility and combined facility and community interventions were more effective than community interventions alone except for EBF at 1-5 months where community-based interventions were most effective.

5.2.6 Conclusions and policy implications

No SRs assessed early breastfeeding initiation or EBF initiation specifically. Education alone is unlikely to improve breastfeeding initiation or EBF rates. To improve its effectiveness, breastfeeding education should be given in a repeated, informal, group session format and personalised to women's needs. There is good evidence for the effectiveness of the BFHI on breastfeeding outcomes; rooming-in and training of health professionals using the WHO/UNICEF training course were found to be effective steps as well as the need to implement the ICMBS to ban commercial discharge packs. There is also increasing evidence for the effect of lay support alone or in combination with health professional support on improving breastfeeding outcomes compared to health professional support alone. Other characteristics of effective support interventions on EBF were the ones conducted face-to-face and with frequent postnatal contacts. Interventions were most effective in countries with high background breastfeeding initiation rates thus more efforts should be put in place for women to initiate breastfeeding. Counselling provided in groups was also most effective on EBF outcomes. Multifaceted interventions that included breastfeeding education and support and sometimes additional components were shown to be effective. Therefore we recommend implementing a package of complementary interventions by applying maternity ward changes according to the BFHI, facilitating the formation of lay support groups and tailoring education and support to the setting and needs of a population.

Recommendations for future research

Future research should use WHO definitions for breastfeeding outcomes, ensure greater methodological rigor, and provide detailed information about the intervention and its delivery, standard care and setting and the study population. Further research should also aim to uncover the steps of the BFHI that are most effective. Additional

trials are needed to investigate which intervention elements have an impact (such as timing, intensity, type of supporter) by comparing between categories of the same variable within the same population. It would be also interesting to examine the potential for synergy between support and other interventions by comparing the components of multifaceted interventions to each other and to usual care. Given high demand but limited health care resources, the cost effectiveness of interventions should also be assessed.

5.2.7 Contributions

Study design: CA; Data extraction and quality assessment: CA and BS; Data analysis: CA; Manuscript preparation: CA; all authors read the manuscript, provided feedback and agreed on final version.

5.2.8 Conflict of interest

Authors declare no conflicts of interest.

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5.2.10 References

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5.3 Appendices

Appendix 5-1 Supplementary material

Table 1 shows the score on each item for each study, the total score and overall study quality.

Table 1 Quality assessment of systematic reviews after full-text screening of systematic reviews on the effectiveness of health services interventions

Study first author and year	A priori design	Duplicate study selection and data extraction	Comprehensive search performed	Status of publication used as inclusion criterion	List of studies (included/excluded) provided	Characteristics of included studies provided	Documented and assessed scientific quality of studies	Appropriate use of scientific quality of studies in formulating conclusions	Appropriate method used to combine studies' findings	Likelihood of publication bias Assessed	Conflict of interest included	Total Score	Overall study quality
Beake 2012	No	Yes	No	No	No	Yes	No	No	Yes	N/A	No	3	Poor
Britton 2007	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	9	Good
Chung 2008	Yes	No	Yes	No	No	Yes	Yes	No	Yes	No	No	5	Fair
De Oliveira 2001	No	Can't answer	Yes	Yes	No	Yes	Yes	Yes	Yes	N/A	No	6	Fair
Dyson 2005	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	7	Fair
Fairbank 2000	Can't answer	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A	No	7	Fair
Guisse 2003	No	Yes	Yes	No	No	Yes	Yes	Yes	No	No	No	5	Fair
Hannula 2008	No	Yes	Yes	No	No	No	Yes	No	No	N/A	No	3	Poor
Hatem 2009	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	9	Good
Ibanez 2012	No	Can't answer	Yes	No	No	Yes	Yes	No	Yes	No	No	4	Poor
Imdad 2011	No	Can't answer	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	6	Fair
Jaafar 2012	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	9	Good
Lee 2008	Yes	Yes	Yes	Yes	Yes	N/A	N/A	N/A	Yes	Yes	N/A	6	Good
Lumbiganon 2012	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	9	Good

Study author and year	A priori design?	Duplicate study selection and data extraction	A comprehensive search performed	The status of publication used as an inclusion criterion	List of studies (included/excluded) provided	Characteristics of the included studies provided	The scientific quality of included study assessed and documented	The scientific quality of included studies used appropriately in formulating conclusions	The method used to combine the findings of studies appropriate	Was the likelihood of publication bias assessed	Conflict of interest included	Total Score	Overall study quality
Moore 2012	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	10	Good
Mushtaq 2008	No	Can't answer	No	No	No	Yes	No	No	No	N/A	No	1	Poor
Pate 2009	No	Can't answer	No	No	No	Yes	No	No	No	No	No	1	Poor
Renfrew 2005	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	N/A	No	8	Fair
Renfrew 2012	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	10	Good
Tedstone 1998	No	Can't answer	Yes	Yes	Yes	Yes	Yes	Yes	No	N/A	No	6	Fair
Ward 2011	No	Can't answer	Yes	No	No	Yes	Yes	No	No	N/A	No	3	Poor

Appendix 5-2 Additional results not reported in article

Table 1: Number of papers retrieved by searched database

Database	Number of papers retrieved
Medline	353
Embase	673
Cochrane Database of Systematic reviews	17
Global Health	133
CINAHL	346
Web of Science	409
Popline	26
Total	1957

Appendix 5-3 Databases searches

Medline

- 1- meta-analysis as topic/ or Meta-Analysis.pt. or meta-analysis.mp. or ((systematic adj3 literature) or systematic review* or meta-analysis* or meta-analyses or meta-analysed or meta-analyzed or meta-analysing or meta-analyzing).ti,ab. or "cochrane database of systematic reviews".jn. or "research synthesis".ti,ab. or ((information or data or evidence) adj2 synthesis).ti,ab. or (data adj2 extract*).ti,ab. or review.pt.
- 2- Breast feeding/ or breast?fe*.mp. [mp=title, abstract, original title, name of substance word, subject heading word, protocol supplementary concept, rare disease supplementary concept, unique identifier]
- 3- Health promotion/ or health education/ or health policy/
- 4- (breast?fe* adj4 (promot* or educat* or polic*)).mp. [mp=title, abstract, original title, name of substance word, subject heading word, protocol supplementary concept, rare disease supplementary concept, unique identifier]
- 5- 2 and 3
- 6- 1 and (4 or 5)
- 7- limit 6 to (yr="1992 -Current" and (english or french))

Embase

- 1- meta-analysis/ or meta-analysis.mp. or systematic review/ or review/ or ((systematic adj3 literature) or systematic review* or meta-analysis* or meta-analyses or meta-analysed or meta-analyzed or meta-analysing or meta-analyzing).ti,ab. or "cochrane database of systematic reviews".jn. or "research synthesis".ti,ab. or ((information or data or evidence) adj2 synthesis).ti,ab. or (data adj2 extract*).ti,ab.
- 2- Breast feeding/ or breast?fe*.mp.
- 3- Health promotion/ or health education/ or health care policy/
- 4- 2 and 3
- 5- (breast?fe* adj4 (promot* or educat* or polic*)).mp.
- 6- 1 and (4 and 5)
- 7- limit 6 to ((english or french) and yr="1992 -Current")

Global health

- 1- Breast feeding/ or breast?fe*.mp.
- 2- Health promotion/ or health education/ or health policy/
- 3- 1 and 2
- 4- (breast?fe* adj4 (promot* or educat* or polic*)).mp.
- 5- meta-analysis.sh. or meta-analysis.mp. or systematic reviews/ or reviews/ or literature reviews/ or ((systematic adj3 literature) or systematic review* or

review* or meta-analysis* or meta-analyses or meta-analysed or meta-analyzed or meta-analysing or meta-analyzing).ti,ab. or "research synthesis".ti,ab. or ((information or data or evidence) adj2 synthesis).ti,ab. or (data adj2 extract*).ti,ab.

6- 5 and (3 or 4)

7- limit 6 to ((english or french) and yr="1992 -Current")

Popline

Keywords: Breastfeeding AND (Health education, Health policy, Education, Policy, Promotion) AND Literature Review

Languages: English or French

Dates: 1992 to 2012

Cochrane Library

1 Mesh descriptor: [Breast Feeding] 1 tree(s) exploded

#2 meshdescr: [Education] explode all trees

#3 meshdesc: [policy] explode all trees

#4 mesh des [health promotion] explode all trees

#5 #1 and (# 2 or # 3 or #4)

From 1992 to 2012, in Cochrane Reviews (Review and Protocols) and Other Reviews

CINAHL

S1 PT "review" or MW "Review" or MM "Literature review"

S2 MH "Health promotion" or MH "Health education" or MH "Health policy" or promot* or support* or educat* or polic*

S3 MM "Breast Feeding" or breastfe*

S4 S1 and S2 and S3

Limiters - Published Date from: 19920101-20121231; Language: English, French

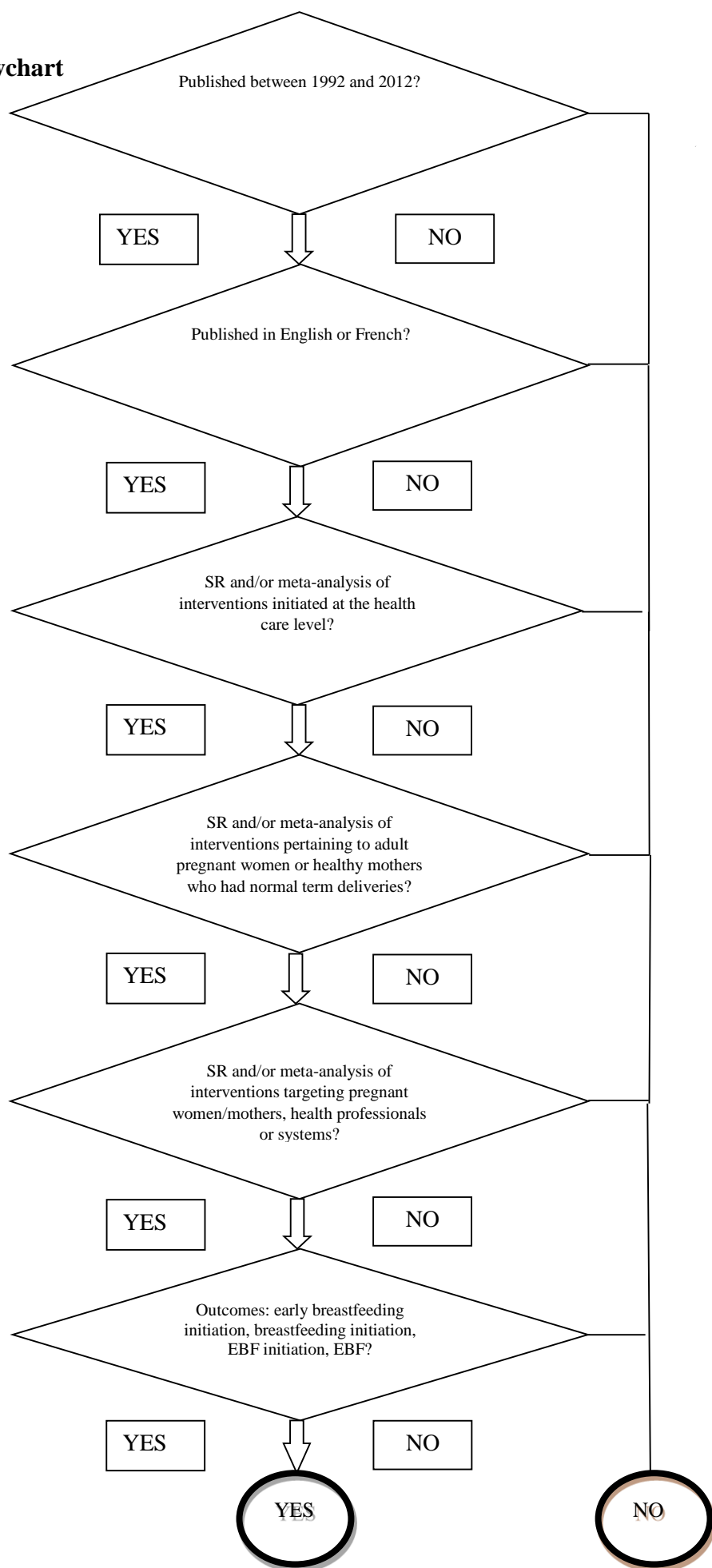
Web of Science

- #1 TS=(breastfeeding)
- #2 TI=(breastfeeding)
- #3 #2 OR #1
- #4 TS=(health promotion) or TS=(health education) or TS=(health policy)
- #5 Topic=(promot* or educat* or support* or polic*)
- #6 #5 OR #4
- #7 #6 AND #3
- #8 TS=(review*) or TI=(review*)
- #9 TS=(meta analys*) or TI=(meta analys*)
- #10 Topic=((evidence OR information OR data OR research) AND synthesis)
- #11 #10 OR #9 OR #8
- #12 #11 AND #7
- #13 (#7 AND #11) AND Language=(English OR French) AND Document
Types=(Article OR Abstract of Published Item OR Correction OR Correction,
Addition OR Database Review OR Excerpt OR Review)

Appendix 5-4 Screening flowchart

SEARCH TERMS

Breastfeeding
Systematic review
Meta-analysis
Promotion
Education
Policy



Appendix 5-5 Detailed description of the AMSTAR tool

The AMSTAR tool consists of an 11-item checklist to measure the methodological quality of SRs. Its development was based on two other instruments (OQAQ by Oxman and Guyatt and the rating scale of Sacks *et al.*). The tool was tested and showed good agreement, reliability, construct validity and feasibility, yet it still requires further testing to confirm its utility (1). Although it has only been tested on SRs of RCTs, authors believe it can be applied on a wide variety of SRs (1). An overall score can be calculated by summing the 11 items scores. If the answer to the item is “yes”, it scores one point otherwise zero (whether the answer is “no, can’t answer or not applicable”). As a number of components are only relevant to meta-analyses, it is acknowledged that the latter are likely to score higher than other reviews. Also some items may have two components; both need to be met for the item to score 1, otherwise it is null.

The 11 items checklist and their description are shown in **Table 1**. The items are: 1) Was an “a priori” design provided? 2) Was there duplicate study selection and data extraction? 3) Was a comprehensive literature search performed? 4) Was the status of publication (i.e. grey literature) used as an inclusion criterion? 5) Was a list of studies (included and excluded) provided? 6) Were the characteristics of the included studies provided? 7) Was the scientific quality of the included studies assessed and documented? 8) Was the scientific quality of the included studies used appropriately in formulating conclusions? 9) Were there methods used to combine the findings of studies appropriate? 10) Was the likelihood of publication bias assessed? 11) Was the conflict of interest stated?

Table 1: AMSTAR tool (1)

<p>1. Was an ‘a priori’ design provided?</p> <p>The research question and inclusion criteria should be established before the conduct of the review.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can’t answer <input type="checkbox"/> Not applicable
<p>2. Was there duplicate study selection and data extraction?</p> <p>There should be at least two independent data extractors and a consensus procedure for disagreements should be in place.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can’t answer <input type="checkbox"/> Not applicable
<p>3. Was a comprehensive literature search performed?</p> <p>At least two electronic sources should be searched. The report must include years and databases used (e.g. Central, EMBASE, and MEDLINE). Key words and/or MESH terms must be stated and where feasible the search strategy should be provided. All searches should be supplemented by consulting current contents, reviews, textbooks, specialized registers, or experts in the particular field of study, and by reviewing the references in the studies found.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can’t answer <input type="checkbox"/> Not applicable
<p>4. Was the status of publication (i.e. grey literature) used as an inclusion criterion?</p> <p>The authors should state that they searched for reports regardless of their publication type. The authors should state whether or not they excluded any reports (from the systematic review), based on their publication status, language etc.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can’t answer <input type="checkbox"/> Not applicable
<p>5. Was a list of studies (included and excluded) provided?</p> <p>A list of included and excluded studies should be provided.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can’t answer <input type="checkbox"/> Not applicable
<p>6. Were the characteristics of the included studies provided?</p> <p>In an aggregated form such as a table, data from the original studies should be provided on the participants, interventions and outcomes. The ranges of characteristics in all the studies analyzed e.g. age, race, sex, relevant socioeconomic data, disease status, duration, severity, or other diseases should be reported.</p>	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can’t answer <input type="checkbox"/> Not applicable

<p>7. Was the scientific quality of the included studies assessed and documented?</p> <p>‘A priori’ methods of assessment should be provided (e.g., for effectiveness studies if the author(s) chose to include only randomized, double-blind, placebo controlled studies, or allocation concealment as inclusion criteria); for other types of studies alternative items will be relevant.</p>	<p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Can’t answer</p> <p><input type="checkbox"/> Not applicable</p>
<p>8. Was the scientific quality of the included studies used appropriately in formulating conclusions?</p> <p>The results of the methodological rigor and scientific quality should be considered in the analysis and the conclusions of the review, and explicitly stated in formulating recommendations.</p>	<p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Can’t answer</p> <p><input type="checkbox"/> Not applicable</p>
<p>9. Were the methods used to combine the findings of studies appropriate?</p> <p>For the pooled results, a test should be done to ensure the studies were combinable, to assess their homogeneity (i.e. Chi-squared test for homogeneity, I^2). If heterogeneity exists a random effects model should be used and/or the clinical appropriateness of combining should be taken into consideration (i.e. is it sensible to combine?).</p>	<p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Can’t answer</p> <p><input type="checkbox"/> Not Applicable</p>
<p>10. Was the likelihood of publication bias assessed?</p> <p>An assessment of publication bias should include a combination of graphical aids (e.g., funnel plot, other available tests) and/or statistical tests (e.g., Egger regression test).</p>	<p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Can’t answer</p> <p><input type="checkbox"/> Not applicable</p>
<p>11. Was the conflict of interest stated?</p> <p>Potential sources of support should be clearly acknowledged in both the systematic review and the included studies.</p>	<p><input type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p> <p><input type="checkbox"/> Can’t answer</p> <p><input type="checkbox"/> Not applicable</p>

Appendix 5-6 Detailed quality assessment using AMSTAR tool

Quality assessment is presented both by AMSTAR item and by SR.

Quality assessment by item

A priori design

Ten SRs (2-11) scored one point for referring to an a priori design. In fact, two reviews by Chung *et al.* and Renfrew *et al.* (2005) (3, 10) mentioned it. The other eight reviews were all Cochrane reviews (2, 4-9, 11) and although they did not mention a priori designs in the paper, it is known that all reviews are registered at an early stage following the submission of a protocol with clear objectives.

Duplicate study selection and data extraction

While five reviews did not provide enough details for us to obtain this information whether for both study selection and data extraction (12-16) or one or the other (17, 18), ten reviews made use of two individuals to select papers and extract the data (2, 5-9, 11, 19-21). In four additional reviews, one investigator selected articles and/or extracted data and the other confirmed (3, 4, 10, 22).

Comprehensive search performed

Out of 21 SRs, four did not conduct a comprehensive search (6, 13, 14, 19). They either did not display the keywords and MESH terms used in the search or did not provide a search strategy (6, 19) or searched only databases (13, 14).

Status of publication used as an inclusion criterion

Eight studies did not state the inclusion of grey literature in their search and/or limited their search to specific languages (3, 13, 14, 16, 17, 19-21). Mushtaq *et al.*, Pate *et al.* did not include the grey literature in their search (13, 14, 17). Beake *et al.*, Chung *et al.*, Guise *et al.*, Hannula *et al.*, Ward *et al.* did, yet limited their search to specific languages such as English and other languages such as Finnish and Swedish in some cases (3, 16, 19-21).

The Cochrane review by Lee *et al.* did not retrieve any results (7). Although a number of remaining criteria may not be applicable to this review anymore, others are as authors reported in their first appendix the plan for data collection and analysis.

List of included and excluded studies provided

Only half of studies (10/20) provided both lists of included and excluded studies. These were mainly the Cochrane reviews (2, 4-6, 8, 9, 11) in addition to three other SR (10, 15, 22). The other half presented the list of included studies only (3, 12-14, 16-20) as references. Lee mentioned including details of excluded studies if trials are identified in the future (7).

Characteristics of the included studies provided

All SRs but the one by Hannula *et al.* SR (21) provided characteristics of the included studies.

Scientific quality of included studies assessed and documented

Seventeen out of 20 studies have assessed and documented the scientific quality of included papers (2-6, 8-12, 15-18, 20-22). The Cochrane reviews assessed the validity of studies according to criteria outlined in the Cochrane Handbook for Systematic Reviews of Interventions (2, 4-6, 8, 9, 11). De Oliveira *et al.*, Fairbank *et al.*, Renfrew *et al.* (2005) and Tedstone *et al.* did not use specific tools but rather assessed according to epidemiological criteria such as method of randomisation, allocation concealment, outcome assessors blinded, loss to follow up, results adjusted for confounding, groups similar at baseline, recruitment method appropriate, statistical analysis appropriate (10, 12, 15, 22). In the case of Fairbank *et al.* and Renfrew *et al.* (2005) SRs (10, 22), authors used specific epidemiological criteria for each study design. "Single quantified scores" were not allocated due to the diversity of study designs (10, 22) as well as the authors' recognition of the study quality being dependent not only on elements of study design (from which a score is obtained) but also of elements of quality related to the intervention (e.g. whether it is appropriate for the group and setting) or measurement of outcome (e.g. proper definition of infant feeding indicators) (10). Other tools used included criteria developed by USA Preventive Services Task Force (3, 20), GRADE criteria (18), the Critical Appraisal Skills Program (CASP)-based scoring system (16), the Finnish Nurses Association (21) and the French National Authority for Health (17). Two studies conducted quality assessments using the Joanna Briggs Institute Comprehensive Review Management System (JBI CReMS)/critical appraisal tools (19) or the Guide to Community Preventive Services: Systematic Reviews and Evidence-Based Recommendations (14), yet they did not document them for each study. In regard to

remaining studies, one trial did not assess the quality of studies that met inclusion criteria (13). Lee *et al.* (7) would have done the assessment using epidemiological criteria such as allocation concealment and completeness of follow-up.

Scientific quality of study appropriately used in formulating conclusions

All studies that did not assess or document the scientific quality of included studies or where it was inapplicable (7) scored null (13, 14, 19). Among the 17 that did, eleven studies only accounted for the quality of studies in formulating their conclusions (2, 5, 6, 8-12, 15, 20, 22).

Methods used to combine the findings of studies appropriate

Thirteen SRs described the appropriate methods for meta-analyses: ten of them conducted the analyses (2-5, 9, 11, 14, 17, 18, 20), while two (6, 8) did not due to lack of studies to combine and one for not retrieving any data (7). Guise *et al.* (20) did not assess homogeneity of studies. Pate did not provide any information on pooling methods (14). Out of the eight studies that conducted qualitative assessments, four reviews justified the reason for not pooling results (10, 12, 19, 22), while four SR did not (13, 15, 16, 21).

Likelihood of publication bias assessed

This item is only applicable to the thirteen studies that have conducted meta-analyses or included them in their methods (2-9, 11, 14, 17, 18, 20). Only four out of the ten SR assessed the likelihood of publication bias (6, 9, 11, 18) and one mentioned assessing it if results are retrieved in the future (7). Imdad *et al.* contacted experts in the research area to share unpublished data they might have (18). Jaafar *et al.*, Moore *et al.*, Renfrew *et al.* (2012) on the other hand, mentioned using funnel plots if they had included ten or more studies in the meta-analysis (6, 9, 11).

