

**THE PARTICIPATORY DEVELOPMENT AND  
IMPLEMENTATION OF A FACILITATOR'S MANUAL FOR THE  
PROMOTION OF EXCLUSIVE BREASTFEEDING**

A thesis submitted to **RHODES UNIVERSITY** in fulfilment of the  
requirements for the degree of

**MASTER OF PHARMACY**

By

**SHINGIRAI MIRANDA KATSINDE**

February 2016  
Faculty of Pharmacy  
Rhodes University  
Grahamstown  
South Africa

## ***Abstract***

### **Background**

Breastfeeding is a common practice, but exclusive breastfeeding for the first six months is no longer a cultural norm in the majority of South African communities. Identification of facilitating and constraining factors which affect breastfeeding and exclusive breastfeeding practices is thus important. The promotion of exclusive breastfeeding is essential for improved infant health and development, especially if it takes into consideration the broader cultural and socio-economic aspects influencing these practices. This study follows up on an initial project conducted in Glenmore and Ndwayana, two rural communities in the Eastern Cape, South Africa. The current study aimed at working with community care workers who are associated with two community based organisations, who work within three communities, Glenmore, Ndwayana and Grahamstown. The study objectives were to identify the factors that influence the adoption of exclusive breastfeeding in the communities researched, to conduct workshops with the community workers on exclusive breastfeeding practices, as well as to develop and implement a facilitator's manual for the promotion of exclusive breastfeeding.

### **Method**

Using the community based participatory research approach and the PEN-3 theoretical framework to guide the research process, individual semi-structured interviews were conducted with 14 community care workers to identify the factors that affect breastfeeding and exclusive breastfeeding. Through participatory involvement and a cyclical research process, a facilitator's manual on breastfeeding was developed, which was used during the workshops in the training of community care workers on breastfeeding and exclusive breastfeeding practices. A pre and post intervention knowledge questionnaire was given to the community care workers to complete before and after the workshops. The facilitator's manual was modified based on 14 months of consistent interaction with the community care workers, who provided feedback on improving the content as well as on how to enhance the cultural appropriateness of the facilitator's manual during guided focus group discussions. Readability testing also guided further modification of the facilitator's manual.

### **Results**

The major findings confirmed that exclusive breastfeeding for six months was no longer a common practice in these three communities. Factors affecting breastfeeding and exclusive breastfeeding were classified as perceptions (knowledge attitudes and beliefs), enablers

(resources and facilities) and nurturers (people), in accordance with the PEN-3 model thematic categories. The knowledge questionnaire, semi-structured interview results, and data from the workshops showed that the community care workers were not sufficiently equipped with information on breastfeeding and exclusive breastfeeding. The facilitator's manual development and modification was made possible by inputs from the community care workers and the community based organisation liaisons. A culturally appropriate, community specific facilitator's manual for the promotion of breastfeeding and exclusive breastfeeding was produced.

### **Conclusion**

The factors affecting breastfeeding and exclusive breastfeeding were identified. These factors were useful in facilitating discussions on how to improve breastfeeding and exclusive breastfeeding practices in the communities researched. The facilitator's manual and the workshops were useful in equipping community care workers with knowledge on breastfeeding and exclusive breastfeeding. The involvement of community based organisations will assist to ensure sustainability of breastfeeding promotion by community care workers by adopting the facilitator's manual as part of their women and child development programmes.

## *Declaration*

I declare that this thesis, titled “**The participatory development and implementation of a facilitator’s manual for the promotion of exclusive breastfeeding**”, is my own work and that it has not been submitted for any degree or examination at any other university. All sources of information that I have used or quoted from have been indicated and acknowledged in a complete reference section.

## ***Acknowledgements***

I would like to thank the Almighty God, my Lord and Saviour, for His grace and mercy in abundance - that is without limits.

### **I would also like to extend my gratitude to the following:**

My principle supervisor, Prof S.C. Srinivas, for her constructive criticism, invaluable support, guidance, mentoring and commitment; as well as my co-supervisor Ms D. Hornby for her continued support, encouragement and commitment throughout the study – to you both I am eternally grateful.

Our community partners, the Ubunye Foundation and St Marys Development and Care Centre, as well as the community care workers in Grahamstown, Glenmore and Ndwayana, where all the data collection took place.

Mrs K. Court for her support and commitment during the field trips to Glenmore and Ndwayana.

The Department of Health Bisho, for granting us access to the Primacy Health Care clinics in Glenmore and Ndwayana.

The Rhodes University Sandisa Imbewu 2011 Funding (awarded to Prof Srinivas and Ms Hornby) for the 2014 funding.

The Canon Collins and Graça Machel Trusts, for the Graça Machel Scholarship received in 2015.

The Rhodes University Faculty of Pharmacy and Community Engagement Office – colleagues, friends and staff members.

Miss K. Mkosana for the translation and transcription of all the recordings, and Mr S.J. Bosman for the English language editing of the thesis and the facilitator's manual.

My friends and research critics – Nomsa, Ida, Tinatsei and Fadzai – for their support and positive criticism.

## *Dedication*

This thesis is dedicated to:

My beloved parents - Mrs C.S and Mr T.J Katsinde

And siblings - Rumbidzai and Tinodaishe Katsinde

## ***Table of Contents***

Abstract .....	i
Declaration .....	iii
Acknowledgements .....	iv
Dedication .....	v
Table of Contents .....	vi
List of Tables.....	xii
List of Figures .....	xiii
List of Abbreviations.....	xiv
1 CHAPTER 1: INTRODUCTION.....	1
1.1 Background .....	1
1.2 Problem statement.....	3
1.3 Genesis .....	3
1.4 Rationale for research.....	4
1.5 Aim.....	4
1.5.1 Objectives .....	5
2 CHAPTER 2: LITERATURE REVIEW .....	6
2.1 Introduction .....	6
2.2 Overview of breastfeeding .....	6
2.3 Initiatives supporting breastfeeding .....	7
2.3.1 Global initiatives supporting breastfeeding .....	7
2.3.2 Initiatives supporting breastfeeding in South Africa .....	7
2.3.3 Breastfeeding practices in South Africa and in the world .....	8
2.4 Health Promotion .....	9
2.4.1 The promotion of breastfeeding practices in South Africa.....	11
2.4.2 Primary Health Care system .....	11

2.4.3	The provision of health promotion material .....	13
2.5	Culture in health promotion .....	14
2.6	Factors influencing breastfeeding practices in low-income communities .....	16
2.6.1	Socio-economic factors.....	16
2.6.2	Marketing and advertising of breast milk substitutes .....	17
2.6.3	Cultural beliefs, values and practices.....	18
2.6.4	Education, counselling and advice related.....	19
2.6.5	Health and disease related.....	20
3	CHAPTER 3: METHODOLOGY .....	22
3.1	Introduction .....	22
3.2	Theoretical Framework .....	22
3.2.1	The PEN-3 model .....	22
3.3	Research design.....	25
3.3.1	Research approach .....	25
3.3.2	Study setting and sampling techniques .....	28
3.3.3	Research instruments .....	31
3.4	Ethical considerations .....	32
3.4.1	Approval .....	32
3.4.2	Non-maleficence .....	32
3.4.3	Confidentiality .....	33
3.4.4	Informed consent .....	33
3.5	Data collection procedures .....	34
3.5.1	Introductory phase .....	37
3.5.2	Pilot testing of the semi-structured interview guide .....	37
3.5.3	Phase 1 – Problem identification and confirmation.....	37
3.5.4	Interim Phase A - Development of the facilitator’s manual .....	39
3.5.5	Phase 2 – Intervention.....	41

3.5.6	Interim phase B - Modification of the facilitator’s manual .....	42
3.5.7	Phase 3 – Implementation .....	44
3.5.8	Phase 4 – Evaluation .....	46
3.6	Data management and analysis .....	46
3.6.1	Phase 1 – Problem identification and confirmation .....	46
3.6.2	Phase 2 – Intervention.....	48
3.6.3	Phase 3 – Implementation .....	49
3.6.4	Phase 4 – Evaluation .....	49
3.7	Validation in mixed methods research .....	49
3.7.1	Member checking.....	50
3.7.2	Triangulation.....	50
3.7.3	External reviewers .....	51
4	CHAPTER 4: RESULTS.....	52
4.1	Introduction .....	52
4.2	Demographics.....	53
4.3	The definition of exclusive breastfeeding .....	55
4.4	Factors affecting exclusive breastfeeding practices .....	55
4.4.1	Positive enablers .....	56
4.4.2	Negative enablers.....	58
4.4.3	Positive perceptions .....	61
4.4.4	Negative perceptions.....	61
4.4.5	Existential perceptions .....	63
4.4.6	Positive nurturers .....	64
4.4.7	Negative nurturers.....	64
4.5	Other themes from the semi-structured interviews .....	65
4.5.1	Identifying the target audience.....	65
4.5.2	Responses towards the booklet for mothers.....	66

4.5.3	HIV/AIDS, policy vs practice .....	67
4.6	Workshops, development and modification of the facilitator’s manual .....	68
4.6.1	Expectations from the workshops .....	68
4.6.2	Participant knowledge on breastfeeding .....	68
4.6.3	The development of the facilitator’s manual .....	70
4.6.4	Modification of the facilitator’s manual .....	72
4.6.5	Readability results.....	81
4.7	Guided implementation data .....	88
4.7.1	Data captured using the forms .....	88
4.7.2	Personal experiences of community care workers.....	89
4.7.3	Facilitating and constraining factors .....	90
4.8	Evaluation and feedback .....	91
4.8.1	Workshop and facilitator’s manual evaluation .....	91
4.8.2	Overall feedback .....	93
5	CHAPTER 5: DISCUSSION .....	95
5.1	Introduction .....	95
5.2	Breastfeeding on the global scene .....	95
5.2.1	The rationale of using community-based participatory research.....	96
5.3	Factors affecting exclusive breastfeeding practices .....	96
5.3.1	Positive enablers .....	97
5.3.2	Negative enablers.....	98
5.3.3	Positive perceptions .....	99
5.3.4	Existential perceptions .....	100
5.3.5	Positive nurturers .....	100
5.3.6	Negative nurturers and negative perceptions .....	101
5.3.7	Summary of factors affecting exclusive breastfeeding .....	102
5.4	Identifying the target audience.....	102

5.5	The importance of community care workers in the promotion of breastfeeding ....	103
5.6	The need for training of community care workers on breastfeeding .....	105
5.7	HIV/AIDS - gap between policy and practice .....	106
5.8	The facilitator’s manual .....	107
5.8.1	The development and modification of the facilitator’s manual .....	108
5.8.2	Modification through readability testing .....	112
5.9	Evaluation of the research .....	114
6	CHAPTER 6: CONCLUSION .....	115
6.1	Conclusion.....	115
6.2	Significance of research .....	117
6.3	Strengths and Limitations.....	118
6.4	Recommendations for future studies.....	119
6.4.1	Continued use of facilitator’s manual .....	119
6.4.2	Training of community care workers.....	119
6.4.3	External evaluation of the study .....	119
7	REFERENCES .....	120
8	APPENDICES .....	134
8.1	Appendix A: Rhodes University Ethical Approval.....	134
8.2	Appendix B: Department of Health Ethical Approval .....	135
8.3	Appendix C: Invitation to participate in study .....	136
8.4	Appendix D: Participant informed consent form .....	138
8.5	Appendix E: Semi-structured interview guide .....	139
8.6	Appendix F: Workshop timetable .....	141
8.7	Appendix G: Workshop guideline.....	142
8.8	Appendix H: Pre- and post-intervention questionnaire.....	143
8.9	Appendix I: Workshop feedback form.....	145
8.10	Appendix J: Guided implementation Focus group discussion guide .....	146

8.11	Appendix K: Guided implementation data collection form .....	147
8.12	Appendix L: Focus group discussion question guide.....	148
8.14	Appendix M: Research outputs .....	149
8.15	Appendix N: Facilitator’s manual .....	151

## ***List of Tables***

Table 3-1: Project timelines .....	35
Table 3-2: Thematic categories generated from two PEN-3 model categories .....	48
Table 4-1: An example of a semi-structured interview transcript extract .....	52
Table 4-2: Community care worker demographics .....	54
Table 4-3: Student t-test results .....	70
Table 4-4: Modifications made to the facilitator's manual .....	73
Table 4-5: Interpretation of readability results from the draft facilitator's manual .....	81
Table 4-6: Interpretation of readability results the final facilitator's manual .....	84
Table 4-7: Overall document readability of the two facilitator's manuals .....	86

## ***List of Figures***

Figure 3-1: Representation of the PEN-3 model.....	23
Figure 3-2: Map showing the study sites .....	28
Figure 3-3: Summary of data collection procedures .....	34
Figure 3-4: Contents page of the breastfeeding booklet for mothers.....	40
Figure 4-1: Knowledge scores of the community care workers .....	69
Figure 4-2: Table of contents page of the draft facilitator's manual .....	71
Figure 4-3: Demographics of the community members encountered.....	88
Figure 4-4: Facilities used in the promotion of breastfeeding .....	89

## ***List of Abbreviations***

ARI	Automated Readability Index
ARV	Antiretroviral
BF	Breastfeeding
CBO	Community Based Organisation
CBPR	Community Based Participatory Research
CCW	Community Care Worker
CHW	Community Health Worker
CLI	Coleman-Liau Index
DCC	Development and Care Centre
EBF	Exclusive Breastfeeding
FGD	Focus Group Discussion
FKGLS	Flesch-Kincaid Grade Level Score
FRES	Flesch Reading Ease Score
GI	Guided Implementation
HCW	Health Care Worker
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
IYCF	Infant and Young Child Feeding
MDG	Millennium Development Goal
NDoH	National Department of Health
NGO	Non-Governmental Organisation
PHC	Primary Health Care
REALM	Rapid Estimate of Adult Literacy in Medicine
SAM	Suitability Assessment of Materials
SAQ	Self-Administered Questionnaire
SDG	Sustainable Development Goal
SMOG	Simplified Measure of Gobbledygook
SSI	Semi-Structured Interview
UFMR	Under-Five Mortality Rate
UNICEF	United Nations Children's Fund
WHO	World Health Organisation

# ***1 CHAPTER 1: INTRODUCTION***

## ***1.1 Background***

Adequate and appropriate feeding practices are crucial for the optimal growth and development of infants and young children. Breastfeeding (BF) has been identified by the United Nations Children's Fund (UNICEF), World Health Organisation (WHO), and the National Department of Health (NDoH) South Africa, as the single most effective and affordable feeding practice that should be adopted for good infant health and improved survival (1–3). Evidence suggests that BF alone can improve the chances of survival of a new-born by 44% if initiated within the first hour after birth. Unfortunately, recent global statistics show that only 43% of new-borns were breastfed within the first hour of birth, thereby increasing negative consequences to the infants (4,5).

The survival of infant and children especially under the age of five, is an urgent matter that requires attention, and has been on the global agenda since the Alma-Ata Declaration of 1978 (6). Noting that the 'health for all' goals that were set in 1978 at the Alma-Ata Declaration were not going to be met, the United Nations member states met at the Millennium Summit in 2000, and established the Millennium Development Goals (MDGs). Eight MDGs were formulated, and these were meant to address the imbalances in the social determinants of health. Of the MDGs, four are health related – with MDG 4 targeted at reducing child mortality: *MDG 4 Target 4.A: Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate* (7,8). The WHO made recommendations that, to achieve MDG 4, preventable child deaths should be avoided with cost-effective and sustainable interventions, such as BF (9). The 2015 deadline for the MDGs passed, and again the targets for reducing infant and child mortality were not achieved. World leaders adopted the 2030 Agenda for sustainable development in 2015, which comprises 17 goals, one of which is Sustainable Development Goal (SDG) 3: to ensure healthy lives and to promote the well-being for all at all ages (10).

The SDG 3 incorporated MDGs 4 and 5. MDG 5 was aimed at improving maternal health, and even though progress was made worldwide, the targets of reducing maternal mortality were also not achieved (10,11). Improvement of maternal health compliments child health, due to the prime responsibility of child care being that of the mother (9). The targets of achieving SDG 3 to secure healthy lives for all start with the first 1000 days of a child's life – which commences with BF within the first hour of birth, and exclusive breastfeeding (EBF) for the

first six months of life, as a primer for a healthier life. Exclusive breastfeeding contributes to improving nutrition for infants for the first six months of life, and, if adopted correctly, with on-demand feeding can reduce malnutrition, stunting and wasting of infants and young children, making it possible to achieve the set goal by 2030 (10–12). Adopting EBF also contributes to achieving SDG 2, which aims at the reduction of hunger and improved nutrition (10).

Exclusive breastfeeding practices have enhanced short and long term effects on the survival of children (1). Exclusive breastfeeding is when a child is given breast milk only, without any additional food, liquids or water (1,13). The provision of only breast milk for the first six months of life is recommended by WHO and the South African NDoH as sufficient to provide all the nutrients for an infant. (2, 14). The provision of alternative foods within the first six months, or the addition of complimentary foods to an infant's diet, exposes them to possible diseases such as diarrhoea and respiratory infections (1,14,15). This is particularly true in Sub-Saharan Africa, where clean water for the reconstitution of breast milk substitutes is not always available (4,16).

Breastfeeding and EBF are key elements in the infant and young child feeding (IYCF) policies in South Africa (2). The shift in focus from promoting EBF in hospitals-only, to the promotion in the community, emerged from the reality that EBF practices are followed in hospital settings, but, as soon as the mother leaves the hospital, EBF becomes a practice of the past (17). To promote EBF in the primary health care (PHC) and community settings, community care workers (CCWs) have been employed by the NDoH to counsel people and to promote health in communities (18,19). Community care workers do not only focus on infant and child feeding practices, but general family health, and social development within the communities in which they live. Due to their capacity as health care workers (HCWs) as well as community members who fill in the health human resource gap, they are a useful human resource for health to drive health promotion interventions (18–20). Health promotion interventions that are community driven have been shown to be successful, hence CCWs play a crucial role in health promotion in South Africa (18,21).

Although the CCW roles can be filled by both men and women, it is mostly taken up by women in South Africa (18). The training of CCWs is another important aspect in the promotion of BF and EBF, especially as BF is such an important feeding practice, and yet the rates, globally, are still low (22). Training of CCWs, or the provision of refresher courses on BF and EBF, will

not only enhance their knowledge, but will also empower them. Empowerment of women is a crucial aspect of the SDGs, in particular, SDG 5, which advocates for gender equality and women empowerment (10).

Community-based promotion of EBF is highly influenced by several factors. One of the crucial factors to consider when facilitating health interventions for EBF is culture (23). Culture encompasses the beliefs and values of a society, and thus influences perceptions, judgements, behaviours, and communication related to EBF. Culturally appropriate and sensitive BF promotion interventions support receptiveness of such interventions by the target communities (23,24). Development of a culturally appropriate BF promotion intervention thus requires the application of a community based approach to research, with the involvement of community members in the development, implementation, and evaluation of such interventions (25,26).

## ***1.2 Problem statement***

Exclusive breastfeeding and BF rates around the world, and in South Africa, are relatively low. Current global statistics show that only two-fifths of the world's infants are exclusively breastfed for up to six months, whilst in South Africa the rate is an even lower 8% (27,28). Low BF and EBF rates are detrimental to infants, especially those in low income and rural communities. This is because of a lack of clean water sources, or reduced funds to purchase sufficient formula milk supplies, which result in illnesses such as diarrhoea, and conditions such as malnutrition, which are major causes of infant mortality. The WHO and UNICEF recommend that infants be exclusively breastfed for the first six months, especially in low income and rural communities (1,3). Factors that contribute to low BF and EBF rates in low income and rural communities include socio-economic factors such as having to back to work after child birth, marketing of breast milk substitutes, cultural beliefs, values and practices, education, counselling and advice related as well as health and disease related. There is need for HCWs to be aware of such factors and to be able to find solutions to addressing them within the communities in which they work in.

## ***1.3 Genesis***

The study by Kuzeeko Faith (unpublished thesis) was aimed at determining one infant health issue of concern in the Glenmore and Ndwayana communities. Participants in that study consisted of two nurses from the two PHC clinics, community care workers, young mothers, expectant mothers, elderly women, village leaders, and women self-help groups. Ten focus

group discussions (FGDs) were conducted with the different groups of participants. The infant health issue of concern that was identified from these FGDs was that EBF was no longer practiced for the first six months, as most mothers in these communities were found to introduce formula and supplementary feeds at a very early age after child birth. Based on the gaps identified in the pre-intervention phase, a booklet promoting EBF was designed and used for an educational intervention with the mothers. Thereafter, a post intervention phase was carried out using the developed booklet which was primarily meant for use by the mothers. This current study is a follow up on the study by Kuzeeko and is reported in this thesis. The same booklet developed in the previous study will be referred to as the BF booklet for mothers, whilst the focal point of this study is the development of the facilitator's manual for the promotion of EBF – primarily meant for use by CCWs.

#### ***1.4 Rationale for research***

South Africa is listed as one of 75 countries which together account for more than 95% of all maternal, infant, and child deaths globally. Infant and child mortality rates in South Africa are still very high, thus the country's statistics show that MDGs 4 and 5 (aimed at reducing child and maternal deaths) were not achieved. Simple, cost effective, sustainable interventions such as BF are essential for improved child survival and to combat child mortality. Breastfeeding and EBF for six months are core infant feeding practices which are mandated by the NDoH in South Africa. Although policies are in place which state that mothers should breastfeed exclusively for the first six months of an infant's life, research shows that the practice is not common, and that EBF rates are very low.

Due to the shortage of health care professionals in South Africa, especially in rural areas, task shifting has resulted in CCWs being in charge of health promotion. The training of CCWs in South Africa is not standardised, and hence not all practising CCWs are certified by the NDoH, due to some of them entering the system through volunteerism. There is need to provide BF related health promotion training and material for CCWs who work with mothers and their communities in the promotion of BF and EBF.

#### ***1.5 Aim***

The aim of this study is to identify factors that affect breastfeeding and exclusive breastfeeding in three communities, and subsequently to develop and implement an exclusive breastfeeding promotion intervention.

### ***1.5.1 Objectives***

- I. To investigate the cultural aspects and practices within the communities that affect BF and EBF.
- II. To determine the role of socio-economic status on the decision to breastfeed and to practice EBF in the communities being researched.
- III. To establish the attitudes and beliefs of the communities that influence BF and EBF.
- IV. To identify the people who influence BF and EBF practices.
- V. To identify the resources available to CCWs and their communities for the promotion of BF and EBF.
- VI. To develop a facilitator's manual for the promotion of BF and EBF for CCWs within these communities.
- VII. To facilitate participatory workshops on the use of the facilitator's manual for the benefit of CCWs.
- VIII. To edit the facilitator's manual according to the feedback obtained from the CCWs and readability tests.
- IX. To determine the facilitating and constraining factors on the use of the facilitator's manual from feedback obtained from the CCWs.

## **2 CHAPTER 2: LITERATURE REVIEW**

### **2.1 Introduction**

The purpose of this chapter is to discuss relevant literature pertaining to the importance of BF; the initiatives that support BF and EBF; culturally appropriate health promotion and the promotion of EBF; the development and provision of health promotion material; the role of culture in health promotion and other factors affecting BF and EBF practices.

### **2.2 Overview of breastfeeding**

The most cost effective form of infant feeding (BF) ensures that a child receives all the nutrients, water, and antibodies that they require for healthy development and growth (14,29). The WHO recommends that an infant should be breastfed within the first hour following birth, and exclusively for the first six months of life (1,14). EBF refers to a situation where “*the infant only receives breast milk without any additional food or drink, not even water*” (1). Although the optimal duration has been debated by researchers worldwide, it is generally accepted that six months of exclusive BF has more protective effects against illnesses, compared to the other suggested periods of three or four months (13,30). The duration and exclusivity of BF determines the benefits of BF for an infant (31).

