



What is Best for My Baby?

– A Literature Review on
Breastfeeding Promotion in Africa

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<p>ABSTRACT</p> <p>The purpose of the final project was to describe the outcomes of breastfeeding promotion, to describe efficient breastfeeding education methods and to explore the factors affecting breastfeeding practices in Africa. The research was done by using an applied structured literature review consisting of fourteen scientific articles.</p> <p>The final project was done as part of Malawi, Zambia, Finland Health care project MaZaFi which aims to promote high quality in health care and in health care education through active collaboration between all partner countries.</p> <p>The findings on the outcomes of breastfeeding promotion included 1) improved breastfeeding practices, especially exclusive breastfeeding, 2) better knowledge on breastfeeding, 3) lower risk of transmitting HIV to the baby through improved HIV knowledge and safer breastfeeding practices. Sometimes breastfeeding promotion had also 4) negative and neutral outcomes when improved exclusive breastfeeding had no effect on the child's health and the counselling was not supportive for the mothers.</p> <p>A combination of clinic and home visits, large scale programs, and HIV prevention programs are effective breastfeeding promotion methods. The lack of support for mothers in counselling was discussed.</p> <p>Factors which affected breastfeeding promotion in Africa were 1) poor knowledge and the social stigma for being HIV positive, 2) women's often poor socio-economic situation and the role in the family and 3) traditional beliefs on breastfeeding.</p> <p>Breastfeeding should be promoted with large scale programs to unify the message and use all available resources. Counselling should be developed into more client-centred direction so that mother's individual situation would be taken into account.</p>		
Keywords		
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<p>TIIVISTELMÄ</p> <p>Opinnäytetyön tarkoitus on kuvata imetyksen edistämisen vaikutuksia, kuvata tehokkaita menetelmiä tukea imetystä sekä selvittää imetykseen vaikuttavia tekijöitä Afrikassa. Kokosin aiheesta aineistoa ja analysoin sitä soveltaen systemaattisen kirjallisuuskatsauksen menetelmää. Aineisto koostui neljästätoista tieteellisestä artikkelista.</p> <p>Opinnäytetyö liittyy Metropolia ammattikorkeakoulun Malawin, Zambian ja Suomen väliseen MaZaFi yhteistyöprojektiin. Yhteistyöprojektin tarkoituksena on tukea korkeatasoista terveydenhuoltoa ja terveystieteen opetusta.</p> <p>Imetyksen ohjauksen tuloksia ovat 1) parantuneet imetystavat, erityisesti eksklusiivisen imetyksen lisääntyminen, 2) imetykseen liittyvän tietämyksen parantuminen, 3) HIV-tartunnan riskin vähentyminen turvallisempien imetystapojen ja tiedon lisääntymisen myötä. Imetyksen ohjauksella oli myös 4.) negatiivisia ja neutraaleja vaikutuksia lasten terveyteen ja naisten kokemukseen saamastaan ohjauksesta.</p> <p>Vaikuttavia tapoja imetyksen ohjauksessa ovat koti- ja klinikkakäynnit, laaja-alaiset projektit ja HIV:n ehkäisyohjelmat. Näiden lisäksi tutkimuksessa kuvataan imetyksen ohjauksessa ilmenneitä puutteita äitien tukemisessa.</p> <p>Imetykseen ohjaukseen vaikuttavia tekijöitä ovat 1) riittämätön tieto HIV:stä ja HIV-tartunnan mukanaan kantajalleen tuoma stigma, 2) naisten usein heikko asema yhteiskunnassa ja 3) erilaiset imetykseen liittyvät kansanuskomukset.</p> <p>Imetystä tulisi tukea laaja-alaisilla projekteilla, joissa käytetään kaikkia viestintäkanavia yhdenmukaisen viestin välittämiseksi. Imetyksen ohjausta tulisi kehittää asiakaslähtöisempään suuntaan, jossa äitien yksilöllinen tilanne otettaisiin huomioon.</p>			
Avainsanat			
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CONTENTS

1. INTRODUCTION	5
2. BREASTFEEDING PROMOTION	6
2.1. Infant feeding methods.....	6
2.2. Breastfeeding promotion.....	6
2.3. Outcomes research and efficacy.....	7
2.4. Factors affecting breastfeeding in Africa.....	8
2.5. HIV and breastfeeding	9
3. THE PURPOSE OF THE FINAL PROJECT AND RESEARCH QUESTIONS ..	10
4. METHODOLOGY.....	11
4.1. Literature review	11
4.2. Data collection	11
4.3. Inclusion criteria.....	12
4.4. Data analysis	13
5. FINDINGS	14
5.1. Outcomes of breastfeeding promotion in Africa.....	14
5.1.1. Improved breastfeeding practices	15
5.1.2. Better knowledge on breastfeeding.....	17
5.1.3. Lower risk of HIV transmission.....	17
5.1.4. Negative and neutral effects.....	18
5.2. Effective methods of breastfeeding promotion in Africa.....	19
5.2.1. Clinic and home visits.....	20
5.2.2. Large scale programs	22
5.2.3. Prevention of mother-to-child transmission of HIV programs	23
5.2.4. Counselling is not always supportive.....	24
5.3. Factors affecting breastfeeding practices in Africa.....	26
5.3.1. HIV.....	26
5.3.2. Women's status in society.....	27
5.3.3. Traditional beliefs	29
6. VALIDITY AND ETHICAL CONSIDERATIONS	30
6.1. Validity.....	30
6.2. Limitations	31
6.3. Ethical considerations	31
7. DISCUSSION	32
7.1. Comparing to other literature	32

7.2. Implications for clinical practice.....	33
7.3. Need for further studies.....	35
8. CONCLUSION	36
REFERENCES.....	38

APPENDIX 1.

APPENDIX 2.

1. INTRODUCTION

“Breastfeeding is the normal way of providing young infants with the nutrients they need for healthy growth and development” (WHO 2001). Breastfeeding has been proven to have a positive effect on the child’s immunization and prevent illnesses such as gastrointestinal infections, iron-deficiency anaemia and several autoimmune diseases such as diabetes type 1 (Riordan & Auerbach 1998:136-138). Exclusive breastfeeding is recommended by the World Health Organization (2007) for the first six months and after that continued breastfeeding along with appropriate complementary foods up to two years of age or beyond. “Lack of exclusive breastfeeding during the first six months of life contributes to over a million avoidable child deaths each year” (WHO 2009).

In developing countries which suffer from poverty and high HIV infection rates, mothers have to do a difficult decision choosing between the benefits of human lactation and the possibility of transmitting HIV to the infant (Bobat, Moodley, Coutsoydis and Coovadia 1997). WHO (2007) recommends exclusive breastfeeding also to HIV-positive mothers who have no other practical option.

Nurses are in a key role in promoting breastfeeding. According to the International Council for Nurses Code of Ethics for Nursing (The INC Code of Ethics for Nurses 2006) nurses’ have fundamental responsibilities to promote health, prevent illness, restore health and alleviate suffering. Breastfeeding is an easy, natural and almost cost-free way to promote health and prevent illness. In Africa the lack of health care professionals gives nurses even more responsibility to provide efficient breastfeeding education. The lack of professionals is especially visible in Sub-Saharan countries like Malawi, in 2004 there were officially just over 7,000 nurses for 13 to 14 million people (Gorman & Hohmuth-Lemonick 2009).

The purpose of the final project is to describe the outcomes of breastfeeding promotion, describe efficient breastfeeding education methods and explore the factors affecting breastfeeding practices in Africa. The project is done by using an applied structured literature review. This final project is done as part of Malawi, Zambia and Finland Health care project MaZaFi, which aims to promote high quality in health care and health care education through active collaboration between all partner countries.

Metropolia University of Applied sciences is the coordinator of the project working with North Karelia University of Applied sciences and several Nursing colleges and schools in Malawi and Zambia.

2. BREASTFEEDING PROMOTION

2.1. Infant feeding methods

Breastfeeding can be defined as feeding the baby with milk from the breast (The New Oxford Dictionary of English, 1998:222). Exclusive breastfeeding (EBF) is practiced when the baby is given no other food or drink, not even water, other than breast milk. In EBF however, drops or syrups consisting of vitamins, mineral supplements and medicines are allowed. (WHO 2007).

Mixed feeding happens when the breastfed baby is given additional fluids, solid food or non-human milks. Formula feeding involves the use of commercial infant formula that should be formulated according to standards so that the infant's nutritional requirements are met during the first months of life. Replacement feeding refers to any diet that gives the baby who is not receiving any breast milk all the nutrients the child needs. (WHO 2007.)

2.2. Breastfeeding promotion

Promotion is activity that supports or provides active encouragement for the furtherance of a cause, venture or aim (The New Oxford Dictionary of English, 1998: 1484).

Health promotion is the important principle of maintaining and enhancing the health of a population (Kauhanen, Myllykangas, Salonen, & Nissinen 1998: 246). Health promotion both enhances positive health and prevents deterioration of health through health education, prevention and health protection (Kauhanen, et al 1998: 248).

Breastfeeding promotion can be identified as primary prevention, since breastfeeding eliminates diseases and other negative health effects (Kauhanen et al. 1998: 255).

Counselling is the provision of assistance and guidance in resolving personal, social or psychological problems and difficulties, especially by a trained person on a professional basis (The New Oxford Dictionary of English 1998: 417). According to Brooker and Mullally (2002: 108) the counsellor listens to the counsellor listens actively, helps to clarify the problems and supports overcoming them.

Myles textbook for Midwives (2009) instructs healthcare professionals that during the first few feeds their role is to ensure that the baby is adequately fed by the breast and help the mother to develop the necessary skills so that she is able to feed the baby by herself. Women need emotional support, such as encouragement and reassurance, practical support and informational support in small manageable chunks. “The function of the midwife is not only to provide the relevant knowledge to the mother, but also identify the skills she needs and specifically enhance her confidence and autonomy” (Henderson & Jones, 1997: 272).

There are several levels and ways of promoting breastfeeding. National media campaigns have been used to improve public perceptions of breastfeeding, prenatal education, peer support and Baby-Friendly Hospital initiative have been used to improve mothers’ breastfeeding rates (Wambach et al. 2005).

In a systematic literature review by Hannula, Kaunonen & Tarkka (2008) that effective breastfeeding supporting interventions were interactive and involved mothers in conversation. Counselling which started during pregnancy and continued after delivery, used multiple methods or gave support by well-trained professionals were most effective. The data breastfeeding support interventions were from Europe.

In this literature review the term breastfeeding promotion is used referring as education, counselling and promotion of breastfeeding given by a health care professional or lay breastfeeding counsellor to pregnant or lactating women, their families or a community.

2.3. Outcomes research and efficacy

“Outcomes research is designed to assess and document the effectiveness of health care services (Polit & Beck 2004).” Needs of cost-effective quality care has stimulated

outcomes research and nurses are increasingly engaged in it focusing on the patients and on the overall delivery system (Polit & Beck 2004). The dictionary definition of efficacy is to produce a desired or intended result (The New Oxford Dictionary of English 1998: 590). An outcome is the effect or outcome of an event (Oxford Advanced Learners Dictionary of Current English, 1989:876).

In nursing outcomes research can be defined as a controlled, empirical assessment of the effect of a given product or technology on patient, cost or service outcomes. Outcomes research focuses on the end results of the patient care, and common outcomes include issues such as survival rates, absence of disease and patient-reported outcomes such as quality of life. (Windle 2006.)

In a systematic literature review by Chapman et al. (2010) the outcomes of breastfeeding peer counselling were highlighted. Breastfeeding initiation rates, duration and exclusivity were improved with peer counselling. Also incidents of infant diarrhoea were decreased and lactation amenorrhoea duration was increased.

2.4. Factors affecting breastfeeding in Africa

There are several psychosocial and environmental factors which affect the decision of breastfeeding. Mothers, who are older, married, educated, more affluent and who have a positive attitude toward breastfeeding are more likely to initiate breastfeeding. In researches, lack of support from social networks, healthcare providers and social environment, have been seen to have a negative affect on breastfeeding initiation. The duration and exclusiveness of breastfeeding is positively associated with the same factors as with initiation, but also health education programs, breastfeeding support, positive post-partum experiences and other psychological factors can improve breastfeeding rates. (Wambach et al. 2005.)