Conflict of interest included

None of the included studies scored “yes” for the statement of the conflict of interest. While seven reported conflict of interest for the SR (3, 6, 7, 16-19), none did for the included studies within the SRs knowing that Lee *et al.* (7) did not retrieve any study.

Quality assessment by study

Beake *et al.* SR (19) scored 3 over 11. The authors did not report an a priori design of the research question and inclusion criteria. Keywords and MESH terms used in the search were not displayed nor the search strategy provided. Authors included grey literature but limited their search to the English language. Two authors selected studies and extracted their data. They presented the characteristics of included studies, and assessed the scientific quality of studies, yet did not document them for each study and thus scientific quality was not considered to have been taken into account in the formulation of conclusions. Authors did report that pooling of results in a meta-analysis was not possible, thus the likelihood of publication bias could not be assessed. They did not include a list of excluded studies or report conflict of interest for each included study.

Britton *et al.* (2), Hatem *et al.*(5), Jaafar *et al.*(6) and Lumbiganon *et al.*(8) Cochrane reviews scored 9 out of 11 points, while Moore *et al.*(9) and Renfrew *et al.*(2012) (11) scored 10. These six SRs scored a point for the a priori designs. As previously mentioned, all Cochrane reviews are registered at an early stage following the submission of a protocol with clear objectives. They conducted duplicate study selection and data extraction, a comprehensive search strategy including the grey literature except for Jaafar *et al.* who did not include the MeSH terms and thus lost a point (6). They provided a list of included and excluded studies and the characteristics of the included ones. They assessed and documented the scientific quality of included studies according to criteria outlined in the Cochrane Handbook for Systematic Reviews of Interventions and used it appropriately in the formulation of conclusions. They all reported the appropriate method to combine the findings of studies whether they conducted meta-analyses or not. Britton *et al.* (2), Hatem *et al.*(5), Moore *et al.* (9) and Renfrew *et al.*(2012) (11) conducted meta- analyses, while Lumbiganon *et al.* (8) did not due to lack of studies to combine. While Jaafar *et al.* and Moore *et al.* planned to assess publication bias if they had conducted a meta-analysis by the use of funnel plots (6, 9), the other four reviews did not. The only criterion not met by all 6 reviews was the inclusion of conflicts of interests of studies in the SR.

The Cochrane review by Dyson *et al.* (4) met 7 out of 11 criteria. There was no duplicate study selection and data extraction. The scientific quality of included studies was assessed, yet it was not used appropriately in the formulation of conclusions.

Authors requested caution in interpretation of results in relation to settings in which studies were done alone and not to the quality of studies.

Lee *et al.* (7) scored 6 out of 11 points. The missing points are due to zero studies being retrieved for this review. The answer was “not applicable” for five criteria: list of included/excluded studies, characteristics of included studies provided, the scientific quality of included studies assessed and documented and used appropriately in the formulation of conclusions and conflict of interest included for each study.

Guise *et al.* (20) review scored 5. They did not refer to an a priori design. They conducted duplicate study selection and data extraction as well as a comprehensive search strategy. They included grey literature but limited the search to the English language. They only provided a list of included studies (not excluded) and their characteristics. They assessed the scientific quality of included studies using criteria developed by USA Preventive Services Task Force, documented them and used them appropriately in formulating their conclusions. Although they conducted meta-analyses, they did not assess homogeneity of pooled studies or potential publication bias. They did not include the conflict of interest of single studies.

Chung *et al.* SR (3) scored 5. Authors answered three out of five questions presented in an analytic framework and thus had an a priori design. Study was not selected nor data extracted by two individuals. They conducted a comprehensive search and included grey literature but limited the search to English language. They only provided a list of included studies; their characteristics as well. They assessed the scientific quality of studies using criteria developed by USA Preventive Services Task Force and documented them, but did not use them appropriately in formulating conclusions. They conducted meta-analyses and assessed homogeneity of studies, yet they did not consider the risk of publication bias. They did not report the conflict of interest of each study either.

De Oliveira *et al.* SR (12) scored 6. Authors did not refer to an a priori design or clearly state whether studies were selected or data extracted by two individuals. They performed a comprehensive search including grey literature. They only presented a list of included studies and their characteristics. They used a 3-item quality scale evaluating 1) the approach to covariate unbalance in the intervention and control groups 2) independence of outcome assessment and 3) methods of statistical analysis

in order to assess the scientific quality of included studies. They documented their appraisal and used it in drawing conclusions. Authors justified not pooling results and thus assessment of publication bias was not applicable. They did not include the conflict of interest of each included study.

Fairbank *et al.* (22) met 7 out of 11 criteria. Authors did not provide information on an a priori design. Study selection and data extraction were done by one person and checked by another one. They conducted a comprehensive search including grey literature. They provided a list of included and excluded studies and presented the characteristics of included ones. Authors conducted a quality assessment using specific epidemiological criteria for each study design but did not allocate a single quantified score for each study due to the diversity of study designs included. They took into account the quality of the studies when drawing conclusions. They did not pool results and thus assessing publication bias was not applicable. They did not include conflicts of interest of single studies.

Imdad *et al.* SR (18) scored 6 points as well. Investigators did not refer to an a priori design, two of them selected articles but it is not clear whether two extracted the data as well. They conducted a comprehensive search including grey literature. They only presented a list of included studies and their characteristics. The scientific quality of studies was assessed using GRADE criteria and documented but not used properly in the formulation of conclusions. They conducted meta-analyses after accounting for heterogeneity and assessed the potential of publication bias by contacting experts in the research area to share unpublished data they might have. On the other hand, they did not report the conflict of interest of each included study.

Mushtaq *et al.* (13) and Pate (14) SRs met only the criterion of presenting the characteristics of included studies out of the 11 AMSTAR items.

Hannula *et al.* (21) met three of the criteria: authors conducted a comprehensive search, a duplicate study selection and data extraction as well as assessed and documented the scientific quality of included studies using the Finnish Nurses Association tool. All other criteria were not met by this SR (21).

Ibanez *et al.* SR (17) met 4 out of 11 criteria. No a priori design was mentioned; two people selected articles but not enough details were provided in regard to data extraction. They conducted a comprehensive search but did not include the grey

literature. Only the list of included studies was provided and their characteristics. Authors assessed the scientific quality using methods adapted from the French National Authority for Health and documented them. They conducted the meta-analyses using the appropriate methods but did not assess the likelihood of publication bias. They only mentioned the absence of conflict of interest for the SR in general and not specifically to any included single study.

Renfrew *et al.* (2005) SR (10) scored 8. The SR is based on the results of a review conducted for the UK Department of Health in 2000. One investigator selected articles and extracted data and another one confirmed his work. A comprehensive search was conducted and included grey literature. Authors provided lists of both included and excluded studies and presented the characteristics of included ones in tables. Given the diversity of study designs, they used specific epidemiological criteria for each study design in their quality assessment and did not assign a score to each study. They further justified the latter by recognising other factors affecting study quality such as those related to the intervention or measurement of outcome. They accounted for the quality of studies in their conclusions. They did not pool results and thus assessing publication bias was not applicable. They did not include conflicts of interest of single studies.

Tedstone *et al.* SR (15) scored 6 points. Authors did not refer to an a priori design and did not provide enough details on whether one or two investigators selected studies or extracted data. They did conduct a comprehensive search and included grey literature. They included lists of included and excluded studies and presented the characteristics of included studies in tables. They assessed study quality according to epidemiological criteria. They documented their appraisal and used it in the formulation of conclusions. They did not discuss conducting meta-analyses and thus assessing the likelihood of publication bias is irrelevant.

Ward *et al.* SR (16) scored 3 points. Authors did not refer to an a priori design or provide clear information on whether two individuals had selected or extracted data. They conducted a comprehensive search and included grey literature but they limited their search to English. The list of included studies was provided in the references (not the excluded ones) as well as their characteristics in a table format. Authors assessed the scientific quality of included studies using the Critical Appraisal Skills

Program (CASP)-based scoring system and documented it, yet they did not use it appropriately in the formulation of conclusions. Authors conducted a qualitative assessment of studies and did not justify why studies' outcomes were not pooled. This leads us to score the assessment of the likelihood of publication bias as not applicable.

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Appendix 5-7 Sample data extraction sheets

	Beake et al. 2012
Title	A systematic review of structured compared with non-structured breastfeeding programmes to support the initiation and duration of exclusive and any breastfeeding in acute and primary health care settings
Aim/Objectives	To assess whether a structured programme such as WHO/UNICEF BFHI implemented in maternity acute care settings is more likely to be associated with higher rates of initiation and duration of EBF than no structured programme.
Studies inclusion criteria	Quantitative and qualitative studies that focused on programmes to support the initiation and duration of EBF implemented in the hospital setting
Target participants	Pregnant women and mothers of newborn infants in hospital
Outcomes of interest	Rates of breastfeeding initiation (1°) Duration of EBF (1°) (results shown for 1 week/ hospital discharge, at 2 months, after 2 months to 5 months, at 6 months)
Systematic review	Of 26 articles – one RCT, 2 controlled trials, one cross-sectional study, 2 descriptive studies, 15 cohort studies and 5 systematic reviews Presenting data from high, middle income and developing countries
Interventions	A structured programme with all 10 steps of the BFHI OR selected components of the BFHI OR a specifically developed local programme Studies included: BFHI accredited, BFHI, BFHI models, low vs. high number of BFHI steps, BFHI training only, or training or breastfeeding promotion “similar” (as defined by authors) to BFHI
Results and conclusions	Statistically significant improvement in breastfeeding initiation and duration of EBF following introduction of a structured programme compared with no programme in most studies.

	<p><u>Initiation of breastfeeding:</u> Seven out of 9 studies found a statistically significant improvement in the initiation of breastfeeding post-intervention.</p> <p><u>Breastfeeding up to 1 week/discharge from hospital:</u></p> <p>6 studies evaluated breastfeeding rates up to 1 week post-birth, during the hospital stay or at discharge from hospital.</p> <p>4 of the studies looked at EBF rates in hospital and all reported increased rates of EBF.</p> <p><u>Duration of EBF:</u></p> <p>EBF rates were described in 13 of the included studies.</p> <p>12 studies showed statistically significant increase in EBF rates</p> <p>4 studies evaluated the duration of EBF and all four studies showed an increase in the duration of EBF.</p> <p>Systematic reviews: 4 out of 5 reviewed systematic reviews are included in the overview.</p>
Authors' comments	<p>Review limitations:</p> <p>Few well designed RCTs</p> <p>Poor overall study quality</p> <p>Poor homogeneity between included studies</p> <p>Little consistency in type of structured support interventions</p> <p>Many studies did not control for potential confounding factors</p> <p>Variety of definitions for breastfeeding outcome and numbers of study end points</p> <p>Inconsistencies in timing of assessments across studies</p> <p>Reporting of studies often not comprehensive</p> <p>No details of the content of the implemented intervention or the care received by groups that received standard care.</p>

6 Field research methods

In order to identify stakeholders' perceptions of barriers to proper breastfeeding practices and to examine the political dynamics of existing policies, a stakeholder analysis was employed and data were collected through semi-structured interviews.

6.1 Stakeholder analysis

Stakeholder analysis was employed to understand actors' (individuals and organisations) interests or positions and to assess their influence on decision making or policy implementation (1, 2). Following the definition proposed by Varvasovszky and Brugha (2), stakeholders are defined in this analysis as actors who either are interested in the breastfeeding issue, who are affected by it or who have an influence on the policy decision-making and implementation process given their position (2).

Thus, the principles of a stakeholder analysis were applied to (1):

- 1- Identify the groups and individuals (stakeholders) relevant to the policy;
- 2- Assess the current interest or position of each stakeholder; and
- 3- Analyse the relative power of each stakeholder in influencing the issue according to their interest

Position was categorised as high, medium or low support for implementation of policies (2). Criteria for judging a stakeholder's position on implementation of policies were developed thus position was gleaned from stakeholders' awareness or knowledge of relevant policies, their views of current breastfeeding practices (whether these have changed over the years and for which reasons), whether infant and young child feeding (IYCF) including breastfeeding was considered by them to be a priority, the impact of implementing the policies on improving breastfeeding practices and whether partnerships with infant formula companies are appropriate or not.

Influence was categorised as high, medium or low influence on implementation of policies (2). Criteria for judging a stakeholder's power to influence breastfeeding policy were also developed: thus it was defined as the degree to which stakeholders are able to place the issue of IYCF including breastfeeding and policies' implementation on the political agenda, to mobilise on the issue, to actively

participate in decision-making forums, to directly influence the uptake of proper breastfeeding practices or intake of breast milk substitutes, to be visible in the media and the resources they have to do the above.

6.2 Data collection

Data for this analysis was collected through semi-structured interviews with stakeholders – mothers and other stakeholders. Documentary review was proposed as a secondary source of data to triangulate the data obtained for improved reliability and validity. However, this was not possible given limited access to and availability of relevant documents.

6.2.1 Interviews with stakeholders

In the proposal, the researcher planned for a purposeful sample of around 50 interviewees. A preliminary list was developed based on a review of the Lebanese literature on breastfeeding and the health system as well as a contact list derived from previous projects she was involved in at the American University of Beirut (AUB). The list was edited as data collection proceeded and new actors were identified to have a stake in the breastfeeding issue. In regard to health providers, she selected ones practicing in public and/or private hospitals, in teaching/non-teaching ones, in the different Lebanese regions. Data collection took place between February and September 2013.

6.2.1.1 *Recruitment of stakeholders other than mothers*

While mothers were recruited through public and private health care settings as detailed below; the “snowball technique” was used to obtain a more comprehensive list of the other stakeholders whereby at the end of each interview, respondents were asked to identify other potential key informants. Interviewees would contact the nominated participants and request permission to share their details – names and phone numbers – with the researcher. For a number of potential participants, their contact details were publically available on the Internet and thus they were contacted directly either by phone or by email. When interviewees were contacted by telephone, the researcher presented the study (**Appendix 6-1**) and asked if he/she would be interested in participating. If interest was expressed, an appointment was taken for the interview day. Emails included a short introduction of the researcher and the study

purpose followed by an interview request. Written informed consent was sought on the interview day.

6.2.1.2 Recruitment of mothers

Convenience sampling was used to interview healthy women who delivered singletons within the last 6 months and were seeking health care for their infants' vaccination. Mothers attending with sick infants were not approached as it was unlikely they would be interested in spending more time for interview purposes. The inclusion of infants born within the last 6 months allowed us to obtain a diverse age range of infants with different experiences. The rationale for this age range was based on the fact that international recommendations are for 6 months of EBF; the investigator also expected different recommendations by paediatricians for time of introduction of solid foods (4 vs. 6 months) and it may only be discussed a few weeks before the suggested timing.

The researcher took into account several maternal socio-demographic variables associated with breastfeeding practices based on a review of the Lebanese literature to capture variability in experiences and perceptions of women (**Table 6-1**).

Table 6-1 Mothers' socio-economic variables to account for in the selection of participants

Variables	Categories
Socio-economic status	Low Middle High
Age*	<25 25-35 >35
Education	Intermediate (or middle school) and below Secondary Technical University (Undergraduate) University (Graduate)
Place of residence	Rural Semi-urban Urban
Religion	Christian Muslim
Employment**	Not working Working in public sector Working in private sector

* Average marriage age: 30 years

**Before pregnancy/delivery. Maternity leave extended for 8.5 weeks in public sector compared to 7 in the private at time of data collection

Recruitment was carried out through state-operated health clinics and private clinics. In Lebanon, in general, women of low and low-middle socio-economic status (SES) seek care for their infants and children at state-operated health clinics, while women of higher SES seek care at private clinics.

6.2.1.2.1 Recruitment through the Ministry of Social Affairs - Maternal and child health (MCH) centres

State health clinics are either operated by the MOPH or Ministry of Social Affairs (MOSA). MOSA centres were selected based on convenience; the local supervisor had previously collaborated with the nutrition department within that ministry which facilitated getting approval to accessing health centres. Approval was obtained in August 2012. MOSA provided the researcher with a list of 95 MCH centres. As place of residence and religion of mothers have previously been shown to be factors affecting breastfeeding rates (**Table 6-1**), these variables were taken into account in the selection of MCH centres. The researcher aimed to recruit a maximum of twelve women from these centres distributed in the six different Lebanese governorates (Beirut, North, South, Nabatiyeh, Mount Lebanon and Bekaa), thus two women from each MCH centre. The researcher contacted the heads of each centre to inform them of the study and confirm if mothers of infants younger than 6 months were seeking the centres for vaccination purposes. She also asked on which days paediatricians visit the centres in order to schedule visits on those days. Five centres she first contacted either did not offer paediatrics services or did not have visiting families with young infants, thus an alternative centre had to be selected. The absence of paediatrics' services in such MCHs centres may be explained by the fact that the list provided was outdated. In the case of Mount Lebanon governorate, she had to select a third centre as the first two did not have mothers with infants younger than 6 months.

During the course of data collection, the political situation became increasingly unstable given the conflict in the neighbouring country, Syria, and its repercussions on the national situation; this prevented the researcher from visiting the two MOSA centres initially contacted in the two villages of the North and the Bekaa for security reasons. As an alternative, three MOSA centres located in safe towns in the two regions were contacted; two of those in the North mentioned that nationals avoided their centres given the influx of Syrian refugees and were rather seeking care at

private clinics. She visited the third centre twice but they did not have mothers of infants younger than 6 months visiting the centre.

The list of visited MOSA MCH centres is shown in **Table 6-2**.

Table 6-2 List of visited Ministry of Social Affairs operated maternal and child health centres

Visited MOSA centres	Governorate
Batroun	North (Rural/ Predominantly Christian)
Al-Marj	Bekaa (Rural/Predominantly Muslim)
Al-Msaytbeh	Beirut (Urban/Predominantly Muslim)
Bourj Hammoud	Mount Lebanon (Urban/ Predominantly Christian)
Jbaa	Nabatiyeh (Semi-urban/Predominantly Muslim)
Lebaa	South (Semi-urban/Predominantly Christian)

Once administrators of MCH centres in the Bekaa and South governorates confirmed their participation in the study, letters were sent to the municipalities in which these MCH centres are located. They were informed of the study being undertaken in collaboration with AUB and the expected dates of the researcher's visits. This additional measure was taken following AUB – Institutional Review Board concern of a risk of breaching confidentiality from third parties confiscating the recordings or other relevant documents in these research areas.

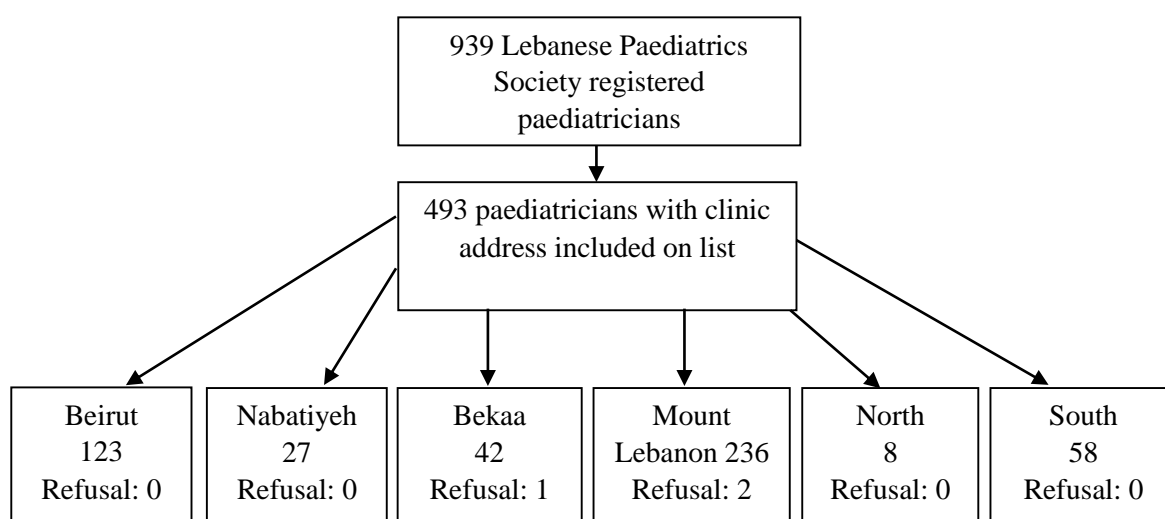
6.2.1.2.2 Recruitment through private clinics

The researcher obtained a list of paediatricians registered at the Lebanese Paediatric Society. The list was last updated in 2010 and paediatricians' names were classified by governorate of clinical practice address. The numbers of registered paediatricians per governorate with a clinical practice address are shown in **Figure 6-1**.

She called paediatricians taking into account the clinic address as a proxy for women's place of residence and religion. As the list was last updated three years earlier, a number of paediatricians were not practicing anymore or left the country or had new clinic addresses. Once paediatricians were reached, she explained the study purpose and interested ones would confirm what days she could visit them to recruit women through their clinics. At several instances, paediatricians refused to have their patients interviewed once the study purpose was described or the interview guide was sent by email upon request.

Paediatricians' clinics were visited initially in the Bekaa, North, South and Beirut. Although the aim was to recruit women from all regions, the interviews conducted in the private clinics of the North and South governorates were with families of lower SES than was expected to be encountered in private clinics. Thus, in order to reach women of higher SES, paediatricians that are known to be sought by women of that status were approached independently of where they practiced; both paediatricians' clinics were in Beirut and thus no women were recruited from Nabatiyeh or Mount Lebanon.

Figure 6-1 Numbers of registered paediatricians with a clinical practice address per governorate



6.2.1.2.3 Once at the MOSA centre or private clinic

At the dispensary or clinic, the investigator sat in the waiting rooms to identify eligible participants. In several instances, the secretary or nurse assisted in identifying the infant's age. For infants of less than 6 months, she presented herself face-to-face to the mother and gave a quick introduction of the study (**Appendix 6-2**). If the participant showed interest in taking part in the study, a time was agreed upon if the interview was not to take place at that time. Most interviews were conducted on site, only one was conducted at the interviewee's home and one over the phone based on the participant's request. The interviewer gave the information sheet and written consent to the participant prior to conducting the interview. For the phone interview, she had given the participant copies of the information sheet and written consent and obtained oral consent over the phone.

6.2.1.2.4 Privacy within MOSA centres and private clinics

In MOSA centres, interviews were conducted in a separate room to respect women's privacy except for the one in Nabatiyeh governorate where interviews were conducted in a large waiting room, on the side which gave some privacy to women. Most private clinics did not have a separate room; thus interviews were either conducted on the side in the waiting room if possible or the mother happened to be the only patient waiting or her and the investigator agreed to meet later. At the private clinic in the South governorate, one interview was conducted in the paediatrician's office based on the mother's request. The mother and paediatrician were from Eastern Europe; the physician assisted in the translation of some terms the mother could not express in Arabic. Bias on women's infant feeding choices is unlikely as the mother was strongly committed to breastfeeding.

6.3 Development of interview guides

Three different interview guides were developed for mothers, health providers and policy makers. These are reproduced in **Appendices 6-3, 6-4 and 6-5**.