A six months duration of EBF is associated with several benefits for the infant, the mother, and their society (13,14,32,33). These benefits for the child include enhanced immunity against infections, improved physical and mental growth and development, as well as the ability of breast milk to be absorbed easily into body cells (3,14,22,30). Benefits for the mother include rapid post-partum weight loss, improved child spacing, low costs for high nutritional value and contraception protection through lactational amenorrhoea (13,30,32,34,35). It is, however, extremely important that the duration of EBF be emphasized by HCWs, because the effects of EBF are highly dependent on its duration, as well as on how much breast milk the infant receives. This means that the more breast milk the infant is given, the more positive effects are evident (13,30). Breastfeeding is part of the requirements for optimal child feeding practices which are successful in the prevention of under-nutrition (2). Evidence-based global and national policies have been developed by organisations and governments in an attempt to promote BF because of its profound short and long term benefits on health and development of an infant. These policies are useful in the implementation of BF and EBF practices worldwide, practices that have been proven to save the lives of children (2,22,36–38).

### ***2.3 Initiatives supporting breastfeeding***

The document published by WHO and UNICEF in 1989 on BF noted the abovementioned benefits of BF for both the mother and the infant. It therefore endorsed worldwide governmental adoption of measures such as the development of national policies that promote BF, as well as the establishment of monitoring systems for such policies (22,39).

#### ***2.3.1 Global initiatives supporting breastfeeding***

In 1981, the **International Code of Marketing of Breast-Milk Substitutes** was established (38). The Code was developed after world leaders, governments, the WHO and UNICEF recognised that global BF rates were declining, and that the availability as well as marketing of breast milk substitutes was a contributing factor. The Code supports and endorses BF practices, and specifies circumstances in which breast milk substitutes can be used (38,39).

The **Innocenti Declaration on Breastfeeding** was established in 1989, following the recognition that BF is important for infant and maternal health, and that it should be supported (35,39). The Declaration supported the International Code Of Marketing Of Breast-Milk Substitutes of 1981, as well as affirmed and officialised the statements issued in 1989 by WHO and UNICEF, in the document titled, '*Protecting, promoting and supporting breastfeeding: the special role of maternity services*' (22,35,38).

The **Global Strategy for Infant and Young Child Feeding** and the **Baby Friendly Hospital Initiative** were developed to reiterate the points that had been stated in the Declaration and the Code (37,40). Salient features included the training of health workers and improving health care facilities to become friendlier toward mothers and their children during and after delivery, in order to promote BF. Despite these initiatives having been developed, BF rates were still declining globally (40). The 1981 and 1989 initiatives mentioned above are reported to have failed mainly because the focus on the promotion of BF was only in health care facilities, and not in the communities where the people lived. Thus, there was need to consider promotion of BF in community settings (37–40).

#### ***2.3.2 Initiatives supporting breastfeeding in South Africa***

The slow progress of South Africa in achieving MDG-4 was the first concern that was raised by officials at the **National Breastfeeding Consultative Meeting** held in August 2011. The meeting was attended by the Minister of Health, Heads of Departments in the NDoH, non-governmental organisations (NGOs), and traditional healers, and resulted in the **Tshwane**

**Declaration** (36). The concern was that target 4A of reducing the under-five mortality was not going to be met by 2015 (7,36). At the time that this Declaration was drafted and published, the infant mortality rate in South Africa was 34 deaths per 1000 live births, whilst the under-five mortality rate (UFMR) was 48 deaths per 1000 live births. According to these statistics, the targets of 18 and 20 deaths per 1000 live births, respectively, were not going to be achieved by 2015 (36,41,42).

The second concern was that BF rates in South Africa were low, and that the marketing of breast milk substitutes was undermining BF rates (36). At the time that the declaration was drafted, only 25.7% of infants from zero to six months were breastfed, whilst 51.3% were mixed fed and 24% being given only formula milk (43). With these concerns, the NDoH prioritised both the reduction of child mortality and the improvement of BF practices, through the promotion of EBF to help achieve MDG 4. This was also due to the evidence provided by WHO and UNICEF about the scientific evidence on the benefits of EBF for both HIV (Human Immunodeficiency Virus) negative and positive mothers, and HIV negative, exposed or positive infants (22,36,39).

Following the Tshwane Declaration of 2011 and the WHO 2010 infant feeding recommendations, revisions were made to the South African IYCF policy of 2007 by the NDoH. The new and current **IYCF policy of South Africa** was published in **2013** (2). The 2013 policy encourages HIV positive mothers to breastfeed exclusively for the first six months if they are on lifelong antiretroviral (ARV) treatment, or are taking it for the duration of the BF period (2,44). This highlight in the policy is fundamental, considering that South Africa has one of the highest HIV/AIDS (acquired immunodeficiency syndrome) prevalence rates in the world, with approximately 90% of cases being pregnant women (45). The main concern with BF-HIV positive mothers is that they will pass the virus to their babies via vertical transmission of the HIV through breast milk (31). The WHO, however, emphasizes that, in a low income society, BF exclusively for the first six months of life is more feasible, affordable, safer, beneficial, and healthier for the infant than alternative feeding (44).

### ***2.3.3 Breastfeeding practices in South Africa and in the world***

An overview of feeding practices highlights BF and EBF practices as key elements of infant and young child feeding globally (2,39,44). Despite the efforts mentioned above, the rates of BF and EBF still remain low. Current global statistics show that only 44% of infants worldwide are breastfed exclusively within the first hour of birth, whilst only two-fifths are breastfed for

up to six months (28). The rate of initiation of BF in South Africa is higher than the global rate, and is currently 61%. The EBF rate by six months has, however, declined since 2011 from 25.7% to a very low 8%, which makes it one of the lowest in the world (27,46). The low BF and EBF rates in South Africa are a cause for concern for the health of children in the country, and for the population as a whole. This is because infants who are not breastfed are at higher risk of dying from pneumonia, diarrhoea and malnutrition, which are conditions that are preventable (3,28). Pneumonia, together with influenza, contributed to the death of 9% of infants in 2013, whilst malnutrition was 2.7%, and intestinal infectious diseases were 13.8% (47). The chances of survival of any infant who is breastfed is at least six times more than an infant who is not breastfed. Furthermore, if breastfed exclusively, the chances of survival increase by 14 times, especially in low- and middle-income countries (3).

Although progress was made globally in decreasing infant and under-five mortality, the 2015 target was not achieved. The global UFMR decreased by 53%, from 90 to 43 deaths per 1000 live births, between 1990 and 2015, thus failing to reach the target, which was 30 deaths per 1000 live births (11). South Africa also failed to achieve MDG 4, as its current UFMR is 41 deaths per 1000 live births, when the target for the end of 2015 was 20 deaths (48,49). The United Nations attributes this failure to reach the MDG 4 target mainly to preventable causes, such as pneumonia and diarrhoea – which could be avoided if children under the age of five years were breastfed within the first hour of birth, exclusively for the first six months of life, and received sufficient complementary feeding at six months onward (11).

Preventable deaths occur despite the fact that policies and initiatives which support BF to improve child health and combat child mortality are in place. An analysis by the United Nations shows that children and mothers miss out on simple, cost effective and high impact interventions due to gaps in health care systems in most developing countries. Such gaps include lack of training in the areas of infant and young child feeding, as well as HCWs working independently in the implementation of interventions meant to improve infant feeding – rendering them ineffective. The Global and Young Child Feeding Strategy reiterates the importance of community involvement in the promotion of BF practices through health promotion practices (11,40).

## ***2.4 Health Promotion***

The foundation of health promotion is attributed to the **Alma-Ata Declaration of 1978**, and the **Ottawa Charter of 1986** (50,51). Both the Declaration and the Charter reiterate that the

wellness of people depends not only on the health sector, but also on the environment in which they live, their socio-economic status, and their cultural backgrounds (50,51). Health promotion is defined by the WHO as:

*'The process of enabling people to increase control over and to improve their health such that a state of complete physical, mental and social wellbeing is achieved'* (50).

This is accentuated by the definition of health, which is affirmed as:

*'A complete state of physical, mental and social wellbeing, and not merely the absence of disease or infirmity'*,

implying that, if people are to be healthy, health promotion is crucial to enable them control over their own health (51).

In an attempt to reduce child mortality, and to promote infant and child health in South Africa, BF has been emphasised by the NDoH as one of the key practices that need to be promoted by HCWs, and thus practiced by mothers (2,52). The National Health Promotion Policy and Strategy 2015-2019 highlights the need to promote preventative health through the involvement of academics, government organisations, NGOs, and other sectors (52). Collaborations taking place in South Africa towards preventive health and health promotion emanate from the notion that, for health promotion interventions to work, there is need to involve communities in the planning, development, and implementation of such interventions (18,53).

In health promotion, health education, communication for social and behavioural change, as well as social and community mobilisation are highlighted. Health promotion is therefore interdisciplinary, and does not focus on HCWs but, rather, on the beneficiaries of the programme, hence the concept of community participation (18,54). Community participation and involvement in health promotion allow for personal and social development, thus empowering community members to have the necessary skills to be able to exercise control over their health (52,53). So the promotion of health co-depends on the community and on their participation (53,55). Unfortunately, health promotion is usually left for NGOs and HCWs, with little community involvement (40).

### ***2.4.1 The promotion of breastfeeding practices in South Africa***

The promotion of BF practices in South Africa forms part of the National Health Promotion Strategies, in an attempt to improve infant and child health (52). Due to the status of the health of children in South Africa, there is need to promote EBF in communities, hospitals, and families. This is especially crucial in low income or rural communities, where there is questionable knowledge on the safety of water that is used in the reconstitution of breast milk substitutes, or on the importance of not over diluting these substitutes in an attempt to save money (46,56). Strategies promoted by the NDoH to support BF and EBF are briefly explained below.

#### ***2.4.1.1 Breastfeeding promoting hospitals and clinics***

In 1993 the NDoH mandated that all hospitals become baby friendly – following the Baby Friendly Hospital Initiative of 1991. This meant that all hospitals, whether private or public, are supposed to be BF support centres. The centres also pass as baby friendly when they implement the ten steps to successful BF (57,58). The most recent statistics show that, as of 2005, 176 hospitals in South Africa were accredited as baby friendly by the NDoH, with BF and cup feeding being mandatory whilst the mother is in hospital (16). There has been notable difference in the acceptance of BF in hospitals around the country and, nonetheless, communities are as yet to become baby friendly spaces. Due to the absence of hospitals in remote and rural areas, PHC clinics provide the first level of health care to many South Africans in the rural or peri-urban regions in the country (16,58).

### ***2.4.2 Primary Health Care system***

The Alma-Ata Declaration strongly reaffirmed health as a human right, and the need for PHC services to provide the first level of contact for health care to communities (51). Following the Alma-Ata recommendations, South Africa adopted the PHC concept in 1994. In 2010, the NDoH embarked on a program of Re-Engineering of PHC services around the country. The program focuses on diverting services from curative approaches to more promotive and preventative services that involve the communities (20,59). PHC service delivery in South Africa has improved since 2010 (18). Clinic services focus on, but are not limited to: improving maternal, neonatal and child health; the strengthening of preventative child health focused on the immunisation of children; and the improvement of nutrition through BF promotion (20). Services in rural areas are provided by clinic staff, which usually comprises of a registered nurse and community health workers (CHWs) (18,58).

Regardless of the PHC, initiated over two decades ago, and its reengineering 6 years ago, the country still faces poor health outcomes. These poor outcomes are as a result of the quadruple burden of disease, which consist of Non-Communicable Diseases; tuberculosis and HIV & AIDS; high maternal and child mortality; and violence and injuries (59). Poor outcomes are also attributed to an increased focus on curative health care rather than preventative or promotional health care, despite the reengineered program (18,20). Although BF promotion occurs through PHC services, the rates of BF in South Africa are not reflective of the effort to promote the practice (27).

#### ***2.4.2.1 Community Health Workers in Primary Health Care***

Although a low-middle income country, South Africa faces a massive crisis in human resources for health. Health Systems Trust South Africa reports that currently, there are 151 professional nurses, 11 pharmacists, 2 dentists, and 30 doctors per 100 000 people in the public sector (60). This shortage in human resources for health mainly affects 80% of the population, who depend on public health services, which attracts the minority of the country's health care professionals (61). To combat shortages in health human resources, CHWs have been part of health systems worldwide, although they have not been used effectively (31,62). A review by Lehmann and Sanders, (2007) shows, however, that the adoption of the CHW programme in countries such as Brazil, Nepal, and India was useful in bridging the health care professional gap (62). This progress was emulated and implemented in South Africa through the reengineering of the PHC system (20).

In the past, CHWs mainly focused on health promotion. Current CHW practices have shifted not only to preventative and promotional health, but also to social, environmental or community development, and thus the term CHW is no longer reflective of their occupation (18,63). The Department of Health and the Department of Social Development (South Africa) formed a collaboration to revise the CHW policy framework of 2004 (18,19). In 2009, a new term – CCW – was agreed upon as more suitable to describe those HCWs previously known as CHWs. According to the CCW management policy of 2009, the new name of CCWs takes into consideration their roles in health and social development (18–20).

##### ***2.4.2.1.1 Training of Community Care Workers in South Africa***

Community care workers are usually the first contact for people within PHC settings, and thus require training on curative, preventative, and promotive health, in order to perform their tasks diligently (51,62). The training of CCWs in South Africa varies according to the type of

recruitment for a particular person. Whilst some attend the one or two year multi-skilled training programmes that are on offer by the NDoH, some only attend short courses or are not trained at all, and only develop their skills through in-service training. In-service training refers to training services that are offered by the NDoH or NGOs which are specific, e.g. tuberculosis and HIV/AIDS testing and counselling. If a CCW does not attend a course, they most likely have the same basic knowledge as any other community member. Some training is offered by NGOs and community based organisations (CBOs) such as hospice, according to the scope of practice that is required by that organisation (18,62,63). Although standardised modules have been published for the training of CCWs, not all CCWs have had a chance to actually be certified, especially those in rural areas (63). Working without any form of training is, however, mostly evident in government PHC clinics within rural settings. As such, because of the shortage of human resources in South Africa, and even more so due to the lack of CCW supervisors, NGOs and CBOs have taken a front-row role in the provision of refresher courses to government employed CCWs. Representatives from NGOs and CBOs end up taking the role of supervision of CCWs, especially in rural communities, where most of these CCWs feel ‘neglected’ and left out (31,63). Although the role CCWs play in the expansion of health care services cannot be debated, they do require the relevant training and resources to enable them to perform their duties effectively – a gap that still requires addressing in rural South African communities (18).

### ***2.4.3 The provision of health promotion material***

Breastfeeding and EBF promotion occurs at different levels in South Africa, mainly within the social and health sectors of the government, CBOs and NGOS. One of the key elements of the promotion of BF practices that has been adopted by the public health sector is the provision of BF promotion material (58). As explained in section 2.4.1.1, the NDoH has mandated all hospitals and clinics to become baby-friendly. Although not all health care facilities are baby friendly accredited, information on BF is provided at all of these facilities (2,58).

Educational or health promotion material is provided as posters hung on walls in health care facilities. These usually contain the ten steps to BF, the advantages of BF, why it is important for both the mother and the child to BF, as well as providing information as to where mothers can receive support for BF (58). Most facilities also offer BF counselling before and after giving birth, and EBF during hospital stays is encouraged for all mothers. When mothers are counselled on BF, pamphlets on BF are given to them to take home as reference material. When

a child is born, they also receive a road to health card, which also contains information about infant feeding, BF, and other relevant infant health topics (58,64).

The training of CCWs and the materials that they use for the promotion of BF and EBF vary according to the organisation or institution which offers them the training, or refresher courses, on BF and EBF (65,66). Limited literature is available on the actual material that is being used for the training on CCWs on BF, or on the materials that they keep as reference sources in South Africa. Organisations such as the La Leche League, who have embarked on training 'peer counsellors' in communities, have used their own curriculum that is based on the local conditions and that take cultural aspects into consideration (65). The acceptability, applicability, and appropriateness of the material that is used for the promotion of BF is crucial in a community context, due to varying traditional beliefs and values which may result in some material not being accepted (22,65). The material that is used by CCWs to promote EBF therefore varies with the type of training that they would have received, the organisation that was responsible for training them, and the financial capability of such an organisation to print and distribute these materials. The use of printed health promotion material in the promotion of BF promotes BF practices (40,67).

## ***2.5 Culture in health promotion***

Culture is a system of shared values, beliefs, norms, practices, and ways of life which are learned and adopted within a given society (25,68). Culture is associated with the adoption or rejection of health interventions, due to its influence on health behaviour within social settings. Due to the vast nature of cultural differences amongst people of different ethnicity, language, race, origin etc., health disparities are likely to occur on the acceptance and adoption of a suggested health behaviour or health intervention (26,69).

Health promotion has now evolved, and health promoters, policy makers, health researchers are considering the effect of culture and the cultural implications of a health intervention before imposing such interventions on a community. Research shows that health promotion studies / interventions conducted without considering the cultural appropriateness of the intervention often fail. Reasons for such failures are the lack of social integration of the values and norms of the target population, the omission of information regarded by the researchers as irrelevant in the interventions, the mode of communication used, or inclusion of information that is regarded as not important by the target population (23,69).

Health promotion efforts meant to even out health disparities have to consider the cultural, environmental and social factors influencing health behaviours – which falls beyond the pale of standard biomedical approaches to health (69). Airhihenbuwa et al. (2013) and Thomas and Fine, (2004) suggest that considering culture in the development of public health interventions would potentially improve receptiveness, and thus increase their adoption by target populations (68,69).

Despite culture being shared and assumed to be consistent in a group of people, some people are possibly multi-cultural. In seeking cultural appropriateness, it is difficult to know which culture should be emphasized for any given behaviour, since one person could belong to several cultures. One approach to the development of health promotion material might not achieve the goal of making it culturally appropriate. Kreuter et al. (2003) summarised five main categories which are useful to enhancing the cultural appropriateness of health promotion material:

- a) **Peripheral strategy:** the use of features that are identifiable by the target group. This includes the layout, colours, pictures, and other images that are familiar and can be comprehended almost immediately by the target group.
- b) **Linguistic strategy:** providing health promotion materials in the target groups' native language. Language is regarded as the most fundamental communication tool when promoting health and being sensitive to culture.
- c) **Evidential strategy:** presenting evidence of impact of a health behaviour to the target group. This can be epidemiological data from previous, relevant studies, or data from the field of study to which the targeted people could relate.
- d) **Constituent-involving strategy:** involvement of members from the target group, or the target group itself, in the planning and decision making process for the health promotion program. The target group enhances insight on the issues that are culturally appropriate within their communities, thus improving the chances of intervention acceptability.
- e) **Sociocultural strategy:** identifying the cultural beliefs, values, and practices of the target population, and using these as building blocks to reinforce the intended health behaviour. Discussions that take broader social and cultural values into consideration are essential to facilitating social change.

Overall, cultural sensitivity and appropriateness might best be achieved by health practitioners and researchers who are trying to promote healthy behaviours which are community- and context-specific (25).

Breastfeeding practices are a balance of both culture and biology. Challenges with BF arise when cultural beliefs and practices ‘do not support the biologically based needs of both the mother and the child’ (70). This often leads to the rejection of BF practices, since culture is already engraved in one’s ways of living and is difficult to let go. A BF mother often looks for advice and approval to breastfeed from family, friends, other community members, and health care professionals – and the information they receive can either promote or hinder BF choice (23,71,72). A study conducted in Cameroon confirms that culture has a role in BF promotion, and hence needs to be addressed when promoting BF and EBF practices (23).

## ***2.6 Factors influencing breastfeeding practices in low-income communities***

Studies have shown that the desire for women to breastfeed when they are pregnant is much higher than the actual practices occurring once they have given birth. Although most women worldwide accept BF practices as important for their children, BF and EBF rates are still very low. Due to the many advantages of BF, and its impact on the reduction of child mortality, researchers have conducted studies to find out why mothers end up not BF as recommended – within the first hour of birth, and exclusively for the first six months of life (22,32,56,73,74). The factors influencing BF and EBF practices can be classified into five main themes, and the most common factors will be discussed in this section.

### ***2.6.1 Socio-economic factors***

Socio-economic factors might be the most influential when it comes to mother’s BF, or exclusively BF for the first six months of their baby’s life (74). Nowadays most women have to work to support their families, either as the prime breadwinner, or to supplement income. Either way, women still need to return to work after child birth (31,32,75). The South African labour law states that BF mothers are allowed four months paid maternity leave, and two 30 minute breaks a day to either breastfeed or to express breast milk for six months (76,77). Unfortunately, not many women are aware of this law. Women who work in informal sectors usually have to go back to work within the first two months after giving birth, or they risk losing their jobs, or not getting paid. Some of these women are low income earners, and cannot afford to go on an extended unpaid leave, and thus resort to alternative forms of feeding, such as cow milk or breast milk substitutes (31,74). Studies report that a lot of women do not breastfeed for six months, because they say they have to go back to work (78,79). On the other hand, employed women have the ability to afford breast milk substitutes. One study conducted in South Africa found that such women are two times more likely to use breast milk substitutes

than women who do not work (80). Due to a high teenage pregnancy rate in South Africa, 7.8% of women who give birth are below 18 years of age, and are most likely still in high school (81). Returning to school is another reason why mothers do not breastfeed exclusively for the first six months of their baby's life (82).

A mother's nutrition is also a very important factor when it comes to BF. A mother who intends on BF exclusively for six months needs to eat a healthy balanced diet to ensure that the baby receives all the nutrition they require (83). Unfortunately, the interpretation that most women have of a healthy balanced diet is high-end, extremely expensive food – which is not the case (74,83). Sometimes mothers believe that it is cheaper for them to feed breast milk substitutes to their children than for them to eat a healthy balanced meal. Feeding the mother is more cost-effective than buying breast milk supplements for the infant, especially in low income communities (74). Despite the income of different households, rural settings are reported to have better prevalence of BF when compared to urban settings. This is likely linked to the high rates of urbanisation, modernisation, and the misconception that breast milk substitutes are superior to breast milk (32).

### ***2.6.2 Marketing and advertising of breast milk substitutes***

The marketing of breast milk substitutes has overwhelmed the social media, and has led to a change of how the world views BF (32,56). Marketing and advertising of breast milk substitutes has most people misled into underestimating the benefits of breast milk over breast milk substitutes. Advertising has also led people into accepting and adopting the use of breast milk substitutes from a very tender age in infants. The interpretation of advertising tactics by manufacturers has been shown to differ amongst people of different education levels. Mothers who are more educated tend to adopt both BF and formula feeding, whilst less educated mothers tend to adopt mostly formula feeding. Unfortunately, the former trend is detrimental, because the less educated mothers usually end up in low income homes, which are most likely to benefit from BF and EBF for six months (56,74).

The use of breast milk substitutes requires the correct and accurate interpretation of instructions on how to reconstitute the milk powder, the use of clean and safe water, and the correct cleaning/sterilisation of bottles and cups used during feeding. Regrettably, proper reconstitution of breast milk substitutes is usually not practiced in low-income, low-educated homes. The result is over dilution of formula milk, contamination through unclean water or dirty utensils, poor infant health, and increased probabilities of child mortality (56).

### ***2.6.3 Cultural beliefs, values and practices***

The adoption of BF and EBF practices within a community context is also reinforced, or hindered, by the supported culture within that society. Mothers rely on communal support for BF, and this is based on values that can be detrimental or beneficial to the practice. Whilst BF is widely accepted by most cultures worldwide, some people associate it with embarrassing practices, which bring shame, guilt, and distaste upon its practitioners (32,73).

Beliefs associated with breast milk are usually a barrier to BF. For instance, in Cameron and Mithila, colostrum is regarded as dirty, of no nutritional value, or unhealthy for the baby (23,84). Mothers in such societies thus tend to wait at least 12-48 hours after birth before BF their child, and feeding them water, cow's milk or herbs until or even after they start BF (23,73,84). On the contrary, amongst the isiXhosa people of South Africa, feeding colostrum (*mtubi*) is a respected tradition, which encourages BF as soon as the baby is born (71). Whilst some cultures require at least 12 hours before BF a child, some emphasize that if a child is not breastfed within the first 24 hours of birth, breast milk is no longer safe to feed the child (32). The interpretation could potentially promote BF if a mother breastfeeds her infant as soon as possible, or hinder BF if it is delayed, and the mother decides that her breast milk is no longer safe to feed her child.