The psychosocial and environmental factors affecting breastfeeding practices in Africa have been researched in several studies. In Africa approximately 99% of women breastfeed their children but mixed feeding is very common with food and liquids such as water, infant formula and cereals or breast milk is supplemented with water, teas and hebal preparations even from the first week after birth. This is often due to incorrect

health belief such as that fluids ease pain or herbal extracts will make the child “strong”. Many of these practices have been shown to be harmful to the infants and increase diarrhoea and respiratory diseases. (Wambach et al. 2005.)

In a study made in Ghana, breastfeeding women identified following obstacles to affect breastfeeding. Women did not breastfeed because of maternal unemployment, breast and nipple problems, perceived milk insufficiency and pressure from the family (Otoo, Larrey & Pérez-Escamill, 2009). In Cameroon, cultural barriers to exclusive breastfeeding included pressures by village elders and families to mix feed because it is a traditional practice and the belief that breast milk is an incomplete food that does not increase the infants weight (Kakute et al. 2005).

Several studies and publications also give information on effective approaches of education programs such as positive, participative approaches and community support (Biancuzzo, 2003: 77-113). Every breastfeeding promotion program should consider the cultural setting and specific needs of the target population. The promotion programs should also have identified, measurable outcome variable. (Riordan & Auerbach 1998: 81.)

The duty of a nurse is to support interventions to meet social and health needs of especially vulnerable populations. The human rights, values, customs and spiritual beliefs of the individual and the community should be respected when providing care (International Council for Nurses 2006). All of these objectives state that providing efficient breastfeeding education can be seen as the ethical responsibility of a nurse.

In Nigeria 71 HIV positive mothers who had got counselling identified the main reasons to choose EBF were that they were afraid of stigmatization, the women did not want their partner to know about the infection or they could not afford commercial infant formula. (Adjeuyigbe et al. 2008.)

2.5. HIV and breastfeeding

Despite multiple positive health effects of breastfeeding, the human immunodeficiency virus (HIV) can be transmitted from an HIV infected mother to her infant through

breastfeeding. Mother-to-child transmission (MTCT) of HIV can happen at any point during pregnancy, delivery or breastfeeding. The longer breastfeeding continues, the greater the cumulative risk. The overall risk of MTCT of HIV without any preventive measures is 30-40 %, with breastfeeding being responsible for 5-20% of cases. (WHO 2007.) “An estimated 430 000 new HIV infections occurred among children under the age of 15 in 2008. Most of these new infections are believed to stem from transmission in utero, during delivery or post-partum as a result of breastfeeding” (UNAIDS 2009).

The World Health Organization (2007) has stated that HIV positive women should breastfeed their babies exclusively for the first six months unless replacement feeding is acceptable, feasible, affordable, sustainable and safe. The risk of transmission through breastfeeding can be lowered by using antiretroviral drugs, exclusive breastfeeding, preventing primary infection of the mother, early cessation of breastfeeding and different kind of heat and antimicrobial treatments of the mother’s milk. (WHO 2007)

Deciding the appropriate infant feeding option depends on the HIV positive mother’s individual circumstances. The health status, local situation, available health services, and support should be considered. “To help HIV positive mothers make the best choice, they should receive appropriate counselling that includes information about the risks and benefits of various infant feeding options based on local assessments, and guidance in selecting the most suitable option for their own situation” (WHO 2007:2).

3. THE PURPOSE OF THE FINAL PROJECT AND RESEARCH QUESTIONS

The purpose of the final project is to describe the outcomes of breastfeeding promotion in Africa. Describe effective methods of breastfeeding promotion and describe factors affecting breastfeeding practices in Africa. During the data collection only the outcomes and effective methods were considered. During the course of the data analysis factors affecting breastfeeding promotion were raised as an additional research question. The aim is to gather together comprehensive knowledge on breastfeeding promotion in Africa and promote the evidence-based knowledge of clinical tutoring to students in a multicultural environment. The project is done by using an applied systematic literature review.

The research questions are:

What are outcomes of breastfeeding counselling in African countries?

What are effective methods of breastfeeding counselling in Africa?

What are factors affecting breastfeeding practices in Africa?

4. METHODOLOGY

The final project data will be collected by using applied systematic literature review. I familiarized myself with the topic of the theses by searching articles related to the topic in databases and the school library. Through this and with the help of information specialist my keywords were chosen and the database search was narrowed down. The material of the theses is collected from medical and nursing science databases and with a manual search. The material will be analysed with the methods of content analysis.

4.1. Literature review

The methodology of this study is a literature review. Applied systematic literature review is used. "A review of literature may be conducted to summarize the research based knowledge for practice or to guide the development of a study to increase the evidence needed to guide practice" (Burns & Grove 2003). Doing a literature review includes the identification, selection, critical analysis and written description of the existing information on a topic (Polit & Beck 2004) and should result in a summary of current theoretical and scientific knowledge about a particular problem and a synthesis of what is known and not known about that problem (Burns & Grove 2003).

4.2. Data collection

The literature review is done by a thorough gathering and analysis of scientific knowledge on breastfeeding promotion and its effects. The search for scientific information is done with database search in PubMed, Medline, CINAHL and Science Direct as well as with manual search. CINAHL stands for Cumulative Index to Nursing and Allied Health Literature and is an important electronic database for nurses covering references to virtually all English-language nursing and allied health journals. Medline

database was developed by U.S. National library of Medicine and covers well bibliographic coverage of the biomedical literature. (Polit and Beck 2004: 92-94.) Manual search was done mainly by reading The Journal of Human Lactation and Breastfeeding Review.

The articles used in this final project are in English and have been published in the 21st century. After the database search had been done, the results headline and abstracts were read to initially evaluate whether the article answered the research questions. Also the availability of the full text of the research was a criterion for exclusion. The researches used should answer the research questions and be quality papers according to the critical appraisal checklist criteria introduced in the chapter on the criteria of data.

The key terms used are: breastfeeding, education, counselling, promotion, Africa. The studies which qualified to the final literature review were from CINAHL and Pub Med databases. Science direct and Ovid MedLine were useful during the preliminary literature review but none of the studies found from these two databases were included in the final study. The information on the data search process can be found as an appendix (Appendix 1).

4.3. Inclusion criteria

Inclusion criteria for the data as that they were in English or Finnish, published in 2000-2010, answered research questions and were quality papers according to a critical appraisal checklist. Articles which were not easily retrievable or were project descriptions rather than studies were excluded.

The quality and of the articles use in this literature review were evaluated with a critical appraisal checklist. The checklist has six questions:

1. Is the report well organized and presented? Is it complete and logical?
2. Is the study question and purpose clearly stated?
3. Is the question relevant for this research?
4. Is the methodology well-presented and adequate to assess the problem?
5. Are the outcomes precisely presented?

6. Do the researchers discuss the weaknesses and strengths of the study adequately?

The list is applied from Greenhalg and Donald's (2000) Critical Appraisal Checklist for an Article Describing a Systematic Review and Burns and Groves (2003) Guidelines for conducting a research critique.

The final amount of studies included in this literature review was fourteen. The studies covered all together eleven African countries. South Africa was the target country of research in five studies. Several articles are based on empirical research with an implemented promotion program with an intervention and a control group.

4.4. Data analysis

The literature review is done by a thorough gathering and analysis of scientific knowledge on breastfeeding promotion and its effects. The contents are sorted into categories using a table format (Appendix 1) and making comparisons among studies (Burns & Grove 2001: 119).

The articles found with database search are analysed by using a modified version of Elo's and Kyngäs's inductive content analysis process (2008), in which the phenomenon of the aspects of breastfeeding were observed from specific to general. The analysis starts with the preparation phase where one becomes immersed in the data when reading through the written material several times and gets focused on what is being analysed. The main information from the studies were organized into table format (Appendix 2). The next step was to organize the qualitative data, mainly focusing on the promotion methods and findings in the studies, according to research questions as lists. From the lists of findings made in the studies the author started to find similarities and connections to be able to comprehend the findings better. The findings were grouped under main subcategories to clarify the answer of the research question. The appropriateness of subcategories were assessed several times while formulating the text. The last phase consists of reporting the analysis process and results. (Elo & Kyngäs 2008) The findings are explained in detail and subcategories are made if necessary so that the process can be redone if needed.

5. FINDINGS

Fourteen relevant studies were included in this applied systematic literature review. The findings of the articles are presented in the order of how they answer the three research questions and are grouped into subgroups.

5.1. Outcomes of breastfeeding promotion in Africa

All the fourteen articles in this literature review described outcomes of breastfeeding promotion from different perspectives. The main outcomes identified in the studies were improved breastfeeding practices, better knowledge on breastfeeding, lower risk of HIV transmission and negative and neutral effects. The diagram below (FIGURE 1.) describes the findings in each subcategory.

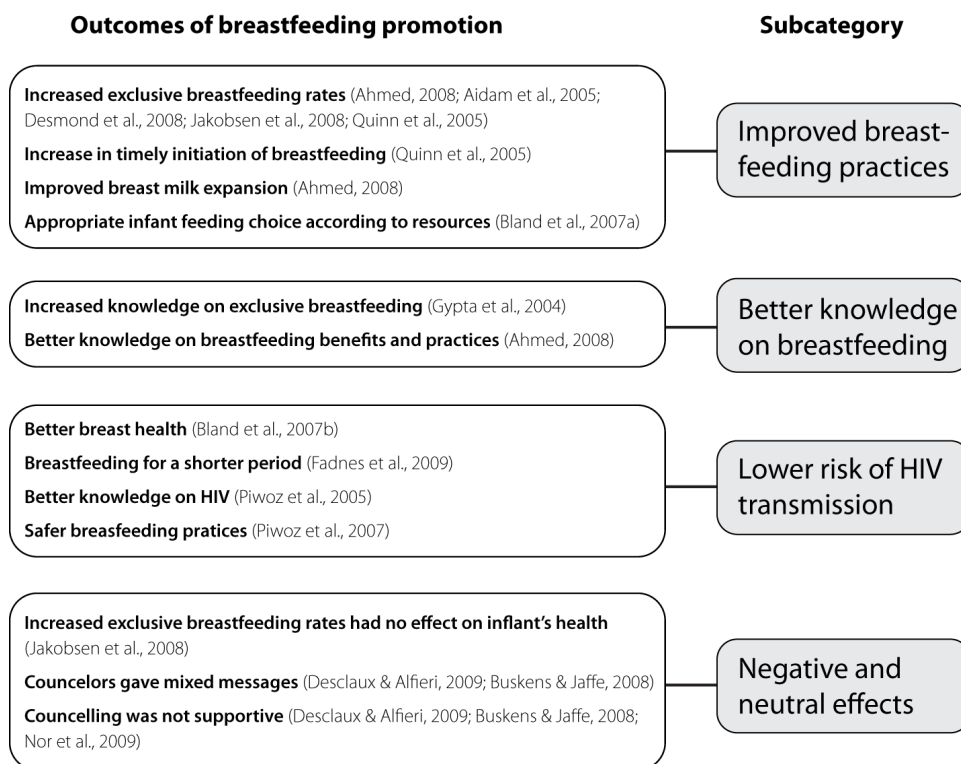


FIGURE 1. Findings on the main outcomes of breastfeeding promotion in Africa.

5.1.1. Improved breastfeeding practices

In five of the studies where breastfeeding was promoted, exclusive breastfeeding (EBF) rate was significantly increased compared to the previous results on the area or control groups (Ahmed 2008; Aidam, Pérez-Escamilla & Lartey 2005; Desmond et al. 2008; Jakobsen, Sodermann, Biai, Nielsen & Aaby 2008; Piwoz et al. 2005; Quinn et al. 2005). In five of these studies the promotion was conducted combining pre- and postnatal counselling and clinic visits. In one study only postnatal promotion of breastfeeding was given (Jakobsen et al. 2008).

In Ghana 136 breastfeeding women were studied by Aidam and her research group (2005). The women were given exclusive breastfeeding support and counselling before and after delivery 90,0 % were exclusively breastfeeding for the last month when the baby was 6 months compared to 47,7 % in the control group (Aidam, Pérez-Escamilla & Lartey 2005: 1691)

In a study made by Jakobsen et al. (2008) in Guinea-Bissau, two groups of mothers were visited at home every two weeks and data about the infants' health was recorded and the mothers were asked about their breastfeeding practices. The mothers in the intervention group were given information on exclusive breastfeeding. At 2 months of age 19,8% of the babies in the intervention group had not yet been given water compared to 13,2% in the control group. Weaning foods were also given later to the babies in the intervention group. (Jakobsen et al. 2008: 71.)