Interviews with mothers aimed to explore their experiences with breastfeeding: what were their intentions during pregnancy, their practices since delivery as well as barriers or supporting factors they perceived to have affected or are affecting their breastfeeding intentions and practices. Women were also asked about hospital practices in regard to breastfeeding at delivery. These interviews allowed us to identify factors related to the mother as well as to the health care system, the policy environment and society.

Interviews with health care providers and representatives of ministries, non-governmental organisations (NGOs), associations, societies, syndicates and orders aimed to identify their knowledge of infant feeding recommendations and policies or programmes available in Lebanon in that regard as well as their perceptions of factors promoting or hindering the implementation of these recommendations and policies.

Interviews with policymakers further aimed to explore the policy environment by investigating the political dynamics as well as other contextual factors around these policies and programmes.

Interview guides were developed in English then translated to Arabic by the researcher herself. Arabic versions were reviewed by Dr.Hala Ghattas as well as

AUB's Institutional Review Board. The interview guides were pilot-tested as well. The first four interviews with mothers were transcribed by the investigator who attempted to identify short responses, lack of probing, use of leading questions and potential participants' lack of understanding of the question. For mothers' interviews, when asked about their knowledge of the "national recommendations for infant feeding", several women did not understand the term "national recommendations" and thus it was changed to the "Ministry of Public Health recommendations". These steps were taken to improve the quality of collected data and to minimize translation-related problems (3). The interview guide with health providers did not necessitate any modifications, whereas the one with policy makers did require a few as the researcher learnt more about the policies and programmes at time of initiation of data collection.

6.4 Transcription and translation of interviews

Interviews were conducted in the Lebanese dialect of Arabic in all but two interviews where participants did not speak Arabic and thus were conducted in English. Most of interviewees mixed Arabic with English or French and a number of them replied instantly in English. Interviews conducted in Arabic and included English or French were transcribed and translated to English by the researcher herself; whereas the five ones in English were only transcribed. She carried out a denaturalized transcription of the interviews as there was interest in the informational content of interviews rather than the specifics of communication (4). Translation early on in the analysis process was for the purpose of sharing transcripts with supervisors when needed.

A common issue encountered in conducting research in a language and reporting the results in a different language is "conceptual equivalence" (3, 5). It refers to "the extent to which a term used in one language has a comparable meaning when translated to another language" p.3 (5). The intimate knowledge of the culture in which research is conducted facilitates gaining this conceptual equivalence (3). In this case, the researcher is Lebanese and her mother tongue language is Lebanese dialect of Arabic with English being her third language after French. In order to express this conceptual equivalence and to maintain consistency in translation of interviews, she developed a glossary for Arabic terms that either do not have an equivalent term in English or they do but have a different connotation in the studied context (**Appendix**

6-6). In some cases, when a literal translation did not convey the meaning and a conceptually equivalent expression could not be retrieved, she left the expression in Arabic to avoid loss of meaning.

6.5 Qualitative analysis

The framework approach, developed by Jane Ritchie and Liz Spencer in 1994 at what is now the National Centre for Social Research, aims to facilitate applied policy research (6, 7). This method answers a variety of objectives where questions can be categorized into contextual, diagnostic, evaluative and strategic. A description of these categories is presented in **Table 6-3** along with examples of questions answered by this research. Given the nature of this research's questions, the framework approach was considered appropriate and adopted. Key features of the Framework are presented in **Table 6-4** and the five steps of framework analysis are described in **Table 6-5**.

Table 6-3 Applied policy research categories taken from Ritchie and Spencer (7)

Category	Goal	Examples of questions answered by this research
Contextual	Identifying the form and nature of what exists	<ul style="list-style-type: none"> • What are barriers to implementing recommended practices in regard to early breastfeeding initiation and exclusivity? • What are mothers' experiences with infant feeding? • What are stakeholders' perceptions of factors affecting breastfeeding practices in Lebanon?
Diagnostic	Examining the reasons for, or causes of, what exists	<ul style="list-style-type: none"> • Why is the breastfeeding issue back on the agenda?
Evaluative	Appraising the effectiveness of what exists	<ul style="list-style-type: none"> • Can the Baby-friendly Hospital Initiative be implemented in the Lebanese context?
Strategic	Identifying new theories, policies, plans or actions	<ul style="list-style-type: none"> • What are strategies or interventions that would minimise barriers?

Table 6-4 Key features of the framework analysis taken from Ritchie and Spencer (7)

Key Features	Description
Grounded or generative	It is heavily based in, and driven by, the original accounts and observations of the people it is about
Dynamic	It is open to change, addition and amendment throughout the analytic process
Systematic	It allows methodical treatment and of all similar units of analysis
Comprehensive	It allows a full, and not partial or selective, review of the material collected
Enables easy retrieval	It allows access to, and retrieval of, the original textual material
Allows between- and within-case analysis	It enables comparisons between, and associations within cases to be made
Accessible to others	The analytic process and the interpretations derived from it, can be viewed and judged by people other than the primary analyst

Table 6-5 Description of the five key steps of a framework analysis p. 82(6-8)

Step	Description
Familiarisation	To become accustomed to the whole dataset
Identifying a thematic framework (also called <i>thematic analysis</i>(8))	To develop a coding scheme. Key themes are likely to be the ones answering the aims of the original proposal as well as new ones coming out of the new data
Indexing	To apply the thematic framework to the whole dataset
Charting	To “cut and paste” the data according to the thematic content so that comparison of themes can be done across cases
Mapping and interpretation	Charts are reviewed to identify patterns across the data and associations within it.

Interviews conducted with mothers were analysed separately from those with the other stakeholders given the different types of questions asked.

As described in **Table 6-5**, the researcher started with getting familiar with the dataset by reading each transcript and carrying out a preliminary coding. The codes and concepts that emerged from a priori issues included in the interview guide, the issues raised by the participants (emerging issues) and the analytical themes coming up from recurrent experiences or views led to the construction of the thematic framework in step 2. This framework was subsequently applied to all transcripts with numerical codes being inserted on the left margin of the documents. For the charting step, an Excel sheet was created with two entries: the respondent identification number and themes/subthemes. Data was retrieved from transcripts and incorporated into the appropriate theme box either in verbatim texts or as synthesis with reference to the page and line to ensure easy tracing back to the original data (7). In the mapping and interpretation stage, the analyst was guided by the original research questions and the themes that emerged to organize the data into categories and sets of barriers as well as the political dynamics for policies' implementation were identified. The organisation of data, including illustrative quotes, under these emerging barriers helped to describe and elucidate the data, interconnections between the data, and the generation of explanatory patterns.

The analysis was performed by the researcher alone although an analysis conducted by more than one could have improved consistency and reliability of analyses (9).

6.6 Confidentiality of data and records

All digital recordings were downloaded on a password-protected computer. Transcriptions were done by the researcher herself. All digital recordings were kept on a password-protected computer and will only be destroyed three years after completion of the study. Names, telephone numbers and addresses were noted down by the researcher in order to set a time and place to conduct the interviews (if not at same location and time). However, at the setting, these details were not recorded. This information was kept in a password-secured file, and a numeric coding system was put in place to keep mothers and other stakeholders anonymous. The link between identifiers and study code numbers were retained after data collection for analysis purposes. Once the thesis is submitted in its final version, these will be discarded.

6.7 Ethical Approval

Ethical approval was obtained from the London School of Hygiene and Tropical Medicine (LSHTM) ethics committee on September 20th, 2012 and AUB Institutional Review Board on January 23rd, 2013 and on February 28th, 2013 (**Appendix 6-7**).

AUB Institutional Review Board had granted a partial approval initially to interview mothers. Interviews with other stakeholders were still being discussed at the committee meetings due to the use of the snowball technique in the recruitment of other potentially relevant stakeholders. The committee was worried about breach of confidentiality in the use of this method. Full approval was granted later on the condition that the original interviewee would first contact the potential participants to provide a briefing of the study objectives and obtain their consent for the researcher to be able to establish contact.

During interviews, all interviewees were informed about the study aim, objectives and confidentiality through an information sheet before signing a consent form agreeing on the interview being tape-recorded and the possibility of including direct quotes in the report.

6.8 The researcher's reflexivity

"Reflexivity means sensitivity to the ways in which the researcher and the research process have shaped the collected data, including the role of prior assumptions and experience, which can influence even the most avowedly inductive inquiries" (10).

Personal characteristics that need to be taken into account include and are not limited to age, sex, social class, professional status, linguistic traditions and political stances (10, 11). Monitoring the effects of these researcher's positions improves the credibility of the findings (11).

For the purpose of this study, the researcher considered her position during the process of conducting interviews.

Being a Lebanese who speaks the local dialect of Arabic facilitated the process of contacting mothers and other interviewees. Also having lived in the country for years enabled her to be familiar with the culture, social norms and the health care system and thus understand and identify with women and health providers' experiences and viewpoints. On the other hand, being unmarried with no children may have discouraged women from sharing their experiences or decisions as they may have felt

that she would not understand them. Furthermore, coming from an urban city and being dressed differently than women in few of the visited conservative communities may have made them uncomfortable. Being a doctoral candidate may have also got the researcher to being perceived from a different social class given the importance given to the doctoral title in Lebanon. To overcome these hurdles, she initiated small talks about children and social mundane topics to break the ice.

For interviews conducted with senior decision-makers and representatives of professional bodies, she was likely perceived as less powerful given her student status; yet the fact that she is registered at an English school and affiliated with AUB, one of the most prestigious universities in the country, might have strengthened her position as the research is expected to be of good quality and thus they were more likely to share their knowledge. The simple fact that she is exploring this topic reveals her interest and position in regard to infant feeding practices. Stakeholders may have held different perspectives or agendas in regard to this subject matter and thus they may not have reported their honest position and interest on the subject. She attempted to minimise this drawback by comparing their accounts to how they were perceived by others. She also knew or previously collaborated with a number of the interviewed stakeholders which facilitated the discussion and allowed a more in-depth conversation and disclosure of sensitive information. In other instances as well, she was not aware of certain changes or contextual information which could have made the respondent feel more empowered by being the expert and thus potentially providing further information.

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6.10 Appendices

Appendix 6-1 Oral telephone script – English version

Hello, is this Dr/Mr/Ms?

This is Chaza Akik, a doctoral student from the London School of Hygiene and Tropical Medicine in London, UK. I am conducting my thesis in Lebanon in affiliation with the American University of Beirut. I got your name or phone number from... (The Internet, the Lebanese Paediatrics Society, etc...) OR Name of person after s/he contacted you.

The study aims at identifying Lebanese stakeholders' perceptions of infant feeding practices and the policies related to them in Lebanon. If you are willing to participate in this study, we will have a one hour interview at a time and place that are convenient for you. Would you be interested in participating in this study?

When would you like to meet? And where? It can be at your clinic, office, health facility or if you prefer, I can invite you for a cup of coffee in a café where we can sit privately, and do the interview.

Okay, so we are meeting (Time:....) (Place:.....)

Thanks a lot for your cooperation.

See you then.

Bye

Appendix 6-2 Oral Script when approaching women at dispensaries or private clinics

English version

Excuse me Mrs., can I talk to you for a while?

How old is your baby?

My name is Chaza Akik. I am a doctoral student in London and I am doing my thesis in collaboration with the American university of Beirut. It aims at identifying people's perceptions of infant feeding practices and the policies related to them in Lebanon. If you are willing to participate in this study, we will do one interview that will last for around one hour. Would you be interested in participating in this study?

We can have the interview here or at a place and time that are convenient to you such as your house, or I can invite you for a cup of coffee at a café where we can sit privately and have a conversation.

So we are meeting (Time:....) (Place:.....)

Can I please have your name and telephone number?

Thanks a lot for your cooperation.

See you then.

Bye

If the woman has no time for the above discussion:

Excuse me Mrs, can I talk to you for a while?

How old is your infant?

Okay, I will talk to you very briefly. I just want you to know that I'm doing a study about breastfeeding and I would like to ask you to participate. Can I have your name and telephone number so that I can explain further on the telephone? My name is Chaza Akik.

Thank you.

Appendix 6-3 Topic guide for interviews with mothers

- How old is your infant?
- What are you currently feeding him/her?
- When did you start giving your infant
 - o Formula or other types of milk?
 - o Water?
 - o Teas?
 - o Solids?
- **During your pregnancy**, did you think about how to feed your infant?
- *If yes*,
 - o What were your plans?
 - o Did you discuss it with anyone? (such as husband or partner, family members, friends, ob/gyn, paediatrician, family physician, midwife, nurse, pharmacist)
 - o What did he/she advise?
 - o Did anyone else advise you? What was their advice?
 - o Did you follow any of the advices?
 - o What information did you get from any other sources such as TV, radio, leaflets?
 - o Is your current experience different from what you had planned? In what way? And why?
- *If not*,
 - o Did you discuss your infant feeding with your health provider (such as your ob/gyn, midwife, nurse)? Or anyone else (such as family members, friends)?
 - o Are you satisfied with your choice of your infant feeding? Why?

Going back to your delivery day and hospital stay:

- Was your baby given liquids other than your breast milk?
- Did your baby stay with you in the room?
- Did you notice any advertising for infant formulas on posters?

- Did you notice any advertising for infant formulas in any infant health leaflets?
- Did you notice any advertising for infant formulas on posters or in any infant health leaflets during any of the post-natal sessions (if provided)?
- What do you think about breastfeeding?
- What do you know about breastfeeding?
- Did health providers ask you what you wanted to feed your infant?
- Was your baby put on your breast within hours of delivery? How many hours later?
- Did any of the health providers discuss with you the benefits of breastfeeding? Who? How long did they advise you to breastfeed? And exclusively?
- Did any of the health providers discuss with you how to breastfeed? Who?
- Did any of the health providers show you how to breastfeed? Who?
- Did you receive any free formulas during your stay at the hospital or before your discharge?
- Can you tell me what the Ministry of Public Health recommendations for breastfeeding are?

Appendix 6-4 Topic guide for interviews with health care providers

Obstetricians/gynaecologists, paediatricians, midwives, nurses, pharmacists, hospital managers

- What are your general recommendations to pregnant women/newly delivered mothers regarding infant feeding?
- Are you aware of the international infant feeding recommendations?
 - o If yes, what are they? What do you think of them?
 - What do you think are the factors helping the mother to:
 - Breastfeed?
 - Initiate breastfeeding early after delivery?
 - Exclusively breastfeed for 6 months?
 - What are the barriers the mother faces when it comes to:
 - Breastfeeding?
 - Initiate breastfeeding early after delivery?
 - Exclusively breastfeed for 6 months?
 - o If no, the WHO recommends 6 months of exclusive breastfeeding followed by introduction of solid foods with continued breastfeeding until 2 years of age or beyond.
 - What do you think of these recommendations?
 - What do you think are the factors helping the mother to:
 - Breastfeed?
 - Initiate breastfeeding early after delivery?
 - Exclusively breastfeed for 6 months?
 - What are the barriers the mother faces when it comes to:
 - Breastfeeding?
 - Initiate breastfeeding early after delivery?
 - Exclusively breastfeed for 6 months?
- Are you aware of the infant feeding policies in Lebanon? What are they? What do you think of them?
- Are you aware of the Baby Friendly Hospital Initiative (BFHI)?
 - o If yes, what is it? What do you think of it? What do you think of it in the Lebanese context?

- If not, the BFHI is a WHO and UNICEF initiative aiming to ensure that all maternities become centres of breastfeeding support. A baby-friendly facility is one that does not accept free or low cost breast milk substitutes, feeding bottles or teats, and has implemented 10 specific steps to support successful breastfeeding such as the training of all health care staff in necessary skills, rooming-in.

What do you think of it? What do you think of it in the Lebanese context?

- What do you think are the factors that would facilitate the implementation of the BFHI?
- What do you think are the factors that would impede the implementation of the BFHI?
- Are you aware of the International Code of Marketing of Breast-milk Substitutes (ICMBS)?
 - If yes, what is it? What do you think of it? What do you think of it in the Lebanese context?
 - If not, the ICMBS aims at protecting and promoting breastfeeding by ensuring appropriate marketing and distribution of breast milk substitutes. Breast milk substitutes include for example infant formulas and baby teas and juices. Implementation of the Code entails for example banning the provision of mothers, their families or health workers with samples of breast milk substitutes.

What do you think of it? What do you think of it in the Lebanese context?

- What do you think are the factors that would facilitate the implementation of the ICMBS?
- What do you think are the factors that would impede the implementation of the ICMBS?

Appendix 6-5 Topic guide for interviews with ministries, national and international NGOs and orders and syndicates

- Are you aware of the international infant feeding recommendations?
 - o If yes, what are they? What do you think of them?
 - What do you think are the factors helping the mother to:
 - Breastfeed?
 - Initiate breastfeeding early after delivery?
 - Exclusively breastfeed for 6 months?
 - What are the barriers the mother faces when it comes to:
 - Breastfeeding?
 - Initiate breastfeeding early after delivery?
 - Exclusively breastfeed for 6 months?
 - o If no, the WHO recommends 6 months of exclusive breastfeeding followed by introduction of solid foods with continued breastfeeding until 2 years of age or beyond.
 - What do you think of these recommendations?
 - What do you think are the factors helping the mother to:
 - Breastfeed?
 - Initiate breastfeeding early after delivery?
 - Exclusively breastfeed for 6 months?
 - What are the barriers the mother faces when it comes to:
 - Breastfeeding?
 - Initiate breastfeeding early after delivery?
 - Exclusively breastfeed for 6 months?
- Are you aware of the National Programme for Promoting and Supporting Infant and Young Child Feeding in Lebanon?
- How important is the breastfeeding/ nutrition of infants and young children issue?
- How important is it compared to other health issues in Lebanon?
- How important is the breastfeeding/ nutrition of infants and young children issue to the MOPH and other relevant stakeholders?
- Are you aware of what is currently being done on:

- The BFHI?
 - The ICMBS?
 - Other potentially relevant policies?
- The BFHI was introduced in Lebanon in 2002. How do you think it worked in Lebanese hospitals?
 - A law based on the ICMBS came out in 2008. Has it been implemented?
 - Who were the stakeholders involved back then? (power, interest, commitment)
 - What are barriers for implementation?
 - Is the nutrition of infants and young children/breastfeeding on or off the agenda?
 - Why is it on/off the agenda?
 - Which components of the programme are on the agenda? Which ones are off the agenda? Why?
 - Probe about the BFHI, ICMBS
 - Are there (contextual) factors that have put the breastfeeding issue and these 2 policies among other health issues off the agenda for years? (What are the main health priorities in Lebanon?)
 - Probe about contextual factors: the political, economic, social, cultural factors in the Lebanese context as well as any international influence.
 - Are there (contextual) factors affecting the current formulation of breastfeeding policies or their implementation?
 - Are there (contextual) factors affecting the current formulation of the BFHI and ICMBS policies or their implementation?
 - Who was involved in putting the nutrition of infants and young children /breastfeeding policy back on the agenda? What are their interests in putting it back on the agenda? Why are they deploying resources on it?
 - Who was involved in the formulation of the programme?
 - Are there individuals or groups or institutions who are not involved in the development of the programme but you think they should be? Why they are not involved? How to involve them?

- How likely are these policies to be implemented?
 - What are the likely barriers for its implementation? Are potential structural, cultural, etc... barriers taken into consideration?
 - Who would be stakeholders that would oppose the implementation of the policies?
- Are there other policies to which the breastfeeding issue can be linked to?

Appendix 6-6 Glossary

Arabic term	Translated English term
القنينة or biberon	Infant formula
بق	Spitting up
مقهورة	To be hurt
صدري بينزل حليب	Fast milk flow
ساعد بالحليب	Supplement with infant formula
شد من الصدر	To suckle forcefully
يضغط الصدر	Breast filling with milk
بنشف دغري من حليبي	My milk dries up quickly
ينضر	Get ill
شهق	To sob
لم يكن الحليب ملائماً	He/she did not tolerate the milk
حرام	Unfair
إدرا الحليب	To produce milk
تعذبني	He/she frustrates me
استسهل	To be lenient
ما الي جلادة	I can't be bothered
قوانين حبر على ورق	Laws that never get implemented

Appendix 6-7 Ethical approvals

London School of Hygiene & Tropical Medicine
Keppel Street, London WC1E 7HT
United Kingdom
Switchboard: +44 (0)20 7636 8636
www.lshtm.ac.uk



Observational / Interventions Research Ethics Committee

Chaza Akik
DrPH research student
DPH/EPH
LSHTM

20 September 2012

Dear Ms Akik,

Study Title: Breastfeeding in Lebanon: Barriers and policy dynamics
LSHTM ethics ref: 6257

Thank you for your application of 20 August 2012 for the above research, which has now been considered by the Observational Committee.

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

Conditions of the favourable opinion

Approval is dependent on local ethical approval having been received, where relevant.

Approved documents

The final list of documents reviewed and approved by the Committee is as follows:

Document	Version	Date
LSHTM ethics application	n/a	20/08/2012
Protocol	V1	16/08/2012
Information Sheet	V1	16/08/2012
Consent form	V1	16/08/2012

After ethical review

Any subsequent changes to the application must be submitted to the Committee via an E2 amendment form. All studies are also required to notify the ethics committee of any serious adverse events which occur during the project via form E4. At the end of the study, please notify the committee via form E5.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'Andrew J Hall'.

Professor Andrew J Hall
Chair
ethics@lshtm.ac.uk
<http://intra.lshtm.ac.uk/management/committees/ethics/>

APPROVAL OF RESEARCH

January 23, 2013
Dr. Hala Ghattas
American University of Beirut
01-350000, ext: 4544
Hg15 @aub.edu.lb

Dear Dr. Ghattas,

On January 23, 2013, the IRB reviewed the following protocol:

Type of Review:	Initial, expedited
Project Title:	Breastfeeding in Lebanon: Barriers and Policy Dynamics
Investigator:	Hala Ghattas
IRB ID:	NUT.HG.09
Documents reviewed:	Letter, Amended English and Arabic Consent Forms - Mothers, received November 30, 2012, Proposal, English and Arabic Mothers Interview Guide, English and Arabic Oral Script when approaching women at dispensaries or private clinics received September 5, 2012.

The IRB approved the protocol to conduct the first part of the study that entails the mothers only.

This approval does not allow conducting the stakeholders' part until a decision has been made regarding the proposed snowballing technique version received November 30, 2012. Another approval to conduct the stakeholder part will be granted once a decision has been made by the IRB.

This is to grant you approval to conduct the mother part from **January 23, 2013** to **January 23, 2014** inclusive. Before November 23, 2013 or within 30 days of study close, whichever is earlier, you are to submit a completed "FORM: Continuing Review Progress Report" and required attachments to request continuing approval or study closure.

If continuing review approval is not granted before the expiration date of **January 23, 2014**, approval of this research expires on that date.

Please find attached the stamped approved documents:

- Proposal (version received January 21, 2013),
- English Consent Form - Mothers (version received November 30, 2012),
- Arabic Consent Form - Mothers (version received November 30, 2012),
- English Mothers Interview Guide (version received September 5, 2012),
- Arabic Mothers Interview Guide (version received September 5, 2012),
- English Oral Script when approaching women at dispensaries or private clinics (version received September 5, 2012).
- Arabic Oral Script when approaching women at dispensaries or private clinics (version received September 5, 2012).

Kindly use copies of these documents to document consent.