The perception of milk insufficiency is one that resonates with most people around the world. Studies have shown that most mothers believe that their breast milk is insufficient to feed their children, especially for the whole first six months of life, as well as in hot weather. Supplements such as water and breast milk substitutes are given to infants from as early as 48 hours after birth. Unfortunately, the introduction of supplements at such an early phase disrupts breast milk production and interrupts BF (46,78,85).

Of interest on the beliefs associated with BF is sexuality, and the objectification of the breast. Barriers include BF in public being a taboo, the breasts being attached to the primary role of sexual behaviours and pleasures, and BF being constrained only to neonates. The result is that women resort to breast milk substitutes as a form of feeding. Other cultures have, however, maintained the role of the breast as an organ for infant feeding, and, as such, BF is expected of women in such societies (75,86).

#### ***2.6.4 Education, counselling and advice related***

Almost all mothers can breastfeed if they have the correct information and the support that they require to breastfeed. Support can be provided by the family, HCWs, and the society at large (32,83). HCWs are at the forefront of provision of this information to mothers on infant feeding practices. The quality of counselling that is received by mothers from HCWs either promotes or hinders BF practices (46). Poor counselling by HCWs when it comes to BF practices is one of the main reasons why mothers do not practice EBF (31,46,75). In a South African based study, mothers identified a lack of support from health care professionals. The mothers in this study said that the reason why they neither breastfed nor practiced EBF for six months was that they had not received enough information from HCWs to convince them of its efficacy (87). In a review by Wilmoth and Elder, (1995), it is reported that mothers who receive BF information and support are more likely to breastfeed successfully, and for a longer duration, as they perceive HCWs to be knowledgeable. Breastfeeding information, coupled with technical support, was emphasized as extremely relevant, especially for first-time mothers, who usually have no idea on how to hold their baby, or when and how to breastfeed (56). This review also recommended intensive training for HCWs who promote BF, because their lack of knowledge and doubt reduces the effectiveness and impact of the information that is given to new mothers (46,56).

Family, friends and community influence are other huge determinants of BF (88). Whilst experiences differ from one community to the next, BF mothers seek advice from people who they regard as role models, such as their grandmothers, their own mothers, or other women who have breastfed before within the communities that they reside in (46,78). Such advice can deter a mother from BF if it is associated with beliefs and perceptions that BF is 'hard', is 'painful' or is 'embarrassing'. Breastfeeding is an accepted culture in most African societies, and thus most elders within a community encourage new and other mothers to breastfeed. From whom a mother seeks advice determines whether or not she will adopt BF or EBF practices for her own child. Husbands and partners are also considered to be primary support for BF mothers, and have been shown to contribute largely to the decision of either BF or not (23,46,71). Kakute et al. (2005) recommend that husbands, relatives, community members, traditional and village leaders should take part in health education discussions on BF, due to their persuasiveness on a mothers' decisions to breastfeed (23).

### **2.6.5 Health and disease related**

Given that South Africa is currently experiencing a crippling HIV epidemic, concerns about BF for HIV positive mothers are still being raised (2). The rate of mother to child transmission for infants below the age of two months is 2.2% (89). Policy by the NDoH clearly states that HIV positive women are encouraged to strictly breastfeed exclusively for the first six months whilst taking ARV medication, and to continue BF, with complementary feeding, until 12 months (2). If a mother decides not to breastfeed, then they are encouraged to exclusively formula feed / give breast milk substitutes, and not to practice mixed feeding (31). Due to fear of transmission of the HI virus to their infants, some mothers choose to feed breast milk substitutes instead (46). In the case of South African low income families, BF exclusively is of utmost importance, because usually such families cannot sustain exclusive formula feeding for the first six months – unlike in high income families (31,46).

Daniels et al. (2010) found that mothers in South Africa would rather practice mixed feeding than either EBF or exclusive formula feeding, due to fear of being stigmatised as HIV positive. This has resulted in most mothers, whether HIV positive or negative, adopting the mixed feeding option – which is perceived by the rest of the community members to be adopted by HIV negative mothers only (31). Mixed feeding is a danger to the child during the first six months of life, due to a weak intestinal lining, which would be more permeable to the virus entering the infant's body. Factors associated with the mother such as RNA viral load, low CD4 cell count, and therapy failure contribute to transmission of the virus to the infant. In low income settings, where mothers usually cannot afford to buy enough formula milk, they tend to over dilute the milk and the child ends up being malnourished. Chances of malnutrition induced mortality then becomes more likely than death as a result of HIV transmission (46).

Poor BF techniques, such as latching and positioning techniques, are widely associated with an increase in breast health problems for BF women. Common breast health problems are sore / cracked nipples, engorgement, and mastitis. These conditions are known to interfere with BF maintenance, due to mothers feeling exposed and vulnerable. Because of breast health problems, or because of having heard about these occurring to peers and family members, many mothers decide to cease all BF (80,82).

A lot of studies have been conducted around the world, and in South Africa, which identify the factors influencing BF and EBF practices from women who have children. Unfortunately, most of these studies do not address the factors that would have been identified (23,80,82,90).

Common recommendations from some studies include the training of CCWs in the promotion of BF (82), combined efforts for promoting BF in health care and community settings (90), consistent provision of education to mothers by health workers working in communities' ante- and post-natal centres (80), and the promotion of BF with combined efforts to address locally relevant cultural beliefs, and educating the community as a whole (23). These recommendations were taken into consideration during this study, as outlined in the methodology section.

## **3 CHAPTER 3: METHODOLOGY**

### **3.1 Introduction**

This chapter comprises details of the theoretical framework used in the study, the research approach, the sampling techniques used, research instruments, data collection procedures employed in the research, ethical considerations, data management and analysis and the validation of these research methods. Justification of the research approach adopted is also included in this chapter.

### **3.2 Theoretical Framework**

Theoretical frameworks are useful in identifying and providing a lens or perspective through which research takes place. There are various ways to conduct research, and a theoretical framework helps to focus it in the desired direction, and to link theories to practice (91). The PEN-3 model was the theoretical framework chosen to guide the current research.

#### **3.2.1 The PEN-3 model**

The PEN-3 was developed by Professor Collins Airhihenbuwa in 1989 in an attempt to ‘centralise culture in health promotion interventions, health beliefs and health outcomes’ (92). The model focuses on how culture influences behaviour, and takes into consideration how extended family and communities can influence one’s health related decisions (93–95). Airhihenbuwa emphasizes that culture should be considered in the development, implementation, and evaluation of health promotion interventions (92,93).

The model consists of three interrelated domains: Cultural Empowerment, Cultural Identity, and Relationships and Expectations (93,94). Within each of these three domains are categories which are labelled so as to form the acronym PEN - hence the name PEN-3 - as illustrated in Figure 3-1.

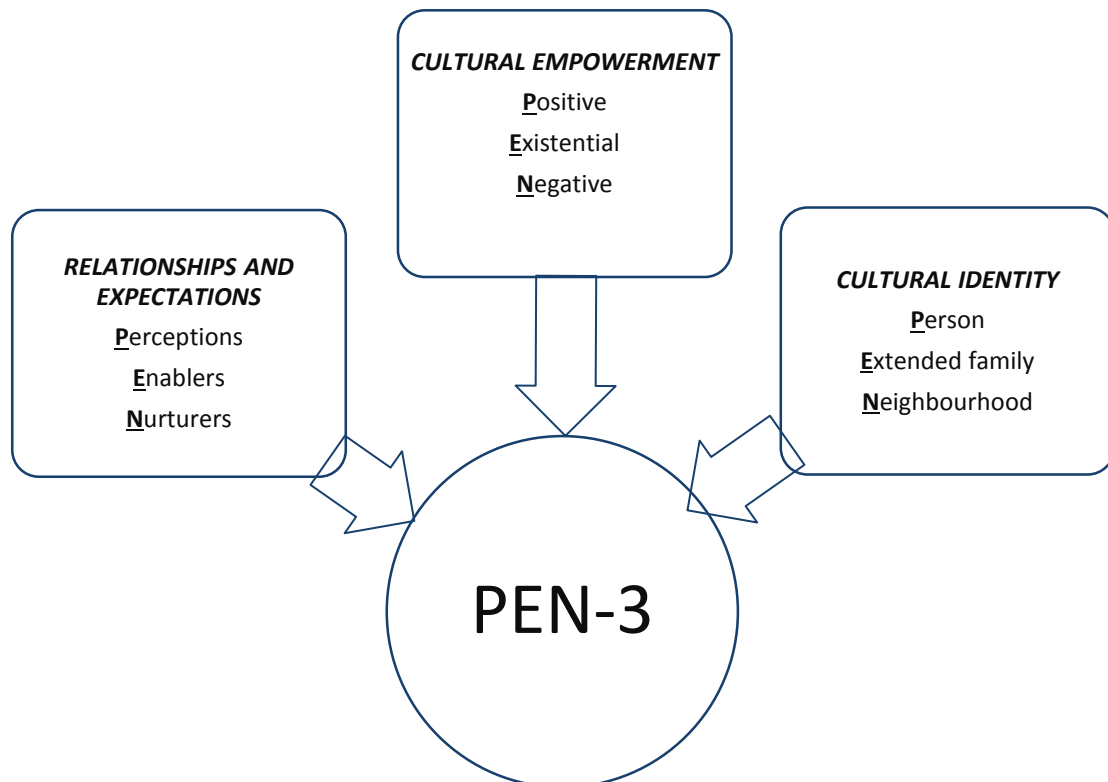


Figure 3-1: Representation of the PEN-3 model

Source: Airhihenbuwa (2009)

### 3.2.1.1 Relationships and expectations

The relationships and expectations domain considers the same influences as other models of behavioural change, such as the Theory of Reasoned Action, the PRECEDE-PROCEED framework, and the Health Belief Model. The difference, however, is that the PEN-3 ‘focuses from the point of view of how cultures define the roles of persons and their expectations in family and community relationship[s] (93). The domain categorises those factors that influence a health behaviour into three categories: perceptions, enablers, and nurturers.

**Perceptions:** These are the knowledge, attitudes, beliefs, and values within a cultural context that influence health behaviour or the motivation to change (93,96).

**Enablers:** Resources, influences or forces which are either cultural, societal or institutional that can either hinder or enhance efforts to change behaviour. These can be skills, referrals, employers or types of services offered, and they should be accessible, affordable, available and acceptable within the context of the community (93,96,97).

**Nurturers:** The social support, i.e. friends, family or community, and the influential roles that they have on behaviour (24,93).

### 3.2.1.2 *Cultural empowerment*

Usually, culture is often misrepresented as bad or as a barrier to a desired outcome, and because of this the collective term “cultural empowerment” attempts to clarify that culture has aspects that can affect health in positive, negative or indifferent ways (96). The cultural empowerment domain highlights that the influences identified in the relationships and expectations domain can be classified as positive, indifferent / existential or negative.

**Positive:** Values, relationships, and attributes that promote a health behaviour or decision. These attributes should form the starting point of an intervention, and ought to be acknowledged and promoted (93,96).

**Existential:** These are the indifferent cultural practices that do not have an effect on the health behaviour. Existential characteristics are unique to a culture, and should be recognised and acknowledged (93,95).

**Negative:** The negative values and beliefs which hinder a health behaviour need to be ‘addressed within the proper contexts’. Before addressing these negative aspects, the reasoning behind them should be understood in that particular context, to avoid initiating interventions that insult cultural beliefs (93,96).

### 3.2.1.3 *Cultural identity*

Cultural identity domain disregards the assumption that health interventions should only focus on the individual targeted for a certain health behaviour (93). In most African cultures and communities, decisions are influenced by family, friends, and the community surrounding an individual (94,97). This domain is used after identifying (relationships and expectations) and classifying (cultural empowerment) these influences on a certain behaviour, to ascertain the people who influence that behaviour, and can thus be targeted to promote it (97). The ‘point of entry’, or people to be targeted for an intervention, are those people who are influential in adopting the health behaviour. Airhihenbuwa et al. (2013) express that, if these people are targeted, an intervention is most likely to be successful and to make a difference in a community. The cultural identity domain has three components (68).

**Person:** The individual who is most likely to exert the most influence on a health decision.

**Extended family:** The role that the family and extended family have on influencing the decision of an individual with regard to health.

**Neighbourhood:** The community and their role in influencing the decision of a person with regard to health (24,94,96).

The PEN-3 model has been applied in various health oriented research, such as in the assessment of breast cancer pamphlets for African American women (97), exploring stigma and HIV in South Africa (96), identifying factors influencing the prevention of mother-to-child transmission of HIV in Nigeria (98), assessing nutrition influences in the US (24), assessing female condom use in South Africa (99), and HIV /AIDS prevention research in South Africa (96). Limited literature was found on the use of the PEN-3 model in the identification of factors that influence EBF practices, or on the development of health promotion material to promote BF and EBF, either around the world or in South Africa. This framework was chosen to guide the research in identifying and classifying the influences on BF practices, determining the target population for the promotion of BF and EBF, and the cultural implications during the development and implementation of an EBF intervention.

### ***3.3 Research design***

The development of material for the promotion of BF and EBF practices has progressed worldwide. However, research shows that the implementation of these materials, their adoption and use have been limited due to the gap that exists between researchers and communities during the development and implementation processes (100). To promote research that is relevant, useful, and applicable to certain community contexts, communities need to be consulted and involved in the research processes. Participatory action and mixed methods research principles were adopted in this study in order to develop an intervention that is culturally appropriate and specific to the communities being researched.

#### ***3.3.1 Research approach***

##### ***3.3.1.1 Mixed methods research***

This is an approach to research that involves the quantitative and qualitative collection of data. Quantitative research involves examining relationships amongst variables. Quantitative data is often presented numerically, and usually uses instruments to either collect or analyse data. To obtain quantitative data, structured questionnaire surveys and close-ended questions can be used (101–103).

Qualitative research, on the other hand, is an approach that has mainly to do with the understanding and exploration of how individuals, or a group of individuals, relate to a problem, the cause thereof, and / or what they consider to be the cause of the problem. Strategies that are employed in qualitative data collection are observations and interviews,

where the use of open-ended questions is applied (101,102,104). Mixed methods were used in this research to better understand and to explore the research questions.

### **3.3.1.2 Participatory Action Research**

Participatory action research is an approach to health research that is based on action and reflection, which aims to combine theory and practice, by involving key informants in the research process and in the identification of practical solutions to everyday issues (102,105). Participatory action research is a cyclic process, where the initial stages involve exploring, identifying, and understanding the issue of concern, after which an intervention will be conducted. The intervention is monitored through various strategies of data collection and reflection, which lead to refined solutions (105–107).

Action research principles go hand in hand with the principles of community based participatory (CBPR) and the PEN-3 model, where the researcher and the researched both have equal roles in the research function, and become co-researchers, thus sharing knowledge, practice, ideas, and the implementation of the interventions, as active partners (96,105,108). The cyclic nature of participatory action research makes the inquiry an equitable and democratic process for sharing knowledge and for co-learning (106,109). Two concepts guide the participatory research process: the PEN – 3 theoretical framework emphasizes the importance of culture in health interventions, and the CBPR approach emphasizes the principles of participation in community based research.

### **3.3.1.3 Community Based Participatory Research**

Community based participatory research is a collaborative approach to research that is meant to build partnerships and relationships in which there is power and resource sharing, while encouraging work towards a goal that benefits all partners (108,110–112). The initial stages of CBPR begin with identifying a key area that is of relevance to the community. This area should be identified as needing attention, thus ‘combining knowledge and action to achieve a social change’(111). The main aim of CBPR is to promote health and wellbeing in a collaborative manner that is sustainable and that allows for continuity (110,113). The approach is different to traditional research methods, where researchers are the active donors, and the community members are the passive recipients of the information or interventions (110–112).

WHO / UNICEF (1978) emphasizes community participation as: *‘the process by which individuals and families assume responsibility for their own health and welfare and for that of the community, and develop the capacity to contribute to their and the*

*community's development. They come to know their own situation better and are motivated to solve their common problems. This enables them to become agents of their own development instead of passive beneficiaries of development aid. They therefore need to realise that they are not obliged to accept conventional solutions that are unsuitable but can improvise and innovative to find solutions that are suitable' (51).*

Community participation and involvement in the research process also promote the success of research activities. For instance, if HCWs, as participants, are only involved in data collection, but not the implementation of the research, they might not be motivated to provide or to collect data that is relevant to the research (51,102,113). This implies that research which values community involvement requires researchers and community members to work together towards understanding the issues and what the community needs with regard to the topic in question, addressing them, sharing the findings as well as applying the knowledge gained (110–112). Participation is therefore essential in CBPR, which bridges the gap that might otherwise exist between research and practice (108,110,112). In CBPR, academic researchers usually partner with CBOs who have an already existing rapport with the communities of interest. CBOs provide a gateway to the community for academic researchers, and serve as liaisons between communities and researchers. The presence and participation of CBOs contributes to the continuity of research (108,110).

### 3.3.2 Study setting and sampling techniques



Figure 3-2: Map showing the study sites

#### 3.3.2.1 Study setting

The current study took place in three communities: Glenmore, Ndwayana and Grahamstown, which are located in the Eastern Cape Province of South Africa. Grahamstown is an urban town, whilst Glenmore and Ndwayana are rural communities, located 43.6 km and 44.7 km North-West of Grahamstown, respectively (shown in Figure 3-2) (114). Ndwayana and Glenmore communities are predominantly isiXhosa first language speakers, whilst Grahamstown is predominantly isiXhosa and Afrikaans first language speakers. The Eastern Cape Province is the second poorest province in the country, with an unemployment rate of 33.6% (115). Although the areas of focus differed between rural and urban, the socio-economic structures of the families in the areas of focus are the same.

#### 3.3.2.2 The collaboration

The CPBR approach makes use of collaborations between academic researchers, CBOs, and community members (108,110). These collaborations are valuable, as they provide evidence based solutions that are useful to implement, in an attempt to reduce health disparities in communities. Partnering with CBOs provides researchers with access to the community, and

promotes continuity of the research, as academic researchers are not always available to see this through (110). This research was strengthened by the following collaborating bodies:

***A. Academic researchers***

The academic researchers who took part in this research originate from a health background. The principal supervisor and the principal researcher are pharmacists by training, in the Department of Pharmacy Practice, Faculty of Pharmacy, Rhodes University. The first collaboration was with community engagement personnel.

***B. Community Engagement personnel***

The community engagement personnel who formed the first link in the collaboration currently includes the Director of the Community Engagement Office at Rhodes University, and was also co-supervisor for this research. The personnel introduced the pharmacists to the CBOs who became involved in the research.

***C. Community Based Organisations***

The first CBO collaboration, formed in 2011, was with the Ubunye foundation (formerly the Angus Gillis Foundation). This is a CBO that was originally established by the owners of Kwandwe<sup>®</sup> Game Reserve. It was formed with the vision of assisting the local people within the Reserve through poverty alleviation and development of the communities (116). Initially the Foundation only served communities within the reserve, but has since expanded beyond its boundaries. Currently, the Foundation is the sole CBO that has health and community development projects, and operates in most of the areas within the rural Makana and Ngqushwa municipal districts, where unemployment and poverty rates are quite high (117). The organisation conducts community development programmes which focus on leadership development, financial savings groups, enterprise development, family health, and early childhood development (116,117). Ubunye is involved with the training and provision of refresher courses for government-employed CCWs within the communities in which they work (117). For the purposes of this study, the organisation introduced the researcher to two PHC clinics within the Glenmore and Ndwayana communities.

The second CBO to join the partnership was St Mary's Development and Care Centre (DCC) in 2014. This is a community based centre which focuses on the developmental needs of children, as well as their families, within one of the Grahamstown residential areas. This Catholic Church based welfare project provides supplementary activities to enhance the social,

educational, and emotional wellbeing of children aged 6-16. The project is now broadening its reach to the families of the children who are in need, and has become a ‘community hub’ for community development. The Centre has permanent staff and volunteers, who are tasked with projects such as garden development, health promotion, education, food preparation, and ensuring that children have clean school clothing before they leave for school in the mornings. One of the objectives of the expansion, which now includes older family members, is to promote good health and wellness, and educating parents on how to prevent common illness in their households (118).

According to Newhall (2013) the involvement of CBOs in action research evolves into the organisations, researchers, and participants assuming equal roles in the research process, thus making them research partners (110). Such involvement of CBOs is crucial to fulfil the obligations of CBPR.

### ***3.3.2.3 Participants***

Through the collaborations mentioned above, the CBOs introduced the researcher to the CCWs who took part in the study. The CCWs are also community members within the communities researched. Community members are central to research, as they provide reliable and valuable perspectives on the norms, beliefs, and values within their communities (55,110).

### ***3.3.2.4 Sampling***

The following criteria were used to determine those participants who could participate in the study:

- Works for or with one of the two CBOs
- Has a health background and is involved in health promotion
- Is a community member in one of the three communities under investigation

A total of 18 CCWs were initially identified through the collaboration with the CBOs as people who could potentially take part in the study. Not all of the CCWs from the initial sample had a health background. Some of the CCWs were only tasked with assisting children after school (St Mary’s DCC), and some were involved in community development programs that had to do with savings groups or nutrition education (Ubunye Foundation). Purposive sampling was used to identify eligible participants. Purposive sampling is a technique that is used to identify participants who are considered most appropriate for a certain study. The criterion for selection is predetermined by the objectives of the study (119). Using purposive sampling, a total of 14 of the 18 CCWs were identified as eligible to take part in the study. This phase of the sampling

was assisted by the CBO liaisons, who identified people within their organisations who were able to participate according to the given criteria. The 14 CCWs who took part in the study all met the criteria outlined above.

### ***3.3.3 Research instruments***

#### ***3.3.3.1 Phase 1 - Problem identification and confirmation***

##### **Qualitative: In-depth semi-structured interviews**

A semi-structured interview (SSI) is a data collection technique involving oral questioning of respondents to obtain required information, either as an individual or as a group. During a SSI, a question guide can be used to guide the researcher. Questions can be open- , closed-ended, or both, and the order in which they are asked is flexible, according to the responses obtained. Probes are necessary to establish the perceptions of the participants on a given topic, and to perhaps gain insight on possible solutions (102,103,105).

##### **Quantitative: Survey**

Surveys are necessary to determine and quantify the distribution of definite variables in a study group. The information obtained is useful in determining the relationships between variables, and the impact thereof on the participant and their participation in the study (102).

#### ***3.3.3.2 Phase 2 – Intervention***

##### **Qualitative: Participatory workshops**

Workshops are valuable for the gathering and dissemination of information to an intended target group. Workshops, or training sessions, have been identified as useful programs for continuing professional development, especially in the health sector, where concepts are continuously evolving, and new developments are being made (105,120).

##### **Quantitative: Self-administered questionnaire**

Self-administered questionnaires (SAQs) are data collection tools that make use of written material that is given to the participants to complete. SAQs can be used to ascertain the knowledge and understanding of the participants through questions, that are scored before and after an intervention, to allow a direct comparison of the performance in question (102,121).

#### ***3.3.3.3 Phase 3 - Implementation***

##### **Qualitative: Focus Groups discussions**

Focus groups are groups of people who are gathered to discuss and to explore a particular topic. FGDs are used to explore people's feelings and attitudes towards the issue of interest, as well as the relevant beliefs, values, barriers and promoting aspects thereof (102,103). FGDs are

appropriate to find out how participants perceive the progress being made by the study. A question guide is usually used during a FGD to focus on the topics (122).

### **Quantitative inquiry: Survey**

Surveys are necessary to determine and quantify the distribution of definite variables in a study group. The information obtained is useful to determine the relationships between variables, and the impact thereof on the participant and their participation in the study (102).