In Egypt (Ahmed 2008) a five-session breastfeeding educational program on breastfeeding knowledge and practices for mothers of preterm infants was developed, implemented and examined. At discharge 80% of the infants were exclusively breast fed compared to 40% in the other group. Mothers started breast milk expression earlier and more frequently compared to the control group. (Ahmed 2008.)

An education and counselling program to prevent breastfeeding-associated HIV transmission in Zimbabwe was performed to 14,110 mother-baby pairs (Piwoz et al. 2005: 950). The program included group education, individual counselling, videos, and brochures. The research group gathered information about the feeding patterns of 8591

infants. Mothers who enrolled when the program was being fully implemented were 8.4 times more likely to EBF than mothers who enrolled before the program began. (Piwoz et al. 2005.)

A study group lead by Desmond (2008) researched the effects of a breastfeeding intervention to promote EBF in high HIV prevalence area in South Africa. The intervention was successful and it promoted EBF for 6 months after the birth. Group education was given to the pregnant women and up to 4 visits before and all together 14 home visits after birth were done by study lay breastfeeding counsellors (Desmond et al. 2008). The research group formulated through this intervention the possibility of a simplified and a basic model of the counselling with for example less home visits. Although the cost of the basic scenario would be less than one tenth of the cost of the simplified scenario, modelled effectiveness of the full and simplified versions suggest that they would be 10 times more effective compared to the basic intervention to promote EBF.

A large-scale breastfeeding improvement project was conducted in Madagascar, Bolivia and Ghana. The project used several existing resources in the government, non-governmental organizations and other partners e.g. media to promote good breastfeeding practices (Quinn et al. 2005: 346). Exclusive breastfeeding rates rose in every country. It rose in Madagascar from 46 % to 68 % and in Ghana from 68 % to 79 % at the end of the project. Also the timely initiation of breastfeeding during the first hour after the birth was increased from 34 % to 78 % in Madagascar and 32 % to 40 % in Ghana.

In a study by Bland et al (2007a) South-African women with HIV or who didn't know their infection status were counselled on different available feeding options. Most HIV-infected mothers who did not have resources to safely replacement feed chose appropriately to EBF, and these mothers adhered better to their feeding intention than those HIV-infected mothers who chose originally to replacement feed (Bland et al. 2007a: 289).

5.1.2. Better knowledge on breastfeeding

Knowledge on breastfeeding was measured in two studies (Ahmed 2008, Gypta, Katende & Bessinger 2004). In Uganda behaviour change communications messages about breastfeeding were given in mass media (Gypta et al.2004). The aim of the messages was to change knowledge, attitudes and behaviour using multiple media types (Gypta et al. 2004: 430). The women who had been exposed to these educational messages knew better that six months is the ideal exclusive breastfeeding duration. The messages also had a positive effect on men's knowledge. However the media campaign did not seem to have a conclusive effect on EBF practices when measured two months after the beginning of the campaign. (Gypta et al. 2004)

Ahmed (2008) studied the knowledge of mothers of preterm babies in Egypt. A questionnaire was given to mothers before and after attending an intervention of a five-session breastfeeding educational. The questionnaire assessed knowledge on benefits of breastfeeding, preterm babies and breastfeeding techniques. The knowledge of the mothers in the intervention group increased significantly after the educational program compared to the control group who did not receive the education. (Ahmed 2008.)

5.1.3. Lower risk of HIV transmission

Mother-to-child transmission (MTCT) is described as transmission of HIV infection from an HIV-positive mother to her child during pregnancy, labour, delivery or breastfeeding (WHO 2007). It is an important factor influencing appropriate infant feeding promotion. The association between breastfeeding promotion and HIV transmission was examined in three studies (Bland et al 2007b; Fadnes et al . 2009; Piwoz et al 2007) and HIV transmission knowledge was assessed in one study (Piwoz et al. 2005).

Breast health problems were studied among women living in rural and urban South Africa (Bland et al. 2007b). Women underwent an intervention designed to improve exclusive breast-feeding during the first 6 months after the babies' birth. The intervention achieved high EBF rates and overall, breast health problems were rare, but women who had not exclusively breastfed were more likely to experience breast health

problems than women who had used other infant feeding methods. The researchers discovered that HIV-infected women who suffered from serious breast health problems, such as a bleeding nipple or mastitis, were 3.55 more likely to transmit HIV to their babies. (Bland et al., 2007b.)

In the study by Fadnes et al. (2009), HIV-positive mothers who were socio-economically better-off, had a positive attitude to EBF, were well-educated or had participated in the Prevention of Mother-to-Child Transmission of HIV program breastfed for shorter durations, which is related with lower HIV transmission rates.

In Zimbabwe a program to decrease Mother-To-Child Transmission (MTCT) of HIV was conducted (Piwoz et al 2007). Families were given education including prenatal care, education for fathers and mothers on infant feeding. The program observed 437 HIV-positive mothers participating in the program. A large majority of these mothers did not know their HIV-status (Piwoz et al. 2007: 1249-1251). Breastfeeding information was gathered and the babies HIV status was checked in clinic visits until the age of 24 months. The study showed that cumulative postnatal HIV transmission was 8.2% and that each additional intervention contact was associated with a 38% reduction in the postnatal HIV transmission.

The knowledge of the participants in the same preventive MTCT program was assessed with a questionnaire before and after the study. Almost 2000 people answered the questionnaire about issues regarding HIV, MTCT, risk factors, and ways to reduce breastfeeding-associated transmission. Participants HIV knowledge increased, but few could name risk factors for postnatal transmission or could cite ways to reduce this risk. Those with more exposure to the intervention answered the questionnaire better. When the intervention was fully implemented, mothers were 7% more likely to know their HIV status before three months after the baby's birth. (Piwoz et al. 2005: 950.)

5.1.4. Negative and neutral effects

Four studies included in this literature review gave new insight to the concept of breastfeeding counselling. The underlying premise behind breastfeeding promotion in

Africa has been that traditional practices such as mixed feeding have a negative effect on the child's health.

In Guinean-Bissau a study by Jakobsen et al. (2008) examined whether promotion of exclusive breastfeeding is effective in reducing infant morbidity and mortality. Mothers in an intervention group were given information on exclusive breastfeeding during home visits. At 2 months of age 19,8 % of the babies in the intervention group had not yet been given water compared to 13,2 % in the control group. Weaning foods were also given later to the babies in the intervention group. However, there was no significant difference in the infants' amount of diarrhoea days, hospitalization, anthropometry or mortality rates between the control and intervention groups. The authors discussed that there seems to be little reason to discourage local practices as long as there is no strong data justifying such a change. (Jakobsen et al. 2008: 71.)

In three studies, where mothers receiving infant feeding counselling from health workers or lay persons were interviewed, it was found that mothers and the counsellors had different agendas for the counselling (Buskens & Jaffe 2008: 336; Desclaux & Alfieri 2009: 821; Nor et al. 2009: 427). Women were given mixed messages about appropriate feeding choices from different sources (Buskens & Jaffe 2008: 339; Desclaux & Alfieri 2009: 821). HIV was a difficult issue for the mothers and the counselled women felt stigmatized and judged by the counsellors (Buskens & Jaffe 2008: 337; Desclaux & Alfieri 2009: 821). These studies concluded that women do not seem to receive enough support.

5.2. Effective methods of breastfeeding promotion in Africa

The studies gave several indicators for effective breastfeeding promotion. Since efficacy is often researched using quantitative methods, this study can not in detail answer the question of effective breastfeeding promotion. The findings were that 1) combination of clinic and home visits seems to be the best method of achieving significant rise in EBF rates and other appropriate feeding methods. Giving promotion before and after the delivery is more effective compared to only postnatal promotion. 2) Large scale programs improve breastfeeding knowledge and can maximize resources to make change in a short period of time. 3) HIV prevention programs improve appropriate

breastfeeding practices and especially print and video material is efficient in lowering mother-to-child transmission of HIV rates. 4) Counselling does not always seem to be effective in supporting women in making infant feeding choices. The findings are demonstrated in the diagram below (FIGURE 2).

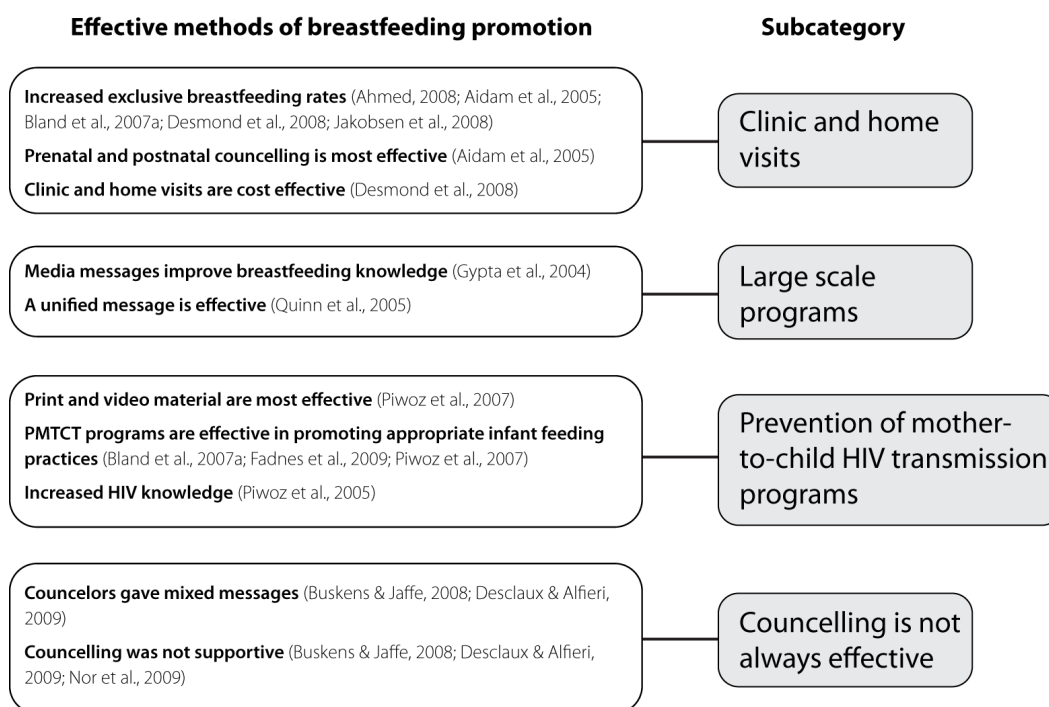


FIGURE 2. Findings on effective methods on breastfeeding methods in Africa

5.2.1. Clinic and home visits

In most of the studies women were given breastfeeding promotion through clinic and home visits before and after delivery (Ahmed 2008; Aidam et al. 2005; Bland et al. 2007a; Desmond et al. 2008; Piwoz et al. 2005) or only postnatally (Jakobsen et al. 2008). The exclusive rate of breastfeeding was significantly increased compared to a control group or previous studies. Through clinic and home visits HIV knowledge (Piwoz et al., 2007), breastfeeding related knowledge (Ahmed 2008) and overall optimal feeding practices were increased (Ahmed 2008; Bland et al. 2007a).

In Ghana the importance of the timing of EBF counselling was investigated with 123 mothers (Aidam et al 2005). One group was given counselling during and after delivery, one only after delivery. In a control group the women were given general health

education but none on breastfeeding. In the group which received counselling during pregnancy and after the delivery 90 % of women were exclusively breastfeeding for the last month when the baby was 6 months compared to 47,7 % in the control group. The researchers discovered that the two educational session prenatally combined with postnatal education was most effective in increasing exclusive breastfeeding. (Aidam et al. 2005: 1691.)

A study by Piwoz's (2005) research group supports the notion that extensive exposure to breastfeeding promotion increases EBF rates. An extensive education and counselling program to prevent breastfeeding-associated HIV transmission in Zimbabwe was performed to over 14,000 mother–baby pairs (Piwoz et al. 2005: 950). The program included group education, individual counselling, videos, and brochures. Information was gathered on the feeding patterns of 8591 infants at 6 weeks, 3 months, and 6 months intervals. Mothers who received the whole program were 8.4 times more likely to EBF than mothers who enrolled before the program began.