The American University of Beirut and its Institutional Review Board, under the Institution's Federal Wide Assurance with OHRP, comply with the Department of Health and Human Services (DHHS) Code of Federal Regulations for the Protection of Human Subjects ("The Common Rule") 45CFR46, subparts A, B, C, and D, with 21CFR56; and operate in a manner consistent with the Belmont report, FDA guidance, Good Clinical Practices under the ICH guidelines, and applicable national/local regulations.

Sincerely,



Michael Clinton, PhD
IRB Vice Chairperson
Social & Behavioral Sciences

Cc: Fuad Ziyadeh, MD, FACP, FASN
Professor of Medicine
Chairperson of the IRB

.../RZ

APPROVAL OF RESEARCH

February 28, 2013
Dr. Hala Ghattas
American University of Beirut
01-350000, ext: 4544
Hg15 @aub.edu.lb

Dear Dr. Ghattas,

On February 28, 2013, the IRB reviewed the following protocol:

Type of Review:	Initial, expedited
Project Title:	Breastfeeding in Lebanon: Barriers and Policy Dynamics
Investigator:	Hala Ghattas
IRB ID:	NUT.HG.09
Documents reviewed:	Email dated December 14,2013, email dated February 26,2013, English and Arabic versions of the flyer (version received February 26,2013)

This is to grant you approval to conduct the stakeholders' part using snowballing techniques proposed in which the primary stakeholder will contact the potential stakeholders pass on a flyer to them and request permission to share their details with the research team from February 28, 2013 to January 23, 2014 inclusive. Before November 23, 2013 or within 30 days of study close, whichever is earlier, you are to submit a completed "FORM: Continuing Review Progress Report" and required attachments to request continuing approval or study closure. If continuing review approval is not granted before the expiration date of January 23, 2014, approval of this research expires on that date.

Please find attached the stamped approved documents:

- Proposal (version received February 27,2013),
- English and Arabic Consent Form - (version received November 30, 2012),
- Topic guide for interviews with health care providers –Obstetricians /gynecologists pediatricians, midwives, nurses, pharmacists, hospital managers(English and Arabic versions received September 5,2012),
- Topic guide for interviews with ministries, national and international NGOs and orders any syndicates (English and Arabic versions receive September 5,2012),
- Oral telephone script (English and Arabic versions received September 5,2012),
- English and Arabic versions of the flyer (version received February 26, 2013).

Kindly use copies of these documents to document consent.

The American University of Beirut and its Institutional Review Board, under the Institution's Federal Wide Assurance with OHRP, comply with the Department of Health and Human Services (DHHS) Code of Federal Regulations for the Protection of Human Subjects ("The Common Rule") 45CFR46, subparts A, B, C, and D, with 21CFR56; and operate in a manner consistent with the Belmont report, FDA guidance, Good Clinical Practices under the ICH guidelines, and applicable national/local regulations.

Sincerely,



Michael Clinton, PhD
IRB Vice Chairperson
Social & Behavioral Sciences

Cc: Fuad Ziyadeh, MD, FACP, FASN
Professor of Medicine
Chairperson of the IRB

7 Reported barriers to appropriate early breastfeeding practices in Lebanon

7.1 Introduction

An article of the reported barriers to appropriate early breastfeeding practices in the context of health services has been drafted for submission to *Maternal and Child Health*. Findings are based on the qualitative research with mothers and other stakeholders. The two coding frames developed to analyse the interviews with mothers and with other stakeholders are presented in **Appendices 7.1** and **7.2**. They were used for this chapter and the following one looking into the political dynamics around the implementation of existing policies.

7.2 Article to be submitted for publication

Article cover sheet

1. For a 'research paper' already published

1.1. Where was the work published?

1.2. When was the work published?

1.2.1. If the work was published prior to registration for your research degree, give a brief rationale for its inclusion

1.3. Was the work subject to academic peer review?

1.4. Have you retained the copyright for the work? Yes / No

If yes, please attach evidence of retention.

If no, or if the work is being included in its published format, please attach evidence of permission from copyright holder (publisher or other author) to include work

2. For a 'research paper' prepared for publication but not yet published

2.1. Where is the work intended to be published? Maternal and Child Health journal

2.2. Please list the paper's authors in the intended authorship order

Akik, C., Ghattas, H., Filteau, S. Knai, C.

2.3. Stage of publication – Not yet submitted

3. For multi-authored work, give full details of your role in the research included in the paper and in the preparation of the paper. (Attach a further sheet if necessary)

I developed the study design with input from all co-authors, I collected and analysed the data.

I drafted the paper and incorporated feedback from supervisors and advisory committee.

NAME IN FULL: CHAZA AKIK

STUDENT ID NO: 097447

CANDIDATE'S SIGNATURE

Date: 30 July 2014

SUPERVISOR/SENIOR AUTHOR'S SIGNATURE

The block contains two handwritten signatures. The first signature is in dark ink and appears to be 'Chaza Akik'. The second signature is in a lighter ink and appears to be 'C. Knai'.

Reported barriers to appropriate early breastfeeding practices in Lebanon

7.2.1 Abstract

The World Health Organisation recommends exclusive breastfeeding (EBF) from within the first hour of life until 6 months of age. Breastfeeding practices in Lebanon fall short of the international recommendations: while more than 90% of infants were ever breastfed, EBF rates drop from their highest for 0-1 month old infants at around 40% to 2% for 4-5 months old infants. The Lebanese health system is likely to have a vital role on early breastfeeding practices given the high access to childbirth in a system that is highly privatised. This research aimed to identify stakeholders' perceptions of barriers to recommended early breastfeeding practices in the context of health services. Semi-structured interviews were conducted with a purposeful sample of 59 stakeholders in early breastfeeding. The framework approach was used for analysing data. Findings revealed suboptimal antenatal preparedness to breastfeeding, hospital practices not conducive to early and EBF initiation during hospital stay, medicalisation of childbirth, health professionals' knowledge and attitudes towards breastfeeding, and aggressive marketing by breast milk substitutes companies as contributing factors. The socio-cultural context also appeared to support a belief system which is depreciative of breastfeeding. Future efforts should focus on sensitizing women, empowering them and increasing their demand for appropriate breastfeeding practices as well as baby-friendly practices within health services, on improving health professionals' knowledge and skills for breastfeeding promotion, support and management, and on limiting the aggressive marketing of breast milk substitutes companies.

Keywords: breastfeeding, barrier, health care system, baby-friendly hospital initiative, Lebanon

Key messages:

- 1- Lebanese mothers initiate breastfeeding but introduce breast milk substitutes early.
- 2- Suboptimal antenatal preparedness to breastfeeding, hospital practices not conducive to early and EBF, medicalisation of childbirth, health professionals' knowledge and attitudes towards breastfeeding, and aggressive marketing by breast milk substitutes companies are reported barriers.

- 3- Challenges for the Baby Friendly Hospital Initiative Ten Steps for Successful Breastfeeding and subsequently law 47/2008 were encountered at the health care and cultural levels.

7.2.2 Introduction

Proper nutrition in the early years of life optimises healthy growth, development and productivity of individuals and populations (1). Growth faltering, which occurs most rapidly in the first 24 months of age worldwide, highlights the urgent need for promoting optimal child health during this critical developmental window including the promotion of appropriate infant feeding practices (2). The World Health Organisation (WHO) recommends exclusive breastfeeding (EBF) for which any other fluids or solids are excluded except for medicinal supplements, from within the first hour of life until 6 months of age. Introduction of complementary foods is recommended at 6 months, with continued breastfeeding up to two years and beyond (3). Early breastfeeding initiation, that is, within 24 hours after birth, has been associated with a 44% decrease in risks of all causes of neonatal deaths and 45% decrease in infection-related deaths compared to breastfeeding initiation at or after 24 hours (4). A potential mechanism for this protective effect is the lower consumption of prelacteal feeds in settings where EBF is hampered by this practice, which in turn lowers the risk of consumption of pathogens and thus mortality risk (4). In both developing and developed countries infants exclusively breastfed for 6 months are less likely to suffer from gastrointestinal or respiratory infections or to be admitted to hospital (5-10). Maternal benefits associated with EBF for 6 months are prolonged duration of lactational amenorrhea and higher postpartum weight loss (5).

Breastfeeding practices in Lebanon fall short of international recommendations in terms of early exclusive initiation, continued exclusivity till 6 months and prolonged breastfeeding up to two years and beyond. Data from the Multiple Indicators Cluster Survey – Round 3, showed that while more than 90% of infants were ever breastfed, other liquids or foods were introduced early (11). EBF rates were at their highest for 0-1 month old infants at around 40% before dropping to 2% for 4-5 months old infants. Over 40% of infants at 0-1 month were given infant formula in addition to breast milk. Complementary foods in addition to breast milk were only given to 41.8% of infants between 6 and 9 months. Rates of continued breastfeeding were

limited to 37.5% and 14.6% of infants aged 12 to 15 months and 20 to 23 months, respectively.

Breastfeeding practices are not only affected by individual factors. Hector *et al.*'s conceptual framework presents two additional levels of factors: group and societal level factors (12). While the individual level accounts for the mother, infant and their relationship attributes, the group level reveals a wide array of environments in which mothers and infants find themselves: the hospital and health services, home/family, work and community environments, and the public policy environment that alters how each of these environments influence mother's feeding decision (12). In addition, societal factors influence breastfeeding acceptability and expectations about it and provide the context in which mothers feed their infants (12). Societal factors can influence the support provided at the group level and these two levels in turn can positively or negatively affect women's decision to breastfeed.

Several studies in Lebanon have examined factors undermining optimal early breastfeeding initiation and exclusivity; most of these involved studying mothers' experiences. Mothers' cultural beliefs such as insufficient quantity of milk and negative family perceptions of breastfeeding were found to discourage mothers from breastfeeding (13, 14). Early return to work was reported to affect breastfeeding duration and inadequate work schedule was reported to affect both women's decision to breastfeed and breastfeeding duration (15). Studies published in 2000 reported deficiency in provision of prenatal classes, absence of mother-baby contact within the first half hour of birth and no rooming-in in hospitals (16, 17). A 2006 report on monitoring of the International Code of Marketing of Breastmilk Substitutes also revealed violations in hospitals and physicians' clinics (18). At the public policy level, the Lebanese government endorsed the Global Strategy for Infant and Young Child Feeding (GSIYCF) in 2002. However, the recent World Breastfeeding Trends Initiative, a flagship programme of International Baby Food Action Network Asia, identified gaps among the policies and programmes meant for implementing the GSIYCF (19).

Since then, the breastfeeding issue has received further attention from policymakers and a National Committee for Ensuring Proper Nutrition for Infants and Young Children was created in 2011. The National Programme for Promoting and

Supporting Infant and Young Child Feeding has a comprehensive agenda including the revitalisation of the Baby-Friendly Hospital Initiative (BFHI), previously initiated in early 1990s and reinitiated in 2007-2008. Members of the BFHI sub-committee, one out of the five sub-committees established for programme implementation, have conducted the 40 hours training of trainers' course for public hospitals and a number of private hospitals that have shown interest. A law (Law 47/2008) that regulates the marketing of breast milk substitutes for under-6 month olds was enacted in 2008. The Ministry of Public Health is the executive body and a National Advisory Committee for the Promotion and Protection of Breastfeeding is responsible for monitoring the implementation of the law.

Various factors undermining early breastfeeding initiation and exclusivity till 6 months have therefore been found at all levels; however, in the Lebanese context, it is likely that what happens within the health system – which itself is affected by the public policy and societal environments – has a large contributing role on early breastfeeding practices. Access to childbirth care is high (20); most births take place in hospitals with 80.1% of deliveries happening in private hospitals or clinics; and 93.6% of women seek antenatal care with medical doctors (20). In fact, the Lebanese health system is highly privatised (21) and medical doctors are highly respected and influential. In an analysis of the environment encouraging caesarean section in Lebanon, women were not involved in the decision-making process due to the total trust they accord to their individual obstetricians (22). There is also some evidence that physicians were the most influential on women's decision to breastfeed (23).

Given the public health relevance of early breastfeeding initiation and EBF until 6 months to child health and the vital importance of Lebanese health services in encouraging breastfeeding, this study aims to identify stakeholders' perceptions of barriers to implementing recommended practices in the context of health services.

7.2.3 Methods

Data collection

Semi-structured interviews were conducted between February and September 2013 with stakeholders in early breastfeeding in Lebanon. These included mothers themselves, as well as representatives of government ministries and agencies, international and local organisations, professional bodies including associations,

orders, societies and syndicates, medical specialists and hospital managers, corporate actors, media and academia.

Key informants were identified through purposeful sampling: a preliminary list of interviewees was developed based on a review of the Lebanese literature on breastfeeding and the health system, as well as an existing professional network at the American University of Beirut (AUB), and expanded using the snowball technique. Health professionals were selected from public/private and teaching/non-teaching hospitals and state-operated or private clinics in the different Lebanese regions. Women were selected by convenience sampling through state-operated health centres and private clinics from all six Lebanese governorates. Healthy women who had delivered singletons within the last 6 months and were seeking health care for their infants' vaccination were approached in waiting rooms and informed consent was sought. Based on a review of the Lebanese literature, several maternal socio-demographic variables associated with breastfeeding practices (socio-economic status, age, educational level, place of residence, religion and employment) were taken into account to capture variability in experiences and perceptions of women.

Interviews were conducted in the Lebanese dialect of Arabic, translated to English and transcribed. A denaturalized transcription of the interviews was conducted as there was interest in the informational content of interviews rather than the specifics of communication (24).

The interview topic guide for interviews with mothers covered the following topics: mothers' early intentions to breastfeed, their practices since delivery, and perceived barriers to breastfeeding intentions and practices. Women were also asked about hospital practices in regard to breastfeeding at delivery. Interviews with other stakeholders aimed to identify their perceptions of factors hindering the implementation of infant feeding recommendations and existing policies in the context of health services.

Data processing and analysis

Data analysis was done using the framework approach given its relevance to applied qualitative policy research (25, 26). A preliminary list of key ideas and recurrent themes from an initial reading of the interview transcripts was recorded in the matrices. Data were then gradually organized into categories, and a set of barriers

emerged. The organisation of data, including illustrative quotes, under these emerging barriers helped to describe and elucidate the data, interconnections between the data, and the generation of explanatory patterns.

Ethical approval was obtained from the London School of Hygiene and Tropical Medicine Ethics Committee and AUB Institutional Review Board.

7.2.4 Findings

Description of participants

In all, 59 interviews were conducted: 20 with mothers and 39 with other stakeholders from a range of occupations and institutional backgrounds, as outlined in **Table 7-1**. While all mothers who were approached agreed to participate, three paediatricians and obstetrician/gynaecologists (Ob/Gyns), an academic, four civil servants and a representative of an international organisation declined to take part in the study. Interviewed mothers ranged in their socio-economic status from low to high, in their age between 21 and 41 years, and parity between 1 and 6 children. The educational level also varied from completing primary school to a master's degree. Seven mothers were working at the time of interview, five in the private sector and two in the public sector. All mothers delivered in private hospitals. Infants' age ranged between 1 and 5 months.

We report the findings in terms of 1) mothers' experiences in regard to infant feeding, 2) barriers within health services and 3) cultural barriers among mothers. A detailed account of barriers at the policy level is presented in a separate article (27).

Table 7-1 Institutional background/ occupations of interviewed stakeholders

Sector (Number of interviewees)
Government ministries and agencies (8)
A United Nations organisation (1)
International NGOs ¹ (3)
Local NGOs and civil society groups (2)
Professional associations, orders, societies and syndicates ² (7)
Health care professionals (14) <ul style="list-style-type: none"> • Hospital manager (1) • Obstetrician/ gynaecologist (1) • Paediatricians (4) • Family physician (1) • Paediatric nurse (1) • Maternity wards managers (3) • Pharmacists (2) • Dietician (1)
Mothers (20)
Corporate actors (1)
Media (1)
Academics (2)

¹NGO: Non-Governmental Organisation

²Five professional bodies were interviewed

Mothers' experiences with infant feeding practices

When asked about feeding practices, all interviewed mothers initiated breastfeeding, yet none had done so exclusively. Two infants were being breastfed with no supplementation with infant formula or foods but they were given water. For all other infants, infant formula, water, herbal teas or food were given with or without breast milk. Giving infants foods “to lick” was not perceived by mothers as having introduced solid foods.

During pregnancy, most mothers reported not discussing infant feeding plans with any health professional. The subject was addressed more frequently with family members such as the husband, mother or sisters. Yet, a number of mothers had not thought at all of their infant feeding plans, which according to a paediatrician is common:

"From what I have seen, pregnant women don't really have that idea or they don't think a lot about it [infant feeding] or they haven't been exposed to it a lot. They [...] usually think a lot more of the labour process, the delivery

process, their bodies and what changes in their bodies and so on but not so much about infant feeding, for most of them at least."

For interviewed mothers who thought about infant feeding plans, half of them intended to breastfeed their infants; one had intended to give infant formula and three to mix breast milk and infant formula.

Interviews with mothers and practitioners revealed that only determined mothers were able to successfully maintain breastfeeding although not exclusively. These mothers requested their baby to be put to their breasts directly after birth, were not affected by peer pressure and were greatly supported by their nuclear family and paediatricians.

Barriers within health services

Suboptimal antenatal preparedness to breastfeeding

Interviews revealed that antenatal preparedness to breastfeeding is limited. Some Ob/Gyns encouraged women by discussing breastfeeding during pregnancy and postpartum or referring to prenatal classes, yet most did not discuss breastfeeding or did it briefly. Only three mothers reported discussing their breastfeeding plans with their Ob/Gyns; one mother had herself brought up the subject. Reasons given by Ob/Gyns and other practitioners for this limited encouragement included lack of time, Ob/Gyns' perceptions that women's education is not part of their role, their lack of interest in breastfeeding and lack of women's demand to discuss breastfeeding. This is illustrated by a family physician and the representative of an international organisation respectively:

"Absolutely no [role for Ob/Gyns] because it is about [...] getting people in and out as quickly as possible; the woman goes in and out very quickly from the obstetrician's prenatal clinic visit; they barely talk about the delivery itself; much less about what would happen afterwards. So the focus is on the pregnancy itself, maybe on the delivery a little bit; for postpartum the focus is on birth control, obstetricians forget about the baby."

"I don't know to what extent obstetricians are urging mothers. I am sure there are [obstetricians that do] but I do not know to what extent they are convinced and they do [urge them to breastfeed]."

The representative of a professional body also reported that for pre-service training the topic of breastfeeding was not covered extensively in curricula of Ob/Gyns.

Prenatal classes are offered in a number of private hospitals but some interviewees mentioned the low attendance and criticised the content as being limited to the description of birthing process.

Hospital practices not conducive to early and EBF initiation

Interviews also identified hospital practices which were not conducive to early and EBF initiation during hospital stay. Skin-to-skin contact (SSC) and rooming-in were not always reported as routine practices. Only a quarter of interviewed mothers' infants were put on the breast directly after birth including one following mother's request; others were delayed between one hour and three days. Only a quarter of interviewed mothers' infants stayed in their mothers' rooms throughout the hospital stay. Most infants of interviewed mothers were given infant formula whether as prelacteal feeds or not for various reasons including insufficient breast milk and potential drop in infant's blood sugar level as per their health providers as reported by a 29-year-old mother of one infant:

"[My baby was put on the breast] after 3-4 hours, they had already given him the bottle as she told me his blood sugar would drop if we leave him without feeding. I tried to feed him but he wasn't taking my breast. At night, they gave him a bottle again."

Midwives also reported some mothers were offered the option of intravenous drug injection to stop milk production by Ob/Gyns at delivery. Breastfeeding assistance from midwives or nurses was only offered to half of mothers and usually to primiparous ones only.

Health professionals' knowledge and attitudes towards breastfeeding

The representative of an international non-governmental organisation (NGO) reported hospital staff's misconceptions were being conveyed to mothers, such as inability to breastfeed in case of twins or flat nipples and the need for supplementation with infant formula as breast milk is insufficient in the first days of life. They may not be supportive of breastfeeding either. A midwife manager at a private hospital explained that:

“If the mother is not very motivated [to breastfeed], we [midwives] would say ‘fine’ and drop it. If she was motivated, we would tell her that the baby wants to rest during the night. [...] Not all of us... but the idea of the infant having to be exclusively breastfed was not well accepted by everyone.”

Health professionals from different hospital wards might convey conflicting messages to mothers as explained by a family physician:

“The mother who is trying to breastfeed is getting conflicting messages from the nursery and the obstetrics floor. You also have the conflict between the nursery nurses and the post-partum floor nurses where everyone is saying something different and they are not on the same page and that doesn’t help but to confuse a mother.”

There was also evidence for mothers not always receiving the appropriate breastfeeding support after hospital discharge. Motivated paediatricians may suffer from lack of time to educate on breastfeeding; others perceived supplementation with infant formula to have no risk or be equivalent to breastfeeding. This is illustrated by the views of a private clinic paediatrician who suggested that:

“He [the baby] can take the bottle, no one would die from it and we all grew up on the bottle [...] Have you seen anyone who took the bottle and suffered from an illness? No one did” [...] It [breast milk] has everything... immunity... but eventually immunity will wean by 6 months; how much can the mother give him immunity? And afterwards, he will have his own immunity. Iron... you can supplement it as well as vitamin D. It is not an issue that doesn’t have a solution.”

A midwife manager also reported some paediatricians were resistant to EBF at birth:

“[Paediatrician talking to the midwife] You want him to be exclusively breastfed? [What about the effects on] His weight loss? The bilirubin? Phototherapy? Low blood sugar level?”

Furthermore, many paediatricians did not seem to discuss breastfeeding or did without insisting and were likely to recommend supplementation with infant formula as soon as mother-infant pair faced challenges.

Interviews with mothers and health professionals revealed that health professionals did not always provide mothers with the most updated evidence-based infant feeding

recommendations either, as shown in **Table 7-2**. The media interviewee reported mothers were receiving conflicting advices from medical doctors graduating from different schools (American vs. French) especially in regard to age for introduction of complementary foods.

Table 7-2 Health professionals' infant feeding recommendations as reported by mothers

Infant feeding practices	Recommendation
EBF	Only 2 of 20 mothers were advised to keep EBF and not supplement with infant formula
Age for introduction of complementary foods	Several paediatricians recommended at 6 months; others recommended at 3 and 4 months
Breastfeeding	<i>Stop in case of</i> Reflux Mother getting pregnant Neonatal jaundice
Supplementation with infant formula	<i>In case of</i> Reflux Low breast milk supply Low birth weight infant Neonatal jaundice Return to work
Other	Breastfeeding every 3 hours – not on demand Giving anise for colic Giving herbal tea to replace milk feed

One paediatrician reported mothers usually seek Ob/Gyns immediately after delivery and before contact with paediatricians; yet in many instances Ob/Gyns do not refer mothers to paediatricians when breastfeeding issues arise; they rather recommend stopping breastfeeding or supplementation with infant formula:

"Even after she delivers, whenever we succeed with a woman in convincing her to breastfeed even if she was enthusiastic, the slightest problem that she has, her initial contact is her obstetrician because she would have built a relationship with him over the 9 months so any problem – a sore nipple, a painful breastfeeding, even if she is not sleeping as there are other problems – she would call the obstetrician, and I am not going to say a 100% of the time... most of the times the recommendation that comes from the obstetrician is stop breastfeeding or supplement with formula. They don't even tell her well this is beyond me now, you should go to the paediatrician... and that would be

enough. Don't give an advice, just refer back to us and we will handle it. I see this every day."