#### ***3.3.3.4 Phase 4 - Evaluation***

### **Qualitative: Focus Groups discussions**

Focus groups are groups of people who gather to discuss and explore a particular topic. FGDs are used to explore people's feelings and attitudes towards the issue of interest, as well as their beliefs, values, and the aspects barring or promoting the desired activity (102,103). FGDs are appropriate to find out how participants perceive the progress and success or failure of a health intervention. A question guide is used during a FGD to focus on the topics (122).

## ***3.4 Ethical considerations***

Ethical considerations made for this research are as follows:

### ***3.4.1 Approval***

Approval for the research to occur is required from ethical bodies to conduct research on or with human subjects. This is so as to ensure that the individual rights of the participants are not violated, by any means, as a direct result of the research or research processes (102).

Prior to commencing the study, the research proposal was defended in front of, and approved by, the Higher Degree Committee, Faculty of Pharmacy - Rhodes University. Ethical approval was obtained from the Faculty of Pharmacy Ethics Committee - Rhodes University (Appendix A: Rhodes University Ethical Approval) and the Department of Health Bisho (Appendix B: Department of Health Ethical Approval). The ethical approval from the University was to assess and to determine the feasibility and applicability of the research from an academic point of view, whilst the ethical approval from the NDoH was obtained to allow the researcher access to PHC clinics.

### ***3.4.2 Non-maleficence***

Non-maleficence is restricted to the non-infliction of harm (103,104). Non-infliction of harm was ensured by constantly seeking oral consent throughout all phases of the research, as well

as by encouraging CCWs to express themselves if they were not comfortable with any of the procedures taking place at any stage.

### ***3.4.3 Confidentiality***

To protect the identity of participants, it is important that their personal information is not disclosed to the public (102,103). Prior to commencing data collection, an invitation to participate (Appendix C: Invitation to participate) was presented to eligible participants. This was a form that detailed information about the study, the advantages of taking part in the study, the role of the participant, and expectations from the researcher. All CCWs were made aware that participation was voluntary, and that they could withdraw at any given time. Confidentiality and anonymity of their personal information was assured by assigning unique participant numbers. The communities were also identified with unique identifiers to protect the identity of the participants.

### ***3.4.4 Informed consent***

Due to the nature of research that involves people, informed consent should be obtained prior to the research commencing (102,103). Written informed consent was obtained from all of the CCWs before the study began. The process involved an explanation of the methods that were going to be employed in the study. The informed consent form (Appendix D: Participant informed consent form) was in English, and an interpreter was available to assist in explaining the details to the CCWs.

### 3.5 Data collection procedures

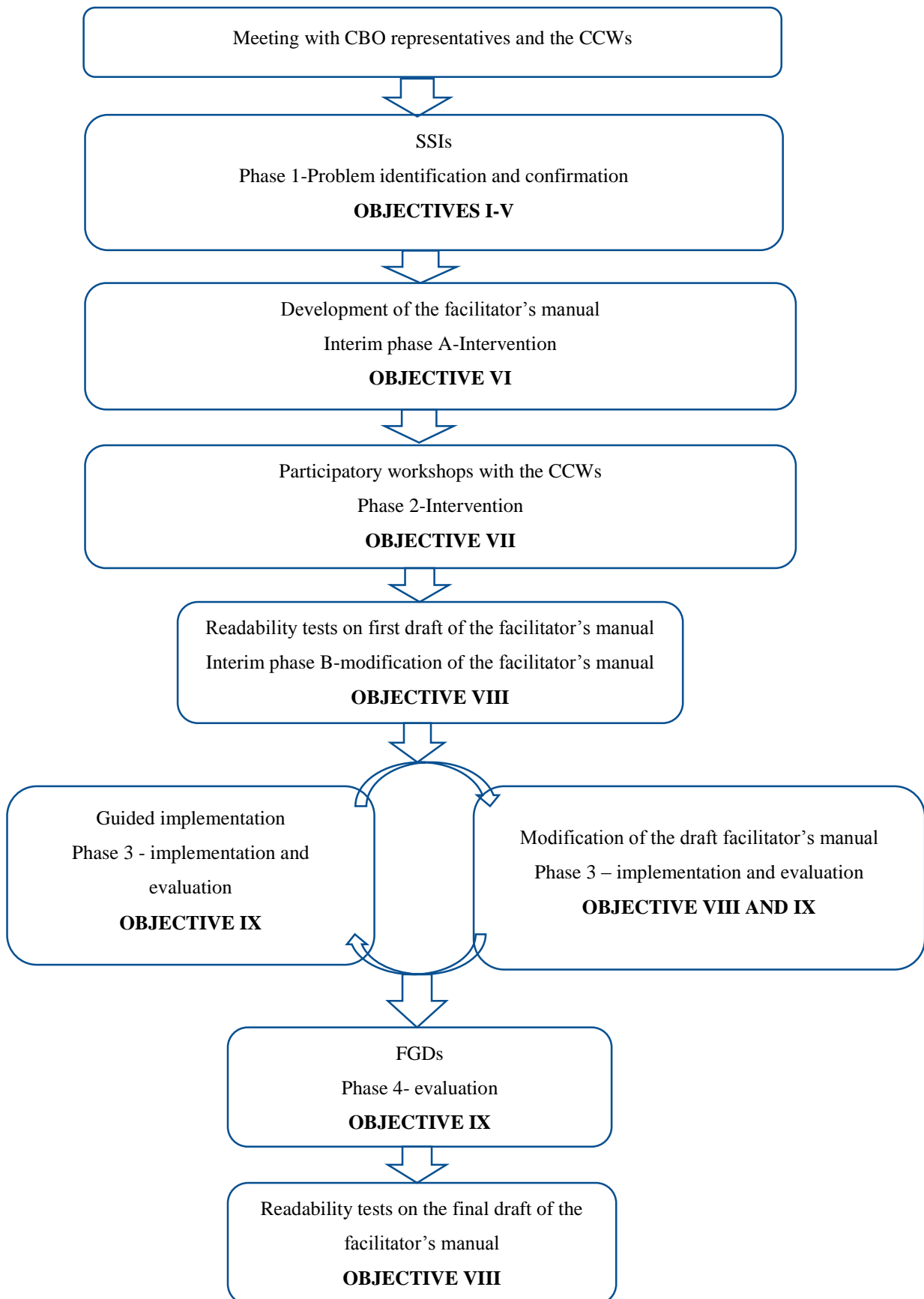


Figure 3-3: Summary of data collection procedures

*Table 3-1: Project timelines*

<b>Description</b>	<b>Date</b>
Meeting with supervisor, co-supervisor and Ubunye Foundation representatives	03 March 2014
Meeting with supervisor and representatives from St Mary's DCC	21 March 2014
Research proposal submission	24 March 2014
Higher Degrees Committee meeting	01 April 2014
Meeting with representatives from Ubunye Foundation	19 May 2014
Higher Degrees Committee Ethical Clearance	28 May 2014
Department of Health Ethical Clearance	12 June 2014
Meeting with representatives from the Department of Health Bisho	17 June 2014
St Mary's Pre interview visit (meeting with the CCW)	19 June 2014
(Phase 1) Semi-structured Interview (St Mary's)	27 June 2014
Ubunye pre-interview visit (Meeting with the nursing staff and CCWs at Glenmore and Ndwayana PHC clinics)	02 July 2014
Phase 1 - Semi structured interviews (Glenmore)	14 July 2014
Phase 1 - Semi-structured interviews (Ndwayana)	15 July 2014
Phase 2 - Workshop (Ndwayana)	20 August 2014
Meeting with representatives from St Mary's	21 August 2014
Phase 2 - Workshop (Ndwayana)	27 August 2014
Qualitative research design course	01 – 06 September 2014
Phase 2 - Workshop (Glenmore)	03 September 2014

Phase 2 - Workshop (Glenmore)	10 September 2014
Phase 2 - Workshop (St Mary's)	25 September 2014
Phase 2 - Workshop (St Mary's)	26 September 2014
Readability tests on the draft facilitator's manual	September – October 2014
Phase 3 - Guided implementation visit (Glenmore and Ndwayana)	01 October 2014
Phase 3 - Guided implementation visit (Glenmore and Ndwayana)	22 October 2014
Phase 3 - Guided implementation visit (Glenmore and Ndwayana)	05 November 2014
Meeting with supervisor, co-supervisor and Ubunye Foundation representatives	13 February 2015
Phase 3 - Guided implementation visit (St Mary's)	24 February 2015
Phase 3 - Guided implementation visit (Glenmore and Ndwayana)	04 March 2015
Phase 3 - Guided implementation visit (St Mary's)	26 March 2015
Phase 3 - Guided Implementation visit (Glenmore and Ndwayana)	08 April 2015
Phase 3 - Guided implementation visit (Glenmore and Ndwayana)	10 June 2015
Phase 3 - Guided implementation and final project evaluation (St Mary's)	28 July 2015
Phase 4 - Final focus group discussions (Glenmore and Ndwayana)	04 November 2015
Readability tests of the final facilitator's manual	November – December 2015

### ***3.5.1 Introductory phase***

All members of the collaboration met and discussed a way forward for the research project. Options related to the role of the participants and CBOs in facilitating the introduction of the researchers to the communities were also discussed and agreed upon.

The second set of introductory meetings was with the CCW in Grahamstown. There was only one CCW in Grahamstown. This meeting was meant to introduce the research to the CCW, and to become familiar with her before commencing data collection. The last set of meetings was with the CCWs and the nursing staff in charge at Glenmore and Ndwayana PHC clinics. The CBO liaison introduced the researcher to the nursing sisters, provided copies of ethical clearance forms from the NDoH as well as from Rhodes University, and explained the purposes of the study. This was because the interviews and FGDs took place in the clinics (Glenmore and Ndwayana). The CBO liaison then introduced the researcher to all of the CCWs who worked in the clinics, so that they would be familiar with the researcher and with what to expect during the study. The researcher briefly introduced the study to the CCWs, and informed them as to how they could volunteer to participate.

### ***3.5.2 Pilot testing of the semi-structured interview guide***

Due to the availability of a small pool size of participants, the SSI guide was pilot tested with a CCW from Grahamstown. The pilot test was to ascertain whether the researcher would be able to acquire all the information needed to proceed with the study, the appropriateness of the SSI guide structure, as well as the changes that were necessary to be made. The SSI guide was modified using the results obtained from this pilot, so as to make the guide more suitable for obtaining the required information.

### ***3.5.3 Phase 1 – Problem identification and confirmation***

The first phase of the study was exploratory in nature. In this phase, the researcher wanted to identify and to gain understanding of the CCWs' opinions on BF and EBF, what they thought influences BF and EBF practices, and the nature of the solutions required to tackle the issue of decreased EBF (102). In-depth SSIs were conducted during the first phase of this study.

In-depth, individual SSIs were conducted with the 14 CCWs. The question guide ([Appendix E: Semi-structured interview guide](#)) had three sections: Section A, B and C. Section A was the quantitative survey, intended to gather relevant demographic details from the CCWs, such as gender, age, educational background, and community development involvement.

Sections B and C were the qualitative components of the interview. Section B comprised questions that relate to EBF in the community, and the construction of the questions was informed by the PEN-3 model (as explained in detail in section 3.2.1). Section C was questions mainly pertaining to the BF booklet designed for the mothers (Kuzeeko F- unpublished thesis). This was meant to establish whether the CCWs, as HCWs with a basic health care background, could relate to, and understand, the contents of the booklet.

Probes were used when necessary, whilst the format of questions was open-ended, in order to obtain as much information from the CCWs as possible. The interviews usually unfolded into conversations, and this was useful, as it allowed the CCWs to converse freely with the researcher. No limitations were imposed by the researcher on the responses given by the CCWs so as to allow data saturation. Researcher bias on misleading the CCWs was avoided by using the SSI question guide during the interview. An interpreter assisted in the interviews to translate from English to isiXhosa, and vice-versa. An audio recording device and note taking were used to capture all of the data.

#### ***3.5.3.1 Integration of the PEN-3 model constructs in the semi-structured interview guide***

Section B of the SSI guide ([Appendix E: Semi-structured interview guide](#)) was informed by the PEN-3 model constructs. In the first phase of the research, the main aim was to identify the problem, and the factors affecting EBF in the target communities. The PEN-3 model was used to assess current EBF practices within the communities being researched. The relationships and expectations domain emphasizes that health behaviour is affected by three main factors: the perceptions towards the behaviour, enablers or nurturers (96).

#### **Relationships and expectations domain**

As outlined in section 3.2.1 (showing the PEN-3 model), this domain identifies the influences that affect health behaviours. According to Airhihenbuwa (1989, 2009), the types of influences can be classified into three categories:

- a) **Perceptions:** Using this category, questions asked included those to ascertain the cultural, societal, economic, social and environmental knowledge, values, attitudes, and beliefs that influence EBF.
- b) **Enablers:** There was need to identify the availability or unavailability of resources, and / or the forces that could potentially promote or hinder EBF practices within those communities.

- c) **Nurturers:** The context of study was in African communities. Identifying the social influences of the people around a BF mother was necessary to determine the role that these people could play in supporting BF behaviour (92,96).

### ***3.5.4 Interim Phase A - Development of the facilitator's manual***

The development of the facilitator's manual for the promotion of BF and EBF was a process which involved two main stages: the use of the BF booklet for mothers, and evidence-based literature sources.

#### ***3.5.4.1 Breastfeeding booklet for mothers***

To develop the facilitator's manual, the first stage involved the review of the BF booklet for mothers that had been developed for mothers in the previous study (Kuzeeko F – unpublished thesis).

Figure 3-4 shows the contents page of the BF booklet for mothers. Using the headings of this BF booklet, the first headings for the draft facilitator's manual were formulated. This was to ensure that the CCWs had all the information from the booklet, but in detail, should they need to explain it further to lay community members.

Page	CONTENTS
2	1. When is it best to start breastfeeding my baby?
2	2. What is exclusively breastfeeding?
2	3. For how long is it best to exclusively breastfeed my baby?
2	4. Why is it important to know if my baby is correctly attached to my breast?
3	5. How will I know if my baby is correctly attached to my breast?
4	6. What are the different positions that can be used during breastfeeding?
5	7. Why is breast milk important for my baby?
6	8. What are the risks if my infants is not exclusively breastfed for six months?
7	9. Is it safe to give my infant formula milk, animal milk and/or semi-solids during the first six months?
8	10. What are some of the different breastfeeding difficulties? Breastfeeding problems: Table 1
10	11. What can I do if I cannot be home during the day?
11	12. What can I do if I cannot be home during the day?
12	13. What are the advantages of breastfeeding?
13	14. What are the disadvantages of breastfeeding? How can these be overcome?
13	15. What are the recommendations for how an HIV+ mother feed her baby?
14	16. What is replacement feeding?
14	17. When can a mother choose replacement feeding over breastfeeding?
15	18. When is a baby at greatest risk of acquiring HIV from his/her mother, if a mother chooses to breastfeed?
16	Myths about breastfeeding
18	References
	<b>1</b>

Figure 3-4: Contents page of the breastfeeding booklet for mothers

#### **3.5.4.2 Evidence-based literature sources**

Literature based sources on BF, such as books and manuals from WHO, UNICEF, NGOS, CBOs and NDoH, were gathered. These sources were useful in identifying the kind of information CCWs need on BF and EBF, as well as in identifying how to structure the current BF promotion manual. The WHO / UNICEF BF manual, titled *Breastfeeding Counselling; A Training Course* (83), was used as the first reference source for the information to be included in the manual. Other manuals (32,123–128) were also used as reference sources for evidence-based information. Other sources of information used include journal articles, internet websites, case-report forms, and books (reference information included in the reference list).

#### **3.5.5 Phase 2 – Intervention**

The second phase was an intervention study. An intervention is an action oriented study that aims at providing a solution, via an intervention, for the problem that has been identified (102). Using the first draft of the facilitator’s manual, participatory workshops were conducted with CCWs. Two sessions of participatory workshops (workshop schedule [Appendix F: Workshop timetable](#)) over two days in each of the three communities were conducted. A workshop guideline ([Appendix G: Workshop guideline](#)) was used before each workshop commenced, to familiarise the CCWs, interpreters, and facilitator on the ground rules and on how the workshop would be facilitated.

Before the workshops began, the SAQ ([Appendix H: Pre and post intervention questionnaire](#)) was given to participants to complete. The purpose of the questionnaire was to ascertain the knowledge and understanding of the CCWs on BF and EBF issues before the intervention had been carried out. The SAQ contained closed-ended questions, in the form of multiple choice, and true / false questions and it been translated into isiXhosa for the convenience of the CCWs. The purpose of the questionnaire was explained to the participants. The same SAQ was given to the CCWs after the workshops had been completed to allow a direct comparison of performance before and after the intervention. A paired student t-test was conducted using STATISTICA® analysis software on the before and after scores.

Workshops were conducted in a flexible manner. Everyone sat down, so as to make it a discussion, and to bridge the researcher / participant barrier, that could have otherwise existed if the researcher was standing up. The CCWs had time to browse through the draft facilitator’s manual, before the workshops began. The CCWs in communities A and C preferred to use the draft facilitator’s manual which had been translated into isiXhosa, whilst the CCWs in

community B preferred to use the draft facilitator's manual in English. The researcher ensured that everyone participated in the discussion as much as possible, so as to allow for everyone's opinions and ideas to be heard. Participatory learning methods were used during the workshops, such as role plays (e.g. communication skills section), demonstrations (e.g. positioning of the baby on the breast), scenario discussions, and reflections.

A feedback form ([Appendix I: Workshop feedback form](#)) was given to the CCWs to complete at the end of each workshop. The feedback forms were useful for the CCWs to express the facilitating and constraining factors of the workshops, as well as for them to comment on the draft facilitator's manual. The CCWs also used these forms to provide feedback on information that they thought was missing from the manual, which would be essential to include. The interpreters in the workshops were also participants, and this was an advantage, especially because, using the CBPR approach, there was need to move away from traditional research methods, where a professional interpreter would have been used. It was an advantage because the participants were familiar with the interpreter, and no-one in the discussions was 'foreign' to them.

#### ***3.5.5.1 Integration of the PEN-3 model and CBPR principles***

One of the requirements of the PEN-3 model is that the researcher needs to go back to the community and share their findings. Participation and sharing findings are crucial components of the PEN-3 model, and the CBPR approach (94,109). This is because the processes promote understanding and transparency between the research partners.

During the workshops, the results obtained in the SSIs were discussed. The researcher conducted member checks, which were essential to clarify the results obtained during the SSIs. The member checks that were conducted during the workshops were used to confirm the point of entry of the intervention - which is identified as the cultural identity domain in the PEN-3 model.

#### ***3.5.6 Interim phase B - Modification of the facilitator's manual***

Modification of the facilitator's manual was an ongoing process. However, because of the nature of the manual being a health promotion entity, the level of readability of the manual was of utmost importance.

### **3.5.6.1 Readability**

Readability is the ease or difficulty with which a written text can be read. The level of readability depends on the content of the text, and the typography used in the text (129,130). Factors that influence the readability of text include punctuation, font size, background knowledge, illustrations, vocabulary, text length, sentence structure, and familiarity of content (129,131). The purpose of assessing the readability level of a written text is to ascertain a best match scenario between the intended reader and the text. This means that an average person in the intended target group, or a person who has completed that grade level, should find the text relatively easy to read (129,130). Unfortunately, understandability and readability are closely related, but are not synonymous, and thus, although the text might be deemed readable at a certain grade or age level, it does not necessarily mean that it is understandable. It is however important for text to be readable for one to be able to understand it (129,131).

### **3.5.6.2 Readability of health promotion material**

Luk and Aslani (2011) reviewed the various tools that are used in the evaluation of written information on health and medicine, either directly or indirectly (132). They identified 23 tests that have been used in the United States of America, United Kingdom, and Australia. The most popularly used tests from this review were the Flesch-Kincaid Grade Level Score (FKGLS), Flesch Reading Ease Score (FRES), Simplified Measure of Gobbledygook (SMOG), Suitability Assessment of Materials (SAM), and the Rapid Estimate of Adult Literacy in Medicine (REALM).

According to DuBay (2004), there are over 200 readability formulae that have been developed (133). Developers have also managed to create computer systems where these readability tests can be computed automatically. Online tools that automatically compute readability tests were searched for on the worldwide web, and eight websites identified, which computed at least five similar tests. Using Luk and Aslani's popularly used tests, and the tests computed by online websites, five tests were chosen (132):

- a) **SMOG Readability Formula** – computes readability according to the word length, sentence length, and the number of syllables in a word. The result is given as a grade value (134,135).
- b) **FKGLS** – the statistic is computed based on the average number of syllables per word, and the average number of words per sentence. The score indicates a grade school level (136,137).

- c) **Coleman-Liau Index (CLI)** – computes the grade level using the number of characters within the text, as well as the average sentences within 100 words (136,138).
- d) **Automated readability index (ARI)** – computes the grade level score using the word and sentence difficulty within a text (135,139).
- e) **FRES** – assesses the grade level of the reader, according to the text provided. The variables used are the number of syllables and the number of sentences for each 100 word sample of text. The test computes the values from 0-100, 100 being the easiest to read (133,140).

In order to increase validity and reliability, more than one website and more than one test were used to determine the readability of the facilitator’s manual in the study. Four websites were chosen for the calculation / computing of readability scores. The links to the websites used in this study are given below:

- a. Readability score.com: <https://readability-score.com/>
- b. Text Readability Consensus Calculator: <http://www.readabilityformulas.com/free-readability-formula-tests.php>
- c. Joe’s web tools: <http://www.joeswebtools.com/text/readability-tests/>
- d. Dairy science food technology: <http://www.dairyscience.info/read/text-clarity.php>

Using the five tests identified in section 3.5.6.2 and the four websites listed above, readability tests were conducted on all of the sections in the draft facilitator’s manual, and the results were analysed. The modification of the draft facilitator’s manual, using the results from the readability tests, was conducted using rules suggested by Du Bay (2004, 2007), as listed below:

- Using simple, short and familiar words
- Avoiding medical jargon
- Using culture sensitive language
- Using correct punctuation, spelling and grammar
- Using simple sentences, bulleted and numbered lists
- Using annotations and images (133,135).

### ***3.5.7 Phase 3 – Implementation***

The third phase of the study was exploratory in nature. During this phase, it was necessary to understand how the CCWs were implementing the draft facilitator’s manual for the promotion of EBF, as well as to determine the constraining and facilitating factors of using the manual.

Evaluation of the success of the intervention, also took place during the guided implementation phase.

During the implementation phase, which took place over a period of fourteen months, the researcher visited the research sites for guided implementation. During these visits, FGDs were conducted. The role of the researcher was to listen to the CCWs' experiences during the implementation of BF and EBF health promotion to find out the problems they had faced, the support that the CBO would be able to give, and to learn ways in which the facilitator's manual had been useful, or not. A FGD guide was used during the guided implementation to answer specific questions ([Appendix J: Guided implementation FGD guide](#)). Ubunye's liaison was present at the FGDs, with the aim of observing as well as for noting down other issues that the CCWs faced, so that these could be addressed later. The other aspect was that the CCWs would also bring up questions that needed follow up or addressing in the facilitator's manual. All of the discussions were audio taped, transcribed verbatim (into English or isiXhosa)<sup>1</sup> and then the isiXhosa was translated into English by an independent transcriptionist and translator.

The CCWs collected data using a form ([Appendix K: Guided implementation data collection form](#)). The form was necessary to record the demographics of the community members for whom the promotion of BF and EBF was being conducted. The implementation discussions also served as a platform to conduct member checks on the results that were obtained from the workshops.