Mother's choice and appropriateness of infant feeding method is especially important in areas where HIV infection rates are high. The research group led by Bland (2007a) researched the infant feeding intentions of HIV-infected and uninfected women and the appropriateness of their choices according to their home resources like clean water. Most HIV-infected mothers who did not have the resources to safely replacement feed chose to EBF, and these mothers adhered better to their feeding intention than those HIV-infected mothers who chose originally to replacement feed. Feeding intention adherence was significantly increased with every home visit done during pregnancy. (Bland et al. 2007a: 289.)

Breastfeeding education can also benefit fragile groups such as preterm babies. In a study made in Egypt (Ahmed, 2008: 125) a five-session educational program on breastfeeding knowledge and practices for mothers of preterm infants was examined. After the program breastfeeding knowledge of the mothers increased significantly and they showed gradual improvement in breastfeeding practices such as starting breast milk expression earlier and more frequently than mothers in the control group. Also breastfeeding problems were less common in the intervention group and at discharge 80

% of the infants were exclusively breastfed compared to 40 % in the control group. (Ahmed 2008: 125.)

Jakobsen's research group (2008) in Guinea-Bissau studied two groups of mothers who were visited home every two weeks and data about the infants' health was recorded and the mothers were asked about their breastfeeding practice. The mothers in the intervention group were given information on exclusive breastfeeding. In the intervention group mixed feeding was less common at 2 months of age nearly 20 % of the babies had not yet been given water compared to about 13 % in the control group. Weaning foods were also given later to the babies in the intervention group. (Jakobsen et al. 2008: 71.)

Implementing a cost effective intervention program is important in resource poor areas. In South Africa an exclusive breastfeeding intervention was conducted. Lay counsellors made all together 14 visits before and after delivery, and the women also attended monthly clinic visits with a nurse. The intervention was highly successful in promoting optimal feeding practices among HIV-infected and uninfected women. The cost of this intervention was calculated and two other models were created on the base of it. In a simplified version there would be half the visits and more clinic based counselling, and in the basic version there would be one third the number of visits compared to the full intervention; all clinic and no home visits. The simplified version was estimated to be the most economically efficient in terms of cost per increased month of EBF. (Desmond et al. 2008.)

5.2.2. Large scale programs

A multi-media program giving information on EBF promotion for the first six months and appropriate complementary feeding practices was conducted in 12 districts in Uganda (Gypta et al. 2004). Exposure to behaviour change communications messages increased women's knowledge of six months as the ideal exclusive breastfeeding duration. However, the project's effect on EBF practices was less conclusive, which may be due to the fact that the survey was done only two months after the beginning of the campaign. (Gypta et al. 2004: 429.)

In a study made by Quinn et al. (2005) they researched the effects of a LINKAGES project to improve breastfeeding practices rapidly in a large scale in Madagascar, Ghana and Bolivia starting in 1996. The program used several existing resources in the government, and nongovernmental organizations to promote good breastfeeding practices such as timely initiation of breastfeeding (TIBF) and exclusive breastfeeding. The behaviour change orientation included media messages, involving fathers and grandmothers, peer groups and using of existing health care facilities. The quality of the program was ensured with consistent messages and material across all communication channels and short-term practical training for health and frontline community workers. It was found out that exclusive breastfeeding rates rose in every country. In Madagascar, EBF rose from 46 % to 68 % and in Ghana, from 68 % to 79 %. Timely initiation of breastfeeding rose from 34 % to 78 % in Madagascar and 32 % to 40 % in Ghana (Quinn et al. 2005: 345). Within 1 year of community interventions notable results were seen in the two African countries. (Quinn et al. 2005.)

5.2.3. Prevention of mother-to-child transmission of HIV programs

In three studies it was concluded that attending infant feeding promotion programs are successful in improving appropriate infant feeding methods (Bland et al. 2007a; Fadnes et al. 2009; Piwoz et al. 2005). Knowledge of HIV was increased in one study (Piwoz et al. 2005) and transmission rates went down in two studies (Bland et al. 2007b; Piwoz et al. 2007). Print and video material was the most successful methods in preventing transmission (Piwoz et al. 2005).

In Zimbabwe, a counselling and educational program aimed at Prevention of Mother-To-Child-Transmission (PMTCT) of HIV included antenatal care, male outreach and education and infant feeding options for HIV infected and non-infected. Piwoz et al (2005) researched the mothers who had participated and found out, that mothers in the program were 70 % more likely to learn their HIV status during the first three months and the EBF rate was improved. HIV knowledge was also increased, although few knew risk factors of postnatal transmission and couldn't tell ways to reduce this risk (Piwoz et al. 2005). In a later study (Piwoz et al. 2007), the transmission rates of HIV from mother to child were examined and there was an over 8 % cumulative risk of transmission over time, the intervention was successful in lowering the risk with 38 %

after each additional intervention contact. Women who were exposed to both print and video material were 79 % less likely to infect their infants compared to mothers who had no exposure. There was no significant difference between the findings of mothers who did and did not know their HIV status.

In a study made in Uganda by Fadnes et al. (2009) HIV positive mothers were surveyed about their infant feeding practices. The result was that mothers who had participated in a PMTCT program were well-educated and socio-economically better-off compared to peers breastfed for a shorter period, which is associated with a lower risk of HIV transmission. (Fadnes et al. 2009.)

Economic aspects of the families were taken into consideration in South Africa, where Bland et al. (2007a) observed 1253 pregnant women who were given information about EBF. HIV-infected women were counselled on different available feeding options. Data was gathered about four resources that facilitate replacement feeding, such as clean water and regular maternal income, and the feeding intentions of the women were studied. When the feeding practices of the first week were examined, most mothers who were HIV infected and did not have the four resources, chose appropriately to exclusively breastfeed (73 %). It was easier for the mothers who had initially intended to EBF to adhere to this (78 %) and the number of antenatal home visits helped mothers to adhere to feeding intentions. It was concluded that with appropriate counselling and support women with HIV can feed their infants in an optimal way. (Bland et al. 2007a.)

5.2.4. Counselling is not always supportive

In several studies counselling has been proven to be effective in improving rates of breastfeeding initiation, duration and exclusivity (Chapman et al. 2010). Peer counsellors are believed to support good breastfeeding practices in a socially and culturally relevant context, because they come from similar backgrounds as their clients (Chapman et al. 2010). Controversial to this, in three studies included in this literature review, it was stated that women were not generally satisfied with their counselling (Buskens & Jaffe 2008; Desclaux & Alfieri 2009; Nor et al. 2009).

Women were given mixed messages about appropriate feeding choices from different facilities and counsellors (Buskens & Jaffe 2008: 339; Desclaux & Alfieri 2009: 821) and the counselled women and counsellors had differing opinions especially when considering social and economical aspects of choices. HIV positive women felt stigmatized and judged by the counsellors and counsellors felt powerless to change women's behaviour (Buskens & Jaffe 2008: 337; Desclaux & Alfieri 2009: 821). In Uganda peer counsellors did not recognize local needs, had insufficient training and did not acknowledge mothers previous breastfeeding experiences (Nor et al. 2009: 430).

Desclaux & Alfieri (2009) researched health services settings in Burkina Faso, Cambodia and Cameroon by interviewing and observing women and health workers in counselling sessions. The aspects that the participants considered when talking about counselling and choices were examined. It revealed that counselling practices vary. Women were given different kind of information about their possibilities of choosing infant feeding. Local authority's ability to provide counselling was dependent on the organizations and local health and aid systems. Women's perceptions on counselling differed from the perceptions of the health care providers'. "While health workers consider economic aspects first, women mostly consider social aspects related to the risk of being stigmatized as a "bad mother" or as HIV-positive" (Desclaux & Alfieri 2009).

Similar results were found in an ethnographic study made in South-Africa, Nigeria and Swaziland. Many infant feeding counselling encounters were demotivating and the counsellors and mothers' needs, expectations and experiences did not meet (Busken & Jaffe 2008: 337). Mothers got mixed messages from different clinics; they often felt judged and stigmatized while counsellors felt stressed and powerless to change the mothers' behaviour. In some cases the counsellors expected the women to be able to make decision on infant feeding while the women were still in emotional turmoil from hearing about their HIV status (Buskens & Jaffe 2008: 339-340).

5.3. Factors affecting breastfeeding practices in Africa

Factors affecting breastfeeding promotion can be divided under HIV, women's status in society and traditional beliefs. The figure (FIGURE 3.) below shows how the study findings were subcategorized.

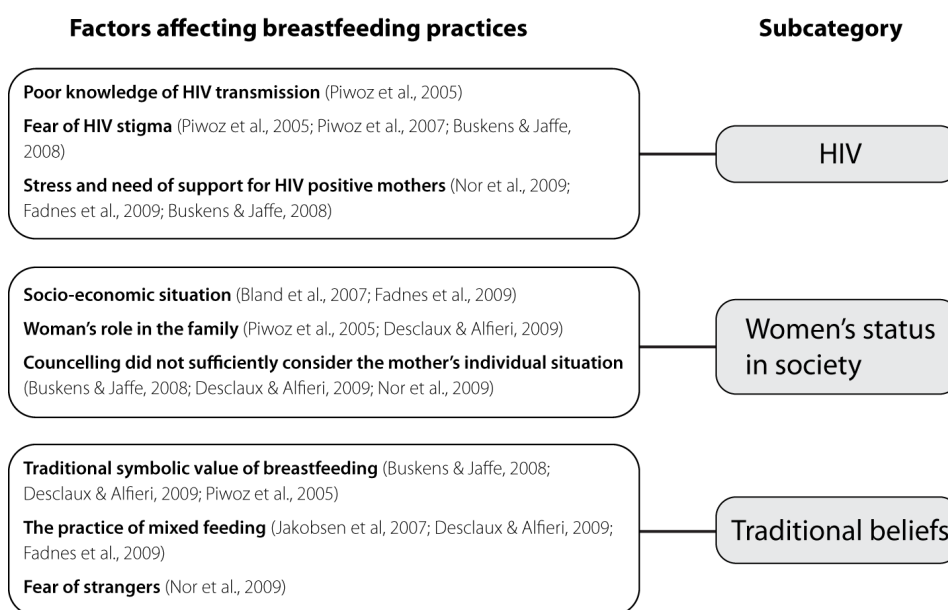


FIGURE 3. Findings on factors affecting breastfeeding practices in Africa.

5.3.1. HIV

Breastfeeding promotion in Africa can not be done without considering the HIV situation in the area. In a study in Zimbabwe, formative research was done to assess knowledge, beliefs, and attitudes in the community about mother-to-child transmission (MTCT) of HIV through interviews. The results were that knowledge on HIV transmission was poor. People had the misconception that all babies of HIV positive mothers would become HIV infected, that there was nothing that could be done to prevent transmission, or that that mixed feeding is a good way to reduce the risk of HIV transmission. (Piwoz et al. 2005.)

Finding out one's HIV status was seen as an extremely negative and fearful experience. Women who were tested before their men could be accused of bringing HIV into their

home. (Piwoz et al. 2005) In the study on the effects of an education and counselling program for preventing breastfeeding associated HIV Transmission in Zimbabwe, only 72 (16%) of the 437 women in the sample chose to receive their HIV test results although they were all encouraged to do so (Piwoz et al. 2007). In a study on infant feeding counselling mothers explained that hearing of one's positive HIV status was shocking and they were pressured to make a decision on infant feeding quickly. The mothers felt that they were not given enough support to understand their own status. (Buskens & Jaffe 2008.)

When infant feeding counselling was studied in South-Africa, Nigeria and Swaziland it was found that many counselling encounters were demotivating and that the counsellors' and mothers' needs, expectations and experiences were opposing (Buskens & Jaffe, 2008). The mothers often felt judged and stigmatized while counsellors felt stressed and powerless to change the mothers' behaviour. The counsellors resorted in confronting, judging and shaming the mothers in order to persuade them to test for HIV and disclose the result, because they felt that it needed to be done to save the baby (Buskens & Jaffe 2008: 337)

In a study by Nor et al. (2009) South African women were given peer counselling. HIV uninfected women were generally unsatisfied, but HIV infected women were satisfied with the counselling and the support and care they received from the counsellor. Many women with an HIV infection with limited or no network of support were stressed and the counsellor could provide them emotional support (Nor et al., 2009: 427). Also in the survey made by Fadnes et al. (2009) in Uganda HIV positive women who attended NGO support groups or received counselling complied more easily with the chosen or proposed infant feeding option. They appreciated the opportunity to speak about various psychological and social aspects of the HIV infection.