Challenges to the implementation of the BFHI and law 47/2008 in health services

Interviews with the varied stakeholders highlighted major challenges to the implementation of the BFHI and law 47/2008 in Lebanese health services. Barriers included resistance from hospital administrators and physicians, health professionals' knowledge, skills and attitude, shortage in human resources and supplies, infrastructure and routine practices, financial incentives for hospitals and health professionals to market breast milk substitutes and the organisational culture.

- ***Resistance at level of hospital administration and physicians***

As the implementation of the BFHI requires administrative support, interviewees referred, on several occasions, to the resistance encountered by nurses and midwives once they received the training and worked on implementing recommended BFHI practices [data also presented in Akik *et al.*(27)]. Resistance was reported to be mainly at the level of hospital administration and physicians as explained by the representative of a governmental agency:

"If we take the BFHI, nurses and midwives are 100% supportive when they attend the trainings. They say we want to [implement the initiative] but the decision is not ours. There is the hospital administration and the medical doctors [to convince]."

One reported justification for a hospital administration not to introduce rooming-in was to avoid the risk of infants' abduction. One indication of resistance among the medical profession is that the BFHI trainings offered by the National Committee were mainly attended by nursing staff and midwives and not medical doctors although they were invited to attend.

A number of interviewees also reported private hospitals may perceive baby-friendly practices to be conflicting with the quality of services expected from mothers as illustrated by the views of a family physician:

"In the upper class hospitals, there is this tendency of wanting the mother to rest, [with staff suggesting to the mother] "let us take the baby so you can sleep"; [...] being one of those hospitals where they always want to take the baby from her so she sleeps as it is like a hotel."

- Health professionals knowledge, attitude and skills

Another factor may be that health professionals were not always knowledgeable about the BFHI, or they would simply associate it with the ban on infant formula. They might lack the skills to perform baby-friendly practices or may not be supportive of them, recommending supplementation with infant formula due to lack of knowledge in breastfeeding management, as explained by the representative of an international NGO:

“Most paediatricians are trained in formula feeding because it has risks but not in breastfeeding management. [...] The nurses are [often] not trained enough to help the mother put the baby on her breast. A lot of times during the night, practical nurses are taking care of the infants in the nursery and they find it easier to give a bottle than take him to his mother and convince her to put him on her breast and help her with the positioning; so they give him a bottle in the nursery.”

Interviewees also highlighted the need for nurses, including midwives, to get further training although breastfeeding is included in their curricula as reported by a paediatrician:

“There is a lot to be desired in terms of their training in order to be able to support breastfeeding mothers across the board.”

- Shortage in human resources and supplies

The shortage in staff of nurses or midwives due to high delivery load was identified as a key challenge for the implementation of SSC as illustrated by one midwife manager:

“We do the skin-to-skin contact for 5 to 10 minutes maximum within the delivery room and then remove the baby [...] because there is a shortage in staff and patients are not prepared. If the baby is on the mother, you [the midwife or nurse] have to stay with her.”

The midwife manager of a public hospital also referred to occasional shortage in supplies needed to promote breastfeeding such as syringes and cups for feeding or small catheters for introverted nipples.

- Infrastructure and routine practices

The structure of wards and patient rooms does not always allow the implementation of SSC or rooming-in. As explained by a paediatrician:

“The reason is that the rooms are not very big; most of our mothers share rooms with other mothers and as you know we have... within our culture, there are no restrictions on visitations whatsoever, so at any given point you will see a lot of family members coming in and congratulating the mother, etc... which makes it a bit more challenging to do rooming-in with the baby.”

Medicalisation of childbirth is interfering as well with baby-friendly practices; specifically the caesarean section delivery is leading to a delay in putting the baby on mother's breast and it would be done for a shorter period of time. A member of the BFHI sub-committee explained that:

“The highly medicalised environment where the mother is getting an episiotomy or epidural or given pain killers... All of these have an effect; this is not the natural process. There is also a high caesarean-section rate; as we are giving epidural, there are many instances of failure to progress. Mothers come on an appointment system; she comes and gets an induction; she is given artificial Pitocin. As you know when she is given artificial Pitocin and she is not ready by completing the 40 weeks, at a lot of times, she ends up getting a caesarean section. For most of them, problems are arising in the progress of labour and here the choice is to get a caesarean section. [...] When the mother is also given a lot of Pitocin and IV, she gets oedema in the areola which causes difficulty for the baby to take the nipple directly after delivery. There are a lot of challenges after delivery and if the mother had an episiotomy, she would be in pain. When she takes a lot of pain killers during delivery or after it, the baby is receiving it and he is sluggish and his reflexes decrease. All of these affect the latching and the secretion of artificial oxytocin that is ... not like the mother who delivers naturally.”

- Financial incentives for hospitals and health professionals to market breast milk substitutes

When investigating potential violations of law 47/2008 within the health care system, more than half the interviewed mothers reported receiving infant formula or bottles as gifts at hospital discharge. A consultant dietician for a baby food company also pointed out that awareness sessions on diet during pregnancy and breastfeeding were given by the company to women in paediatricians and Ob/Gyns' clinics.

Interviews with different stakeholders confirmed that many public and private hospitals and health professionals have contracts with infant formula or other breast milk substitutes companies. Hospitals are offered money or equipment in exchange for marketing their products, while paediatricians receive cash money, trips to attend conferences, funding for workshop attendance, funding for research and clinic equipment. In fact, participants recognised that banning of infant formula would be the hardest step to achieve baby-friendly status given the financial interest of hospitals and health professionals. A paediatrician at a private teaching hospital explained:

"I think there is a conflict of interest. If you are accepting donations from companies that make these products, you cannot be baby-friendly. I know it is a very difficult step because it causes losses to the hospital. When someone is offering me baby feeds for a year free of charge; he wants something in exchange; the argument always is that yes they are giving us but you as physicians are not obliged to prescribe them. That's right; but what are they expecting when they are giving you them? That you are going to prescribe it. The person becomes more lenient [...] this issue is going to be the hardest for us towards achieving a true baby-friendly... we don't want the certificate... we want to really be a baby-friendly hospital."

Several practitioners reported not being aware of law 47/2008 and one paediatrician perceived no harm in prescribing a specific infant formula brand in exchange of trips or other incentives, explaining that:

"I do not see anything wrong with this; he prescribes this [product] or gets paid by this [company] or he gets trips... yes nothing is wrong with that. What matters most is that you are not harming your patient. All infant formula companies do that and they offer us trips especially to Paris for the Paediatrics Day... we have to thank them. What is wrong with that? You don't even have to ask them, they come by themselves. They fight over you. They keep following you and asking you to prescribe few of their products; at the end of the day you are giving them profit; so there is nothing wrong with you getting a trip [in exchange]."

Other health professionals reported finding no harm in accepting incentives from these companies as long as they are not forced to prescribe products.

- Organisational culture

A family physician and the representative of a professional body also pointed out respectively the paternalistic and vertical care offered by health services which hinder the establishment of a breastfeeding culture:

“The hospital likes to take control; we have a very paternalistic set up where nurses want to take control and the doctors want to take control; there isn’t relinquishing at all to the mother and in that kind of culture when the mother needs to be breastfeeding, the medical system has a hard time with it. They want to orchestrate; you keep hearing them saying “oh you are not breastfeeding enough; if you are not going to breastfeed him enough, we will take the baby and give him the bottle”, “oh the baby is sleeping a lot, we will take him to give him a bottle”. We want to control so we do not give the woman the space.”

“But in none of the places, at least among the training programmes of the major hospitals here, you are training doctors into the concept of comprehensive women’s health care and integrated care. This concept does not exist. You have the concept of vertical or separated care by dysfunction. Infertility clinic, high-risk clinic, etc... you don’t have integrated care. [...] You don’t get into a programme where you see the woman, and understand every dysfunction; the target is women’s based care or your target is wellness promotion care. No until now we have an individual approach on harm reduction. It makes a big difference. In this model, there is no place for breastfeeding. If you haven’t taught me the importance of breastfeeding, and emphasized that it is good for the woman, and women are not demanding it, why should I spend time on it? Then I might want to do things other than breastfeeding.”

Cultural barriers among mothers

Interviews with the various stakeholders highlighted maternal beliefs which are reflective of a societal context that is depreciative of breastfeeding and which are likely to undermine efforts for breastfeeding education and support in health services if unaddressed.

Mothers held breastfeeding misconceptions

Mothers were generally aware of breastfeeding benefits including improved immunity, nutrition, and health in general and mother-infant emotional bonding but they also held misconceptions such as breast milk not being beneficial after 6 months, “watery and thin breast milk” requires supplementation with infant formula, and older maternal age is associated with lower milk supply. Health professionals confirmed that misconceptions are playing a major barrier to breastfeeding success with insufficient milk being the main concern.

Mothers held negative perceptions of breastfeeding

Mothers also held negative perceptions of breastfeeding as reported by them and other interviewees. Reasons for which interviewed mothers did not breastfeed or quit soon after birth or supplement with infant formula included fatigue, wanting to maintain their figure and breasts’ shape, worrying about loss of their husbands’ interest in them, wanting to maintain a social lifestyle where breastfeeding would be a barrier, and worrying about the infant getting used to the breast when they need to return to work within two months. Two mothers, a 33-year-old mother of one infant, a 35-year-old mother of one infant, and a midwife manager, respectively, explained their views:

“There are a lot of women who worry a lot about their bodies, they worry about their breasts changing shape, and they worry about their husband refusing them because of breastfeeding.”

“Breastfeeding is not really in fashion anymore.”

“This is a common question for all women: I have to go back to work, what happens if the baby gets used to my breast? What if he misses it? How will he act?”

Mothers have a total trust in medical doctors and respect for medical institutions

Interviewees also reported that women’s decision-making process was affected by the hierarchy in the medical field [data also presented in Akik *et al.*(27)]. While nurses/midwives are the main providers of breastfeeding assistance and information to women after delivery, mothers have a total trust in medical doctors who are not always supportive of breastfeeding as illustrated by a midwife manager and an Ob/Gyn respectively:

“As a woman who recently delivered, I wouldn’t know better than the paediatrician. He is my idol so I follow what he tells me. Your infant is not feeling full, give him formula. What does a woman want? Something that relieves her baby but she doesn’t know that mixing two milks is the reason for his crying and colic. When he is crying and getting colic, this is causing him diarrhoea and infections. She wouldn’t care then about the education we [midwives] gave her and put effort in.”

“We, the Lebanese, the Orientals in general, think that doctor is god. They listen to him more than to the midwife. Am I not right?”

Women are thus in general not empowered to question or refuse a certain practice recommended or performed by the physician as explained by the representative of an international NGO:

“They don’t know that they can say no to it [episiotomy] and mainly women would have it performed and would not know it was done to them so the simplest processes of birth are not explained.”

Mothers’ practices may also be affected by their respect for medical institutions as illustrated by a member of the BFHI sub-committee:

“The mother leaves the hospital with the gift which is the artificial milk, pacifier and bottle that are readily available so she finds it easy. If they gave me them at the hospital that is considered by her as a respectful medical centre then the artificial milk is good for my child, so why not give it to him?”

Mothers may themselves be barriers to the BFHI implementation

Mothers might refuse rooming-in as they may want to spend time with guests and may worry about their infants getting infections or be superstitious about other people seeing their newborns as illustrated by a 22-year-old mother of one infant:

"[The baby stayed in the room] for a little while. The time I breastfeed her; it didn’t work, they took her back. People were coming in and out of the room which is not healthy for the baby. She should stay in the nursery."

Women also may feel that they need to use this time to rest, as reported by a 30-year-old mother of two children and a paediatrician respectively:

"I didn't want to. [...] Because I will soon be back home and I will have to stay awake."

"A lot of moms ask not to have the baby around because they want to rest, because they view the hospital somewhat as a spa for the first two days so the nurses can take care of the baby, they [mothers] will take care of him when home."

Mothers may also not be prepared for SSC as described by a midwife manager:

"The woman would shout once the baby is on her breast for them to remove him; and this is not an insignificant percentage [of mothers]. We are not talking about the primipare; most of them would be multipare. She wouldn't be eager to see her baby like a primipare so [it is as if] 'I went through the pain and he is the cause of it, remove him'."

Several practitioners reported mothers were avoiding hospitals "forcing" breastfeeding and may even expect infant formula as gift at hospital discharge. As explained by a 29-year-old mother of two children:

"In that other hospital, they were better. They gave us leaflets, they gave us shampoo and soap; they gave us milk. The kind of milk you want to give your baby, they offered it to us for free from the hospital's pharmacy whereas in [this hospital where I delivered my second baby] they did not."

A number of hospitals also offer mothers the option of contacting the maternity ward for support after discharge or they provide them with the national hotline for breastfeeding support. It was reported few women take advantage of these.

7.2.5 Discussion

The qualitative analysis of stakeholders' experiences and perceptions provides evidence that early breastfeeding initiation and exclusivity until 6 months in Lebanon are hindered by the practice of health professionals and the health services environment which in turn are affected by the policy environment and societal factors, and that the current efforts for the revitalisation of the BFHI, including the implementation of law 47/2008, are faced with various challenges.

Findings from interviews with mothers were congruent with national statistics showing that breastfeeding practices fall short of the WHO recommendations. While

all women initiated breastfeeding, none of them were exclusively breastfeeding their infants who were between 1 and 5 months; they supplemented with infant formula or gave other liquids or foods. Mothers were aware of breastfeeding benefits but held misconceptions and milk insufficiency was a major worry, as found in previous research (13, 14). As revealed in this study, these practices and beliefs are shaped by wider factors.

At the health services level, women are reaching the delivery stage not informed about breastfeeding. Interviews revealed that few Ob/Gyns discuss the topic with their patients for reasons such as lack of time, lack of interest in the subject or women's demand for it as well as their perceptions that women's education is not part of their role. In fact, women's lack of preparedness is not limited to breastfeeding alone; mothers are not prepared to the birthing process, or other practices such as caesarean section (22). In a study assessing women's experiences of maternity care, women were satisfied with the information about pregnancy but most of primiparous women complained about the lack of information on labour and delivery procedures (16). Furthermore, prenatal classes are not offered in a systematic way; none of the governmental public hospitals offers such classes (28) and the ones offered in few private hospitals have been criticised in this study for their content that is focused on birthing processes and low attendance levels.

Evidence for medicalisation of childbirth, which has been associated with private practice, medico-legal pressures and the partial involvement of women in decision-making (29), was reported in this study. A review of hospital practices in Lebanese maternity wards revealed that many of the routine procedures and interventions performed are either not beneficial or may carry risks or be harmful to the women or infant such as induced labour and episiotomies (17). For caesarean section, a population-based survey found the rates to be at 23.2% (20) whereas a more recent hospital-based survey found alarmingly higher rates at 40.8% of all reported deliveries in 2008 (21). These practices are known to interfere with early breastfeeding (30-33).

The obstetrician-led maternal care in Lebanon has caused the marginalisation of the midwifery profession: midwives' roles are now restricted to those of an obstetric nurse where the encounter between midwife and women only happens during labour

in hospitals and her role is restricted to providing information on routine procedures (21, 22). This hierarchy in medical care has been reported to have an effect on women's decision-making process. While midwives are the main providers of breastfeeding assistance and information post-delivery; their input is often diminished by medical doctors' advice that is not always supportive of breastfeeding. This total trust in doctors also translates into women being less empowered to question or refuse practices performed or recommended by physicians as also shown in a study with Lebanese women about the medical management of their pregnancy and delivery (16).

Women do not always receive the appropriate support or information from hospital staff or paediatricians they follow up with after discharge. Practitioners provide various recommendations which are not always evidence-based and may be conflicting. They may have their own misconceptions, or may advise supplementation with infant formula given their lack of breastfeeding management skills. These are likely due to limited pre-service and in-service training. While breastfeeding education in medical schools seems to be limited as reported in interviews, it seems to be better covered in the nursing/midwifery training. One of the few midwifery schools in Lebanon recently started offering a breastfeeding diploma for midwives, an opportunity to improve knowledge and skills to support women. In-service training is likely to be limited as well with the absence of breastfeeding training. The BFHI training that consisted of 40 hours training of trainers' courses given to two or three health professionals per attending hospital followed by further training of 20 hours to larger groups of health professionals per hospital was mainly attended by nurses and midwives which could reveal the lack of interest among hospital administrators, paediatricians and Ob/Gyns in the initiative. Another contributing factor is the lack of unified national standards or guidelines for obstetric or paediatric care or any other medical area (22). A main obstacle for the development and enforcement of such standards is likely the diversity of medical schools in Lebanon which follow the French or American educational systems and the return of medical graduates who received their training abroad including the United States, Western and Eastern Europe and other Arab countries. This diversity and the absence of a regulatory body of the private health sector make it hard to reach consensus on best practice (22).

This study also revealed that the current efforts for the revitalisation of the BFHI, including the implementation of law 47/2008 are faced with challenges additional to the already existing ones within the health care system to promote and support breastfeeding. As the beneficiaries, mothers' acceptability of these practices is crucial to the initiative's successful implementation thus efforts should be put into sensitising them and their families on the initiative as much as on the health services themselves. An integrative review of barriers and facilitators to implementing the baby-friendly initiative revealed similar challenges encountered at the level of mothers, health providers, and health services in both developing and developed countries (34).

As presented by Hector *et al.* (12), health services barriers are shaped by the public policy environment, and an examination of the implementation of existing policies to improve early breastfeeding practices in Lebanon was done by analysing the position and influence of key stakeholders (27). The study revealed that despite the government's endorsement of law 47/2008 for regulating the marketing of breast milk substitutes and the establishment of a National Programme for Promoting and Supporting Infant and Young Child Feeding in 2011, efforts for implementation of these policies seemed to be hindered by the weak commitment and governance of the Ministry of Public Health, the weak engagement from key international organisations and professional associations and the financial interests offered by breast milk substitute companies to hospitals and health professionals (27).

Limitations

This study was carried out using purposeful sampling of women and other stakeholders, these cannot be considered representative of all Lebanese mothers, practitioners or policymakers; interviews rather provided insights into barriers. Additional stakeholders that would have been useful to interview are midwives with no managerial positions as their perceptions might differ from those of their managers.

One potential limitation to interviews with mothers is the conduct of the interview in the clinic or dispensary whether before or after the appointment. This may cause paediatricians to advise more on breastfeeding and to respondent bias in regard to the advice women get from them. However, the lack of potential places from which to recruit women required the investigator to be pragmatic in her data collection. In practice, the fact that paediatricians were not the contact person between the

investigator and the participant (secretaries or nurses were) minimised this potential bias. Furthermore, most of private clinics did not have a separate room in which to conduct the interviews; thus they were either conducted on the side in the waiting room if possible or the mother happened to be the only patient waiting. This lack of privacy may explain the short duration of some interviews conducted in these settings.

7.2.6 Conclusions and policy implications

Early breastfeeding initiation and exclusivity till 6 months are hindered by factors at the level of the health care system which in itself is affected by the public policy and societal environments. Suboptimal antenatal preparedness to breastfeeding, detrimental hospital practices during hospital stay with SSC and rooming-in not always reported as routine practices and infant formula given as prelacteal feeds or not for various reasons, the medicalisation of childbirth, health professionals' knowledge and attitudes towards breastfeeding and the aggressive marketing by breast milk substitutes companies are all contributing factors.

Given the current context we recommend interventions that would 1) sensitize women, empower them and increase their demand for early breastfeeding initiation and exclusivity until 6 months as well as baby-friendly practices within health services, 2) improve health professionals' knowledge and skills for breastfeeding promotion, support and management, and 3) limit the aggressive marketing of breast milk substitutes companies through:

- 1- Providing mothers with the information and skills needed through awareness campaigns using social marketing principles in order to target specific breastfeeding misconceptions and negative perceptions as well as improve their knowledge of breastfeeding management. This should be in collaboration with medical doctors who are supportive of the cause given the trust mothers accord to physicians.
- 2- Sensitising and mobilising the media on the breastfeeding issue and the BFHI along with other maternal and infant health issues.
- 3- Offering prenatal classes in public and private hospitals as well as through private clinics in collaboration with the Association of Midwives and the Lebanese Society of Obstetricians and Gynaecologists. Prenatal classes would include breastfeeding education that is repeat, informal, given in groups and personalised to women's needs (35). To ensure accessibility and effectiveness,

all health professionals should be made aware of them so they recommend them; and the information given to women should not conflict with the Ob/Gyns and paediatricians' recommendations.

- 4- Developing unified national standards or guidelines for all medical areas including guidelines for breastfeeding management in order to avoid conflicting advice to women.
- 5- Conducting continuous medical education courses on breastfeeding and the BFHI Ten Steps for Successful Breastfeeding in association with the Lebanese Society of Obstetricians and Gynaecologists and Lebanese Paediatrics Society.
- 6- Sensitising hospital administrators and relevant hospital staff on the BFHI.
- 7- Offering postpartum support through development of mother support groups; there is increasing evidence for the effectiveness of these peer support groups on improving breastfeeding initiation and exclusivity (35).
- 8- At the policy level, the Ministry of Public Health and other relevant actors need to ensure the implementation and enforcement of law 47/2008 and its dissemination in media outlets and medical and educational institutions.

7.2.7 Acknowledgments

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7.2.8 Funding

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7.2.9 Conflict of interest

Authors declare no conflicts of interest.