### ***3.5.7.1 Integration of the community based participatory research principles***

The guided implementation discussions promoted co-learning through the sharing of ideas and the provision of solutions for all the research partners. The process was interactive and cyclical, in the sense that whenever the researcher found new information from either literature or from the results that was of potential interest to the CCWs, she shared these with them. This gave a chance for the CCWs to confirm if they wanted in-depth explanation of such information in the facilitator's manual. The process iterated and reiterated the importance of BF and EBF practices, the importance of community involvement in the promotion of BF and EBF, and the importance of communication skills necessary for these processes to occur. During the guided implementation visits, modifications to the facilitator's manual were shared with the CCWs,

---

<sup>1</sup> English and isiXhosa were both used during the discussions, hence the transcription was verbatim for both languages, and then the isiXhosa was translated into English.

and an explanation was given as to why such modifications were made. This was necessary to consider the applicability and acceptability of the changes made in the communities researched.

### ***3.5.8 Phase 4 – Evaluation***

The fourth phase of the study was exploratory in nature. During this phase, the evaluation of the study took place.

The final FGDs that took place at the end of the study, were used as a platform for the CCWs and researcher to evaluate the intervention and its usefulness in the promotion of EBF, as well as to identify gaps for recommendations for future research. A FGD guide ([Appendix L: FGD question guide](#)) was used during the focus groups. During the discussions, personal reflections were also encouraged for everyone to share their views, and to reflect on what they now do better as a result of the study. The final member checks were also conducted during these FGDs. The CBO liaisons were given the edited facilitator's manual and they provided feedback on its appropriateness in the communities researched.

## ***3.6 Data management and analysis***

Creswell & Clark (2011) developed a framework that is useful as a guide for data analysis and interpretation (104). This framework was used in this study to guide the data analysis process, as outlined by the following steps:

- a) Organising and preparing data for analysis
- b) Exploring data
- c) Analysis via data coding
- d) Thematic coding and description
- e) Interpretation of data

### ***3.6.1 Phase 1 – Problem identification and confirmation***

- a) **Organising and preparing data for analysis** - Koshy et al. (2011) suggest that, in order to fully analyse and manage qualitative data, a computer software package be used (103). NVivo® is a data management computer software that is useful in managing and classifying qualitative data (141).

The researcher attended a one day training workshop on the use of the NVivo® software, which was offered by the Centre for Higher Education Teaching and Learning (CHERTL) at Rhodes University. Audio tape recordings from the SSIs were given to an independent transcriptionist and translator, who transcribed the recordings verbatim (English and

isiXhosa), and then translated from isiXhosa into English. These transcriptions were imported and saved into NVivo® 10.

- b) **Exploring data** - Data exploration requires the reading and re-reading of transcripts to obtain the common themes and keywords that emerge from the data (104). The researcher read through the transcripts until data saturation had been reached, in order to identify keywords which were used during the coding process.
- c) **Analysis via data coding** - Coding refers to grouping data that has the same meaning, relevance, or substance (103). Using the keywords identified in step (b) above, the initial coding was conducted. These groups of data are referred to as nodes in NVivo® 10. Examples of the initial node labels were: beliefs on EBF, people who promote EBF, mixed feeding, definition of EBF, ages of CCWs, etc.
- d) **Thematic coding and description** – Thematic coding refers to the grouping of data according to identified themes. Themes can be derived from meanings of data, similar data, or by using either the theoretical or conceptual framework (104).

Using the PEN-3 model constructs of the **relationships and expectations** domain, three main nodes were identified and created in NVivo® 10, i.e. perceptions, enablers, and nurturers. From these three main themes, the data was further classified according to the **cultural empowerment domain**. According to this domain, factors that influence behaviour can either be positive, existential or negative.

The process of further classifying data required cross-tabulation of the constructs from the relationships and expectations domain, and those from the cultural empowerment domain, as suggested by Airhihenbuwa (1989), to form nine new themes as shown in Table 3-2 (92).

Table 3-2: Thematic categories generated from two PEN-3 model categories

<b>RELATIONSHIPS and EXPECTATIONS</b>	<b>CULTURAL EMPOWERMENT</b>			
	<i>Domains</i>	Positive	Existential	Negative
	Perceptions	<b>1-Positive perceptions</b>	<b>2-Existential perceptions</b>	<b>3-Negative perceptions</b>
	Enablers	<b>4-Positive enablers</b>	<b>5-Existential enablers</b>	<b>6-Negative enablers</b>
	Nurturers	<b>7-Positive nurturers</b>	<b>8-Existential nurturers</b>	<b>9-Negative nurturers</b>

Source: Airhihenbuwa (92,93)

Using the thematic categories identified in Table 3-2, seven nodes were constructed (from thematic categories 1, 2, 3, 4, 6, 7 and 9 as shown in the results section 4.4).

e) **Interpretation of data**

Having identified and classified the factors affecting BF and EBF in the target communities, the ‘point of intervention entry’ for the intervention, or for the target population, was identified by the researcher, together with the CCWs, using the **cultural identity** domain. The target population was identified through member checks during the workshops, and the guided implementation focus group discussions (GI – FGDs).

**3.6.2 Phase 2 – Intervention**

Using Creswell and Plano-Clark’s data analysis framework, as outlined in section 3.6, data was managed and analysed. Using the NVivo® 10, three main themes were identified:

- i. Expectations of the information from the workshops
- ii. More information that need clarity
- iii. Community specific and culturally appropriate information

The information obtained from the workshops was useful in the modification of the facilitator’s manual, as shown in Table 4-4.

### **3.6.3 Phase 3 – Implementation**

The transcripts from the guided implementation were imported into NVivo<sup>®</sup>, and analysed using Creswell’s framework (104), which is outlined in section 3.6. The main themes that were identified were:

- i. Information to be added to the facilitator’s manual
- ii. Information to be removed from the facilitator’s manual
- iii. Sections that need further explanation
- iv. Factors affecting BF and EBF
- v. Implementation processes / people being targeted.
- vi. Facilitating and constraining factors on the use of the facilitator’s manual.

The results from this phase were integrated in the results section, especially in Table 4-4 which shows the modifications made according to the CCWs inputs.

### **3.6.4 Phase 4 – Evaluation**

After the FGDs, the data was transcribed, and the transcripts were imported into NVivo<sup>®</sup>. Using the same framework outlined in section 3.6, the following themes were identified:

- i. Information to be added to the facilitator’s manual
- i. Information to be removed from the facilitator’s manual
- ii. Sections that need further explanation
- iii. Factors affecting BF and EBF
- iv. Facilitating and constraining factors on the use of the facilitator’s manual
- v. Feedback on the whole study.

The results from the phase were also integrated in the relevant sections in the results section.

## **3.7 Validation in mixed methods research**

One aspect of good quality research is the ability to validate the data, the results achieved, and their interpretation. Validity in mixed methods research is defined by Creswell and Plano-Clark (104) as:

*“Employing strategies that address potential issues in data collection, data analysis and the interpretations that might compromise the merging or connecting of the quantitative and qualitative strands of the study and the conclusions drawn from the combination.”*

The ability to validate the data collection methods, data analysis, or interpretation, allows for the research to become more trustworthy and acceptable as valid in a broader context (104). A

few strategies have been suggested by Hardon et al. (2001), Creswell and Plano-Clark (2011), and Koshy et al. (2011) on how to validate research (102–104). The strategies used to validate this research are described below.

### ***3.7.1 Member checking***

This is the sharing of findings, interpretations, and conclusions of the research with the participants, and confirming that the researcher accurately captured their experiences (103,104). Member checks are also required as a principle of the CBPR approach, and the PEN-3 model, which both require sharing of findings with all research partners (96,109).

- Member checks were conducted in the workshops for the SSI results, to confirm the results and how the researcher had classified them. The CCWs and the researcher agreed on the classification of the results as positive, negative, or existential, according to the PEN-3 model definitions.
- Member checks were also conducted during the guided implementation phase for the data that had been obtained from the SSIs and the workshops. The process was ongoing, and this resulted in the CCWs becoming proactive, and volunteering personal experiences and information. This information was useful to validate the community experiences, as the CCWs are also part of the community.
- The final FGDs served as a platform to conduct the final member checks, through research evaluation for all research partners.

### ***3.7.2 Triangulation***

Triangulation refers to multiple data collection techniques and tools to authenticate results. It is essential, especially in finding inconsistencies in data, and either rectifying or discarding data that is not consistent. Methodological triangulation was used in this study (102–104).

- Four data collection techniques were employed in the study: SSIs, participatory workshops, FGDs and a SAQ.
- The data from the SSIs was exploratory, and hence useful in finding out if the lack of EBF for six months was indeed a problem, and in determining the factors influencing EBF, as well as to establish what CCWs understood EBF to be.
- The SAQ gave the researcher an indication of how much the CCWs knew about EBF, and this information was also obtained from the interviews.

- Workshops were a co-learning exercise, which was meant to iterate information on EBF, and the information that was not clear or evident from the SSIs and SAQ was further explored during the workshops.
- The FGDs were also useful in identifying and validating data from the SSIs, SAQ, and the workshops.

### ***3.7.3 External reviewers***

External reviewing refers to either colleagues, peers, or other people who are not research partners, giving feedback on the research findings, and providing scrutiny according to their understanding (103,104). Peer scrutiny of methodology, results, and interpretations was obtained from the following:

- The study data and interpretations were presented at university seminars, at national conferences; and at meetings with collaborators (Appendix M: Research outputs and Table 3-1 on project timelines). The feedback that was obtained from these platforms was either written down or audio taped (when consent was obtained), and used to clarify and to refine the issues highlighted.
- The researcher also attended a week-long qualitative research design course offered by the Faculty of Education at Rhodes University, and the ideas on the methodology and presentation of results was discussed with peers and trainers. These colleagues provided insight on what could be improved during the research process.
- Results were also shared in a research group with three other peers as well as the supervisor. The concept of writing respondents was adopted by this group and utilised for providing feedback to each other for abstracts, and presentations during which concepts were bounced off each attendant in an attempt to clarify interpretations.

## 4 CHAPTER 4: RESULTS

### 4.1 Introduction

This chapter summarises the results obtained from the SSIs, the workshops, and the FGDs. Due to the cyclical nature of the study, and how information would be reiterated throughout all phases thereof, these results are grouped according to the objectives of the study, whilst emerging themes are also presented in their own subsections. The results are presented in seven main sections: factors affecting EBF (objectives I-V), workshops, development and modification of facilitator's manual (objectives VI-VIII), guided implementation data, evaluation and feedback (objective IX), demographics, the definition of EBF, other themes from the SSIs.

The qualitative component of the in-depth SSIs was intended to gain understanding of the factors affecting EBF in the three participating communities. During the SSIs, workshops, guided implementation, and the FGDs, probes were used to ascertain a response. When more than one question was asked, or when probes were used, the researcher merged the responses. Some of the responses given below have been rephrased to suit the phrasing of the question, in order to provide the reader with a perspective of the answer given. Table 4-1 is an extract (verbatim) from one of the transcripts:

*Table 4-1: An example of a semi-structured interview transcript extract*

<p><i>Extract of transcript from SSI - CCW 9</i></p> <p>...</p> <p><b>R: So is it just the mothers who know about EBF, or is it everyone?</b></p> <p>P: Everyone, even the teenagers.</p> <p><b>R: And what of the husbands and the fathers, do they know about EBF?</b></p> <p>P: Not in my area</p> <p><b>R: So do you think that if you told them about EBF, they would support it?</b></p> <p>P: Ja, I'm sure they will because most of them are not working</p> <p><b>R: So what would be their reason for supporting EBF?</b></p> <p>P: They won't have to spend money buying formula milk</p> <p>...</p>
---

Such a response will be presented as follows:

*“The husbands and fathers in my area do not know about EBF. I’m sure if I told them, they will support it because most of them are not working, so they will not have to spend money buying formula milk.” SSI - CCW 9 (amended)*

## **4.2 Demographics**

Fourteen female CCWs took part in the study, with ages ranging from 26 to 63 years. All of the CCWs were first language isiXhosa speakers, were affiliated with either Ubunye Foundation or St Mary’s DCC, and had varying training, as shown in Table 4-2. All of the CCWs had four or more years’ experience in community development programs at the time of data collection, and had attained at least a grade ten level in high school. In Glenmore, one CCW is allocated to 104 households, in Ndwayana, the ratio is 1 CCW per 75 households, and in Grahamstown it is one per 24 households. Table 4-2 gives a summary of the CCW demographics.

Table 4-2: Community care worker demographics

<i>Participant unique identifier</i>	<i>Gender</i>	<i>Age</i>	<i>Years of involvement in community development</i>	<i>Type of employment</i>	<i>Type of training</i>	<i>Highest education grade attained</i>
1	F	38	16	CBO employee	Home based care	Grade 12
2	F	38	13	Government employee	CCW formal training	Grade 11
3	F	42	11	Government employee	Lay counsellor	Grade 11
4	F	44	9	Government employee	Home based care	Grade 11
5	F	49	7	Government employee	CCW formal training	Grade 11
6	F	31	9	Government employee	CCW formal training	Grade 11
7	F	32	10	Government employee	Lay counsellor	Grade 11
8	F	39	14	Government employee	CCW formal training and BF training	Grade 12
9	F	29	7	Government employee	Home based care	Grade 11
10	F	42	7	Government employee	CCW formal training	Grade 11
11	F	34	6	Government employee	Home based care	Grade 12
12	F	44	7	Government employee	None (briefing on the job)	Grade 11
13	F	26	4	Government employee	Home based care	Grade 10
14	F	63	6	CBO employee	Nursing (retired)	Grade 12

### **4.3 The definition of exclusive breastfeeding**

During the SSIs, there was need to establish whether the participants knew what EBF was. Some of the responses obtained are given below:

*“I think it’s when a person does not want to breastfeed at all.”* SSI - CCW 1

*“When you feed with breast milk only, not with bottle or other food.”* SSI - CCW 2

*“I explain it to mothers as feeding babies breast milk only, not to mix with other food like bottle - formula milk and other things... ”* SSI - CCW 4

*“Exclusive (BF) is when a baby drinks breast milk only and does not mix with other foods.”* SSI - CCW 8

*“Exclusive breastfeeding means you breastfeed only...for six months.”* SSI - CCW 12

*“Breastfeeding ...no I don’t know.”* SSI - CCW 13

Twelve out of the 14 CCWs knew what EBF meant. The concept of EBF was explained to the two CCWs who did not understand what it meant before continuing with the rest of the interview. With regard to mixed feeding, the CCWs shared the following:

*“What happens is that some mothers are breastfeeding, but mixing with other foods as well; they breast feed and formula feed. Some mix breast milk and other foods.”* SSI - CCW 6

*“Yes (breastfeeding is common) because most mothers do it.... (We encourage) no mixed feeding, if a mother is breastfeeding they should breast feed only.”* SSI - CCW 7

*“They (mothers) do breastfeed, but some of them lie, they do not breastfeed up to six months.”* SSI - CCW 11

*“Other mothers mixed feed although I’ve told them not to do that. I don’t think that EBF is happening for the whole six months because others are bottle feeding.”* SSI - CCW 12 (amended)

The CCWs mentioned that, although BF was practiced, EBF was not commonly practiced for the recommended period of six months in the communities. Mixed feeding before the age of six months was the norm. The factors influencing the decision to breastfeed exclusively, as identified by the CCWs, are outlined below.

### **4.4 Factors affecting exclusive breastfeeding practices**

The presentation of the factors affecting EBF is according to PEN-3 thematic categories. The following themes were identified:

- Positive and negative enablers
- Positive, existential and negative perceptions
- Positive and negative nurturers

#### **4.4.1 Positive enablers**

Positive factors enabling mothers to practice EBF in the communities were identified as the following:

##### **4.4.1.1 Health promotion initiatives**

The following responses were obtained from the CCWs with regard to the health promotion initiatives that they conduct in the community:

*“Yes the mothers come to the clinic to get information, but also in the community when we do home visits and we meet with someone on the street who has a baby, we teach them about breastfeeding.”* SSI - CCW 2

*“Every Tuesday is baby weighing (antenatal and postnatal day)... so we educate all the mothers every Tuesday, on how to feed and how to bathe (the babies)....”* SSI - CCW 8

The results shown above were supported during the guided implementation FGDs:

*“Whenever there is someone with a baby, I am supposed to talk to them about the importance of breastfeeding. Tuesdays here at the clinic are dedicated to the mothers. When they bring their babies that is when we educate them about breastfeeding.”* GI – FGD 12

EBF promotion campaigns are also conducted outside the home, i.e. in the community or at the clinic.

*“We do health promotion activities but not just in the community, sometimes in the clinic or else when we visit the client in the community or in their home.”* SSI - CCW 5

As part of their work and responsibilities, the CCWs conduct a series of health-promotion initiatives, which they identified as having a positive impact on EBF. The most common initiatives are home visits, post- and ante-natal education talks, BF campaigns, and meetings in the community.

#### **4.4.1.2 Facilities**

On asking the CCWs about the facilities that they found to be useful when promoting BF and EBF practices, the following were identified:

*“When you go for check-ups at the clinic that is when you get information about exclusive breastfeeding.”* SSI - CCW 1 (amended)

*“We usually have activities in schools and talk to the children, because some of them are already mothers. We also sometimes meet at the community hall and encourage them to exclusively breastfeed instead of using bottles...we talk about it (EBF) at church, at the meetings and at the hall.”* SSI - CCW 10

Promotion of BF and EBF practices is conducted at different places within these communities. Facilities such as churches, schools, clinics, and community halls were identified as useful by the CCWs.

#### **4.4.1.3 Health promotion materials**

Health promotion materials were also identified as resources that are useful in the promotion and adoption of BF and EBF practices by CCWs in communities B and C.

*“Even when we go to the community hall, we also give them booklets and tell them to read them in order to get more information about EBF...”* SSI - CCW 10

*“Yes there are pamphlets to promote breastfeeding that are given to the mothers when they come to the clinic.”* SSI - CCW 13 (amended)

*“Breastfeeding pamphlets we give to them (mothers), whatever campaign we do we bring pamphlets. Mama Rue<sup>2</sup> (CBO health liaison) also sometimes brings pamphlets for the care workers.”* SSI - CCW 14

Pamphlets and booklets were identified as materials useful in the promotion of EBF. Pictures within the health promotion materials were also identified as useful in promoting EBF, serving as a form of reinforcement of the practice, as well as providing clarity of the information presented.

*“For the people who cannot read, pictures are useful, as they help them to understand the written information.”* SSI - CCW 1 (amended)

#### **4.4.1.4 Low income**

The study took place in low-income communities, where most of the community members are not employed, or are low income earners.

---

<sup>2</sup> Name changed

*“... actually most mothers like breastfeeding because they do not have money to buy formula.” SSI - CCW 10*

*“I think money wise, because nobody is working here, they like that idea of breastfeeding a lot because it helps if you are not working. And these formulas are not cheap these days, so some of them they do like breastfeeding because of that, because it helps them save money.” SSI - CCW 14*

Although unemployment is not a positive aspect, it contributes positively to EBF, because the people in the communities cannot afford to buy formula milk. Hence EBF is accepted as an affordable baby feeding option.

#### **4.4.2 Negative enablers**

Negative hindering factors to EBF were identified by the CCW as the following:

##### **4.4.2.1 Lack of health promotion materials**

On the issue of health promotion materials, CCWs in community A did not agree with what had been said by other CCWs in community C (positive enablers section).

*“Most of the time I educate them by talking to them, we don’t have pamphlets, but I think they need to see what we teach them, they need pamphlets.” SSI - CCW 4*

*“We educate (verbally) because sometimes we don’t have pamphlets.” SSI - CCW 5*

*“We do not have pamphlets so we just educate (verbally) them. We have pictures like that one (points to a poster showing a BF mother). But we would like more material to use.” SSI - CCW 8*

Lack of BF promoting materials was identified as a barrier to EBF promotion. One CCW mentioned that as CCWs, they needed more health promotion material for EBF.

##### **4.4.2.2 Health promotion materials in English language**

The need to develop health promotion material in the *lingua franca* was highlighted by the CCWs.

*“I think it’s just the language that is the problem, people need information that is written in their language.” SSI - CCW 1 (amended)*

*“...it’s a Xhosa village and English is not a first language here, so if we are going to give them those English pamphlets, they’re not going to read it because they will not understand what (is written) about breastfeeding.” SSI - CCW 8*

*“The books (facilitator’s manual) have to be in isiXhosa, some of the people from here are not well learned or literate, so they don’t understand English.” SSI - CCW 11 (amended)*

*“There are tips written in the road to health card, and I understand most of our community including the other care workers understand only Xhosa and not English. That is why it would be better if the information were in English and Xhosa, so that they understand it.” SSI - CCW 14*

Health promotion materials (whether on BF or any other health information topic) which were available at all study sites were given in English. These were said to be provided either by the NDoH, CBOs or NGOs. The CCWs identified this as a problem, because none of the communities are first language English speakers.

#### **4.4.2.3 Unavailability of the mother to breastfeed**

The mother’s absence was identified as a hindrance to EBF.

*“Sometimes they (the mothers) tell you that they cannot exclusively breastfeed as they sometimes go to town or they go to school. That is why they mix with other feedings, because they are not always at home and don’t like to pump breast milk.” SSI - CCW 2*

*“It’s when someone who is breastfeeding has to go to town; that is when they mix breastfeeding with other baby foods, although they are supposed to express and keep the milk.” SSI - CCW 6*

*“...some of them when they are bottle feeding (using formula milk as a substitute) they say they work far from home so that’s why they use bottles.” SSI - CCW 12*

The mother’s absence from her home due to travelling, attending school, or work, was identified as a barrier to EBF, and was identified as a reason why babies receive mixed feeds.

#### **4.4.2.4 Gaps in health promotion campaigns**

The CCWs also identified gaps in health promotion campaigns.

*“The husbands and fathers in my area do not know about EBF, but if I told them I think they would support EBF because most of them are not working, so they will not have to spend money buying formula milk.” SSI - CCW 9 (amended)*

*“The men don’t know (about EBF) because when we are campaigning they are not usually there.” SSI - CCW 10*

*“They (BF promotion campaigns) do help because when campaigning we call everybody; mothers, grandmothers. Our mistake is leaving men.”* SSI - CCW 14

When asked who their target was, the CCWs identified that it was mainly the women in the communities. Men were identified as a group within all three communities who were not involved in BF campaigns. Some of the reasons why men were not part of the campaigns were explored:

*“I hardly ever come across someone who is actually married and lives with her husband. It’s always these kids who have been impregnated by their boyfriends, so I only get to meet with just the girl and the boyfriend isn’t usually there. It’s rare to find the mother and the father.”* GI – FGD 6

*“The fathers are not usually at home, they are not usually around, and they are at work. So it’s only the mother who are at home and who I can talk to about breastfeeding.”* GI – FGD 12

*“Sometimes it is a bit uncomfortable to talk to the father who doesn’t breastfeed when the mother there. (Why it is uncomfortable) is because even though he is at the house, he doesn’t actually do the breastfeeding, so that is why I decide to talk to the mother.”* GI – FGD 12

#### **4.4.2.5 Breast health problems**

The CCWs also identified breast health problems as a potential barrier to BF.

*“Sore nipples are common because some of them (the mothers) complain that their nipples are sore from breastfeeding.”* SSI - CCW 1

*“The only problems I’ve heard of is when the mother experiences sore nipples. But I always assume that it’s because they have only just started breastfeeding.”* SSI - CCW 9

Sore nipples were the only breast health problem that were identified as a barrier to EBF in this study.

#### **4.4.2.6 Immuno-compromised mothers**

Due to the HIV/AIDS prevalence in South Africa, there was need to establish the influence of HIV in EBF practices.

*“Some mothers face challenges especially when they are HIV positive, because they fear that the virus will be transmitted to the baby through breast milk.”* SSI - CCW 5 (amended)

*“Here we support breastfeeding only but there are cases when a mother chooses to use formula milk because of their (HIV) status.” SSI - CCW 8*

Despite the fact that HIV positive mothers are encouraged to practice EBF for six months, some of the mothers were said to fear that they will pass the virus to their young ones, and thus avoid BF their babies.