5.3.2. Women's status in society

In the studies came up that the socio-economic status of the women, their role in the family and women's limited possibility to make informed consent choices affect breastfeeding practices.

The overall socio-economic situation of the mother has an influence on the breastfeeding practices according to a research lead by Fadnes (2009). In a survey made in Uganda HIV positive mothers who were well educated, and socio-economically better-off, and those who have attended the PMTCT program or discussed infant feeding with someone, had a shorter breastfeeding duration, which decreases the risk of HIV transmission. The difference was especially significant with well-educated mothers who breastfed for approximately 1 year less than their uneducated peers. (Fadnes et al. 2009.)

Since mothers in Africa often have to live with low financial and material resources, it affects breastfeeding choices. In the case of HIV according to WHO, replacement feeding should not be used unless it is acceptable, feasible, affordable, sustainable and safe (WHO 2007). In a counselling study in South Africa HIV-infected women were counselled on different available feeding options. The study group gathered information on four resources that facilitate replacement feeding: clean water, adequate fuel, access to a refrigerator and regular maternal income. An algorithm was developed for the counsellors to use when presenting infant feeding choices to an HIV infected woman. Most women who did not have these resources for safe formula feeding chose appropriately to exclusively breastfeed. (Bland et al. 2007a.)

In Zimbabwe according to interviews fathers have the last say in what way the baby is fed and for how long. When men were educated about MTCT, it helped men understand their responsibility in prevention and men wanted to assume a leadership role through knowledge on the issue. (Piwoz et al. 2005: 952.) Also in Burkina Faso the family structure did not enable women to make free decisions on infant feeding according to Desclaux and Alfieri (2009). Fathers can make financial decisions in the family including buying formula and force on decision on the infant feeding method. On the other hand fathers have the authority to protect women from criticism, especially from the infant's paternal grandmother. The grandmothers often have decision-making power regarding infant care and feeding. Two out of three mothers hid their HIV situation from the fathers during the study period. (Desclaux & Alfieri 2009.)

There were limitations to the efficiency of counselling because women's' needs and perceptions differ from the health care providers' (Desclaux & Alfieri 2009; Buskens &

Jaffe, 2008). Women considered the visits as consultation while the counsellors considered that they were giving health education aimed at saving the baby (Buskens & Jaffe, 2008). Health workers consider economic aspects first; women mostly consider social aspects and local practices (Desclaux & Alfieri 2009: 821). When the counsellors in South-Africa were interviewed, they complained about mothers' lack of compliance and suffered from stress and burnout, while mothers often felt shy, stigmatized and judged. They sometimes lied about their feeding practices to please the counsellor (Buskens & Jaffe 2008: 340). In the peer counselling study by Nor et al. (2009: 433) peer counsellors were unsuccessful in acknowledging women's knowledge and previous experiences of infant feeding and appeared threatened by the women's confidence instead of using it as a tool in counselling.

Women were given mixed messages about appropriate feeding choices from different facilities and counsellors (Buskens & Jaffe 2008: 339; Desclaux & Alfieri 2009: 821). Desclaux & Alfieri (2009) found that counselling practices vary. Women were given different kind of information about their possibility of choosing infant feeding according to the local authorities' abilities to provide counselling. Sometimes only one option was proposed to all women, or the health care provider assessed the economic level of the mother and proposed infant feeding method on that basis. In Buskens & Jaffe's study (2008: 339) women were given mixed messages from clinics and counsellors because of bias towards either breastfeeding or formula feeding.

5.3.3. Traditional beliefs

Breastfeeding has strong cultural meaning and there were several beliefs related especially to women who did not breastfeed. In South-Africa women felt that breastfeeding was the most important conduit of expressing their love of the child, and the fact that they could not perform it seemed to need mourning (Buskens & Jaffe 2008: 340). Women who do not breastfeed or wean the baby "too early" can be considered to be a bad mother (Desclaux & Alfieri 2009). In Zimbabwe women who do not breastfeed may face negative social effects such as people thinking that she has HIV, believing that she is a witch, has stolen the child, is promiscuous, or that there are spirits or omens in the mother (Piwoz et al. 2005: 952). These findings are important in the context of preventing transmission of HIV.

Mixed feeding is a common practice in Africa. In Guinea Bissau, the introduction of water and other foods is culturally important. It is even believed that late introduction of water may harm the child. The intervention managed to postpone the introduction of water and weaning foods but it was not totally seized. (Jakobsen et al. 2008: 73.) Also in Burkina Faso it is customary to give herbal teas very early to the baby for preventive care (Desclaux & Alfieri 2009).

When conducting counselling where the counsellor enters the women's' homes, it is important to consider the local beliefs. In South Africa, especially in rural areas, Nor et al. (2009) noted that there is a belief and fear of the "evil eye", which is believed to cause miscarriages and malformed babies. This was one reason why women did not want to be visited by strangers and sometimes gave them incorrect pregnancy history and a wrong home address. Women also expressed fear that the peer counsellors would steal the identity card of the baby, which qualifies for government social support. (Nor et al. 2009:430.)

6. VALIDITY AND ETHICAL CONSIDERATIONS

6.1. Validity

Validity assesses the integrity of the findings of a study, how free they are of bias (Kunz & Antez 2003: 132). Validity can be analyzed by looking at the data collection, data criteria, the relationship between the author and the data, the length of the study, the analysis of the data, the ethics of the study and reporting of findings (Tuomi 2007: 150-152).

The articles in this literature review were peer reviewed scientific articles retrieved from reliable and professional databases. The articles are therefore qualified to be cited in internationally peer-reviewed scientific journals. The literature review includes diverse articles on breastfeeding promotion. Data description

All the articles were considered valid when they fulfilled the inclusion criteria introduced in the section describing the reliability of this study. The steps of analyzing

the data are openly introduced and in the discussion it is described how the findings relate to previous studies on the issue of breastfeeding promotion.

Through this study I learned a lot about conducting a literature review. I grew to understand how health promotion is a complex issue having parties with different points of view, and that especially in an environment like Africa, where resources are limited, social and environmental aspects are intertwined together.

6.2. Limitations

However there are some limitations to the literature review. 1) The author is a novice researcher and the approach to the data collection and analysis may be less thorough and analytical than that of a more experienced researcher. 2) A larger research including an experienced researcher would have made it possible to include more articles in the literature review. 3) The effectiveness of different promotion methods might have been more conclusively researched if a quantitative analysis method would have been used. 4) Financial limitations also restrained the purchase of articles for the study. 5) Time limitations due to a fixed dead line did not allow including all recently published literature thoroughly to this study.

However, considering all the limitations of this study I am still confident that I have managed to reveal the main patterns of the outcomes, effective methods and factors affecting breastfeeding promotion in Africa.

6.3. Ethical considerations

The criteria of good and ethical scientific practice is that the researchers use integrity, carefulness and accuracy when conducting research, presenting results, and when judging research (Academy of Finland 2003).

The ethics and good scientific conduct are presented in this study. The information was gathered in a systematic manner. The articles chosen followed good scientific conduct which was evaluated with the critical appraisal checklist mentioned in inclusion criteria. Anonymity and privacy of the participants was ensured in the articles. Information from

the sources was used fairly to for the findings and the information was introduced without altering the meaning.

The findings are presented without the authors opinions. The phases of the literature review are introduced openly and the authors were appropriately referenced. This literature review is written using the Metropolia University of Applied Sciences Guidelines for Writing papers.

Infant feeding is a very ethical issue since nurses have a fundamental responsibility to promote health, prevent illness, restore health and alleviate suffering (The INC Code of Ethics for Nurses 2006). The new born babies don't have means to advocate for their own health breastfeeding and other appropriate feeding options to aid mother is choosing the most healthy option (WHO 2007).

7. DISCUSSION

The purpose of this literature review was to determine what are the main outcomes, effective methods and factors affecting of breastfeeding promotion in Africa. An applied systematic literature review was conducted with fourteen articles.

7.1. Comparing to other literature

This literature review highlighted the multiple outcomes of breastfeeding promotion. The findings were comparable with previous studies where it was noted that peer counselling on breastfeeding improved breastfeeding initiation rates, duration and exclusivity (Chapman et al. (2010). Incidents of infant diarrhoea were decreased and lactation amenorrhoea duration was increased according to Chapman et al.'s (2010) literature review. This effect was researched only in one study included in this literature review and the findings were controversial.

Hannula and her research group stated that in their literature review (2008) effective methods of breastfeeding promotion included using multiple methods, counselling during pregnancy and after delivery, interactive and involving methods and support by

well-trained professionals. These findings were partly comparable with this literature review.

The factors affecting breastfeeding identified in this literature review were similar to previous studies, where factors were observed (Adejuyigbe et al. 2008; Otoo, Lartey & Pérez-Escamilla 2009; Wambach et al. 2005).

During this literature review the author has learned a lot about the process of doing a literature review. Skills on formulating research questions, searching for data and reporting findings developed. The subject of the review was very intriguing. Especially the articles where mothers were interviewed (Buskes & Jaffe, 2008; Desclaux & Alfieri, 2009; Nor et al., 2009) gave better understanding of the complexity of infant feeding choices and the women's role. The author believes that they give extra value to this topic and a "human voice". It would have been interesting to have more studies on the health implications of different methods on children's health, since the study from Guinea-Bissau (Jakobsen et al., 2008) on children's health and breastfeeding was controversial to previous studies.

The MaZaFi health care project continues in 2010 between Metropolia and co-operating schools. Finnish students have been interested to go to Africa for exchange. Through the exchange program students have learned a new kind of respect for human rights and understood the importance of socio-cultural aspects. The students have been interested in being involved in developmental co-operation. (MaZaFi internet document). The author hopes that this literature review can help especially midwife students to get new perspectives on African health issues.

7.2. Implications for clinical practice

The findings confirm that a combination of clinic and home visits before and after delivery support exclusive breastfeeding. The studies brought up improvement suggestions on unifying the message from different facilities, developing counselling, supporting HIV positive women and implementing large scale programs.

This review consisted of very diverse studies on breastfeeding promotion. They brought up several cultural and socio-economical factors which affect breastfeeding promotion. The studies had data from eleven African countries, but the continent is very diverse. Health promotion should derive from the local needs of a specific country, community and ethnic background.

According to WHO guidelines (2007) HIV positive women should receive counselling that assesses their situation and guides to select the most suitable option for themselves and the infant. Giving information about the risks and benefits of different infant feeding options helps mothers to make an informed choice (WHO 2007).

This was not the reality in the breastfeeding promotion according to the studies where counselled women were heard (Buskes & Jaffe 2008; Desclaux & Alfieri 2009; Nor et al. 2009). In the research by Desclaux & Alfieri (2009), it was noted that individual woman could receive as much as five different types of advice from health workers on breastfeeding and HIV. Some nurses and health facilities were biased towards either breastfeeding or formula feeding (Desclaux & Alfieri 2009). The need for coordination and a unified message is apparent.

The studies indicated a need for more client-centred counselling (Buskens & Jaffe 2008: 338). These researchers recommended different kind of training for the counsellors. It should acknowledge and manage the opposing agendas of the health care workers and mothers. Nor and his research group (2009) considered that the counsellors did not have enough training and their work was not supervised enough. They suggest more input of the counsellors when defining program's goals and objectives. There should be a clear job description for the peer counsellors and adequate funding for the initiatives.

Peer counselling was found to be very important to HIV positive women to get support and talk about different aspects of HIV infection (Fadnes et al. 2009; Nor et al. 2009: 427). Women with HIV infection live with the stressful situation of making choices both for themselves and the baby. In the study in Burkina Faso, Cameroon and Cambodia (Desclaux & Alfieri 2009) women sometimes invented flexible strategies to balance the need to feed the baby well and at the same time avoid being stigmatized as "bad mothers" or HIV positive. Some health workers also supported these practices and

helped the mothers to avoid disagreement about infant feeding with those in their close family and friends. Since the role of a woman in the family affects infant feeding choices (Desclaux & Alfieri 2009; Piwoz et al. 2005), involving men in the breastfeeding promotion can have a great impact for the better. Improving HIV knowledge and support can help to relieve the stress of these mothers while improving health of their children.