7.2.10 References

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7.3 Appendices

Appendix 7-1 Coding frame for analysis of mothers' interviews

1. Feeding practices
 - 1.1. Mother feeding plans during pregnancy
 - 1.1.1. Feeding plan
 - 1.1.2. Discussed with
 - 1.2. Expected/planned duration to breastfeed
 - 1.3. Expected/planned age for introduction of complementary foods
 - 1.4. Current feeding practices
 - 1.5. History of feeding practices (how did they initiate and continue)
 - 1.5.1. Breastfeeding initiated (exclusive or not) + difficulties
 - 1.5.2. Breastfeeding terminated (exclusive or not) + causes
 - 1.5.3. Supplementation with infant formula + causes
 - 1.5.4. Other liquids given
 - 1.5.5. Introduction of solid foods
 - 1.6. Mothers' decision to change infant feeding practices (based on advice from health provider or not)
 - 1.7. Mothers' satisfaction with current feeding practices
2. Mothers knowledge and perceptions
 - 2.1. Breastfeeding
 - 2.1.1. Breastfeeding benefits
 - 2.1.2. Other reasons to prefer breast milk
 - 2.1.3. Drawbacks of breastfeeding
 - 2.2. Mothers' perceptions of the need to supplement breastfeeding with infant formula
 - 2.3. Mothers' perceptions of ways to improve milk supply
 - 2.4. Mother's perceptions of factors that decrease milk supply
 - 2.5. Mothers' perceptions of recommended breastfeeding duration
 - 2.6. Mothers' perceptions of recommended age for introduction of complementary foods
 - 2.7. Other sources of information
 - 2.8. MOPH recommendations

3. Role of the health system in promoting and supporting breastfeeding
 - 3.1. Role of the obstetrician in antenatal care
 - 3.2. At hospital, after birth
 - 3.2.1. Hospital practices
 - 3.2.1.1. Mother asked if she wants to breastfeed
 - 3.2.1.2. Baby put on mother's breast
 - 3.2.1.2.1. Directly after delivery
 - 3.2.1.2.2. Later in the room
 - 3.2.1.2.3. After discharge
 - 3.2.1.3. Mother received assistance on how to breastfeed (by whom)
 - 3.2.1.4. Rooming-in
 - 3.2.1.5. Mother received information on breastfeeding
 - 3.2.1.5.1. By whom
 - 3.2.1.5.2. Type of information
 - 3.2.1.6. Distribution of leaflets
 - 3.2.1.7. Infant formula given to infants whether as pre-lacteal feed or not
 - 3.2.2. Law 47/2008 (Law adapted from WHO Code)
 - 3.2.2.1. Advertisements within the hospital
 - 3.2.2.2. Distribution of infant formula alone or in gift boxes at discharge
 - 3.2.2.3. Purchase of infant formula at hospital
 - 3.2.3. Role of the paediatrician within hospital
 - 3.3. Role of the paediatrician after discharge
4. Infant feeding recommendations by health providers
 - 4.1. Breastfeeding initiation
 - 4.2. Age at introduction of complementary foods
 - 4.3. Duration of breastfeeding
 - 4.4. Duration of EBF
 - 4.5. Reasons to stop breastfeeding
 - 4.6. Reasons to supplement with infant formula

5. Role of close network in promoting and supporting breastfeeding
6. Socio-cultural factors that may affect women's decision to initiate and/or continue breastfeeding or supplement with infant formula
 - 6.1. Mothers' perceptions of why other women don't breastfeed
 - 6.2. Pejorative perceptions of women who breastfeed for long periods of time
 - 6.3. Peer pressure to quit breastfeeding or supplement with formula
7. Work: a barrier to (exclusive) breastfeeding?
8. Mother's determination: key for successful breastfeeding

Appendix 7-2 Coding frame for analysis of other stakeholders' interviews

1. Stakeholders' perceptions of
 - 1.1. Current practices
 - 1.2. Why mothers do not initiate breastfeeding
 - 1.3. Whether breastfeeding/IYCF is/should be a priority
2. Antenatal preparedness to breastfeeding
 - 2.1. Role of Ob/Gyns during pregnancy or early after delivery
 - 2.2. Prenatal classes
 - 2.3. Limited role for midwives at delivery
3. Detrimental hospital practices to EBF initiation
 - 3.1. Appropriate routine practices not applied
 - 3.1.1. Skin-to-skin contact
 - 3.1.2. Rooming-in
 - 3.2. Ob/Gyns give IV drugs
 - 3.3. Breastfeeding assistance offered to primiparous
 - 3.4. Misconceptions held by hospital staff
 - 3.5. Conflicting messages between health professionals
 - 3.6. Postpartum phone support
4. Lack of support after hospital discharge
 - 4.1. Health professionals reported practices in regard to breastfeeding
 - 4.2. Health professionals infant feeding recommendations
5. Challenges to implementation of the BFHI and law 47/2008
 - 5.1. Individual level
 - 5.1.1. Mothers
 - 5.1.2. Health professionals
 - 5.2. Organisational level
 - 5.2.1. Leadership of BFHI programme
 - 5.2.2. Organisational culture
 - 5.2.3. Human resources

- 5.2.4. Breastfeeding training
- 5.2.5. Infrastructure and routines
- 5.2.6. Hospital reliance on infant formula
- 5.2.7. Contracts with paediatricians

6. Reasons for previous BFHI failure

7. Law 47/2008

7.1. Violations of law 47/2008

7.2. Challenges to implement law 47/2008

8. National programme

8.1. Description/ structure/ actors

8.2. Challenges in implementation of national programme

8.2.1. The national programme

8.2.2. The BFHI

9. Suggested strategies

8 Implementation of policies to promote, protect and support breastfeeding in Lebanon: A stakeholder analysis

8.1 Introduction

An article of the political dynamics around the implementation of existing policies to promote, protect and support breastfeeding has been drafted for submission to *Health Policy and Planning* journal. Findings are based on the qualitative research with mothers and other stakeholders. The two coding frames developed for the analysis of interviews with mothers and with other stakeholders were presented earlier in **Appendices 7.1** and **7.2**.

8.2 Article to be submitted for publication

Article cover sheet

1. For a 'research paper' already published

1.1. Where was the work published?

1.2. When was the work published?

1.2.1. If the work was published prior to registration for your research degree, give a brief rationale for its inclusion

1.3. Was the work subject to academic peer review?

1.4. Have you retained the copyright for the work? Yes / No

If yes, please attach evidence of retention.

If no, or if the work is being included in its published format, please attach evidence of permission from copyright holder (publisher or other author) to include work

2. For a 'research paper' prepared for publication but not yet published

2.1. Where is the work intended to be published? Health Policy and Planning journal

2.2. Please list the paper's authors in the intended authorship order

Akik, C., Ghattas, H., Filteau, S. Knai, C.

2.3. Stage of publication – Not yet submitted

3. For multi-authored work, give full details of your role in the research included in the paper and in the preparation of the paper. (Attach a further sheet if necessary)

I developed the study design with input from all co-authors. I collected and analysed the data.

I drafted the paper and incorporated feedback from supervisors and advisory committee.

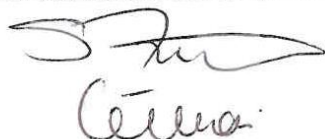
NAME IN FULL: CHAZA AKIK

STUDENT ID NO: 097447

CANDIDATE'S SIGNATURE

Date: 30 July 2014

SUPERVISOR/SENIOR AUTHOR'S SIGNATURE



Implementation of policies to promote, protect and support breastfeeding in Lebanon: A stakeholder analysis

8.2.1 Abstract

Recognising the vital role of appropriate feeding practices in optimising health outcomes, the Global Strategy for Infant and Young Child Feeding jointly developed by the World Health Organisation and the United Nations Children's Fund recommends the implementation of a comprehensive policy on infant and young child feeding that protects, promotes and supports breastfeeding. Lebanon endorsed the strategy in 2002 and passed law 47/2008 for the regulation of marketing of breast milk substitutes. However, it does not meet the international recommendations for early exclusive initiation, continued exclusivity till 6 months and prolonged breastfeeding up to two years and beyond. Following an assessment that identified gaps among the policies and programmes meant for implementing the strategy in Lebanon, the issue of breastfeeding has received further attention from policymakers. A National Programme for Promoting and Supporting Infant and Young Child Feeding was developed. This study examined the political dynamics around the implementation of law 47/2008 and the National Programme to improve early breastfeeding practices in Lebanon by analysing the position and influence of key stakeholders. Semi-structured interviews were conducted with a purposeful sample of 59 stakeholders in early breastfeeding. The framework approach was used for analysing data. Findings revealed that despite endorsement, efforts for implementation of the policies seemed to be hindered by the weak commitment and governance of the Ministry of Public Health, the weak engagement from key international organisations and professional associations compounded by the financial interests of strong stakeholders in the health care system offered by breast milk substitute companies thus hindering advocates' efforts for the promotion and support of breastfeeding.

Key words: stakeholder analysis, breastfeeding, Lebanon, International Code of Marketing of Breastmilk Substitutes, policy analysis

Key messages

- There is a disconnect between adoption of law 47/2008 and the National Programme and their practical implementation.
- Implementation efforts seemed to be hindered by the weak commitment and governance of the Ministry of Public Health and the weak engagement from key international organisations and professional associations.
- The financial interests of strong stakeholders in the health care system offered by breast milk substitute companies contributed to the weak implementation of key policies.

8.2.2 Introduction

Adequate nutrition in the early years of life is essential for optimal growth, development and productivity of individuals and populations (1). The World Health Organisation (WHO) recommends exclusive breastfeeding (EBF) initiation within the first hour of life until 6 months of age and the introduction of complementary foods at 6 months, with continued breastfeeding up to 2 years and beyond (2).

The vital role of appropriate feeding practices in optimising health outcomes has been reflected in international commitment over the last five decades to improve infant and young child feeding (IYCF) practices. The most comprehensive international agreement is the Global Strategy for Infant and Young Child Feeding (GSIYCF). Jointly developed by WHO and the United Nations Children's Fund (UNICEF), the GSIYCF recommends the implementation of a comprehensive policy on IYCF that protects, promotes and supports breastfeeding (2) (**Table 8-1**).

The implementation of the GSIYCF has recently been shown to be effective in improving EBF rates in an analysis of Demographic and Health Surveys from 22 countries in Asia and the Middle East, Africa and Latin America. These countries had also carried out the World Breastfeeding Trends Initiative (WBTi), a tool that uses a set of 15 indicators addressing policies and programs as well as feeding practices (3). The higher the WBTi score, the more consistent national policies and programs were with WHO/UNICEF recommendations. Countries with higher WBTi scores had higher increases in national EBF rates. Maternal demographic factors, such as urban residence, paid maternal employment, maternal education, or gross national income,

Table 8-1 The GSIYCF policies and programmes that protect, promote and support breastfeeding

		Policies and programmes
Protection		International Code of Marketing of Breast-milk Substitutes
		International Labour Organisation maternity protection legislation C.183
Promotion		Information, Education and Communication programmes
Support	Through the health care system	Provision of skilled counselling (pre-service and in-service training of health workers)
		The Baby-Friendly Hospital Initiative Ten Steps to Successful Breastfeeding
		Increasing access to antenatal care, education about breastfeeding and delivery practices
	In the community	Community-based support networks (mother-to-mother support groups and peer or lay counsellors)

identified as potential confounders, were not associated with the annual increase in EBF (3).

In 2002, the Lebanese government endorsed the GSIYCF (4). However, Lebanon does not meet the international recommendations for early exclusive initiation, continued exclusivity till 6 months and prolonged breastfeeding up to two years and beyond. Despite high initiation rates, data from the Multiple Indicators Cluster Survey –Round 3 showed that only about 40% of Lebanese infants between 0 and 1 month were exclusively breastfed and this percentage dropped to 2% for those between 4 and 5 months of age. In fact, more than 40% of infants at 0 - 1 month were given infant formula in addition to breast milk (5).

Possible reasons for suboptimal EBF rates in Lebanon have been explored in various studies (6-12) revealing that optimal early breastfeeding initiation and exclusivity are undermined by factors related to the mother, the hospital and health services, work, home environments and societal factors. The Lebanese health system is likely to play an important role in early breastfeeding practices: most childbirths occur in hospitals with 80.1% of deliveries happening in private hospitals or clinics; and 93.6% of women seek antenatal care with medical doctors (13). The health system is highly

privatised and medical doctors are highly respected and influential in that community (7, 14, 15).

The 2010 WBTi conducted in Lebanon identified gaps among the policies and programmes meant for implementing the strategy such as the absence of a national action plan and lack of funding for it, the need to revitalise the Baby-Friendly Hospital Initiative (BFHI) and the lack of monitoring and enforcement of law 47/2008 enacted in 2008 to regulate the marketing of breast milk substitutes to newborns and infants based on the International Code of Marketing of Breastmilk Substitutes (ICMBS) (16). The BFHI was launched in 1991 by the Lebanese Ministry of Public Health (MOPH) in collaboration with UNICEF and WHO and 22 hospitals were certified (4). However, efforts for the certification of more hospitals and the implementation of the ICMBS were hampered by the decline in international support due to the absence of an entity within the MOPH responsible for monitoring and the inactivity of the national committee for the protection and promotion of breastfeeding (4). The initiative was reinitiated in 2007-2008 by WHO in collaboration with the Order of Nurses; but it was not adopted by the MOPH, the Order of Nurses or Syndicate of Private Hospitals (16).

Since the WBTi assessment, the issue of breastfeeding has received further attention from policymakers and a National Committee for Ensuring Proper Nutrition for Infants and Young Children (referred to as the *National Committee* throughout the rest of the article) – headed by the MOPH's general director – was created in 2011. The MOPH agreed to allocate part of its budget to fund the National Programme for Promoting and Supporting Infant and Young Child Feeding (referred to as the *National Programme* throughout the rest of the article) that was later developed by the National Committee. It has a comprehensive agenda but excludes the implementation of law 47/2008.

This article examines the political dynamics around the implementation of law 47/2008 and the National Programme to improve early breastfeeding practices in Lebanon by analysing the position and influence of key stakeholders.

8.2.3 Methods

Analysis was conducted using stakeholder analysis principles (17, 18) to assess the current interest or position and influence of stakeholders on the implementation of the National Programme, the BFHI and law 47/2008 to improve early breastfeeding practices. Criteria for judging a stakeholder's position on implementation of policies were developed thus position was gleaned from stakeholders' awareness or knowledge of relevant policies, their views of current breastfeeding practices (whether these have changed over the years and for which reasons), whether IYCF including breastfeeding was considered by them to be a priority, the impact of implementing the policies on improving breastfeeding practices and whether partnerships with infant formula companies are appropriate or not. Influence was categorised as high, medium or low influence on implementation of policies. It was defined as the degree to which stakeholders are able to place the issue of IYCF including breastfeeding and policies' implementation on the political agenda, to mobilise on the issue, to actively participate in decision-making forums, to directly influence the uptake of proper breastfeeding practices or intake of breast milk substitutes, to be visible in the media and the resources they have to do the above.

Data were collected using semi-structured interviews with stakeholders in breastfeeding in Lebanon, defined as individuals who either are interested in the breastfeeding issue, are affected by it or who have an influence on the policy decision-making and implementation process given their position (18). A preliminary list of potential interviewees was developed from a review of the Lebanese literature on breastfeeding and the health system and an existing professional network at the American University of Beirut (AUB), expanded upon using the snowball technique. Ten major groups of stakeholders were interviewed: governmental ministries and agencies, United Nations (UN) organisations, local and international non-governmental organisations (NGOs), professional bodies including associations, orders, societies and syndicates, health care professionals, corporate actors, media, academics and mothers themselves. Data collection took place between February and September 2013.

While a number of participants spoke in their official capacity on behalf of their organisations, others gave their individual perspective. A comprehensive literature

review of breastfeeding practices and determinants in Lebanon and an overview of effective interventions at the health care system to promote early breastfeeding initiation and exclusivity until 6 months (19) contributed to a better interpretation of results obtained from interviews.

Transcripts of interviews were analysed using the framework approach given its relevance to applied qualitative policy research (20, 21). An initial reading of interview transcripts led to a preliminary list of key ideas and recurrent themes. Guided by the original research questions and the themes that emerged, data were organized into categories and the political dynamics for policy implementation emerged. The organisation of the data, using illustrative quotes, under these categories contributed to a better description of the data, the interconnections between the data and the generation of explanatory patterns.

Ethical approval was obtained from the Ethics Committees of the London School of Hygiene and Tropical Medicine and the Institutional Review Board at AUB.

8.2.4 Results

Fifty-nine interviews were conducted, 20 of which with mothers and 39 with other stakeholders, as outlined in **Table 8-2**. Nine potential interviewees refused to take part in the study; these were three paediatricians and obstetrician/gynaecologists (Ob/Gyns), an academic, four civil servants and a representative of a UN organisation.

Table 8-2 Institutional background/ occupations of interviewed stakeholders on the implementation of the National Programme and law 47/2008

Sector (Number of interviewees)
Government ministries and agencies (8)
A United Nations organisation (1)
International NGOs ¹ (3)
Local NGOs and civil society groups (2)
Professional associations, orders, societies and syndicates ² (7)
Health care professionals (14) <ul style="list-style-type: none"> • Hospital manager (1) • Obstetrician/ gynaecologist (1) • Paediatricians (4) • Family physician (1) • Paediatric nurse (1) • Maternity wards managers (3) • Pharmacists (2) • Dietician (1)
Mothers (20)
Corporate actors (1)
Media (1)
Academics (2)

¹NGO: Non-Governmental Organisation

²Five professional bodies (A, B, C, D, E) were interviewed

Disconnect between policy endorsement and translation on the ground

The stakeholder analysis identified a disconnect between adoption of key policies and their practical implementation. Specifically, the key actions were the passing of law 47/2008 (which regulates the marketing of breast milk substitutes to newborns and infants in Lebanon), the establishment of the National Committee and the development of a National Programme in collaboration with other stakeholders. Through these actions, the MOPH put the IYCF issue back on the agenda, yet implementation was subject to the interests and influences of actors that have a stake in this issue.

Law 47/2008

The MOPH is the executive body responsible for implementing law 47/2008. The National Advisory Committee for the Promotion and Protection of Breastfeeding that includes representatives of ministries, governmental agencies, professional associations and orders, NGO and international organisations, was created in 2011 and is responsible for monitoring the implementation of this law.

- The MOPH: weak dissemination, implementation and enforcement

Although the law was passed in 2008, its dissemination remained an issue as reported by a professional body's representative:

"There was a clear law banning the marketing [of breast milk substitutes] but there was an issue with its dissemination. Not everyone knew about it."

In fact, many interviewed health professionals were not aware of the law; and the media may not be aware of it either. The media representative highlighted the lack of knowledge of law 47/2008 by the MOPH staff and lack of communication of the law to other relevant ministries such as the Ministry of Information and subsequently to mass media. In fact, s/he reported being made aware of violations in their printed materials by breastfeeding advocates:

"I was never made aware of it legally [...]. It is not even mentioned anywhere and the first time we were approached by a lady [one of group of motivated mothers], we tried to ask the Ministry of [Public] Health if it is true. Are there any regulations? Can we have any documentation about that so we can have a look at it? They didn't even know about it. They said they didn't know."

S/he also reported that the sector does not perceive breastfeeding as a core subject on which to focus. This was confirmed by mothers who also reported no relevant infant nutrition information on television.

The MOPH was not perceived to be enforcing the law as described by an international NGO representative and a paediatrician, respectively:

"The MOPH is not taking any action when the law is being violated. You find companies putting advertisements again including on billboards; we are reporting it and still the MOPH is not acting."

"I don't feel this is being implemented at all. These products are being promoted left and right whether by health care professionals or directly to the consumer. These violations are happening, monitoring so far is non-existent."

Although member of National Advisory Committee for the Promotion and Protection of Breastfeeding, the Ministry of Social Affairs interviewee also reported not enforcing the law in their health centres:

“There is no monitoring on whether the paediatrician is given these samples and decides to give them out in the centre rather than his clinic. [...] It is possible that this is done in our centres, nothing stops them. And we are not banning it as part of a clear administration’s decision. [...] We have never discussed the fact the paediatricians should not be allowed to give out samples.”

However, a MOPH civil servant involved in the implementation of law 47/2008 perceived it to be implemented: once violations were reported, warnings were issued to the relevant company, and in case of recurrence, the Ministry had the authority to refer it to the concerned judiciary authority.

- Pressure from advocacy groups

In fact, the MOPH seemed to act reactively to pressure from advocates and specifically a group of mothers who reported violations of law 47/2008 and created a petition putting pressure on the Ministry to follow-up on these violations occurring in media and health services. Mothers mobilised through breastfeeding peer support meetings and social media forums, in speaking of the group, one mother said:

“It just somehow seemed to really tap into a lot of the moms; everybody had faced these problems, in one way or the other; in some cases [...] they themselves had to give up breastfeeding for the previous child because they were not aware about these things; so now they feel [...] they really need to do something because they are not happy that they fell into these [...] traps. And now they want to make sure that for the future, they don’t have to do that and that other people don’t have to.”

The group of mothers recently formed an association aiming to raise awareness among mothers and provide peer support. This formal structure was perceived by the interviewee to give them further recognition and consequently influence:

“If we are an association then we can go to the press [...], we are stronger, then it will be more difficult for [decision makers] to ignore us [...] this is one of the reasons why creating an association is important.”

- Ad-hoc policy process, institutional incapacity and a non-active national committee were reported as potential reasons for the non-implementation of the law

The non-implementation of the law was not surprising to many interviewees as it provides another example of the non-enforcement of laws in the Lebanese context as per a paediatrician:

"This [law] has been present for a long time but it is not being implemented on the ground like everything else in Lebanon. There are laws but they don't get enforced and the ones who breach them are not held accountable; and the ones responsible for holding people accountable are the first ones to breach them."

This is partly due to the lack of assessment of implementation barriers according to one academic:

"One of the major limitations [...] is that there is not enough attention given to implementation barriers right at the level of policy development. We are developing the policy and then barriers will come. [...] When the tobacco [control law] first came out or seat belt [use], we said it will not be enforced. Lebanese people know that the policy has not been given sufficient attention to address this. When the state comes and says "this is the policy, we know these are the barriers and this is how we are addressing it", and they enforce it, then we [Lebanese] will take it seriously. This is not happening, that is why a lot of people do not have faith in the government capacity to enforce law, regulations and policies. [...] They have institution capacity problems."

In fact, the MOPH has limited institutional capacity – financial and human – for implementation as reported by a civil servant involved in the National Programme and a health promotion academic involved in tobacco control respectively:

"If anything happens with the law 47/2008, we do not have one employee to take care of this, to pick up calls and refer violations."

"Given what kind of funding they [MOPH] have and resources in terms of people, knowledge and skills. It is very limited."

Furthermore, the National Advisory Committee, responsible for monitoring the implementation, was reported as not fully functional as meetings were not being held as frequently as required and actions were not taken as reported by a member civil servant:

“Once the government formed this national committee, then there was a political will [but] there hasn’t been an actual translation. We can say that it hasn’t been translated on the ground. Not one action or activity.”

There was contradictory information on whether enforcement procedures have been developed or not. According to one interviewee, the delays were due to political pressure:

“That is why they are obstructing the Code, because the issue of [breast milk substitutes companies’] contracts [with hospitals] is being approached.”

The National committee and implementation of the National Programme

In order to overcome the stalling in implementation of law 47/2008, a National Programme for Promoting and Supporting Infant and Young Child Feeding was established and a National Committee was formed. The National Committee has the role of overseeing five sub-committees responsible for implementing the programme that are (1) the BFHI, (2) infant feeding in emergencies, (3) media and promotion, (4) mother support groups and (5) pre-service and in-service training. Only the first two were active at the time of data collection.

- ***The MOPH: weak commitment***

Although the MOPH’s lack of institutional capacity to implement and sustain programmes has been recognised, the MOPH plays the role of facilitator by disseminating decrees or decisions, and forms an umbrella for other organisations responsible for implementation. According to a civil servant involved in the National Programme and a governmental agency representative:

“If there are programmes [relevant to our department], we take part in them as facilitators, not more or less as we cannot do any implementation and we cannot be in the field as there are no personnel.”

“For this country, if the government is to implement the programme on its own, it wouldn’t work. There must be a partner to whom the state would

provide an umbrella and this partner would implement the work as there is no one in the government that does the implementation. Implementation needs planning and follow-up; and then the civil society, those who believe in this cause, would act under this umbrella. [...] We do not have a sponsoring government or a government that develops programmes and implements them or has the ability to lead these projects in the real sense of leadership. Consequently, there should be leadership in the shadow. What does that mean? An entity that believes in the state, in the country's interest and thus it is not there to work in parallel to the state. It would be working under the umbrella of the state in a transparent way."

These organisations include three NGOs which were key in the formation of the National Programme and were involved in the implementation through capacity building and raising awareness. Two of these were also the sole funders of the programme's activities at time of data collection. One of these NGOs has played a major advocacy role. It was perceived by most stakeholders at the decision-making level as highly influential given its pioneer role in supporting and encouraging breastfeeding and had the professional expertise. It also had the ability to mobilise hospitals for the BFHI since its members were involved in the previous BFHI in the 1990s.