#### **4.4.3 Positive perceptions**

The advantages of BF and EBF that led to the adoption of BF exclusively were identified by CCWs as key positive influences.

*“...I tell them that breastfeeding is very good because the baby grows healthily, the breast (milk) has minerals and vitamins.” SSI - CCW 3*

*“The child will not get sick, like have diarrhoea or be vulnerable to diseases, he/she will get all the nutrients he/she needs and even at school he/she will be bright. Also you don't have to buy breast milk; you get it freely from the mother. Breastfeeding also promotes the child's growth and it encourages the bond between mother and child.”*

SSI - CCW 12

The most common information sought by mothers from CCWs involved details of the advantages of BF and EBF, and the disadvantages of not practising EBF. This information would be given to mothers during the educational talks, visits or campaigns about BF or child care. The information was useful in encouraging mothers to breastfeed.

#### **4.4.4 Negative perceptions**

Negative perceptions about BF or EBF effects were identified as major barriers to EBF.

##### **4.4.4.1 Attitudes of young mothers**

*“The problem is the young people or mothers who do not want to breastfeed.” SSI - CCW 3*

*“The young mothers do not care because they want to leave their children with their mothers and go. So they do not care whether they breastfeed or not. One girl brought a bottle when she went to the hospital to give birth because she did not want to breastfeed.” SSI - CCW 8*

Teenagers and young mothers were identified by the CCWs as having a negative attitude toward BF.

*“I don’t think there is anyone who discourages exclusive breastfeeding. The problem is always with teenagers, they say they don’t want to breastfeed because it will damage their breasts and they can’t have that.” SSI - CCW 12*

*“They (women) need to know that breastfeeding is important because some of them do not breastfeed because of what they say it (BF) does to their breasts. (They say it changes their breast shape).” SSI - CCW 13*

*“Some of them being ladies, these teenagers say that they don’t want to stink like breast milk so they won’t be feeding the child...they don’t (express breast milk) because if you express automatically if your breasts are full, the milk will come out that’s when they say they don’t want to smell.” SSI - CCW 14*

The negative attitudes towards EBF are believed to emanate from teenage / young mothers who associate BF with physical changes in their bodies and the ‘smell’ of breast milk. This was also supported during the workshops and the guided implementation:

*“Some of the people who don’t want to breastfeed are students who have to go back to school. They say that they do not want their clothes to smell because of breast milk and breastfeeding.” Workshop 5*

*“It’s usually the boyfriends who say that you cannot get into a relationship with a new mother because they smell of breast milk.” GI – FGD 6*

#### **4.4.4.2 Beliefs within the communities**

##### **4.4.4.2.1 Intimacy issues**

*“Husbands won’t want you to breastfeed because they know the wrong information that if you breastfeed then you can’t have sex with your partner.” SSI - CCW 1*

*“The women in the community have this belief that if you are involved sexually with your man then the child will not grow properly. So the women will stop breastfeeding than to stop intimacy with their partners.” SSI - CCW 14 (amended)*

One of the beliefs is that when BF, a woman cannot be intimate at all, which is rejected as not practical for the whole six months.

##### **4.4.4.2.2 Insufficient milk**

*“Yes, sometimes the mothers practice mixed feeding because they tell us that the baby does not get enough breast milk.” SSI - CCW 3 (amended)*

Some mothers believe that their milk is not enough to feed the baby for the whole six months, as required for EBF. The perception of producing insufficient milk led to mothers practicing

mixed feeding (section 4.3), as well as to an early introduction of supplements into the infant's diet, as follows:

#### **4.4.4.2.3 Use of supplements**

*“Yes it (BF) is common but the only problem is they (mothers) like mixing, saying that I must give my child cooled boiled water because it promotes urinating ...there is also that old thing, gripe water. They say that my child is going to burp, it makes the child to burp, but in actual fact the breast milk can do that...”* SSI - CCW 14

Supplements are not only given as a source of food, but are also associated with perceived health benefits for the infant.

*“Those (young mothers) like to mix breast milk and other foods for the child, but we tell them that they must not. We also tell them that they must not give gripe water to the child.”* SSI - CCW 5

*“We (in this community) give the child isicakathi. We say it's going to make the stool lose and keep out all the mucus-like substance. You know when a child is born, there is mucus (in their mouth). We believe that if we give the child isicakathi, the mucus is going to go down.”* GI – FGD 12

The use of supplements soon after birth was common, and was reported to be practiced by almost all of the mothers in the community. Supplements include previously boiled and cooled water, gripe water, and a local herb called *isicakathi*.

#### **4.4.5 Existential perceptions**

##### **4.4.5.1 Expressing of breast milk after travelling.**

*“Some people believe that if you come back from a funeral or from town or if you have travelled then you need to squeeze out the first milk before feeding the baby...”* SSI - CCW 4

*“There is this belief that if you have been in town, when you come back from town you must express milk and throw it out, not feed the baby, before letting the baby breastfeed. (This is), because they believe that you have come across bad spirits that will transfer to the baby. But now we tell them that they must not (not necessarily), instead they should wipe the breast using warm water and a cloth.”* SSI - CCW 7

Within these three communities, members believe that after having gone out of the house, the mother has to discard a little breastmilk first before BF.

#### **4.4.6 Positive nurturers**

People identified as having a positive influence, encouraging mothers to breastfeed, were identified as the following:

##### **4.4.6.1 Community care workers**

*“People in the community come to us (the CCWs), they sometimes come to the clinic but they prefer coming to us first because we are always in the community.”* SSI - CCW 8

*“I think the most influential people when it comes to breastfeeding is us, the community health workers.”* SSI - CCW 12 (amended)

##### **4.4.6.2 The local clinic nurses and CBOs/NGOs.**

*“If I have to refer, then I refer the situation to the clinic so she can get more information from the sister (nurse).”* SSI - CCW 8

*“In this community it’s the care workers, the nursing sisters and of late Ubunye foundation who promote EBF.”* SSI - CCW 14 (amended)

*“These non-governmental organisations and even the staff from the hospital and the clinic (promote EBF).”* SSI - CCW 9

##### **4.4.6.3 The women in the communities.**

*“The mothers in the communities such as the grandmothers or the aunts in the community promote EBF.”* SSI - CCW 8 (amended)

*“...it is the women in the community (who promote EBF)...”* SSI - CCW 2

The people acknowledged as having a positive impact on the decision to breastfeed by the CCWs were other women in the community who have had BF experiences, such as: nurses, CBO representatives, and the CCWs themselves.

#### **4.4.7 Negative nurturers**

None of the participants acknowledged that there was anyone within the communities who discouraged EBF. However, after further probing, some CCWs mentioned the following:

*“Husbands won’t want you to breastfeed, whereby some of the men say to them; (the BF partner) you don’t have to breastfeed because I am willing to buy formula milk.”* SSI - CCW 1 (amended)

*“Some of the men in the community do not want their girlfriends to breastfeed, so if the girlfriend decides to sleep over at the man’s house, she will not be able to breastfeed her child because the boyfriend will not like it.” SSI - CCW 5*

*“The husbands in the community will not want you to breastfeed because they want you to have sex early (after childbirth).” SSI - CCW 8*

The partners to the BF women, either husbands or boyfriends, were believed to not support BF by the CCWs. The reasons for not supporting BF were either the lack of knowledge or those beliefs outlined in section 4.4.4.

## **4.5 Other themes from the semi-structured interviews**

### **4.5.1 Identifying the target audience**

From the cultural identity domain of the PEN-3 model, there is need to identify who the target audience for the promotion of BF and EBF should be. This was conducted after identifying the factors that influence EBF. In order to identify who to target, the people who were targeted / not targeted during the current practices within the communities in this study were identified as:

*“...to encourage the family members and also even the males, because they need to know about EBF...” SSI - CCW 1*

*“What we should do differently is to have campaigns for everyone in the community. We don’t involve them (men) but even the fathers should actually be there.”*

SSI - CCW 10 (amended)

*“It is important to talk to the men, but sometimes when I visit the home, the father will not be there, so I will not be able to educate him. Men are usually less stubborn, easy to reach and convince than women, so explaining to them why EBF is important, is good” SSI - CCW 12*

During the interviews, some CCWs mentioned that men should become part of the campaigns for the promotion of BF. Using the cultural identity domain of the PEN-3 model, through member checks and FGDs, the CCWs identified that everyone in the community was supposed to be targeted by BF campaigns.

*“I think everyone in the community needs that information (about BF) because even if the mother or the pregnant woman knows, the father of the child and the family should also know why breastfeeding is important. Then it will be easier for them to encourage the mother to breastfeed.” Workshop 5*

*“...say for instance I’m in a taxi and it happens that I have to feed the baby, the people in the taxi should understand that and not be shocked at the fact that I am breastfeeding.”* GI – FGD 1

*“Talking to everyone in the community would also encourage teenagers not to be shy or embarrassed about breastfeeding...because the teenagers are embarrassed.”* GI – FGD 1 & 2

#### **4.5.2 Responses towards the booklet for mothers**

Given a chance to browse through the BF booklet for mothers, and to provide feedback, most of them said there was nothing to add, and that the booklet was fine as it was, whilst some of the CCWs said the following:

##### **4.5.2.1 It was a useful resource:**

*“This is so good, (the booklet) and helpful because I have also seen something that I did not know about the advantages of EBF (points to the prevention of cancer and the improved child spacing).”* SSI - CCW 9

*“...the pictures are also alright, so that when you are teaching people, you can show them a picture as well. I think it’s easier for them when they see a picture.”* SSI - CCW 2

The booklet was identified as a useful resource in promoting BF and EBF practices.

##### **4.5.2.2 English language was a barrier:**

*“I think we need to have a booklet in isiXhosa or else a booklet that is written in isiXhosa and in English, because all the people here prefer reading isiXhosa and if we give them this one (referring to the booklet) then it won’t be helpful. Also if the booklet (facilitator’s manual) you are making is in isiXhosa and English I think it will be helpful.”* SSI - CCW 8

*“I like this book, it’s only that it is written in English, otherwise it explains everything nicely and clearly, so the people here will gain more from it. The English is simple. It’s only that most of our people here are not learned and they don’t understand English. So maybe if you write English and you write isiXhosa underneath every point, maybe they will also learn the English.”* SSI - CCW 14

The language issue, as a barrier to understanding health promotion material, was also reiterated for the BF booklet for mothers; which was also written in English. Suggestions were made about translating the facilitator’s manual into isiXhosa.

### 4.5.3 HIV/AIDS, policy vs practice

With regard to BF for HIV positive mothers, the following was brought up during the SSIs:

*“We counsel because we know that this mother is HIV positive, then we educate by all means that she must understand that she has to exclusively breastfeed for six months. Then after that she must stop (BF completely).” SSI - CCW 8*

*“Some of the mothers breastfeed for 6 months exclusively, and then they continue to breastfeed after six months, even when I have educated them not to.” SSI - CCW 12 (amended)*

The IYCF policy of South Africa recommends that, when a mother is HIV positive, the child is breastfed exclusively for the first six months, and then BF occurs till 12 months. However, this is not what the CCWs were practising in communities A and C. The CCWs were encouraging mothers to stop all BF at six months. In order to verify the practices that were being advocated in the province, the researcher contacted the District Department of Health office in Grahamstown. The Human Resources Deputy Director expressed that the current practice in the hospitals and clinics within the district was following the 2013 IYCF policy. The Deputy Director however went on to express that the adoption of this policy by CCWs only depends on whether they had been trained on it, thus mentioned that there was need for improved communication between policy makers, supervisors and the CCWs.

Nursing sisters in charge of the PHC clinic were also asked about the policies that they were implementing in the clinics. They both confirmed that they were using the Integrated Policy from 2013, which required EBF for the first six months of life (when HIV positive), and then continued BF until 12 months if the mother and child are taking ARV medication.

When the new policy was communicated to the CCWs, they had their own reservations. This had especially to do with HIV positive women BF, and the fact that some of them can interrupt or default on their ARV medication.

*“But now how do I talk to a mother who does not take her medication often?” GI – FGD 12*

*“If a mother interrupts her ARV treatment or becomes a defaulter, won't that affect the baby...because this person is a defaulter, they cannot continue breastfeeding their child for a year, because they not consistent with their treatment. So another question I have is, so let's say someone continues breastfeeding beyond the six months but then all of*

*a sudden in the 10<sup>th</sup> or 9<sup>th</sup> month, they stop being consistent with their treatment, wont that affect the child.” GI – FGD 12*

From the discussion with the CBO liaison, it was confirmed that miscommunication in policy and practice amongst CCWs is common.

*“The information is there and they (the CCWs) have most of it, but it is not useful to them unless someone explains it and helps them to understand. That is why these workshops (the breastfeeding workshops) are useful because you provide the information, and you also help them (CCWs) to understand this information. It is also very common that they are not abreast with the current information and that is why we (CBO) are involved with giving them refresher courses.” CBO liaison*

## **4.6 Workshops, development and modification of the facilitator’s manual**

### **4.6.1 Expectations from the workshops**

At the beginning of each workshop, the CCWs were asked to identify key learning areas on BF that they wanted to learn more about.

*“I expect to get more information about breastfeeding and the importance of breast milk.” Workshop 1*

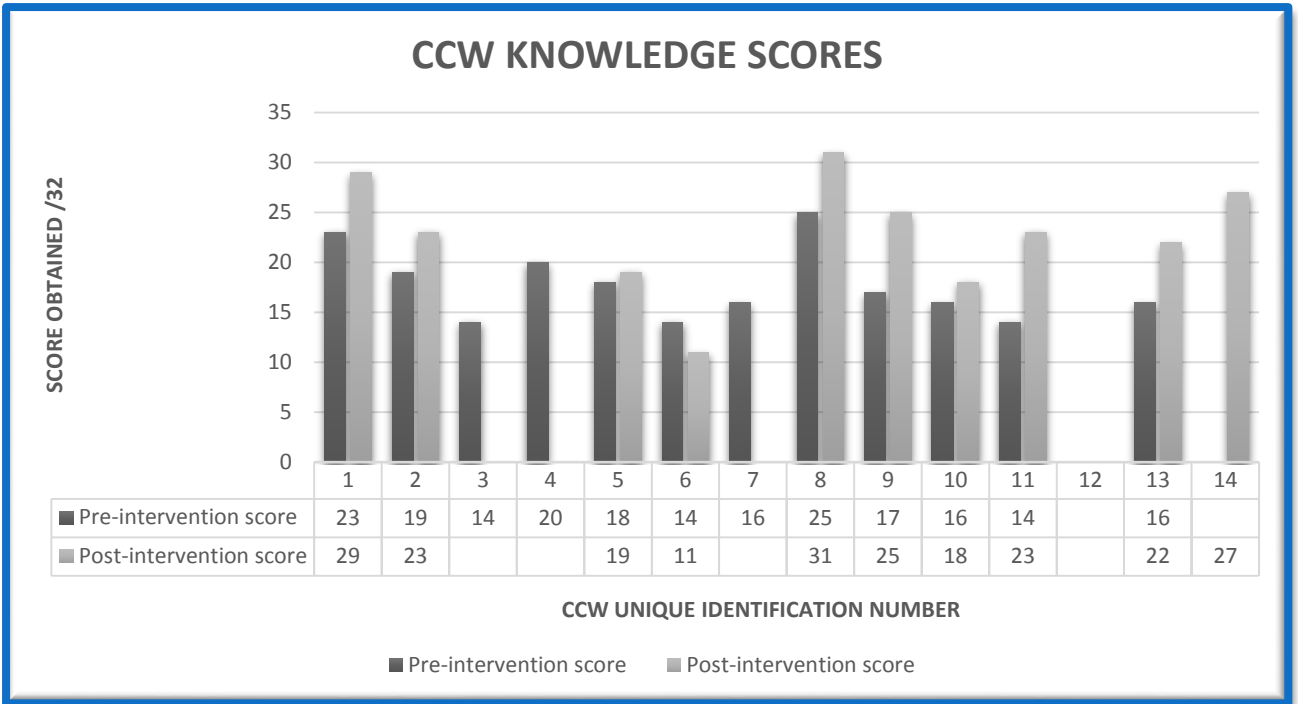
*“I want to know more about how to educate the community on the importance of breastfeeding.” Workshop 1*

*“We talk to the mothers and the family members, so maybe you can give us a skill or something like that, to be able to talk to them.” Workshop 4*

*“I am expecting to get more information about breastfeeding, so that I can implement the information in the community.” Workshop 5*

### **4.6.2 Participant knowledge on breastfeeding**

The CCWs were given an SAQ to determine their knowledge on BF practices before and after the intervention (workshops and facilitator’s manual). The results are shown in Figure 4-1. The questionnaire was also given to them to complete after the workshops had been completed.



*Figure 4-1: Knowledge scores of the community care workers*

Figure 4-1 shows the SAQ results. Of the 14 CCWs, only nine managed to complete both the pre- and post-intervention SAQ. CCWs 3, 4 and 7 only attended the workshops on the first day, hence only completed the pre-intervention SAQ. CCW 14 only managed to complete the post-intervention SAQ, and CCW 12 was not available to attend any of the workshops. From the results shown in Figure 4-1, there was a general increase in scores for CCWs 1, 2, 5, 8, 9, 10, 11 and 13, whilst the score for CCW 6 decreased after the workshops.

The results from the paired student t test are shown in Table 4-3.

Table 4-3: Student t-test results

T test for dependant samples		
Marked differences are significant at $p < 0.0500$		
Null hypothesis ( $H_0 : \mu_d = 0$ ) vs alternative hypothesis ( $H_1 : \mu_d \neq 0$ )		
	Variable	
	Variable 1 (before)	Variable 2 (after)
<b>Mean</b>	18.0000	22.3333
<b>Standard deviation</b>	3.8078	5.9791
<b>N</b>		9
<b>Diff</b>		-4.3333
<b>Standard deviation diff</b>		3.7749
<b>t</b>		-3.4437
<b>df</b>		8
<b>p</b>		0.00877
<b>Confidence -95.000%</b>		-7.2349
<b>Confidence +95.000%</b>		-1.4316

At 8 degrees of freedom, a p - value of 0.00877 was obtained.  $p - \text{value} < \alpha = 0.05$ , hence we reject  $H_0$  and conclude that the intervention (workshops) had an effect (since the mean difference is significantly different from zero and made a difference at the 5% (the 0.05 alpha level) level of significant).

#### 4.6.3 The development of the facilitator's manual

The development of the draft facilitator's manual for the promotion of BF and EBF was informed by contents from the BF booklet as well as from sources from WHO and UNICEF. Figure 4-2 shows the table of contents of the draft facilitator's manual. This was the facilitator's manual that was used by the researcher and the CCWs during the workshops, and was modified as necessary during the course of the study.

Breastfeeding manual final 19 aug 2014 for thesis.pdf - Adobe Reader

Edit View Window Help

Open [Icons] 3 / 38 58.7%

Table of Contents	
<b>1 Introduction</b>	<b>3</b>
1.1 Objectives	3
1.2 Duties of a community care worker	4
1.3 How to provide basic counselling skills	5
1.4 Breastfeeding assessment	6
<b>2 Section A</b>	<b>8</b>
2.1 Objectives	8
2.2 What is breastfeeding?	8
2.2.1 What is Exclusive Breastfeeding?	8
2.3 Activity 1: Importance of breastfeeding	9
2.4 Why is exclusive breastfeeding important?	10
2.4.1 Advantages of breast milk	10
2.4.2 Advantages of exclusive breastfeeding	10
2.4.3 Disadvantages of not breastfeeding exclusively	10
2.5 Breast milk vs artificial feeding	11
<b>3 Section B</b>	<b>13</b>
3.1 Objectives	13
3.2 Activity 2: Breastfeeding patterns	13
3.3 Normal breastfeeding patterns	14
3.4 Normal baby behaviour	14
3.4.1 Spitting	14
3.4.2 Burping the baby	15
3.4.3 Hiccups	15
3.4.4 Crying	15
3.5 Night waking	15
3.6 Activity 3: Match the best position with the scenario	16
3.7 Proper breastfeeding positioning and techniques	17
3.7.1 Football/clutch hold	17
3.7.2 Side lying hold	18
3.7.3 Cross-cradle hold	19
3.7.4 Cradle hold	20
3.8 Correct attachment position	20
<b>4 Section C</b>	<b>22</b>
4.1 Objectives	22
4.2 Activity 4: Let's discuss	22
4.3 Breastfeeding recommendations	22
4.3.1 Weaning	23
4.3.2 Can a breastfeeding mother take medicines?	23
4.4 What to do when mother cannot be home to feed the baby	23
<b>5 Section D</b>	<b>26</b>
5.1 Objectives	26
5.2 Activity 5: Common breast health problems	26
5.3 How to manage breast health problems	27
5.3.1 Flat and inverted nipples	27
5.3.2 Sore /cracked nipples	28
5.3.3 Engorgement/over filled breasts	28
5.3.4 Blocked ducts	29
5.3.5 Mastitis	30
5.4 How to assist mothers with breastfeeding	30
5.5 Activity 6: Let's discuss and role play!	32
5.6 Myths about breastfeeding	33
<b>6 References</b>	<b>35</b>

1 | Page      2 | Page

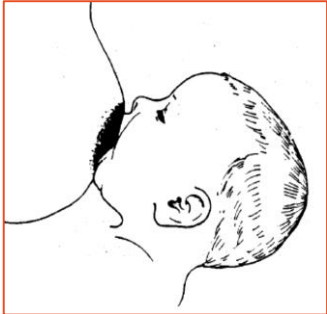
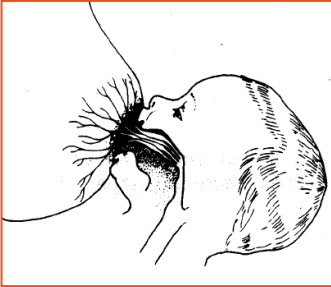
Figure 4-2: Table of contents page of the draft facilitator's manual


#### ***4.6.4 Modification of the facilitator's manual***

The CCWs were familiar with some of the content of the draft facilitator's manual. Modification of the facilitator's manual took place from the workshops until the last FGDs. Table 4-4 shows the major modifications made to the content of the manual.

Table 4-4: Modifications made to the facilitator's manual

Section modified / removed / added (in the manual)	Content in first draft of facilitator's manual	Quote if available	Reason for modification
<b>Modified</b> section 3.1 and placed a text box with the recommendations from the NDoH South Africa on the duration of BF and EBF.	Yes	<p><i>"I breastfed my child for a year, but I stopped then because my mother told me to stop."</i> GI – FGD 12</p> <p><i>"I haven't experienced any problems, the only mother I know stopped breastfeeding because she had finished one year. But there weren't any problems."</i> GI – FGD 12</p>	To emphasize the fact that it is more beneficial to breastfeed for two or more years, because the impression that mothers should stop BF in the first year seemed dominant.
<b>Removed</b> content on giving the child breast milk from wet nurses from section 3.1.1 of the facilitator's manual.	Yes	<i>"Back in the day you could express milk for someone who could not breastfeed. But not anymore, because of the sicknesses and the diseases that are there...."</i> Workshop 2	Health concerns relating to HIV and other infectious diseases.
<b>Added</b> explanation on how breast milk helps with ear infection. (section 3.2.2 of the facilitator's manual)	No	<p><i>"In our community, if a child has an infection of the ear, we breastfeed the ear. Is that what we are supposed to do?"</i> Workshop 5</p> <p><i>"How does breast milk help with ear infection, because some people tend to 'breastfeed' the ear instead of the child."</i> Feedback form 5</p>	Community members use breast milk as ear drops for ear infection, so there was need to clarify that, for ear infections, mothers should continue to breastfeed the child and take them to the clinic, and not use breast milk in the ears.