Large scale programs such as the one implemented in Madagascar, Bolivia and Ghana are encouraging in showing that changes can be made efficiently and in a short period of time (Quinn et al., 2005). The LINKAGES behaviour change orientation to improve breastfeeding rates included media messages, involving father sand grandmothers, peer groups and taking advantage of existing health care facilities. The quality of the program was ensured with consistent messages and material across all communication channels and short-term practical training for health and frontline community workers. Harmonizing the message of good breastfeeding practices for women by using several intervention partners and bringing together health and community workers expands coverage and maximises the use of resources (Quinn et al. 2005: 353).

7.3. Need for further studies

HIV and infant feeding is a global issue and new information surfacing all the time. The issue of HIV and infant feeding recommendation is changing and there is ongoing research on the possibilities of antiretroviral therapy, early cessation of breastfeeding and the transition from exclusive breastfeeding to mixed feeding (WHO 2007). The effects of preventive HIV drug treatments were not included in this study because they did not affect the promotion methods. In the future guidelines of breastfeeding may evolve through the use of new drug treatments.

The answer to the question on efficacy of breastfeeding promotion seemed somewhat inconsistent. The health of the children was taken into consideration in studies where the MTCT of HIV was lowered through improved EBF practices (Bland et al. 2007b; Piwoz et al. 2007). In Guinea-Bissau the study made on the health of the children was measured by counting diarrhoea and mortality. There was no difference found when comparing the intervention group with women practicing EBF more than the control

group (Jakobsen et al. 2008). The authors concluded that it is not likely to be cost effective to discourage the local practice of mixed feeding without further studies. The findings were not similar other researches. In a systematic literature review on the effects of peer counselling infants (Chapman et al. 2010) the intervention groups generally had less diarrhoea incidences than the infants of mothers who did not receive counselling. Also in this study the health affect of transmission of HIV was not taken into consideration in the health effects.

There should be more research on the health impacts of different infant feeding methods to the infant and the mother. The psychological outcomes of breastfeeding promotion and different infant feeding practices to the mother-baby relationship in the context of Africa could be an interesting to research. For instance in some Nigeria women believed that the children can only recognize them as their mothers if they are breastfed (Adejuyigbe et al. 2008).

8. CONCLUSION

Main outcomes of breastfeeding promotion according to this literature can be categorized into 1) Improved breastfeeding practices, especially exclusive breastfeeding, 2) better knowledge on breastfeeding, 3) lower risk of transmitting HIV to the baby through improved HIV knowledge and safer breastfeeding practices. Sometimes breastfeeding has also 4) negative and neutral outcomes when the improved exclusive breastfeeding had no effect on a child's health and the counselling was not supportive for women.

A combination of clinic and home visits, large scale programs and HIV prevention programs are effective methods to promote breastfeeding. Counselling is not an effective method in supporting breastfeeding women.

Breastfeeding practices in Africa is affected by poor knowledge and the social stigma of HIV, women's often poor socio-economic situation and role in the family, and traditional beliefs on infant feeding.

Counselling should be improved through better training, giving a unified message to mothers from all facilities and focusing on client centred counselling where the mother makes an informed consent choice best for her situation. Supporting HIV women is important to relieve stress. Large scale program can be implemented to maximise resources and make change efficiently in a short period.

REFERENCES

Adejuyigbe, E., Orji, E., Onayade, A., Makinde, N., and Anyabolu, H. (2008) Infant Feeding Intentions and Practices of HIV-Positive Mothers in Southwestern Nigeria. *Journal of Human Lactation* 24(3), 303-310

Ahmed, A.H. (2008) Breastfeeding Preterm Infants: An educational Program to Support Mothers of Preterm Infants in Cairo, Egypt. *Pediatric Nursing* 34(2) 125-138

Aidam, B.A., Pérez-Escamilla, R., and Lartey A. (2005) Lactation counseling increases exclusive breast-feeding rates in Ghana. *Journal of Nutrition* 135(7):1691-5

Academy of Finland (2003) Guidelines on Research Ethics. Internet document. <<http://www.aka.fi/Tiedostot/Tiedostot/Julkaisut/Suomen%20Akatemian%20eettiset%20ohjeet%202003.pdf>> Read 9.11.2010

Biancuzzo, M. (2003) *Breastfeeding the Newborn Clinical Strategies for Nursing*. 2nd ed. St Louis: Mosby

Bland R.M, Becquet, R, Rollins, N.C., Coutsooudis, A., Coovadia H.M., and Newell M.L. (2007b) Breast Health Problems are Rare in both HIV-Infected and HIV-uninfected Women Who Receive Counseling and Support for Breast-Feeding in South Africa. *Clinical Infectious Diseases* 45(11), 150215-10

Bland, R.M., Rollins N.C., Coovadia, H.M., Coutsooudis, A., and Newell, M.L. (2007a) Infant feeding counselling for HIV-infected and uninfected women: appropriateness of choice and practice. *Bulleting of the World health Organization* 85:289-296

Bobat, R., Moodley, D., Coutsooudis, A., and Coovadia, H. (1997) Breastfeeding by HIV-1-infected women and outcome in their infants: a cohort study from Durban, South Africa. *AIDS* 11(13), 1627-1633

Brooker, C. & Mullally, S. (2002) *Dictionary of Nursing* 18th edition. London: Churchill Livingstone

Burns, S. K. & Grove, N. (2001) *The practice of Nursing Research conduct, critique & utilization*. 4th ed. Philadelphia: W.B. Saunders

Burns, N. & Grove, S.K. (2003) *Understanding Nursing Research* 3rd ed. Philadelphia: W.B. Saunders

Buskens, I. & Jaffe, A. (2008) Demotivating infant feeding counselling encounters in southern Africa: Do counsellors need more or different training? *AIDS Care* 20(3), 337-345

Chapman, D.J., Morel, K., Anderson, K., Damio, G., and Pérez-Escamilla, R. (2010) Breastfeeding Peer Counseling: From Efficacy Through Scale-Up. *Journal of Human Lactation* 26 (3), 314-326

CIMO: Malawi-Zambia Health Care Project MaZaFi. Internet document.

<<http://www.cimo.fi/dman/Document.phx?documentId=vs13308174228967&cmd=download>> Read 3.10.2010

Desclaux, A. & Alfieri, C. (2009) Counseling and choosing between infant-feeding options: Overall limits and local interpretations by health care providers and women living with HIV in resource-poor countries (Burkina Faso, Cambodia, Cameroon). *Social Science & Medicine* 69(6), 821-829

Desmond, C., Bland, R.M., Boyce, G., Coovadia, H.M., Coutsooudis, A., and Rollins, N., Newell, M-L. (2008) Scaling-Up Exclusive Breastfeeding Support Programmes: The Example of KwaZulu-Natal. *Public Library of Science ONE* 3(6), e2454.

Elo, S. & Kyngäs, K. (2008) The qualitative content analysis process. *Journal of Advanced Nursing* 62 (1), 107-115

Fadnes, L.T., Engebretsen, I.M.S., Wamani, H., Wangisi, J., Tumwine, J.K. and Tylleskär, T. (2009) Need to optimize infant feeding counselling: A cross sectional

survey among HIV-positive mothers in Eastern Uganda. *BMC Pediatrics* 9(2)
10.1186/1471-2431-9-2

Greenhalg, T. & Donald, A. (2000) *Evidence Based Health Care Workbook*. London:
British Medical Journal Publishing Group

Gorman, C. and Hohmuth-Lemonick, E. (2009) At Work with Malawi's Nurses.
American Journal of Nursing 109(6), 26-30

Gypta, N., Katende, C., and Bessinger, R. (2004) An Evaluation of Post-Campaign
Knowledge and Practices of Exclusive Breastfeeding in Uganda *Journal of Health,
Population and Nutrition* 22(4), 429-439

Hannula, L., Kaunonen, M. and Tarkka M-T. (2008) A Systematic Review of
Professional Support Interventions for Breastfeeding. *Journal of Clinical Nursing*.
17(9), 1132-1143

Henderson, C. & Jones, K. (1997) *Essential Midwifery*. London : Mosby

International Council of Nurses (2006) *Code of Ethics for Nurses*. Internet document.
<<http://www.icn.ch/icncode.pdf>> Read 19.10.2009

Jakobsen, M.S., Sodermann, M., Biai, S., Nielsen, J., and Aaby, P. (2008) Promotion of
breastfeeding is not likely to be cost-effective in West Africa. A randomized
intervention study from Guinea-Bissau *Acta Paediatrica* 97: 68-75

Kakute, P., Ngum, K., Mitchell, P., Kroll, K., Forgwei, G., Ngwang, L., and Meyer, D.
(2005) Cultural Barriers to Exclusive Breastfeeding by Mothers in a Rural Area of
Cameroon, Africa. *Journal of Midwifery & Women's Health*, 50 (4), 324-328

Kauhanen, J., Myllykangas, M., Salonen, J.T. and Nissinen, A. (1998)
Kansanterveystiede 2nd ed. Porvoo: WSOY

Kunz, K., Kunz, R., Kleijnen, J., and Gerd, A. (2003) *Systematic Reviews to Support Evidence-based Medicine: How to Review and Apply Findings of Healthcare Research*. Oxford: Royal Society of Medicine Press Ltd

Nor, B., Zembe, Y., Hons, B., Daniels, K., Doherty, T., Jackson, D., Ahlberg, B.M. and Ekström E.-C. (2009) "Peer but Not Peer" Considering the Context of Infant Feeding Peer Counseling in a High HIV Prevalence Area. *Journal of Human Lactation* 25(4), 427-432

Otoo, G. E., Lartey, A. A., Pérez-Escamilla, R. (2009) Perceived Incentives and barriers to Exclusive Breastfeeding Among Periurban Ghanaian women. *Journal of Human Lactation* 25(1), 34-41

Oxford Advanced Learners Dictionary of Current English (1989) 4th ed. Oxford: Oxford University Press

Polit, D.F. & Beck, C.T. (2004) *Nursing Research. Principles and Methods 7th edition*. Philadelphia: Lippincott Williams & Wilkins.

Piwoz, E. G., Humphrey, J.H., Tavengwa, N.V., Iliff, P. J., Marinda, E. T., Zunguza, C. D., Nathoo, K. J., Mutasa, K., Moulton, L. H., and Ward, B. J. (2007) The Impact of Safer Breastfeeding Practices on Postnatal HIV-1 Transmission in Zimbabwe. *American Journal of Public Health* 97(7), 1249-1254

Piwoz, E. G., Iliff, P.J., Tavengwa, N., Gavin, L., Marinda, E., Lunney, K., Zunguza, C., Nathoo, K.J., the ZVITAMBO Study Group and Humphrey, J.H. (2005) An Education and Counseling Program for Preventing Breast-Feeding–Associated HIV Transmission in Zimbabwe: Design and Impact on Maternal Knowledge and Behavior. *Journal of Nutrition* 135: 950-955

Quinn, V. J., Guyon A.B., Schubert, J.W., Stone-Jiménez, M., Hainsworth, M.D. and Martin, M.H. (2005) Improving Breastfeeding Practices on a Broad Scale at the Community Level: Success Stories From Africa and Latin America *Journal of Human Lactation*. 21(3), 345-354

Riordan, J., & Auerbach, K.G. (1998) 2nd ed. *Breastfeeding and Human Lactation*
Missisauga: Jones & Bartlett Publisher

The New Oxford Dictionary of English (1998) New York: Oxford University Press

Tuomi, J. (2007) *Tutki ja lue: Johdatus tieteellisen tekstin ymmärtämiseen*. Jyväskylä:
Tammi

UNAIDS/WHO (2009) *AIDS Epidemic update December 2009*. Internet document.
<http://data.unaids.org/pub/Report/2009/JC1700_Epi_Update_2009_en.pdf> Read
2.10.2010