Concerns among members of the National Programme were soon raised about the programme's sustainability once funding from international NGOs ends. They called for further commitment from the MOPH as explained by one NGO representative:

"There is a need to formalize this [programme]. The MOPH has to say this is our policy, to promote it and to disseminate it to other ministries. [...] It can be further formalised. The way it is right now is based on an initiative supported by different stakeholders. If these are gone, there will be nothing. [...] The coordinator, the supporting NGOs, the individuals who are supporting... in my opinion, if these leave, nothing will happen. It will only be at an individual level then, not a national level."

Their worries are based on a perceived lack of commitment on behalf of the MOPH towards the National Programme. Despite the enactment of law 47/2008 and the creation of the National Programme, some interviewees reported breastfeeding did not

seem to rank high on the MOPH's list of priorities compared to other health programmes. As explained by a representative of a UN organisation:

"Its [the GSIYCF] translation on the ground is dependent of the priorities put by governments. So when you have systems that are under pressure... for example now the Lebanese system is under pressure given the presence of hundreds of thousands of Syrian refugees or displaced. So I don't know how this would be a priority... despite its importance in times of displacements."

As well as by a MOPH civil servant involved in the National Programme:

"There are more important issues given the situation of the country so I believe on the priorities' scale, breastfeeding is not ranked at the very top."

The MOPH was also not perceived to have fulfilled its financial commitment towards the National Programme: the funds allocated had not been cashed at time of data collection as reported by one NGO representative:

"They [the MOPH] committed to have a certain percentage of the budget be allocated to this programme. That was a year ago and until now there has not been anything."

Furthermore, a civil servant involved in the National Programme identified the need for the MOPH to institutionalise the National Programme within its departments:

"If it [the programme] doesn't get institutionalised [...] in some department and it becomes part of its tasks or it is not defined as a priority, who will keep working on it? We would go back to fragmentation of this issue; where it is not limited to a person or a department. [...] It can't remain this loose."

One way in which the interviewee explained this delay is the MOPH's current organisational structure:

"The infant feeding issue, we still do not know where to squeeze it. Is it a legal topic? Is it under mother and child health? Is it nutrition? [...] It requires an update to the organizational chart as it is not part of it."

Also according to this person, the current status is translating into lack of accountability and less commitment towards the subject of infant feeding:

"This topic [infant feeding] has to be the responsibility of one department, of one person whether he is able to do it or not. If you receive a circular from the

top level that you are responsible for this, you will find time... if the director general or the minister tells me you are responsible for this, I will do as much as I can; I will take it more seriously.”

Furthermore, the National Committee was not reported to be fully functional. No regular meetings were being held as explained by the representative of a professional body:

“[The meeting was] around a year ago. [...] They never invited me again personally. They might be meeting I don’t know.”

In fact, meetings were reported to be held among members of sub-committees rather than at the level of the National Committee to avoid delays related to bureaucracy. However, this was reported to cause lack of engagement from stakeholders who are only on board of the National Committee as well as weak visibility for funding NGOs which are members of sub-committees only and thus influencing their decision-making power.

Where are the international organisations and professional associations?

- ***The UN organisation: where does it stand?***

The UN organisation identified IYCF as one of its child health priorities and as members of the National Committee, they provided technical support to the National Programme. As the Syrian refugee crisis caused a shift in resource allocation towards emergency relief in the region including Lebanon, further mobilisation of resources on IYCF for Lebanon from this entity was reported to be dependent of whether the international momentum on the GSIYCF reaches the region. Other interviewees pointed to the lack of interest of this organisation in the breastfeeding issue; representatives of a governmental agency and an international NGO respectively stated:

“[The UN organisations] had given up [on the breastfeeding issue]. In the past period, it wasn’t part of their interests in Lebanon. They consider this issue to be an old one. They have other priorities. We are trying to bring them back... Have we succeeded so far? No we haven’t.”

“[The UN organisation] has not been a main player in breastfeeding. They worked on the emergency context, on the statement [a joint-statement issued

by various governmental, non-governmental and academic institutions on IYCF in emergencies] ... let's say they are not the main supporter for now."

- Professional bodies: other priorities and agendas

Two professional bodies (A and B) were considered highly influential as members of both the National Committee and the National Advisory Committee for the Promotion and Protection of Breastfeeding and they belonged to a self-regulated Order of Physicians as illustrated by an academic:

"The Order of Physicians is a self-regulated body and there is no one above that Order that can regulate the regulator and that is why they [MOPH] have a problem with monitoring their performance. The MOPH cannot in fact dictate or whatever to the Order, it has to be by moral suasion. [...] They don't report to the MOPH."

The third professional body (C) is member of the National Committee and it represents powerful organisations that have a stake in early breastfeeding. It was however considered to have medium influence given the MOPH's ability to balance its power by being the main payer for these organisations.

None of these three professional bodies seemed to be engaged in the implementation of the National Programme. This lack of commitment is likely due to IYCF not being a priority given competing issues to address as per the representatives of two professional bodies. The third representative reported having been involved in setting action plans of the National Programme and perceived the professional body to be active in the implementation while other stakeholders reported the opposite and potential conflict of interest through collaborations with infant formula companies as reported by a governmental agency representative:

"One thing [members of] this [professional body] will tell you is the following: where would I get the money for the scientific conferences?"

The representative of professional body (C) suggested including the BFHI in the accreditation standards given the current interest of the MOPH in revamping all standards of accreditation. The professional body (A) representative confirmed that this entity would not take the lead on the subject but is ready to invest in providing technical resources and solutions for interventions promoting breastfeeding to women/mothers.

Two professional bodies (D and E) – whose members have a stake in promoting breastfeeding in health services – had their influence hampered by their weak presence at the decision-making level. Representatives reported being absent from the board of the National Committee (although one was present on the National Advisory Committee for the Promotion and Protection of Breastfeeding) and not being well informed of current national initiatives given irregular contact with relevant actors. While professional body (E) did not identify breastfeeding as one of its priorities to address, the representative offered to activate channels with professionals and highlighted the potential role for colleagues to play in breastfeeding education whether at hospital, primary health care centres or community levels.

The health care system: Breastfeeding promotion and support put at stake?

Implementation of law 47/2008 and the National Programme – specifically the BFHI – are further challenged by the interests of strong stakeholders in the health care system. As quoted by the representative of a governmental agency:

“Who is in control? The state, the medical profession and the hospitals... these are the three actors that either lead to failure or success of the law. They have to choose where to stand.”

- ***Financial incentives for hospitals not to implement law 47/2008 or the BFHI***

The representative of a governmental agency also reported that

“Compared to our previous experience, I found that the hospitals are harder [to convince of implementing law 47/2008 and the BFHI] than in 1990s. [...] Companies are pouring much more money than they used to in the past; thus no matter what the justification is... there are people who market the breast milk substitutes and are giving money, etc...”

These financial profits seemed to have an effect on the extent of engagement of public hospitals in the BFHI training offered by the BFHI sub-committee. Given the limited regulatory power of the MOPH on the private sector, enrolment in the BFHI training was compulsory for public hospitals while it was optional for private ones. Thus public hospitals might have perceived it as an unjust act with many private hospitals still benefiting from the financial profit as illustrated by the representative of a professional body:

“In Lebanon [...] the public sector is the minor sector with lowest finances and budget. [...] So how to implement it [the initiative] on the public sector only and not all [hospitals]? If we consider this necessary and important, then there is a necessity for the state to support this and put it in a law that is semi-constitutional i.e. that it should be implemented. I don’t take one hospital and apply the BFHI to it. [...] There are hospitals that are not involved in this [initiative] and are benefiting [financially]. Thus [we cannot require] a hospital that is in need [for financial support] to apply a difficult but beneficial law [...] [while] we ignore other hospitals that do not have financial issues. This is wrong.”

A civil servant involved in the National Programme confirmed that the initiative would only get implemented in public hospitals if the MOPH imposes financial constraints and that requires a high level decision:

“For governmental hospitals, this decision has to be taken at the higher level by the director general or minister where they would tell hospitals that you do not receive money in advance; we do not raise your financial ceiling unless you implement this [the BFHI].”

In fact, infant formula companies were reported to offer additional financial incentives for hospitals not to get involved in the BFHI as illustrated by a member of a local NGO:

“We knew about a hospital that was given US\$40,000 [by an infant formula company] and when they [infant formula company] heard about forming the national committee and there was some action, [they told them] take US\$50,000 and don’t get involved.”

Financial constraints were identified as the main reason for hospitals to accept these incentives as explained by the member of a local NGO reporting on an example with a public hospital director:

“I told him that the first people to implement this law have to be governmental hospitals. He said I want you to go to the MOPH, let them pay us back the money they owe us and haven’t given us and let them support us to get this machine and this machine and this machine then I would be ready not to be taking from infant formula companies.”

Furthermore, at the organisational level, hospital managers may not provide the support needed for health professionals who received the BFHI training to implement the baby-friendly practices within the hospital [as also presented in Akik *et al.* (22)]. The manager of a private hospital refused further BFHI training for his employees due to restrictions on contracts with infant formula companies:

“We sent people from here but what I understood [...] back then is that they will ban the infant formula from hospitals. We definitely cannot force people as I told you. Our job is to encourage people to breastfeed and highlight its benefits as well as the risks of infant formula but we cannot force them. This issue of forcing the woman... you cannot do it... you cannot... no one has the right to force someone to breastfeed.”

- Breast milk substitutes’ companies: direct marketing of products to mothers and financial incentives for paediatricians to market their products

Breast milk substitutes’ companies were also reported to market their products directly to mothers and health professionals. One way in which a baby food company seemed to be promoting its products was by building consumers’ trust in the brand through awareness sessions given to physicians and the public such as mothers. Most interviewees including the consultant dietician of a baby food company reported that many paediatricians may have signed contracts with infant formula companies in exchange for financial incentives to market the companies’ products as illustrated by the representative of a professional body:

“There are paediatricians who [...] are encouraging breastfeeding a lot. On the other hand, you have paediatricians who like the infant formula [companies] as they get gifts; they travel for conferences and congresses at the expense of infant formula companies. There is nothing for him [...] to lose.”

Such violations can only be sanctioned by the Order of Physicians according to the civil servant involved in implementation of law 47/2008:

“[By law], if it becomes clear to the MOPH that the medical doctor is collaborating with companies, it would be the role of the Order of Physicians to refer him to a disciplinary board. Any complaint we get is transferred to the Order and they deal with the physician who is not fulfilling his duty.”

Violations by health professionals are particularly threatening given the high influence of paediatricians on women's infant feeding decisions. Mothers were reported to have a total trust in physicians' advice and most of those interviewed were not aware of the MOPH recommendations in regard to infant feeding with only two out of 20 participants giving accurate answers on recommended duration of exclusive and continued breastfeeding. They were generally aware of breastfeeding benefits but held misconceptions and negative perceptions of breastfeeding [data also presented in Akik *et al.* (22)]. Mothers are thus considered non-mobilised in this context.

- *Influence and support of other health professionals*

This trust among women is also granted to Ob/Gyns. As the primary providers of antenatal care to pregnant women, they were not found to be always supportive of breastfeeding. As per the representative of a professional body,

“Unless you are graduating a different breed of obstetricians, do not expect much from the current obstetricians in spending time counselling on breastfeeding.”

Given various reasons such as their perceptions of women's education not being part of their role or lack of women's demand to discuss breastfeeding. They also reported mixed responses in regard to their interest in implementing the BFHI Ten Steps such as skin-to-skin contact: while some Ob/Gyns and especially the older generation may not be interested, the interviewed Ob/Gyn reported being supportive.

Efforts from the highly motivated maternity ward managers to implement baby-friendly practices were also hindered by the lack of support from hospital managers and the conflicting messages women receive from them and medical doctors [data also presented in Akik *et al.* (22)]. As explained by an academic:

“Don't forget also from a sociological or anthropological point of view that the power of the professional groups in Lebanon and in the region is very critical because still physicians in terms of hierarchy, the social image of physicians versus the social image of nurses, midwives, etc... so no matter... those stakeholders [nurses, midwives] are always on board, they work hard, etc... but again when they don't see the support... again how they see it in terms of hierarchy, it might affect their level of engagement and implementation and might create frustration.”

Other health professionals were not perceived to have high influence on women's infant feeding decision. Family physicians were rarely sought by families of newborns and may not discuss breastfeeding with their patients. Pharmacists might advise on the use of one brand of infant formula over another given specific conditions such as reflux or diarrhoea but they did not seem to contribute to the decision of supplementing formula. Sale of formula was reported as one minor service offered in pharmacies with limited financial profit. Hospital dieticians visited mothers during hospital stay and gave information on the importance of breastfeeding and its benefits as well as dietary tips. Being in contact with the mother-infant dyad in case of newborn hospital admission or discharge from the neonatal intensive care unit only, the interviewed paediatric nurse did not seem to influence the infant feeding decision as mothers would have already initiated a certain feeding method.

In this challenging context, certain positive influencers were identified

Interviews also identified a number of stakeholders that are supportive of breastfeeding and the implementation of relevant policies.

A governmental agency, with the aim of improving children's wellbeing in Lebanon, has a high interest in IYCF given its past involvement in lobbying for different laws related to infant feeding including laws 47/2008 and the extension of maternity leave. It developed a draft national strategy on early childhood including IYCF in coordination with different sectors including members of the National Committee. The delay in its ratification due to the political situation implies that implementation is not expected before a couple of years.

Moreover, since 2010, academics have played a major role in influencing the policy formulation of tobacco control through advocacy in partnership with motivated activists. This experience was reported to be positive by academics that could play a greater role in the implementation of policies to encourage breastfeeding.

Overview of stakeholders' positions and influences

Figure 8.1 provides a summary of stakeholders' influences and positions on the implementation of existing policies. This mapping, based on the semi-structured interviews described above, reveals stakeholders with varied levels of support and power.

Figure 8-1 Estimation of position and influence of Lebanese stakeholders on implementation of the National Programme, the BFHI and law 47/2008 (as at 2013)¹

POSITION	INFLUENCE			
		Low	Medium	High
	High support	Professional body (D) International NGO A governmental agency	International NGOs Maternity wards managers	Group of mobilised mothers Local NGO
	Medium support	Pharmacists Professional body (E) Family physicians Hospital dieticians Paediatric nurse Mothers (not mobilised)	Ministry Of Public Health Ministry of Social Affairs	Professional body (A) Media (not mobilised) Paediatricians
	Low support		Professional body (C) Academics	United Nations organisation Professional body (B) Ob/Gyns Hospital managers Breast milk substitutes companies

8.2.5 Discussion

Despite policy endorsement, implementations of law 47/2008 and the National Programme are hindered by the MOPH weak governance and commitment, the weak engagement of key international organisations and professional associations compounded by the financial interests of strong stakeholders in the health care system offered by breast milk substitute companies. These are in turn hindering advocates' efforts for the promotion and support of breastfeeding.

Although the MOPH put IYCF back on the agenda, findings highlighted weak ownership of the programme whether due to low prioritisation or weak governance. The conflict in neighbouring Syria has likely contributed to a shifting in MOPH priorities. Since the start of the conflict in 2011, over a million refugees have registered with the United Nations High Commissioner for Refugees in Lebanon by May 2014 (23), which constitutes around a quarter of the Lebanese population. This influx of refugees is putting pressure on the country's infrastructure in terms of health, education, water and sanitation among others and shifting government's efforts to deal with this emergency crisis. The MOPH also suffers from weak governance. The civil war that extended between 1975 and 1991 impeded the government's governance authority and its capability to fulfil its oversight functions and the problem persists until today (24). Looking at other health policies, lagging political commitment was also identified as a challenge for the tobacco control law issued in 2011 translating then into its weak implementation and enforcement (25).

Interview findings also revealed a lack of engagement from professional bodies and international organisations possibly due to competing issues to address or potential collaborations with infant formula companies. The National Committee was not reported to be meeting regularly which is likely a contributing factor and thus one can suggest that no serious efforts to engage them were taking place.

Other relevant stakeholders were not invited to take part in the National Committee such as the two professional entities whose members are key for provision of optimal maternal and child health. This highlights the ad-hoc process by which policies are formulated in this context. This also applies to policy implementation as to our knowledge, implementation barriers of either law 47/2008 or the National Programme were not assessed during policy development. An insight into barriers for

recommended early breastfeeding practices in the context of health services including the implementation of the BFHI and law 47/2008 are presented elsewhere (22).

The lack of commitment from the various relevant entities suggests that the interest of international NGOs – already working on Lebanese grounds in the health field – in funding programmes to encourage and support IYCF was the catalyst for the creation of this programme by the MOPH following years of advocacy efforts by the national NGO. However, reliance on donor funding without strong political will and long-term commitment – including financial – from the state will not lead to sustainable improvements and scaling up as proven by the previous experience with the BFHI in the Lebanese context (4) and international development literature on scaling up of maternal and child health programmes (26, 27). To scale up breastfeeding promotion programmes in low and middle income countries (LMICs), the “breastfeeding gear” model developed by Perez-Escamilla *et al.* revealed that political will, including long-term commitment from policy makers is crucial. There is also a need to generate the resources to support “the needed workforce development and program delivery” as well as promotion through mass media and local events (27).

As stated in the GSICYF endorsed by the Lebanese state in 2002, implementation of the strategy including the ICMBS (translated to law 47/2008 in the Lebanese context) requires collaboration between governments, international organisations and other concerned parties (2). As part of its public health roles, WHO should promote and monitor the implementation of norms and standards they set, as well as provide technical support, catalyse change and build sustainable institutional capacity to member states (28). UNICEF is also mandated to protect and promote the health and nutrition of children and is currently involved in Syrian emergency relief (29).

Advocates should request further commitment from both international organisations to assist the MOPH and its partners in the implementation of law 47/2008 and the National Programme, with a potential focus on building institutional capacity. They should advocate as well for further commitment from the government to prioritise the breastfeeding issue building on the economic benefits of breastfeeding in terms of decreasing health care costs (30-33).

The weakened state governance also led to an expansion of the private sector at the expense of the public sector with 90% of hospitals being private (24). These in turn

led to a weakened MOPH not capable of monitoring or regulating the private sector (24). One example is the BFHI training being voluntary for private hospitals while being mandatory for public hospitals. With the aim of improving the quality of care provided by hospitals and strengthening its regulatory capabilities, the MOPH introduced the accreditation system in 2000 where quality of care is evaluated in terms of processes rather than outcomes. As it remains the main public financier of the private sector, the MOPH is using this “policy instrument” as an incentive where hospital payment rates are linked to accreditation scores (24, 34). Since the MOPH is interested in revamping all accreditation standards, advocating for the inclusion of the BFHI Ten Steps into these standards constitutes an opportunity to improve its uptake by both public and private hospitals; and through its implementation and law 47/2008 subsequently decrease the influence of breast milk substitutes companies. Successful implementation would also require commitment from health care professionals, specifically Ob/Gyns and paediatricians, and thus engagement of their professional associations would be key. Professional associations could facilitate the establishment of continuous medical education courses to cover breastfeeding management, the BFHI including the WHO/UNICEF training course and law 47/2008.

Strategies targeted at medical doctors only are unlikely to succeed given the self-regulated nature of the profession. Medical doctors are only accountable to their Order of Physicians identified as the most influential order in the Lebanese health sector (24). They practice in public and private clinics or hospitals where the quality of care they provide is not regulated by any governmental body, thus enforcement and monitoring would be challenging.

In conjunction with the top-bottom approach, a bottom-up approach is needed. There is need for grassroots advocacy to shift the culture by empowering women to demand breastfeeding. This would optimistically translate into health professionals encouraging breastfeeding and more hospitals adopting baby-friendly practices. Advocates should work in collaboration with the maternal and child health community, the media, health professionals supportive of the cause and professional associations. They should increase public and health professionals’ awareness of the programme, the BFHI and law 47/2008 and highlight the strategies used by breast milk substitutes companies to undermine breastfeeding. Advocates should also collaborate with policy researchers to assist them in better understanding the political

dimensions of the policy process and to develop strategies and tactics to change them. Such academic resources are available at the American University of Beirut through the Knowledge to Policy Centre for Health and the Issam Fares Institute for Public Policy and International Affairs centres. Advocates should also have links with regional and international organisations to draw on their expertise in other countries.

Limitations

The stakeholder analysis highlights the importance of actors in the policy making process and its main strength is in its prospective dimension where it can be utilised to forecast and provide information to influence the process in the future (17). However, its cross-sectional nature limits its relevance if not applied in the near future given the changing nature of the policy environment, stakeholders' positions and influences and stakeholders' perceptions among other variables (17).

Furthermore, it is possible that participants' responses may reflect their individual views which may contradict those of the organisation they represent. Another limitation is the degree to which participants may not disclose their implicit or covert positions on the issue given the clear interest of the analyst in the topic (18). Previous collaboration between the analyst and several stakeholders facilitated the discussion and allowed a more in-depth conversation and disclosure of information.

Triangulation of the information by comparing stakeholders' accounts to how they were perceived by others also permitted improving the findings' reliability and validity. Although researchers aimed initially to use document review as a second source of data, the availability and access to such documents were limited. This in turn made it difficult to have a complete understanding of the roles and responsibilities of individuals or organisations within committees.

A number of interviewees reported on personal interactions between stakeholders which could have subsequently affected their influences and interests in the implementation of the policies. These could not be further explored and were not reported due to sensitivity considerations.

Further interviews with maternal and child health or nutrition researchers and the subjects that refused to take part in the study, specifically the international organisation would have contributed additional valuable insight.

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8.2.8 Conflict of interest

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8.2.9 References

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9 General discussion

Protecting, promoting and supporting breastfeeding are relevant to Lebanon where breastfeeding practices fall short of international recommendations. While most women initiate breastfeeding, exclusive breastfeeding (EBF) is very soon hampered by the introduction of infant formula or other liquids in the first days or weeks of life and any breastfeeding is discontinued well before the recommended period of two years and beyond (1). In this context, it is likely that what happens within health services has a large contributing role on early breastfeeding practices as the health care system is highly privatised (2) and access to antenatal and childbirth care are high (3). The health care system itself is affected by the public policy and societal environments. At the public policy level, law 47/2008 for regulating marketing of breast milk substitutes was passed, a National Committee for Ensuring Proper Nutrition for Infants and Young Children was created in 2011 and a National Programme for Promoting and Supporting Infant and Young Child Feeding was put in place in collaboration with other stakeholders.

Therefore, this research aimed at identifying Lebanese stakeholders' perceptions of barriers to recommended early breastfeeding initiation and EBF till 6 months in the context of health services as well as the political dynamics around existing policies that if implemented would address these health system barriers.

In this final chapter, a brief synthesis of the findings is presented followed by a section highlighting the overall strengths and weaknesses of the study. Implications of the findings, including policy and programmatic recommendations for addressing early breastfeeding in Lebanon are explored. Recommendations for future research are made and efforts to disseminate the findings of this research are provided.

9.1 Brief synthesis of the study findings

The study's first objective was to conduct a systematic review of systematic reviews on the effectiveness of health services interventions to promote and support breastfeeding initiation and exclusivity till 6 months. Based on the key findings presented in **Box 9-1**, a package of complementary interventions would be most effective. It would include applying maternity ward changes according to the Baby-Friendly Hospital Initiative (BFHI), facilitating the formation of lay support groups, and tailoring education and support to the setting and needs of the population. One should note that the implementation and scaling-up of such an intensive package constitute financial and technical challenges for governments of low and middle income countries (LMICs). Furthermore, these interventions need to be accompanied by changes at the policy level (e.g. extension of maternity leave or implementation of the International Code of Marketing of Breast milk Substitutes (ICMBS)) as there may be a limit to the effect of such interventions expanding through pregnancy and postnatal period.