Section modified / removed / added (in the manual)	Content in first draft of facilitator's manual	Quote if available	Reason for modification
<p><b>Not modified</b> – information available (section 4.2.1 of the facilitator's manual)</p>	<p>Yes</p>	<p><i>“Culturally we say spitting is good, it means that the baby is growing big.”</i> Workshop 1</p>	<p>None available</p>
<p><b>Replaced</b> the first picture with the one in this box, which showed the same concept of correct attachment, and has less detail the first picture in the mother's booklet. (section 4.4.1 of the facilitator's manual)</p> 	<p>Yes</p>	<p><i>“I do not understand what this picture is referring to (participant points at the picture on attachment of the baby to the breast – shown in this box).”</i> SSI - CCW 2 (picture was in the mothers booklet)</p> 	<p>The picture in the booklet had too much detail (showing milk ducts in the breast, and the baby's internal mouth structure) for what it was trying to show, and a CCW requested an explanation as they could not understand the first picture.</p>

Section modified / removed / added (in the manual)	Content in first draft of facilitator's manual	Quote if available	Reason for modification
<p><b>Removed</b> the cross-cradle hold position from section 4.3 of the facilitator's manual.</p> 	Yes	<p><i>"I don't think this is right...the mother is not comfortable and she also has to hold her breast like this (action) so she cannot hold the baby like this (referring to the cross cradle hold)."</i> Workshop 1</p> <p><i>"I don't like it (the cross-cradle position), because if you hold the baby like this (illustration) how then do you support the baby and (hold) the breast at the same time? It is not right to leave them like that, because you are supposed to guide the child whilst holding the breast."</i> Workshop 4</p>	Expressed that culturally, it is not appropriate to use.
<p><b>Further explained</b> the instances when the side lying position is appropriate to use (section 4.3.3 of the facilitator's manual).</p>	Yes	<p><i>"First of all she is sleeping (referring to side lying hold), she could easily fall asleep and suffocate the child....the baby has to be older so that they can at least move away or remove themselves from the breast otherwise the mother will suffocate the child."</i> Workshop 1</p>	Some CCWs were worried that if the position is used in new-borns, they could suffocate.

Section modified / removed / added (in the manual)	Content in first draft of facilitator's manual	Quote if available	Reason for modification
<b>Added</b> section 4.5 in the manual on rooming in and bedding in.	No	<i>“Us Xhosa people we sleep on the same bed with the baby most of the time...for us Xhosa people, it is rare that you will find the mother sleeping separately from her child. This whole cot and nursery thing is not practiced here. In our community I have never heard of anyone who does that.”</i> Workshop 2	Question raised in one workshop: <i>“For interest sake, where must the baby sleep?”</i> Workshop 2
<b>Removed</b> the section on breast examination from the facilitator's manual ( section 5.1)	Yes	<i>“In this community we do not do breast examination, that is done by the nursing sisters.”</i> Workshop 2	Not practiced by the CCWs.
<b>Not modified</b> - information available (section 5.1.2 of the facilitator's manual)	Yes	<i>“I would like to know, there are people who usually say that they do want to breastfeed but their nipples are inverted and sore, what can they do?”</i> Workshop 1	None available
<b>Added</b> a text box with further explanation on why the cup is better to use than a feeding bottle	Yes	<i>“Which one is best when feeding a child, a bottle or a cup...because we tell the mothers that they should not use the bottle but they should use a cup?”</i> Workshop 1	Content not explained well enough in draft manual.

Section modified / removed / added (in the manual)	Content in first draft of facilitator's manual	Quote if available	Reason for modification
(section 6.2 of the facilitator's manual)			
<b>Removed</b> content from section 6.2.1 of the manual, on freezing breast milk six months to one year.	Yes	<i>"How can this happen (referring to the point that breast milk can be stored to up to six months in a deep freezer), how can you find milk to express for 6 months or a year? It's not possible...even for a month...that's impossible...maybe for a week."</i> Workshop 2	Expressed that this is not practical.
<b>Same pictures</b> (Figures 12 and 13 in the facilitator's manual) were used and a detailed explanation given on how breast milk can be expressed manually (section 6.2 of the facilitator's manual)	Yes	<i>"I do not understand what is happening here (participant points to the pictures on expressing breast milk)." SSI - CCW 5 (pictures were in the mothers booklet)</i>	Figures 12 and 13 in the facilitator's manual, were also used in the BF booklet for mothers. However, the explanation was not clear.
<b>Added</b> two new sections on cases where a mother does not produce breast milk	No	<i>"I would like to know if it is possible for someone not to have milk in their breasts. Not that they are sick but maybe they were just made</i>	CCWs required information on how to advise mothers.

Section modified / removed / added (in the manual)	Content in first draft of facilitator's manual	Quote if available	Reason for modification
<p><b>Added</b> a section (6.4) which explains the cases when a mother does not produce enough milk, and section 6.5 with suggestions on how to increase breast milk supply.</p>		<p><i>that way. Because some say that there is nothing coming out when they are trying to feed or maybe there is just not milk.</i>" Workshop 1</p>	
<p><b>Further explanation</b> on the differences between a BF mother who is HIV positive, and one who is HIV negative (section 7.2.1 of the facilitator's manual)</p>	Yes	<p><i>"I would like to know, am I not supposed to breast feed my child if I'm HIV positive?"</i> Workshop 1</p>	Content not clear from draft facilitator's manual
<p><b>Added</b> a section (7.1 in the facilitator's manual) on food and drinks that should be avoided by a BF mother.</p> <p>Added information on the effects of alcohol on the baby when a mother drinks alcohol when BF</p>	No	<p><i>"... some, most of them (mothers) are drinking while they are breastfeeding their children... But they don't know the advantages and the disadvantages, whatever that you put inside your mouth gets to the baby through breastfeeding. I think that is <b>more information</b> that we need to give to the people. Because yes</i></p>	Necessary to amplify the effects of alcohol and why it should be avoided.

Section modified / removed / added (in the manual)	Content in first draft of facilitator's manual	Quote if available	Reason for modification
		<i>you will notice that they are breastfeeding, but the same person is drinking, the same person is not eating healthy food.</i> ” Workshop 5	
<b>Modified to improve clarity</b> and emphasis made on the new guidelines on infant and young child feeding when a mother is HIV positive (section 7.2.1 of the facilitator's manual)	Yes	<i>“I just want to ask why the HIV positive mothers are supposed to stop breastfeeding their babies when they are six months, they can't keep on breastfeeding their babies after that, why?”</i> Workshop 4	CCWs were not aware of the new infant feeding guidelines.
<b>Added</b> section (7.3 in the facilitator's manual) on the effects of alcohol on the baby if a mother drinks alcohol during pregnancy.	No	<i>“There is this one person I am currently dealing with. She is pregnant but she doesn't want to stop drinking alcohol, I've been trying to get her to stop drinking but she refused. So we need information about how alcohol is bad during pregnancy.”</i> GI – FGD 2	CCWs required information on the effects of alcohol during pregnancy.
<b>Added</b> a section under 7.2.1 on defaulting ARV treatment.	No	<i>“If a mother interrupts her ARV treatment or becomes a defaulter, won't that affect the baby...because this person is a defaulter, they</i>	Concerns about women who interrupt their medication when they are BF their babies.

Section modified / removed / added (in the manual)	Content in first draft of facilitator's manual	Quote if available	Reason for modification
		<p><i>cannot continue breastfeeding their child for a year, because they not consistent with their treatment. So another question I have is, so let's say someone continues breastfeeding beyond the six months but then all of a sudden in the 10<sup>th</sup> or 9<sup>th</sup> month, they stop being consistent with their treatment, wont that affect the child.</i>" GI – FGD 12</p>	
<p><b>Added</b> information on the need to wait for at least six weeks to resume intimacy after child birth or as advised by the doctor/nurse was added in the beliefs section 8.1, in Table 7 in the facilitator's manual.</p>	No	<p><i>"Others say that if you have sex early the child will not grow properly, is that so?"</i> Workshop 1  <i>"When breastfeeding you can't have sex. Is it true?"</i> GI – FGD 6</p>	Concerns on the effects of sex after child birth and during BF.

#### 4.6.5 Readability results

The readability results are given in the three tables. Table 4-5 for all the sections from the draft facilitator’s manual, 4-6 for all the sections within the final facilitator’s manual, and 4-7 which shows the average scores for both the draft and the final facilitator’s manuals.

##### 4.6.5.1 Draft manual results

Table 4-5: Interpretation of readability results from the draft facilitator's manual

Section	Name of test and interpretation of readability score				
	FRES	FKGLS	CLI	SMOG	ARI
1.1 Objectives	Fairly difficult	Middle School	<b>College</b>	Middle School	Middle School
1.2 Duties of a community care worker	<b>Difficult</b>	<b>College</b>	<b>College</b>	<b>College</b>	<b>Post College</b>
1.3 How to provide basic counselling skills.	<b>Very confusing</b>	<b>Post college</b>	High School	<b>College</b>	<b>Post College</b>
1.4 Breastfeeding assessment	<b>Very confusing</b>	<b>Post college</b>	High School	<b>College</b>	<b>Post College</b>
2.1 Objectives-2.3 Activity : Importance of breastfeeding	Fairly difficult	High School	<b>College</b>	High School	High School
2.4 Why exclusive breastfeeding is important	<b>Difficult</b>	<b>College</b>	<b>College</b>	<b>College</b>	<b>College</b>
2.5 Breast milk vs artificial feeding	<b>Difficult</b>	<b>Post college</b>	High School	<b>College</b>	<b>Post College</b>

3.1 Objectives -3.3 Normal breastfeeding patterns	Fairly difficult	High School	Middle-High school	High School	High School
3.4 Normal baby behaviour -3.7 Proper breastfeeding positioning and techniques	Standard	High School	High School	Middle School	Middle School
3.7.1 Football hold -3.7.4. Cradle hold	Fairly difficult	<b>College</b>	Middle-High school	Middle School	<b>College</b>
3.8 Correct attachment position - 4.2 Activity 4: let's discuss	Fairly difficult	<b>College</b>	Middle-High school	High School	<b>College</b>
4.3 Breastfeeding recommendations -4.4 What can a mother do if she's not home during the day?	Fairly difficult	<b>College</b>	Middle-High school	High School	<b>College</b>
5.1 Objectives-5.3.1 Flat and inverted nipples	Fairly difficult	High School	High School	High School	High School
5.3.2 Sore /cracked nipples -5.3.4 Blocked ducts	Fairly difficult	High School	High School	High School	<b>College</b>
5.3.5 Mastitis- activity 6: Let's discuss and role play	Fairly difficult	High School	High School	High School	<b>College</b>
5.4 How to assist mothers with breastfeeding -5.6 Myths about breastfeeding	Standard	Middle School	High School	Middle School	Middle School
Average scores	<b>Difficult</b>	<b>College</b>	High School	High School	<b>College</b>

Table 4-5 shows the results from the draft facilitator's manual. From the results computed for the different sections: 12 sections had an extremely high reading level; difficult or very confusing (FRES); college or post college (FKGLS and ARI); and college (CLI and SMOG). The overall document readability was difficult, requiring at least high school level abilities, or, at most, college level reading abilities.

From the readability results shown in Table 4-5, the draft facilitator's manual was modified to lower the readability scores. The considerations and changes to the facilitator's manual according to the readability scores made are as follows:

- **Addition of pictures** – More pictures were used to enhance visual understanding. Where possible, annotations were also used, and pictures were referred to in the accompanying text. The number of pictures was higher in the final facilitator's manual (27 in total), when compared to the number of pictures in the draft facilitator's manual (23 in total).
- **Use of bulleted sentences** - Long continuous sentences were eliminated. Bulleted and numbered, short, simple sentences were used.
- **Punctuation** - The content in the draft manual had limited punctuation. Punctuation was improved during the modification process.
- **Text boxes** - The number of text boxes were increased from five text boxes in the draft facilitator's manual, to 15 in the final facilitator's manual.
- **Medical jargon** - The use of complicated medical terms was avoided. In instances where the words could not be avoided, a definition or detailed explanation of the meaning was given.

#### 4.6.5.2 Final facilitator's manual results

Table 4-6: Interpretation of readability results the final facilitator's manual

Section	Name of test and Interpretation of the readability scores				
	FRES	FKGLS	CLI	SMOG	ARI
1.1 Who is a community care worker - 1.5 Why should information about breastfeeding be given to everyone?	<b>Difficult</b>	High school	<b>College</b>	High school	High school
2.1.1 Use of open-ended questions - 2.1.3 Being respectful	Standard	Middle school	High school	Middle school	Primary school
2.1.4 Listening - 2.2.4 Giving practical help	Fairly difficult	Middle school	High school	Middle school	Middle school
2.3 Discussion : Communication skills in breastfeeding - 3.11 What is exclusive breastfeeding	Standard	Middle school	High school	Middle school	Middle school
3.2 Discussion : overview of breastfeeding - 3.3.3 Disadvantages of not breastfeeding	<b>Difficult</b>	High school	<b>College</b>	High school	High school
3.4 Breast milk versus artificial feeding - 3.4.6 How does breast milk help fight infection	Standard	Middle school	High school	Middle school	Middle school
4.1 Discussion : breastfeeding patterns - 4.3.5 Night waking	Standard	Middle school	High school	Middle school	Middle school
4.4 Breastfeeding positioning and techniques - 4.7 Activity : baby positioning	Fairly easy	Middle school	High school	Middle school	Middle school

5 Breast health problems - 5.2.2 Sore/cracked nipples	Standard	Middle school	High school	Middle school	High school
5.2.3 Engorgement/over filled breasts - 5.3 Activity : using a syringe in inverted or flat nipples	Standard	Middle school	High school	Middle school	Middle school
6 Other recommendations with regard to breastfeeding - 6.2.1 How long can milk be stored after being expressed?	Fairly easy	Primary school	Middle – High school	Primary school	Primary school
6.2.2 How to warm breast milk - 6.3 How much milk is enough?	Fairly easy	Middle school	High school	Primary school	Middle school
6.4 What happens if a mother does not produce enough milk? - 6.5 What can a mother do to increase milk supply?	Fairly difficult	Middle school	High school	Middle school	Middle school
7 Mothers' behaviours which affect the growth and development of the baby - 7.2 Can a breastfeeding mother take medicines?	Fairly difficult	High school	High school	Middle school	High school
7.3 Effects of alcohol during pregnancy - 8.1 The role of community care workers in breastfeeding support	Fairly difficult	High school	High school	Middle school	High school
8.2-8.2 Beliefs that could potentially hinder breastfeeding or exclusive breastfeeding	Fairly difficult	High school	<b>College</b>	High school	High school
8.3 General discussion - 9 Workshop guideline	Standard	Middle school	High school	Middle school	Middle school
<b>Average scores</b>	Standard	Middle school	High school	Middle school	Middle school

The second and final readability tests on the final facilitator’s manual (Table 4-6) show an improvement in the readability results. These results show that only three sections are either difficult (FRES) or college level (CLI), which shows a vast improvement from the 12 sections in Table 4-5. For the rest of the sections, readability improved significantly, and thus the average scores show that the overall document readability is standard (according to the FRES test), and ranges from middle to high school level (according to the FKGLS, CLI, SMOG and ARI).

Table 4-7: Overall document readability of the two facilitator's manuals

	<b>FRES</b>	<b>FKGLS</b>	<b>CLI</b>	<b>SMOG</b>	<b>ARI</b>
Average score from the <i><b>draft</b></i> facilitator’s manual	44.73	15.30	10.97	11.04	17.18
Rounded score	44.00	15.00	10-11	11.00	17.00
Interpretation	<b>Difficult</b>	<b>College</b>	High School	High School	<b>College</b>
Average score from the <i><b>final</b></i> facilitator’s manual	61.48	8.32	11.47	8.00	8.29
Rounded score	61.00	8.00	11-12	8.00	8.00
Interpretation	Standard	Middle school	High school	Middle school	Middle school

Table 4-7 shows a direct comparison of the overall document readability between the draft and the final facilitator’s manuals. Table 4-7 also shows the actual scores, and the improvement in readability results.

The resulting facilitator's manual was divided into eight sections, with information in each section subdivided according to point pertinent to that subsections.

**Title page:** The BF promoting resource was titled *Breastfeeding: A facilitator's manual for community care workers*. The emphasis on it being a 'facilitator's manual' was because CCWs are facilitators for the promotion of BF and EBF in their communities.

### **Section 1: The roles of community care workers**

This section contains information on the definition of a CCW, the roles of CCWs in BF and EBF promotion, and why information about BF and EBF should be given to everyone in the community.

### **Section 2: Skills in educating the community**

This section includes information on useful communication skills, BF assessment, as well as confidence and support skills in BF and EBF. The information within section 2 has also been included in other manuals directed at HCWs who want to promote BF practices (83,125,127,142,143).

### **Section 3: Overview of breastfeeding**

This section includes information on BF, the definition of EBF, the importance of BF and EBF, the differences between breast milk and artificial milk, and a discussion of the whole section.

### **Section 4: Breastfeeding patterns**

The section on BF patterns contains information on the least expected frequencies when a mother is BF on demand, 'normal' baby behaviours, BF positioning and techniques, correct attachment of the baby to the breast, as well as rooming and bedding in.

### **Section 5: Breast health problems**

This section contains information about the four most common breast health problems, their causes, and their management.

### **Section 6: Other recommendations with regard to breastfeeding**

This section contains information on weaning, expressing breast milk, cases when a mother does not produce enough breast milk, and on foods that increase breast milk supply.

### **Section 7: Maternal influences on the growth and development of the baby**

This section included information on the importance of a balanced diet for the mother, food and drinks that should be avoided by expectant and BF mothers, medication taking during BF, and BF in the context of HIV/AIDS.

### **Section 8: The role of family in supporting breastfeeding**

The last section was a brief discussion on the role of family and friends in BF promotion, emphasising why everyone in the community should be targeted for BF promotion.

## 4.7 Guided implementation data

### 4.7.1 Data captured using the forms

During the guided implementation, a form ([Appendix K: Guided implementation data collection form](#)) was used to gather information about the target population encountered during that phase, as well as the information provided. Due to the reengineering of PHC services in their area, which resulted in an increase in workload and paperwork, the CCWs only managed to capture data on these forms from January until March 2015.

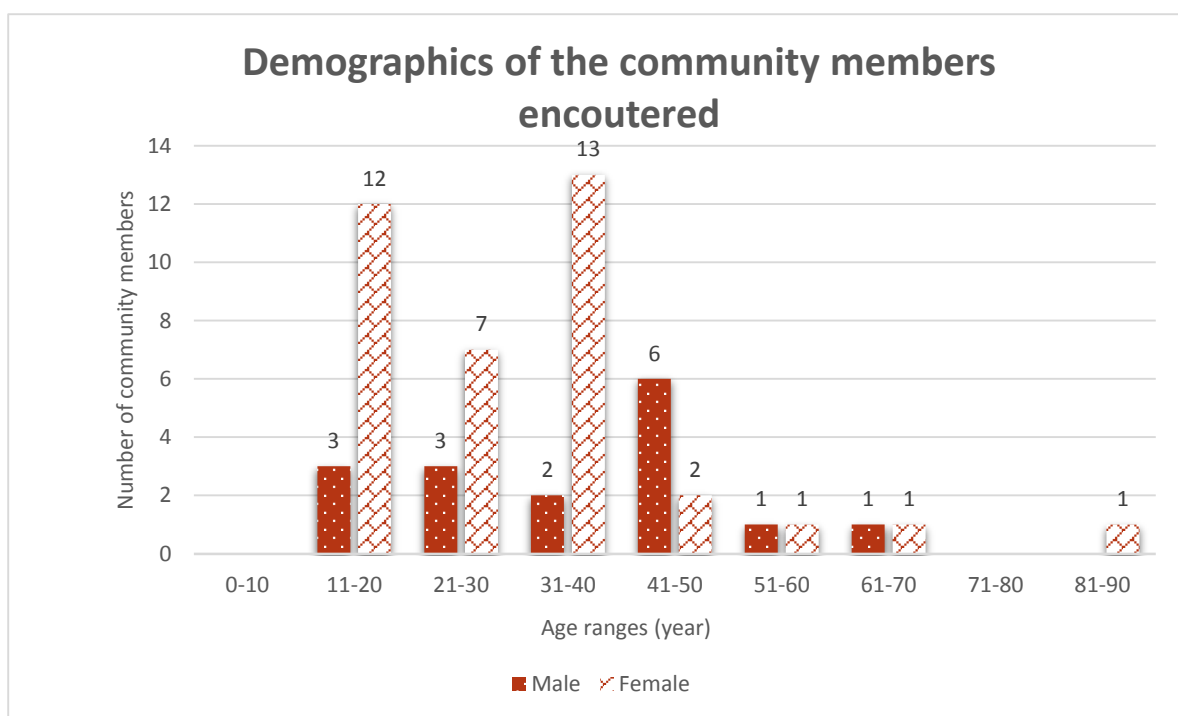


Figure 4-3: Demographics of the community members encountered

Figure 4-3 shows the demographics of the community members encountered.

A total of 53 people were recorded by the CCWs as having received BF and EBF information during the period between January and March 2015. Of the total number of people recorded, 16 were male and 37 were female. The most people encountered were between the ages of 11-

20 and 31-40 years. The results of people recorded are, however, not reflective of the actual number of people encountered, since only 7 CCWs returned their implementation data forms. The facilities or places where the promotion of BF and EBF took place are shown in Figure 4-4.

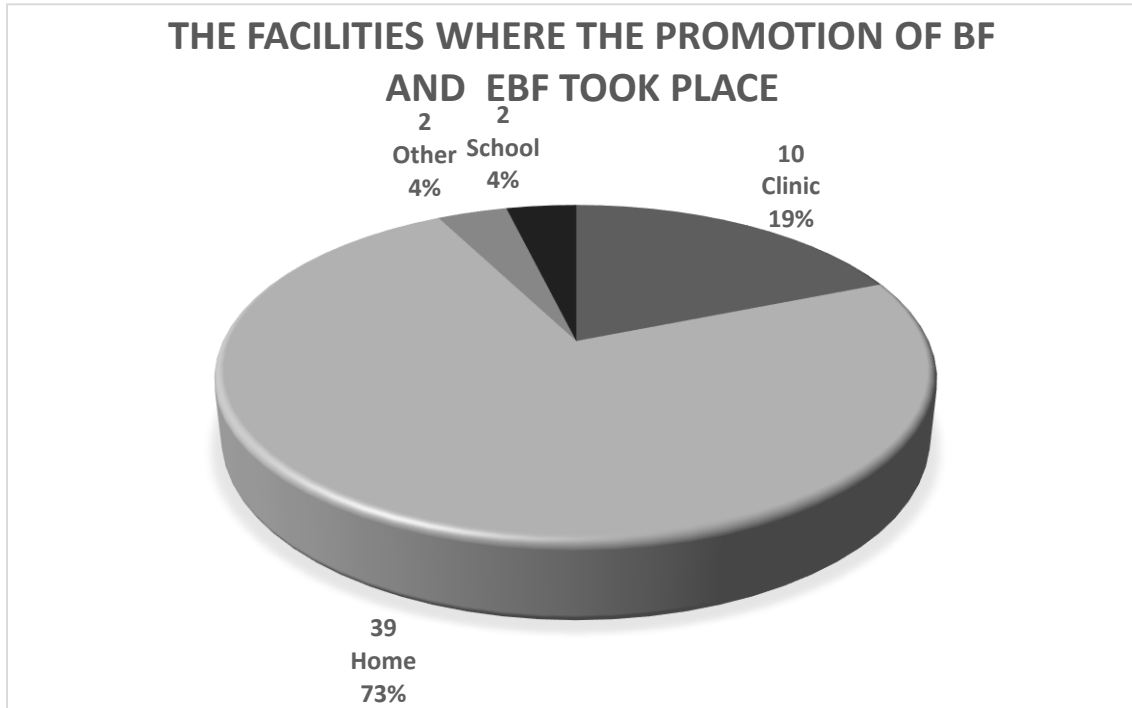


Figure 4-4: Facilities used in the promotion of breastfeeding

The pie chart in Figure 4-4 shows that implementation was indeed taking place at the facilities that were mentioned in the positive enablers section (4.4.1). The most frequently used facility was the home, whilst the school and other unspecified places were used the least. Some of the information obtained from the guided implementation data forms is as follows:

*“I gave a talk at the clinic about breastfeeding and the importance of breast milk. The nutrients that it has and the importance of not mix-feeding.”* GI form 3

*“I educated a mother about the importance of breastfeeding during the first 6 months after the child is born. So she said she was going to breastfeed.”* GI form 6

#### 4.7.2 Personal experiences of community care workers

The CCWs shared their own BF experiences during the guided implementation phase.