Wambach, K., Campbell, S.H., Gill, S.L, Dodgson J. E., Abiona, TC., and Heinig M.J.
(2005) Clinical Lactation Practice: 20-years of Evidence. *Journal of Human Lactation*
21(3), 2005, 245-258

WHO Global strategies for infant and young child feeding. Internet document. Updated
1.5.2001 <http://apps.who.int/gb/archive/pdf_files/WHA54/ea54id4.pdf> Read
19.10.2009

WHO Ten facts about breastfeeding. Internet document. Updated July 2009.
<<http://www.who.int/features/factfiles/breastfeeding/en/index.html>>. Read 16.10.2009

WHO/UNAIDS/UNFPA/UNICEF (2007) *HIV Transmission through breastfeeding: A
Review of Available Evidence*. Internet document.
<http://whqlibdoc.who.int/publications/2008/9789241596596_eng.pdf> Read
2.10.2010

Windle, P.E. (2006) *Outcomes Research: A Paradigm Shift for Nursing Research*. The
Journal of Stroke and Cardiovascular Diseases. 15 (2), 64-65

DATABASE SEARCH

Database and date of search	Keywords	Search criteria	Number of hits	Article(s) chosen
PubMed 17.02.2010	Breastfeeding AND promotion AND Africa	English language Year of Publication 2000-2010	77	6 Desmond et al. (2008) Jakobsen et al. (2007) Aidam et al. (2005) Piwoz et al. (2007) Bland et al. (2007) Gupta et al. (2004)
PubMed 18.2.2010	breast feeding AND Africa AND education	English language Year of Publication 2000.2010	156	5 Desmond et al. (2008) Ahmed et al. (2008) Jakobsen et al. (2007) Aidam et al. (2005) Desclaux & Alfieri (2009)
PubMed 22.2.2010	breast feeding AND Africa AND counselling	English language Publication year 2000-2010	98	7 Nor et al (2009) Desclaux & Alfieri (2009) Fadnes et al (2009) Desmond et al. (2008) Bland et. al (2007) Piwoz et al (2005) Aidam et. al (2005)
			Total: 331	Total: 18 (11 used)

Database and date of search	Keywords	Search criteria	Number of hits	Article(s) chosen
CINAHL 16.2.2010	Breast feeding AND promotion AND Africa	English language Year of publication 2000-2010	9	1 Quinn et al. 2005
CINAHL 18.2.2010	breast feeding AND africa AND education	English language Year of publication 2000-2010	19	1 Bland et. al 2007
CINAHL 22.2.2010	breast feeding AND Africa AND counselling	Publication year 2000-2010	5	1 Buskens & Jaffe 2008
			Total: 33	Total: 3

Database and date of search	Keywords	Search criteria	Number of hits	Article(s) chosen
Ovid MedLine 1996 to Feb 2010 16.2.2010	Breast feeding AND health promotion AND Africa	Advanced search English language Year of publication 2000-2010	5	0
OVID MedLine 1996- 2010 18.2.2010	breast feeding AND Africa AND education	Advanced search English language Year of publication 2000-2010	0	0
OVID MedLine 22.2.2010	breast feeding AND Africa AND counselling	English language Publication year 2000-2010	2	0
			Total: 7	Total: 0

Database and date of search	Keywords	Search criteria	Number of hits	Article(s) chosen
Science Direct 16.02.2010	Breast feeding promotion (in abstract, title or keywords) AND Africa	Year of Publication 2000-2010	11	0
Science Direct 18.2.2010	“breast feeding” AND Africa AND education	Year of publication 2000-2010 Nursing and health professions	177	0
Science Direct 22.2.2010	breast feeding AND Africa AND counselling	Publication year 2000-2010	86	0
			Total: 247	Total: 0

Title, author, year and country	Journal	Purpose, Sample	Data Collection and Data Analysis	Main Findings
<p>Lactation counseling increases exclusive breast-feeding rates in Ghana</p> <p>Aidam, A.B., Pérez-Escamilla, R. and Lartey, A.</p> <p>2005 Ghana</p>	<p>Journal of Nutrition 2005; 135 (7):1691-5</p>	<p>Purpose was to determine 1) the effect of lactation counselling on Exclusive Breast Feeding (EBF) rates after controlling for the Hawthorne effect, and 2) the timing of breastfeeding support that would be most effective in improving EBF rates among Ghanaian mothers delivering in urban hospitals.</p> <p>The sample was 231 pregnant women were followed for 6 mo after delivery.</p>	<p>The mothers were interviewed in the beginning, then placed randomly into three groups, 2 intervention groups and 1 control group. In the first intervention group the women were given EBF support pre-, peri- and postnatally. In the second intervention group EBF support was given only peri- and postnatally. The control group received non-breastfeeding health education. Two educational sessions were provided prenatally, and 9 home follow-up visits were provided in the 6-month postpartum period. Infant feeding data were collected monthly at the participant's home. Data from the interviews were analysed statistical analysis ANOVA and X² analysis.</p>	<p>There were significant differences in EBF between the groups. At 6 mo postpartum, 90.0% in the first group and 74.4% in intervention group 2 had exclusively breast-fed during the previous month compared with only 47.7% in control group. Similarly, the percentage of EBF during the 6 mo was significantly higher among intervention groups (39.5%) than among control (19.6%).</p> <p>Counselling compliance was higher in the intervention groups. The lactation counselling intervention was associated with a doubling of EBF.</p>
<p>Breast Health Problems are Rare in both HIV-Infected and HIV-uninfected Women Who Receive Counseling and Support for Breast-Feeding in South Africa</p> <p>Bland R. M, Becquet, R., Rollins N.C., Coutsooudis, A., Coovadia, H.M., Newell, M.L.</p> <p>2007 South Africa</p>	<p>Clinical Infectious Diseases 2007 45:1502-1510.</p>	<p>The purpose is to report breast health problems in HIV-infected and HIV-uninfected women in rural and urban South Africa who underwent an intervention designed to improve exclusive breast-feeding rated during the first 6 months after birth.</p> <p>The sample were 2326 women, HIV-infected (1119) and uninfected (1207)</p>	<p>Women enrolled prenatally underwent a breast-feeding counselling intervention until 6 months after delivery. Lay trained breastfeeding visited the women's homes and gave information and asked breast health problems which were documented per breast for 180 days after delivery.</p> <p>The data of HIV-infected and uninfected mothers were statistically analysed and Cox regression model was used to assess the effect of breast health problems on the risk of postnatal transmission of HIV.</p>	<p>Overall, breast health problems were rare and there was no significant difference between the woman's HIV status. Women who had not exclusively breast-fed their infants were more likely to experience any of the breast health problems than were women who had exclusively breast-fed their infants.</p> <p>When those problems did occur, HIV-infected women with bleeding nipple, pus oozing from a nipple or breast, or mastitis/abscess were 3.55 times more likely to transmit HIV to their infants.</p>

Title, author, year and country	Journal	Purpose, Sample	Data Collection and Data Analysis	Main Findings
<p>Promotion of breastfeeding is not likely to be cost-effective in West Africa. A randomized intervention study from Guinea-Bissau</p> <p>Jakobsen, M.S., Sodermann, M., Biai, S., Nielsen, J., Aaby, P.</p> <p>2008 Guinea-Bissau</p>	<p>Acta Paediatrica 2008, vol. 97, n° 1, pp. 68-75</p>	<p>The purpose was to examine whether promotion of exclusive breastfeeding is effective in reducing infant morbidity and mortality in Guinea-Bissau.</p> <p>The sample consisted of 1721 infants over 7 days and their mothers.</p>	<p>The mothers and infant pairs were randomly divided into an intervention group and a control group. Both groups had a home visits every two weeks. Only the mothers in the intervention group were given information about exclusive breastfeeding during these visits.</p> <p>The infants' anthropometric data, hospitalizations and information on the mother were also collected from medical files. Mortality, introduction of supplement foods and hospitalization were calculated using a hazard regression model. Diarrhoea days were counted and compared with Poisson regression model. Also the infants weight and height were analyzed.</p>	<p>Water was introduced in the intervention group significantly later than in the control group (at 2 months 19,8% vs. 13,2% of infants in control group were not yet given water), also weaning foods were given later in the intervention group.</p> <p>However there was no significant difference in the infants' amount of diarrhoea days, hospitalization, anthropometry or mortality rates between the control and intervention groups.</p>
<p>Scaling-Up Exclusive Breastfeeding Support Programmes: The Example of KwaZulu-Natal</p> <p>Desmond, C., Bland, R. M., Boyce, G., Coovadia, H. M., Coutsooudis, A., Rollins, N., Newell, M-L.</p> <p>2008 South Africa</p>	<p><i>Public Library of Science ONE</i> 2008 3(6): e2454.</p>	<p>The purpose of the study was to present a costing and cost effectiveness analysis of a successful intervention to promote EBF in high HIV prevalence area in South Africa, and implications for scale-up in the province of KwaZulu-Natal.</p> <p>2722 Pregnant women attending 9 government clinics in KwaZulu-Natal over 3 years were enrolled for the intervention.</p>	<p>The full scenario was tested by designing a breastfeeding intervention where exclusive breastfeeding was promoted for 6 months after birth. Feeding practices were documented.</p> <p>The costing of the actual intervention as it was implemented was counted and a model was made of the costs and outcomes associated with running such an intervention at Provincial level under three different scenarios: full intervention as conducted would cost R95 million (\$14 million) per year, a simplified (half the number of visits compared to the full intervention; more clinic compared to home visits) would cost R47 million (\$7 million) and basic version (one third the number of visits compared to the full intervention; all clinic and no home visits) would cost R14 million (\$2 million).</p>	<p>The Vertical Transmission Study (VTS) was highly successful in promoting optimal feeding practices amongst HIV-infected and uninfected women in a mostly rural. But the simplified scenario, with a combination of clinic and home visits, is the most efficient in terms of cost per increased month of EBF and has the lowest incremental cost effectiveness ratio.</p>

Title, author, year and country	Journal	Purpose, Sample	Data Collection and Data Analysis	Main Findings
<p>“Peer but not peer” Considering the Context o Infant Feeding Peer Counselling in a High HIV Prevalence Area Nor, B., Zembe, Y., Daniels, K., Doherty T., Jackson, D., Ahlberg, B. M., Ekström E.C., 2009 South Africa</p>	<p>Journal of human Lactation 2009, 25(4):427-434</p>	<p>The purpose of the study was to analyse are how HIV influence infant-feeding peer counselling in different contexts, how women in different areas perceive peer counselling and what is the women’s perception of infant-feeding peer counselling in the context of maternal HIV. 27 women who received infant-feeding peer counselling given by the PROMISE- EBF trial were chosen. 8 of the women were HIV -infected, 15 were not and 4 had an unknown HIV status.</p>	<p>A subset of women in both the intervention and control arm (not receiving counselling) were selected for data collection of infant feeding practices at 3, 6, 12 and 24 weeks postpartum. They were given 17 of the women were interviewed about their and 10 were observed during counselling sessions. The recorded interviews were analysed separately by two researchers. Then they jointly read the transcripts to find new relations, clarify emerging ideas, and identify patters using Thome et al.’s interpretative description frameworks.</p>	<p>HIV infected mothers were satisfied with the counselling and the support and care they received form the counsellor. HIV- uninfected women were generally unsatisfied. Some of the women had fear and suspicion of the counsellor’s visits and motives sometimes due to lack of information. In some interviews the women expressed that the counsellors did not acknowledge the experience and knowledge of women. The authors concluded that the study does not support the assumption that peer counsellors will automatically recognise issues that are contextual and that infant feeding peer counselling may offer valuable support to HIV -infected women.</p>
<p>Demotivating infant feeding counselling encounters in southern Africa: Do counsellors need more or different training? Buskens, I. & Jaffe A. 2008 South-Africa, Swaziland, Nigeria</p>	<p>AIDS care. March 2008; 20(3): 337-345</p>	<p>The purpose is to explore through ethnographic research how the perceptions and experiences of counselling health workers, pregnant women and recent mothers can be used to improve infant feeding counselling in the context of HIV transmission. 167 mothers and 17 nurses or feeding counsellors in South-Africa, Nigeria and Swaziland were included in the study. Also other parties such as pregnant women and relatives were observed or interviewed.</p>	<p>Researchers used participatory observation, observation, formal and informal interviews and focus groups to collect data on the perception and experiences of the counsellors and mothers. Conceptual framework analysis was used when the researchers analysed their data individually before using analytic retroduction to formulate the results.</p>	<p>It was found that many counselling encounters were demotivating. The counsellors and mothers’ needs, expectations and experiences were opposing. Pregnant women got mixed messages for different health care facilities. HIV support was insufficient. Counselling was found to be at times stressful for both the mother and counsellor.</p>