The second and third objectives aimed to identify Lebanese stakeholders' views on barriers to implementing recommended practices in regard to early breastfeeding initiation and exclusivity in the context of health services; and to examine the political dynamics around the existing policies that, if implemented, would address these health system barriers. Findings from interviews with mothers were congruent with national statistics showing that breastfeeding practices fall short of the World Health Organisation (WHO) recommendations. None of the interviewed mothers was exclusively breastfeeding at time of interview and although they were aware of breastfeeding benefits, they held misconceptions and negative perceptions of breastfeeding and reported weak acceptability of baby-friendly practices. As shown in this empirical research, these practices and beliefs are shaped by wider factors; including at the level of health services which itself is affected by public policy and societal factors.

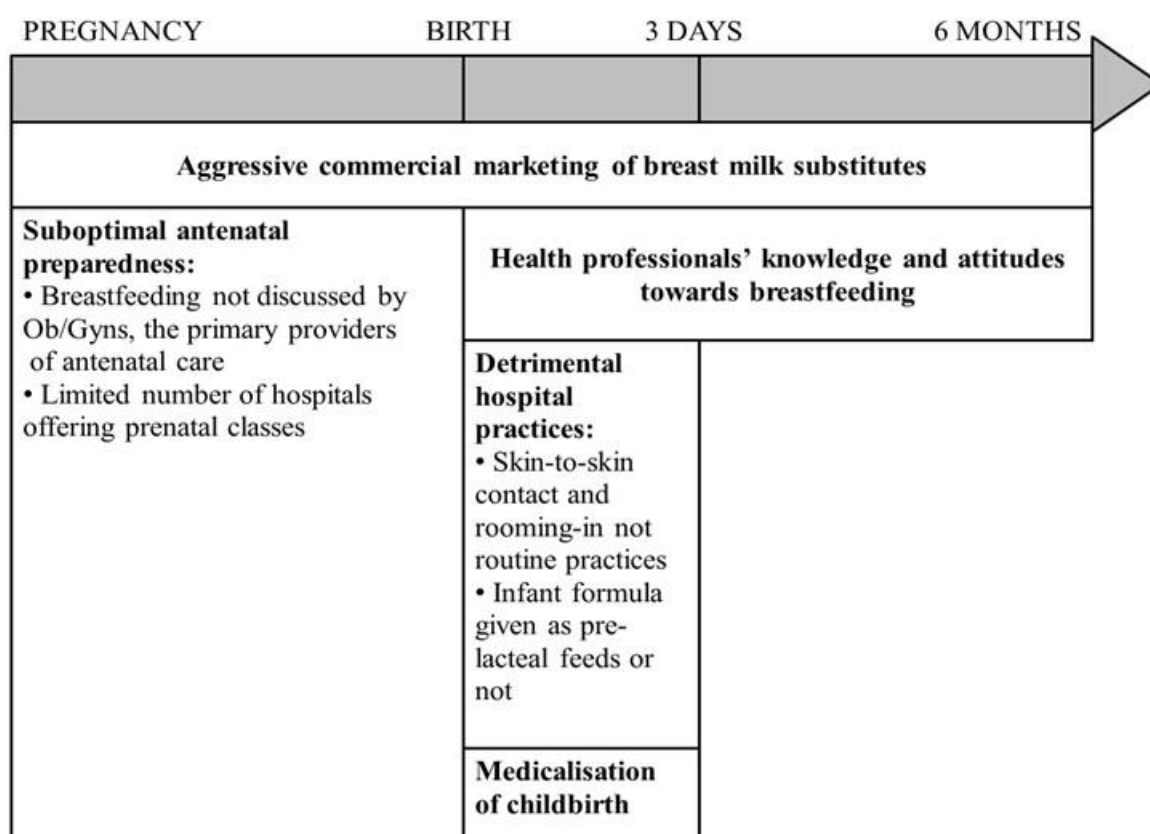
Box 9-1: Key findings of the systematic review on effectiveness of health services interventions to promote and support breastfeeding initiation and exclusivity till 6 months

- Education alone unlikely to improve breastfeeding initiation or EBF rates.
- Higher effectiveness for breastfeeding education given in a repeated, informal, group session format and personalised to women's needs.
- Good evidence for effectiveness of the BFHI on breastfeeding outcomes with rooming-in and training of health professionals using the WHO/UNICEF training course being effective steps as well as the need to implement the ICMBS to ban commercial discharge packs.
- Increasing evidence for the effect of lay support alone or in combination with health professional support on EBF.
- Other characteristics of effective support interventions on EBF:
 - Face-to-face and with frequent postnatal contacts.
 - Interventions most effective in countries with high background breastfeeding initiation rates.
 - Combined group and individual counselling.
- Multifaceted interventions that included breastfeeding education and support and sometimes additional components were effective.

Analysis of interviews revealed that health services barriers for appropriate early breastfeeding practices were encountered from pregnancy till infancy as shown in **Figure 9-1** and were triggered by different stakeholders. Current efforts for the revitalisation of the BFHI through training of health professionals in public hospitals and a number of private hospitals that have shown interest were faced with challenges in addition to the ones already existing in health services. Challenges included hospital administrations' resistance, limited health professionals' knowledge of the initiative or skills for conducting baby-friendly practices and infrastructural challenges.

By examining the political dynamics of key policies adopted by the government to protect, promote and support breastfeeding and that would be addressing health services barriers, implementation of these policies was found to be hampered by most interviewed stakeholders. The Ministry of Public Health (MOPH) had weak governance and commitment, key international organisations and professional associations were weakly engaged due to competing priorities or interests and the

Figure 9-1 Identified barriers at level of health services



strong health care system was likely putting breastfeeding promotion and support at stake for financial interests through contracts signed between breast milk substitutes companies and hospitals – both public and private – and with health professionals. These are in turn hindering breastfeeding advocates' efforts to diminish health services barriers, a number of which were highlighted in our research.

The effects of societal factors, which according to Hector *et al.* framework include attributes of society, culture and economy (4), on mothers, health services and public policy could be discerned throughout the analysis. Mothers held misconceptions and negative perceptions which are likely the mirror of a context that is depreciative of breastfeeding. The economic importance of breast milk substitutes was highlighted in its effect on provision of appropriate breastfeeding education and support in health services as well as implementation of key policies. Women's trust in medical doctors was another reported factor affecting not only mothers' breastfeeding practices but also the motivation of other health professionals (nurses/midwives) in providing breastfeeding education.

9.2 Study strengths and weaknesses

Limitations of this study have already been discussed in the research articles. Overall strengths and additional weaknesses are presented below.

9.2.1 Overall strengths

The overview on effectiveness of health services interventions on breastfeeding initiation and exclusivity till 6 months brought together results of several reviews and thus highlighted specific characteristics of effective interventions. For example, while one review may have found training of health professionals as not effective in improving breastfeeding outcomes, another review assessing specifically the use of the WHO/UNICEF training course found significant improvements, thus concluding that the latter is to be adopted for health professionals' training. One way in which the review informed empirical research is that it allowed the researcher to identify discrepancies between stakeholders' perceptions of effective interventions and those evidence-based interventions.

Although previous research –both published and unpublished – may have highlighted issues pertaining to the health services and the public policy environments in the Lebanese context, this is, to our knowledge, the first study to assess in depth these structural factors affecting early breastfeeding practices in Lebanon as well as uncovering societal factors that influence the support provided in these environments.

Furthermore, while most of the published literature on breastfeeding determinants in Lebanon assessed the perceptions of mothers only; this study addressed the perceptions of both beneficiaries and other actors who influence breastfeeding outcomes; thus giving a more comprehensive picture of the underlying barriers to adopting appropriate early breastfeeding practices in terms of what and who.

To our knowledge, this work also contributes to the limited amount of research in the Lebanese context that has applied the principles of stakeholder analysis to identify the positions and influences of varied stakeholders on a health issue as well as to have identified implementation barriers for health policies or programmes. Thus this analysis gave insights into the policy context and process which are likely to be applicable to other health issues in this context. This analysis also adds to the limited literature on health policy analysis in LMICs (5) and specifically in Lebanon.

This study also contributes to the international evidence on barriers for appropriate early breastfeeding practices and the implementation of policies and programmes such as the BFHI or ICMBS. These findings may be further relevant to other LMICs where state governance is weak, the health sector is highly privatised and the culture is depreciative of breastfeeding.

9.3 Overall limitations

Using Hector *et al.*'s framework of breastfeeding determinants (4) and given the Lebanese context, this study focused on hospitals and health services as one of the environments in which the mother and infant find themselves that affect breastfeeding initiation and its exclusivity till 6 months and that is affected by the public policy and societal environments. However, we recognise the other environments – the home, community and work environments – effects on breastfeeding practices. Thus further research should look into these environments and how the policy and societal environments are affecting them.

As previously stated, this qualitative research study was carried out using purposeful sampling of women and other stakeholders; thus these cannot be considered representative of all Lebanese mothers, practitioners or policymakers; results therefore cannot be generalised and interviews rather provided insights into barriers. A number of interviewees held more than one official position and although they were interviewed as representatives of one specific organisation, they would provide information acquired from their experiences in the different organisations. This was beneficial as it added richness to the data, yet it may have led the researcher to believe that there was no need to interview representatives of the other organisations when in fact results for the stakeholder analysis could only be reported for the organisation the participant was interviewed about. Also, there are very few lactation consultants in Lebanon; two of them also held other positions and thus they were interviewed as representatives of these organisations.

Recruitment of mothers was carried out through state operated health clinics and private clinics. In Lebanon, in general, women of low and low-middle socio-economic status (SES) seek care for their infants and children at state operated health clinics, while women of higher socio-economic class seek care at private clinics. The data collection process did not reveal such a clear-cut division: some women of middle

SES still went to Ministry of Social Affairs centres for vaccinations only and some women of low SES went to private clinics and this was likely exacerbated by the influx of Syrian refugees and their use of state operated health centres.

As this is a doctoral research thesis, the stakeholder analysis was conducted by one individual rather than a team; thus personal biases may have arisen in the assigned perspective of stakeholders' positions and influences compared to a team approach that would have minimised these potential biases. In order to minimise the effects of these limitations on the study results' validity and reliability, the analyst attempted to triangulate the perspectives on the issues across different interviews (6) as documentary review could not be used as a second source of data due to limited access and availability of documents. However, the uniform approach in collecting qualitative data would guarantee higher reliability and more internally valid data cross-comparisons (7).

One challenge the researcher encountered when writing the findings and including quotes was her worry about breach of confidentiality. As Lebanon is a small country and the breastfeeding policy community is very narrow, the analyst wanted to ensure confidentiality and thus was selective in the quotes she included. For sensitivity considerations, she also could not report on personal interactions between stakeholders which could have affected their influences and interests in implementation of policies as previously reported in Chapter 8.

9.4 Policy and programmatic implications

Empirical research revealed numerous barriers at health services triggered by different stakeholders and a disconnect between endorsement and implementation of key existing policies that should be addressing these barriers. The recommendations, presented in Chapters 7 and 8 and shown in **Table 9-1**, take into account the results of the overview of effective health services interventions to promote and support breastfeeding initiation and exclusivity till 6 months, as well as the interests for collaboration suggested by interviewed stakeholders.

Key recommendations include the need for further commitment from government accompanied simultaneously by grassroots advocacy to shift the culture by sensitising and empowering women to demand early breastfeeding initiation and exclusivity till 6

months as well as baby-friendly practices within health services. Based on the barriers identified in health services, recommendations also included several programmes that the government would need to engage in simultaneously to optimise improvements in breastfeeding practices since multifaceted health services interventions have shown to be effective. A review of six country programmes also revealed that piecemeal approaches and ad hoc activities lead to major barriers being unaddressed and a failure to reach critical populations (8) thus the need for a comprehensive strategy, one that extends beyond health services to include interventions related to other environments such as extension of maternity leave to meet the International Labour Organisation recommendation of at least 14 weeks (9).

Strategies should aim as well to achieve scale and be sustainable. Perez-Escamilla *et al.* identified eight essential gears to achieve sustainability and scaling up of breastfeeding promotion programmes in LMICs (10) shown in **Figure 9-2.a**. By adapting this model to the current Lebanese context, the empirical research revealed weakness in most gears and the absence of two – research and evaluation, and promotion – as shown in **Figure 9-2.b** and explained in **Table 9-2**. Thus national efforts need to be devoted to strengthen these gears with the aim of reaching scaling up and sustainability. A number of the suggested recommendations in **Table 9-1** contribute to achieving this.

Table 9-1 List of policy and programmatic recommendations

<p>Further commitment from government on IYCF</p> <ol style="list-style-type: none">1- Advocate for further commitment from international organisations (WHO and UNICEF) to assist the MOPH and its partners in the implementation of law 47/2008 and the National Programme, with a potential focus on building institutional capacity.2- Advocate for further prioritisation of the breastfeeding issue building on the economic benefits of breastfeeding in terms of decreasing health care costs (11-14).
<p>Grassroots advocacy by national and international non-governmental organisations (such as the Lebanese Association for Early Child Development, Lactica – the recently formed association of motivated mothers, the International Orthodox Christian Charities, World Vision Lebanon and La Leche League) as well as researchers in order to shift the culture by sensitising and empowering women to demand early breastfeeding initiation and exclusivity till 6 months as well as baby-friendly practices within health services</p> <ol style="list-style-type: none">1- Work in collaboration with the maternal and child health community, the media, health professionals supportive of the cause and professional associations (the Lebanese Society of Obstetricians and Gynaecologists, the Lebanese Paediatrics Society, the Midwifery Association and the Order of Nurses).2- Sensitise and mobilise the media on the breastfeeding issue and the BFHI along with other maternal and infant health issues.3- Provide mothers with the information and skills needed through awareness campaigns using social marketing principles in order to target specific breastfeeding misconceptions and negative perceptions as well as improve their knowledge of breastfeeding management. This should be in collaboration with medical doctors supportive of the cause, given the trust mothers accord to physicians.4- Increase public and health professionals’ awareness of the programme, the BFHI and law 47/2008 and highlight the strategies used by breast milk substitutes companies to undermine breastfeeding.5- Collaborate with policy researchers to better understand the political dimensions of the policy process and develop strategies and tactics to change them.6- Have links with regional and international organisations to draw on their expertise in other countries.
<p>Programmatic implications for the Lebanese government to engage in</p> <ol style="list-style-type: none">1- Offer prenatal classes in public and private hospitals as well as through private clinics in collaboration with the Association of Midwives and the Lebanese Society of Obstetricians and Gynaecologists. Prenatal classes would include breastfeeding education that is repeat, informal, given in groups and personalised to women’s

needs. To ensure accessibility and effectiveness, all health professionals should be made aware of them so they recommend them; and the information given to women should not conflict with the Ob/Gyns and paediatricians' recommendations.

- 2- Include the BFHI Ten Steps into the national hospital accreditation standards as it constitutes an opportunity to improve its uptake by both public and private hospitals. This needs to be accompanied by sensitisation of hospital administrators and relevant staff on the initiative.
- 3- Offer postpartum support through development of mother support groups, given the increasing evidence for the effectiveness of these peer support groups on improving breastfeeding initiation and exclusivity.
- 4- Develop unified national standards or guidelines for all medical areas including guidelines for breastfeeding management in order to avoid conflicting advice to women, in collaboration with the Ministry of Education, professional bodies and educational institutions.
- 5- Develop professional courses for health professionals already in service. Conduct continuous medical education courses on breastfeeding and the BFHI Ten Steps for Successful Breastfeeding including the WHO/UNICEF training course and law 47/2008, in association with the Lebanese Society of Obstetricians and Gynaecologists and Lebanese Paediatrics Society.
- 6- Develop a comprehensive communications strategy aiming at improving the public and more specifically women's knowledge in breastfeeding and its management, the BFHI and law 47/2008 and ensure the dissemination of the latter in media outlets, medical and educational institutions.

Figure 9-2 The Breastfeeding Gear Model (a) and its adapted version to the Lebanese context (b)

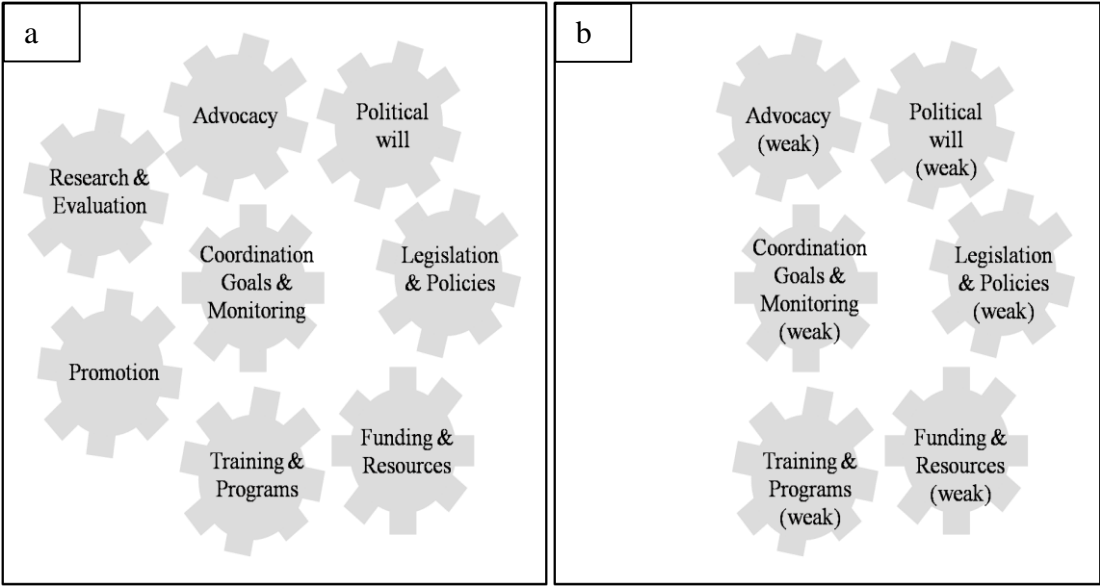


Table 9-2 The eight gears of the breastfeeding gear model and their description for the Lebanese context¹

Gear	Description in Lebanese context
Research and evaluation	No baseline facility or community needs assessment No operational (formative) research
Advocacy	Previously strong for enactment of policies and programmes but currently weak for their implementation
Political will	Weak commitment from MOPH and other stakeholders
Legislation and policies	Enactment but no implementation of law 47/2008
Funding and resources	Implementation of the National Programme currently reliant on international aid MOPH suffers from institutional incapacity – financial and human
Training and programmes	The BFHI training conducted by one of the National Programme's sub-committees is limited to public hospitals and private ones that have shown interest Pre-service training in medical curricula and nursing schools reported to be limited Weak endorsement from professional associations Inactive pre-service/in-service national sub-committee
Promotion	No communications or mass media campaigns No community-based breastfeeding promotion or support programmes No visible community events
Coordination goals and monitoring	Weak intersectoral coordination No monitoring and evaluation systems for example of law 47/2008

¹ Data was compiled from empirical research and knowledge of the context

Such comprehensive strategies are cumbersome for LMICs including Lebanon that suffers from weak governance with limited institutional – human and financial – capacity; yet piecemeal approaches are also known to limit the effectiveness of implemented strategies. Realistically, the Lebanese government may not have the needed resources for such comprehensive strategies – assuming they recognise the importance of early breastfeeding practices and commit further politically – and request a listing of key priorities. If so, the researcher would recommend:

- 1- **Implementation of law 47/2008** to limit the well-established detrimental effects of marketing of breast milk substitutes
- 2- **Inclusion of the BFHI Ten Steps for Successful Breastfeeding in the national accreditation standards** to change hospital practices
- 3- **Developing unified national standards or guidelines for all medical and nursing areas including guidelines for breastfeeding management** to improve health professionals' knowledge and skills in breastfeeding management, the risks of infant formula and law 47/2008
- 4- **Mass media campaigns to sensitise and empower the public and specifically women** to demand appropriate early breastfeeding practices.

9.5 Research implications

- 1- Future research assessing the effectiveness of interventions on breastfeeding outcomes should ensure better study design and explore the effectiveness of specific elements of interventions or synergistic effects of different interventions as detailed in the discussion of the systematic review. Also internet-based interventions may be worth exploring further given the increasing access to technology. Cost-effectiveness of interventions should be addressed as well. In terms of outcomes, further research is needed on EBF initiation where the evidence from included reviews was limited probably due to failure of single studies in providing specific definitions of breastfeeding outcomes. EBF initiation is a key outcome to improve and a key indicator to measure progress in early breastfeeding practices especially in contexts where breast milk substitutes

have a large contributing role in health services such as in Lebanon. In addition, once EBF initiation is interrupted by consumption of infant formula, it is harder for mothers to return to EBF after hospital discharge.

- 2- As previously mentioned, this research focused on the hospital and health services environment. Similar analyses need to be conducted for the other environments in which mother and infant find themselves in order to obtain a more comprehensive picture and develop programmes that are locally applicable.
- 3- Assessing the feasibility of strategies suggested above is key for increasing their odds for implementation. As the researcher is interested in evidence-based policy briefing she is hoping to take the study findings forward by investigating the feasibility of the following three policy options:
 - a. Including the BFHI Ten Steps for Successful Breastfeeding in the national hospital accreditation standards
 - b. Including breastfeeding management in medical and nursing curricula schools
 - c. A mass media campaign to raise awareness of breastfeeding, law 47/2008 and the BFHI
- 4- In addition to the international literature on breastfeeding savings for health systems, conducting cost-effectiveness analyses would provide local evidence for the economic benefits for protecting, promoting and supporting breastfeeding.

9.6 Dissemination of findings

Findings of this research need to be disseminated to all relevant parties with the aim for a positive change.

At the national policy level, discussions with breastfeeding advocates have already been taking place. The study findings have so far assisted them in highlighting to governmental agencies key issues with the implementation of law 47/2008 and

potential strategies to improve the uptake of the BFHI by hospitals. The researcher may also ask for meetings with representatives of the MOPH as well as the National Committee for Ensuring Proper Nutrition for Infants and Young Children to discuss findings.

As the researcher is intending to investigate further the implementation of policy options suggested above, the study findings would also likely be shared with all relevant stakeholders including these governmental representatives as well as international and national non-governmental organisations.

The researcher plans to disseminate the study findings in a seminar at the Faculty of Health Sciences in AUB where many academics work on maternal and child health specifically the Choices and Challenges in Changing Childbirth research team who work on “building scientific evidence on childbirth practices and on identifying effective ways to improve the safety of maternity services and women’s experiences with the received care” (15).

The researcher will also aim to present the study findings at conferences organised by the different professional bodies – the Lebanese Society of Obstetricians and Gynaecologists, the Lebanese Paediatrics Society, the Midwifery Association and the Order of Nurses.

The media constitutes an important channel to disseminate these findings and potentially bring attention to the protection, promotion and support of breastfeeding by framing the issue in ways that will motivate different groups. One framing example is the economic benefits of breastfeeding in terms of decreasing health care costs to the government.

At the international level, preliminary findings of the systematic review were presented at the Experimental Biology conference in Boston, USA in April 2013. The researcher will apply to international conferences in order to disseminate the results of the empirical research.

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