Title, author(s), year, country	Journal	Purpose, Sample	Data collection and Data Analysis	Findings
<p>An Education and Counselling Program for Preventing Breast-Feeding-Associated HIV Transmission in Zimbabwe: Design and Impact on Maternal Knowledge and Behavior</p> <p>Piwoz E.G., Iliff, P.J., Tavengwa, N., Gavin, L., Marinda, E., Lunney, K., Zunguza, C., Kusum J. Nathoo, K.J., the ZVITAMBO Study Group and Humphrey J.H. Zimbabwe, 2005</p>	<p>Journal of Nutrition 135:950-955, April 2005</p>	<p>The purpose was to evaluate the impact of a educational and counselling program on maternal knowledge, feeding practices, and postnatal HIV transmission. The educational programme consisted of antenatal care, male outreach and education, infant feeding options for HIV infected and non-infected mothers was offered.</p> <p>14,110 mother-baby pairs in ZVITAMBO were enrolled within 96 h of delivery and were followed at 6 wk, 3 mo, and 3-mo intervals. A questionnaire was administered to 1996 women</p>	<p>Health and pregnancy related information was collected in the beginning of the study. Detailed infant feeding information were collected during follow-up visits up to 24 months after delivery.</p> <p>A questionnaire was administered to 1996 women to ascertain sources of information and knowledge about 16 issues regarding HIV, MTCT, risk factors, and ways to reduce breast-feeding-associated transmission.</p>	<p>HIV knowledge improved but few could name risk factors for postnatal transmission or could cite ways to reduce this risk. Increasing exposure to the program improved the results. Mothers were 70% more likely to learn their HIV status early (<3 mo).</p> <p>Mothers who enrolled when the program was being fully were 8.4 times more likely to exclusively breast-feed than mothers who enrolled before the program began. Also mixed breast-feeding rate decreased.</p>
<p>The Impact of Safer Breastfeeding Practices on Postnatal HIV-1 Transmission in Zimbabwe</p> <p>Piwoz E.G., Humphrey J.H., Tavengwa, N.V., Iliff, P.J., Marinda E.T., Zunguza, C.D., Nathoo, K.J., Mutasa, K., Moulton, L.H., Ward, B.J. 2007 Zimbabwe</p>	<p>American Journal of Public Health 97(7): 1249-1254</p>	<p>The purpose of the study is to assess the association between exposure to an educational intervention that emphasized safer breastfeeding practices and postnatal HIV transmission.</p> <p>Sample consisted of 437 HIV-positive mothers in Zimbabwe, 365 of whom did not know their infection status.</p>	<p>Baseline data were collected via interviews and medical record transcriptions. Follow-up clinic visits were performed at 6 weeks and 3 months and then at 6 month intervals up to 24 months and the infants HIV status was checked each time. Breastfeeding information was also gathered.</p> <p>Intervention exposure was assessed by a questionnaire, Turnbull methods were used to estimate postnatal HIV transmission, and multivariate Cox proportional hazard models were constructed to assess the association between intervention exposure and postnatal HIV transmission.</p>	<p>Cumulative postnatal HIV transmission was 8.2%; each additional intervention contact was associated with a 38% reduction in postnatal HIV transmission. Print and video material exposure worked best in preventing transmissions.</p> <p>There was no significant difference between HIV-positive mothers who knew their status and HIV-positive mothers who did not know their HIV status.</p>

Title, author(s), country, year	Journal	Purpose, Sample	Data collection and Data Analysis	Findings
<p>Counseling and choosing between infant-feeding options: Overall limits and local interpretations by health care providers and women living with HIV in resource-poor countries (Burkina Faso, Cambodia, Cameroon).</p> <p>Desclaux, A. & Alfieri, C.</p> <p>2009 Burkina Faso, Cambodia, Cameroon</p>	<p><i>Social Science & Medicine</i> 69 (6), 821-829</p>	<p>The purpose of the article is to shed light on three aspects: how, in various countries and health services settings, recommendations are translated into clinical practices of “counseling” and “guidance”, what aspects women consider when building their “choice” of infant feeding and how health care workers’ “guidance” and women’s “choices” interact in a context of constraints.</p> <p>All together 159 women and 25 health care workers were interviewed.</p>	<p>The first part of the study included monographs of the different infant feeding programs and a series of interviews with the women.</p> <p>The second part was an ethnographic approach to analyze the context of infant feeding, especially in health services.</p>	<p>The research found that counselling practices vary, the women were given different kind of information about their possibility of choosing infant feeding. Health workers consider economic aspects first when choosing infant feeding; women mostly consider social aspects such as stigmatization. There were limitations to the efficiency to counselling because of women’s need’s and perceptions differ from the health care providers.</p>
<p>Infant feeding counselling for HIV-infected and uninfected women: appropriateness of choice and practice.</p> <p>Bland, R.M., Rollins N.C., Coovadia, H.M., Coutsoodis, A., Newell, M.L.</p> <p>2007 South-Africa</p>	<p>Bulleting of the World health Organization 85:289-296</p>	<p>The purpose of the study was to examine infant feeding intentions of HIV-infected and uninfected women and the appropriateness of their choices according to their home resources; and to determine their adherence to the choice.</p> <p>2491 pregnant women attending seven rural clinics, one semi-urban clinic and one urban clinic in KwaZulu Natal, South Africa were enrolled to receive infant feeding counselling at the clinic according to their HIV status.</p>	<p>Feeding intentions of pregnant women were compared against four resources that facilitate replacement feeding: clean water, adequate fuel, access to a refrigerator and regular maternal income. First-week feeding practices were documented.</p> <p>Data on the adherence to the feeding choices was collected during a home visit by a counsellor one week postpartum.</p> <p>The data was analysed by both invariable and multivariable logistic regression analyses.</p>	<p>Most HIV-infected women chose appropriately to exclusively breastfeed if they did not have the resources for replacement feed. Also those who chose to EBF adhered best to their intention. Feeding intention adherence was significantly increased with every antenatal home visit.</p>

Title, author, year and country	Journal	Purpose, Sample	Data collection & Data Analysis	Main Findings
<p>Breastfeeding Preterm Infants: An educational Program to Support Mothers of Preterm Infants in Cairo, Egypt</p> <p>Ahmed, A. H.</p> <p>2008, Egypt</p>	<p>Pediatric Nursing 2008; 34(2) 125-138</p>	<p>The purpose was to develop and assess the effects of a breastfeeding educational program on breastfeeding knowledge and practices of Egyptian mothers of preterm infants.</p> <p>The sample was 60 mothers from an NICU ward who had preterm infants born before 37 weeks of gestation. 30 mothers were in the intervention group and underwent a breastfeeding educational program and 30 mothers were in the control group and got the knowledge which was normally given on the ward.</p>	<p>Data was collected with a breastfeeding knowledge questionnaire before and after the intervention time, an observational checklist of mother's breastfeeding practices was filled out three times by the researchers, the mothers kept a breastfeeding diary and the babies' development was followed with a infant profile form. Both groups were followed for 3 months after discharge.</p> <p>The data of each instrument was analysed using either SPSS, ANOVA, Chi-square or regression.</p>	<p>The breastfeeding knowledge of the mothers in the intervention group increased significantly after the educational program compared with the control group.</p> <p>The intervention group showed gradual improvement in breastfeeding practices such as starting breast milk expression earlier and more frequently than the mother in the control group. 80% of the infants were exclusively breast fed compared when discharged compared with 40% in the other group.</p>
<p>Need to optimize infant feeding counselling: A cross sectional survey among HIV-positive mothers in Eastern Uganda.</p> <p>Fadnes, L.T., Engebretsen, I.M.S, Wamani, H., Wangisi, J., Tumwine, J.K. and Tylleskär, T.</p> <p>2009, Uganda</p>	<p><i>BMC Pediatrics</i> 9(2) 1-11</p>	<p>The aim of the study was to investigate feeding practices, in the context of preventing mother-to-child transmission (PMTCT) of HIV in Uganda.</p> <p>235 HIV-positive mothers of infants and children under 2 years of age born in Mbale, Eastern Uganda answered a cross-sectional survey. The mothers were enrolled through The Aids Support Organisation (TASO) Outreach Clinics.</p>	<p>Infant feeding practices, reasons for stopping breastfeeding and breast health problems were studied.</p> <p>The data was analysed statistically. Cox regression analysis was used to estimate the independent impact of each factor on breastfeeding duration.</p>	<p>Well-educated mothers breastfed for a substantially shorter time than their less well-educated peers. Mothers who were socio-economically better-off or had participated in the PMTCT program also breastfed for shorter durations.</p> <p>Breastfeeding was initiated by most of the mothers, but the majority of children were mixedfed. Only 56% of the mothers initiated breastfeeding within the first two hours after delivery and 76% initiated it within the first day.</p>

Title, author, year and country	Journal	Purpose, Sample	Data Collection and Data Analysis	Main Findings
<p>Improving Breastfeeding Practices on a Broad Scale at the Community Level: Success Stories From Africa and Latin America</p> <p>Quinn, V.J., Guyon A.B., Schubert, J.W., Stone-Jiménez, M., Hainsworth, M.D., Martin, L.H.</p> <p>2005 Bolivia, Ghana, and Madagascar</p>	<p>Journal of Human Lactation. 21(3), 345-354</p>	<p>“This article describes the progress made by LINKAGES and its partners to increase the rates of timely initiation of breastfeeding (TIBF) and EBF in Bolivia, Ghana, and Madagascar.” (Quinn et al. 2005: 346)</p> <p>The Academy for International Development designed and implemented a 10-year program called LINKAGES Project to improve breastfeeding practices rapidly in a large scale starting in 1996. The program used existing resources in the government, nongovernmental organizations and other partners e.g. media to promote good breastfeeding practices.</p>	<p>An overall monitoring and evaluation system was established in each country program to provide data to track progress. A combination of cross-sectional approaches included baseline and endline surveys were used to survey households with children younger than 2 years.</p> <p>Data were entered into Epi Info version 6, imported into SPSS for data cleaning and analysis by in-country monitoring and evaluating staff.</p>	<p>In Bolivia the timely initiation of breastfeeding (TIBF) rate rose from 56 % to 74 % during the three years. EBR of babies 06 months rose from 54 % at baseline to 65 % at endline.</p> <p>Within 1 year of community interventions notable results were seen in the two African countries.</p> <p>In Ghana TIBF rate rose from 32% to 40%. Exclusive breastfeeding was increased from 68 % to 79 %.</p> <p>In Madagascar TIBF rose from 34 % to 78 % and EBF from 46 % to 68 %.</p>
<p>An Evaluation of Post-Campaign Knowledge and Practices of Exclusive Breastfeeding in Uganda</p> <p>Gypta, N., Katende, C., and Bessinger, R.</p> <p>2004 Uganda</p>	<p>Journal of Health, Population and Nutrition 22 (4), 429-439</p>	<p>The purpose of the study was to assess the extent of which exposure to multi-media behaviour change communications (BCC) messages determined improvements in breastfeeding knowledge and practices in the project area.</p> <p>The sample of surveyed people was 1,057 men and 1,766 women.</p>	<p>Two months after a BCC campaign a DISH Evaluation Survey was conducted by giving a survey to 15-54 years of age living in the campaign target districts. The people were asked about family-health issues, such as breastfeeding, and mothers who had given birth in the last 3 years were asked about their child's nutrition and health. The results were compared against findings of a previous survey two years earlier.</p> <p>Multiple logistic regression techniques were used to determine the significance of the variables (knowledge of EBF optimal 6 months and current EBF status of youngest child under 6 months) and outcomes.</p>	<p>Exposure to BCC messages improved women's knowledge of six months as the ideal exclusive breastfeeding duration and also had a positive effect on men's knowledge.</p> <p>The projects' effect on EBF practices was less conclusive and this may be due to the fact that the survey was done so soon after the beginning of the campaign.</p>