*“I introduced water at three months for my child, before that I only gave breast milk.”*

GI – FGD 12

*“I breastfed exclusively for six months, I did not even like formula and when I had it, I would sell it. My mother was a nurse, so she told me to breastfeed only for six months without mixing.”* GI – FGD 6

*“I started giving my child the bottle after about 10 days. I gave Pelargon® (formula milk).”* GI – FGD 6

All the CCWs were mothers, and all except one had more than one child. All of the CCWs breastfed their babies, but only one breastfed their baby for six months. The other CCWs breastfed exclusively for varying time lengths: 4 days; 10 days; 3 weeks; 1 month; 1 ½ months; 3 months; etc. This confirmed that EBF was not commonly practiced for six months, either in the community, or amongst the CCWs. Mixed feeding before the age of six months still took place. Through the member checks, some of the negative perceptions that had been identified in the SSIs were also reiterated during this phase.

#### **4.7.2.1 Insufficient milk**

*“When my child was breastfeeding, I felt that my child was not getting enough milk because he was not able to tell me if he was hungry or full. So I bought formula milk and started giving it to him, so that they would not feel hungry.”* GI – FGD 6

#### **4.7.2.2 Use of supplements**

*“I also gave my child gripe water right from the start (from day one after giving birth), this was for cleaning, to clean the child’s intestines. Apparently the child has a mucus like substance when they are born, so that is what was being cleaned”. GI – FGD 12*

*“I breastfed my child for three months, and my mother told me to give my child isicakathi when she was four months old.”* GI -FGD 6

### **4.7.3 Facilitating and constraining factors**

#### **4.7.3.1 Facilitating factors to the promotion of exclusive breastfeeding**

The practice of involving males in the promotion of BF was becoming increasingly evident as the research progressed during the guided implementation stage. Two CCWs mentioned the following:

*“We can help each other through this information. So basically, our focus shouldn’t be on only the people who come to the clinic, but like we discussed before, exclusive breastfeeding affects everyone.”* GI – FGD 1

*“There are now a few old men that are coming (for the antenatal and postnatal talks at the clinic), there is even one who is helping us by going to the schools and having talks with them (teenagers).”* GI – FGD 8

The CCWs were also coming up with solutions on how to deal with the barriers to BF and EBF that had been previously identified. After the CCWs agreed that there was no problem with a mother being intimate during BF as long as it was after the recommended six weeks for healing, one CCW raised a valid solution to addressing men who might not understand this:

*“I’m saying that, you know how mothers who have just given birth are told to wait for 6 weeks before engaging in sex? So when you talk to the boyfriend or husband and they do not seem to understand, tell them about the 6 weeks that they also have to wait after circumcision. It’s the same thing for the women as well; they have to wait at least 6 weeks so that they can heal first.”* GI – FGD 12

The role of the CBO liaison was evident during the discussions with the CCWs, and it was a facilitating factor. The CCWs mentioned that:

*“She (CBO liaison) is also encouraging us to not only talk about these things here at the clinic only, but also share the information with our friends and relatives. As long as the person will pass the information on and share it with others in the community”*  
GI – FGD 1

#### **4.7.3.2 Constraining factors to the promotion of exclusive breastfeeding**

Bad weather resulted in the CCWs not being able to perform their daily duties, since these duties require them to walk from one house to the next.

*“Yesterday it was raining very hard so there was only one mother who came through”*  
GI – FGD 9

*“We are supposed to be in the field today, but it’s wet and raining so we cannot go”*  
GI – FGD 7

## **4.8 Evaluation and feedback**

### **4.8.1 Workshop and facilitator’s manual evaluation**

*“I think both (the workshop and the facilitator’s manual) were useful, because at first we did the workshops and then we understood and then you gave us the (facilitator’s) manual. With the information we got from the workshops, we go through the manuals easily*

*because we understand the things in it. The things we talked about in the workshops are all explained in the facilitator's manual. So both of them (the workshops and the facilitator's manual) were useful.*" FGD 1

*"The workshops have been very helpful because I haven't looked at the manual much, but I remember the information from the workshop especially the importance of EBF, I even went and shared this information with my neighbours."* FGD 1

*"The manual has been very helpful in building my confidence when answering some questions from the mothers. Before, I just spoke from the information I heard and when the mothers would ask a question sometimes I wouldn't be able to answer their questions. But now I have the manual and I have read it, I am better able to answer any questions they ask me."* FGD 2

The Ubunye CBO liaison also mentioned how they (as an organisation) were going to adopt both the program and manual to ensure sustainability of the project.

*"We are going to use these books (referring to the facilitator's manual). I'm just thinking of something that will prove to make it sustainable is that, next year we will do the same thing again (conduct refresher training with CCWs using the facilitator's manuals) . We will look at the book (facilitator's manual) and the CCWs can pick up on the issues and problems that they encountered in the community and we can discuss about it."* CBO liaison FGD 1

In one community, the CCWs felt as if the teenagers were a challenge, and made a mockery of their work.

*"What I would like to know is, is it possible for you to come with us to the school next year when we go to talk to the teenager, for you to be part of the talks?"* FGD 2

The CBO liaison reassured the CCWs that they, as an organisation, would assist them in conducting the campaigns in schools for teenagers, thus aiming for sustainability of the BF and EBF promotion project.

*"Well she (the researcher) is not here next year, but maybe we (CBO representatives) can help, or we can try and get somebody else to come in and help you, since it feels like you need another face if that is fine and then maybe the planning where we will say this week we will do this, and the next week we do that..."* CBO liaison FGD 2

From the final FGDs, the difference was highlighted by two of the CCWs as to how the involvement of men in BF and EBF promotion is helping in the community.

*“It’s not the same as before, when I look at it now, for instance, next door to my house there is a young woman who recently gave birth and also goes to school. I have been noticing that the boyfriend now comes over to pick the baby up so that they take turns in taking care of the baby. So I think that they have learnt that it is important for both to be involved in the baby’s life.” FGD 1*

*“Even in my neighbourhood, there is a girl who has a baby and whenever she had to study, the boyfriend takes care of the baby the whole day. FGD 1*

These results are also supported by results obtained from the *Guided implementation data forms*, about men now being involved in the BF and EBF promotion activities, as well as their active involvement in child care. (Figure 4-3)

#### **4.8.2 Overall feedback**

##### **From the SSIs:**

*“I can only comment that you are doing a very important and good thing for our community. We are gaining knowledge and understanding....” SSI – CCW 14*

##### **From the workshops:**

*“All I want to say is thank you so much for coming through to spend your time with us. We are also very grateful for all the lessons because there are certain things that we did know that we learnt from these sessions and now we know them. That means you have expanded our knowledge and when we go back to the community, we will have new information to give to the mothers.” Workshop 4*

##### **From the guided implementation FGDs:**

*“Since Miranda (researcher) started coming here, it has encouraged us more to do our job. Because when you do something and you don’t have the information, sometimes you don’t want to do it because of the lack of the information. But if you have new information you want to go there into the community to share this information. She has really helped us with information and understanding because we did not know some of the information. We did not know that a person could use a syringe if she has inverted nipples, or that a new-born feeds more frequently than older infants because they have smaller tummies.” GI – FGD 2*

*“Ok, we would also like to extend our gratitude to you. When you got here, we knew some things but not everything, so with the workshops, you’ve helped us increase our knowledge and we appreciate all the information you have shared with us.”* GI – FGD 9

*“... before the workshop, I also didn’t have the information I have now and the approach regarding the importance of breastfeeding. After the workshop, I learned so much about breastfeeding and its advantages and so I am able to talk to the mothers about it and they actually listen.”* GI – FGD 12

**From the feedback forms:**

*“I also used the information I got from the workshops to educate other care workers (CCWs) ....”* GI – FGD 12

**From the final FGDs:**

*“I would like to say that attending these workshops has been very beneficial. I already knew some of the things we talked about, but I gained more knowledge and information about them through the workshops. It also gave me the confidence, boldness and courage to stand in front of people and talk about these things because I understand them better now.”* FGD 1

The overall feedback from the CCWs was positive, and it reinforced that they were grateful for the project, the facilitator’s manual and the workshops. The CCWs mentioned that the BF promoting project was important in their communities, and that they gained knowledge, understanding through the workshops, and that they were now better equipped to be able educate the community members, and even other CCWs on issues pertaining to BF and EBF.

## **5 CHAPTER 5: DISCUSSION**

### **5.1 Introduction**

This chapter is a comprehensive discussion of how BF fits into the global agenda, as well as the results presented in chapter four and considers how these are either similar or different to those found by previous studies with regard to BF and EBF

### **5.2 Breastfeeding on the global scene**

Although MDG 4 and 5 targets were not achieved, the targets to reduce child and maternal mortality have been incorporated into SDG 3. Notwithstanding that BF is not highlighted as part of any of the targets within any of the SDGs, it is a core infant feeding practice which substantively contributes to SGDs 2, 3 and 5 (10,11). Promoting EBF in a culturally appropriate manner enhances the chances of the acceptance of information, and possibly adoption of the practice by mothers (23,26). If mothers practice BF exclusively, then they are less prone to post-partum depression, osteoporosis, ovarian, and breast cancers. The mother will also bond with her baby, which fosters a positive attitude and environment within which a mother will be living. This in turn will promote good health and wellbeing for the mother (83). In the long-term, adopting EBF practices will result in a reduction in maternal mortality due to improved health and wellbeing.

Babies who are not exclusively breastfed are more likely suffer from respiratory diseases, ear infections, dental caries, juvenile diabetes, and bacteraemia (33,83,144). Studies show that breastfed babies are protected from recurred occurrences of diarrhoea and dehydration - which are major contributors to infant and young child mortality in South Africa (47,83). Infants are also protected against non-communicable diseases such as diabetes, which will not only improve the health of infants, but could substantially contribute to a decrease in infant and young child mortality (13). Improvements in maternal and infant mortality rates will contribute towards achieving SDG 3.

The promotion of BF and EBF could be conducted in a more sustainable manner by CCWs, who work in PHC clinics in rural South African communities. CCWs in this study were involved in participatory training workshops, which empowered them with knowledge and skills in BF and EBF. The training and provision of resources for CCWs, who are also women in the current study, is a positive step to the empowerment of women in South African

communities, through supporting ownership of knowledge and resources for the promotion of BF.

BF and EBF have numerous benefits, and these are not only for the BF mother, or the breastfed baby, but, as core to achieving global goals, it is a necessity that EBF should be promoted by CCWs and be adopted by mothers and this cannot be emphasized enough. This does not only apply to low income countries, but to middle and high income countries too, since the WHO reports that every country in the world has nutrition problems: be it obesity, malnutrition, or vitamin deficiencies (145). Increasing BF practices improves nutrition for not only infants and young children, but for the nation as a whole, which is a positive step towards improving nutrition for all and ending hunger.

### ***5.2.1 The rationale of using community-based participatory research***

Traditional research usually fails to solve health disparities, because, more often than not, the researchers do not understand what drives community members to a certain health related behaviour. This is because community members are seen as passive recipients of information, and that they have no contribution to the actual research. Research fatigue is often encountered by community members. In most instances, researchers use their findings only to benefit their scholarly or academic progress, and not for the community. Community participation is thus crucial for health promotion interventions (51,54,108,110–112).

Other researchers have found that involvement of the community and participatory methods become useful in the design of research instruments, and have applicable research findings that can be used by the community to develop their own solutions to problems (51,110). The engagement of community members is also a way of establishing rapport between the researcher and the community, which is useful for future research. The benefits of CBPR include the formation of new and long-lasting relationships, learning the needs of a community, professional development of all the partners involved, and the development and provision of practical and evidence based solutions (108,110–112).

### ***5.3 Factors affecting exclusive breastfeeding practices***

The CCWs expressed that mixed feeding is the most common form of feeding practiced in their communities. Exclusive breastfeeding for six months is described by CCWs as not common in these communities. According to the CCWs' own experiences, EBF duration ranged from as

little as seven days to six months. Only one of the CCWs breastfed exclusively for the first six months of life, reflecting the probable practices within their communities. This concurs with results of another study in South Africa, where EBF was found to be appreciated, but was not commonly practiced (146). Despite the initiatives and policies that are in place to promote EBF, rates are still low in South Africa, as described in Section 2.3.3 (43). From this study, we found out that there are many factors which influence the adoption of BF and EBF practices in the communities researched. These include factors that are discussed below.

### ***5.3.1 Positive enablers***

Factors that enabled mothers to breastfeed were mainly related to the health promotion that the CCWs do in the communities. Health promotion initiatives include home visits, ante-natal, and post-natal days at the clinic, as well as educational and health promotion campaigns conducted at places such as clinics, schools, churches and community halls. Whilst most of these initiatives have been reiterated by other studies (22,23,71,75,147) as useful in the promotion of BF, the church was of particular interest (67). One CCW highlighted that she would also talk about BF at church meetings. The church was suggested as a place for the promotion of BF in a study conducted by Ware et al. (2014). Referring to the study by Ware et al. (2014), mothers suggested programs such as home visits, support groups, schools, and church campaigns as solutions to address the barriers they faced when trying to breastfeed (75). This current study identified that these initiatives and structures were already in place, and were being used in the promotion of BF practices.

From the results stated in Section 4.4.1, poverty has been shown to have a positive impact on EBF. The cost of feeding a new-born formula milk exclusively requires roughly R 600 – R 1000 a month, and this will increase as the infant gets older (148). This amounts to almost half of what most farm workers earn, and is too much to spend on infant feeding every month for a low income earner (149). Communities A and C are highly dependent on neighbouring farms for work, and therefore, in such societies, it was necessary to reinforce the need to breastfeed for a longer duration, as well as exclusively. This is because using formula milk during the first six months, when one cannot afford to provide it consistently, could be detrimental to the health of the child, because the child is likely to suffer from malnutrition (143). Whilst the study by Setegn et al. (2012) amplifies the results from this current study, mentioning that unemployed mothers are five times more likely to breastfeed due to poverty, researchers such as Mahgoub

et al. (2002) found that unemployment, low income, and poverty drive mothers away from their homes and communities in search of employment in neighbouring communities (88,150).

### **5.3.2 Negative enablers**

Despite the positive enabling factors identified above, the CCWs also identified negative factors that hindered BF and EBF practices in their communities. Contrary to health promotion materials positively enabling BF and EBF, CCWs in community A expressed that they did not have BF promotion materials, such as pamphlets or booklets, for distribution in their community. The lack of BF promoting material is a potential barrier to improved EBF practices, since the availability of such material has been previously identified as useful in the promotion and adoption of BF and EBF practices. The other issue with such materials is that they are provided in English. These materials, in an unfamiliar language, were identified as a barrier by the CCWs, because the communities are predominately isiXhosa or Afrikaans first language speakers, who are not entirely English literate. Kreuter et al. (2003) suggest that for health promotion material to be acceptable and useful, the language of the communities has to be taken into consideration (25). Provision of material in a language that is familiar to that community is suggested to improve cultural appropriateness and acceptance. The results from this study concur with those from the study by Airhihenbuwa et al. (2009), which amplifies that language differences are barriers to communication (96).

The CCWs in all communities stressed the fact that the unavailability of mothers for BF was also a hindrance to BF and EBF. Some mothers in the community are school-going, and, as such, returning to school was given as a reason not to continue BF or EBF. The CCWs also highlighted that some mothers would not breastfeed exclusively, because they would need to travel, or they worked away from home. These reasons were also identified in other studies as reasons not to BF or exclusively BF (71,88,150,151). Although mothers were apparently informed as to how to express breast milk by HCWs, CCWs said that expressing or pumping breast milk was not adopted by mothers in their communities. In a study conducted in the United States of America, mothers gave reasons for not expressing breast milk, saying that it was either too hard, time consuming, or painful: formula feeding was preferable to them (75).

Breast health problems were also raised as potential barriers to BF and EBF by the CCWs. Sore nipples were identified as a breast problem which leads to the cessation of BF. A study by Doherty et al. (2012) identified that mothers who experience breast health problems were three

times more likely to cease all BF than a mother who did not experience such problems. In the study by Doherty et al. (2012), sore nipples, mastitis, and engorgement were mentioned as the problems encountered by these mothers (80). In this present study, however, sore nipples were the only problems mentioned, and because they interfere with BF practices, CCWs need information on how to deal with these, so as to communicate this with the affected mothers. The HIV status of the mother was also mentioned as a barrier to BF and EBF in this current study. As HIV can be transmitted to the baby via breast milk, the CCWs expressed that mothers who were HIV positive would rather formula feed than BF or exclusively BF. These results were also found in Kwa Zulu Natal, where mothers mentioned that they would not breastfeed due to fear of transmitting the HI virus to their babies (78).

The final negative enabler was that men weren't involved in BF promotion campaigns. This was because either they were not around, or because the CCWs did not see the need to involve them. One CCW mentioned that she believed men had the potential to support their spouses in BF. A study by Tasnipar et al. (2013) also identified that men were hardly involved in BF promotion campaigns, although some of the men in that study actually wanted their spouses to BF (152). Men have also been identified as extremely influential in supporting BF practices (79,152). Not involving men in BF promotion is a drawback to BF and EBF, due to them not being fully knowledgeable of the advantages of BF and EBF.

### ***5.3.3 Positive perceptions***

CCWs recognised that the benefits of BF and EBF, which they conveyed to the mothers or which the mothers already knew, were the major reasons why they chose to breastfeed. The information given or known to mothers include health benefits of BF, EBF or breast milk as well as the socio-economic aspects of convenience and affordability. Sibeko et al. (2005) also found that 70% of the mothers in their study said that they chose to breastfeed because of the health benefits of BF for their babies, or themselves. Other studies also found the same results - that the benefits such as affordability (71), convenience (72), healthier babies (152) and healthy mothers (78,152) were reasons why mothers preferred BF or EBF to formula feeding. The knowledge, attitudes, and beliefs which attribute BF and EBF to health and wellbeing are key elements to be fostered in any community context, as they positively contribute to the adoption of BF and EBF practices (22).

### ***5.3.4 Existential perceptions***

Amongst the influences to BF and EBF, one existential perception identified by the CCWs neither hindered nor promoted EBF. The perception was that of discarding a little breast milk after having travelled from outside the community. The reason given by the CCWs was that discarding a little milk before feeding would get rid of any evil spirits that the mother would have encountered outside the home from getting to the baby. This finding was also found amongst the isiXhosa people within the Western Cape province of South Africa (71). The reasons given by the study from the Western Cape were to get rid of stale milk from the breast, to ensure that the breast actually contains milk, as well as the one obtained in this study – to get rid of any evil spirits. This perception identified by the CCWs was reported to not have a negative or positive influence on BF or EBF, but is rather a culturally accepted practice amongst the isiXhosa people. Bland et al. (2002) also highlight the reality of existential perceptions associated with cultural and spiritual reasons, and they suggest that locally sensitive issues such as these need to be discussed, to ensure that they do not hinder or become a barrier to BF and EBF (146).

### ***5.3.5 Positive nurturers***

Although the decision to breastfeed is ultimately the mother's, influences originate from family and friends, as well as from people around her within the community (153). From this study, health care professionals, such as nurses from the hospitals surrounding the communities and from the clinics within these communities, and CCWs, were identified as people who influenced BF and EBF positively. The CCWs also identified CBO representatives as also being influential in the promotion of BF and EBF. Emotional and social support is key to a mother's ability to breastfeed. Taspinar et al. (2012) and McLeod et al. (2002), in their findings, concluded that women who received support from health care professionals, family, and friends have a greater chance and ability to breastfeed (79,152). Mothers to the BF women, and mothers-in-law, were also mentioned as extremely influential in the decision to breastfeed. Breastfeeding mothers always seek approval from their own mothers, or their mothers-in-law, because these people are key role models deemed knowledgeable by the communities in such matters (75,146,152). The involvement of family members and friends in the promotion of EBF is therefore important to clarify issues that could potentially hinder BF, especially because they have a role to play in encouraging a mother to breastfeed (22,79,146).

### ***5.3.6 Negative nurturers and negative perceptions***

Social influence has been recognised as important to the adoption of health behaviours (93). The CCWs identified men as the most prominent group responsible for discouraging women from BF (section 4.4.7). The reasons identified by the CCWs were, for instance, that the men would not like it, or they could afford to buy formula milk, or because they wanted to be intimate. One of the beliefs which hinders BF and EBF is that, during the time a woman was BF, they could not be expected to be intimate. This then means that if a woman decides to BF or to BF exclusively for up to six months, intimacy cannot occur during that whole period – which is something men were said not to accept. The women then would rather choose to be intimate with their partners than to breastfeed, so as to maintain their relationships. A study conducted in Turkey also found that men would discourage their partners from BF because they said it would ruin their sex lives, whilst another study conducted in rural Cameroon revealed that sexual contact was deemed culturally inappropriate until all BF had been ceased (23,152). The CCWs in the current study confirmed that this is a cultural belief evident in their communities. The CCWs came up with ways of overcoming this barrier, by urging the partners to at least wait for six weeks after birth before intimacy, stating that they could use the experience of circumcision as an example which men could understand and relate to.

The CCWs also cited that teenage mothers within their communities do not want to breastfeed, because they believe BF damages breasts or that BF will make them smell. This is a hindrance to BF and EBF, in that even if the young mother has not breastfed yet, they would rather not try to breastfeed, because of the attitude towards BF and its effects on their bodies. In another study, men were concerned that BF would result in their partner becoming ‘physically unattractive’ (152). Another study, which involved African American mothers, also confirmed that mothers did not want to BF for the same reasons (75).

A common belief which is a barrier to BF, and more especially to EBF amongst African communities, is that breast milk is not a sufficient source of nourishment for the baby (23,72,79,146,150). One CCW mentioned that even she ‘felt’ as if breast milk was not enough for her baby, and, as such, she decided to introduce supplements at a very tender age. In a study conducted in Cape Town, 90% of the isiXhosa mothers within that study said that they added breast milk substitutes and supplements, because they believed that breast milk was not enough to sustain the child (71). Kakute et al. (2005) report that the addition of supplements is associated with weight gain and the growth of the child (23). Mixed feeding was understood to

be common in the communities researched, with babies being fed formula milk, water, gripe water, other foods, and *isicakathi*. Whilst water was meant to quench the thirst for the baby, and other food, as well as formula, was meant to add nutrition – gripe water and *isicakathi* were given either to detox the child or to get rid of wind. A study conducted in the Transkei region of South Africa reports that the use of *isicakathi* is common for detoxing the baby, getting rid of meconium, and to counteract constipation and wind, amongst other uses. The medicinal properties of *isicakathi* are widely known amongst the isiXhosa people, and, as such, it is believed that the herb should be given to the baby as the first medicine after birth, and in the following months as a nutritional supplement. Various plant species are used as *isicakathi*, such as *Commelina africana*, *Chlorophytum comosum*, *Ledebouria sp.*, *Ranunculus multifidus* and *Helichrysum pedunculatum*, depending on the location in the Eastern Cape (154).

### ***5.3.7 Summary of factors affecting exclusive breastfeeding***

It was important to identify the positive, negative and existential factors that affect EBF practices, as is suggested by the PEN-3 model. The positive factors that we identified during the whole project were used as building blocks to foster the importance of EBF and to explain why it is important to promote in the communities being researched. The existential factors were acknowledged, since they did not have any effect on adopting EBF. The negative factors were discussed, and ways of addressing them formed part of the discussions that took place during the workshops, the guided implementation, and the FGDs.

### ***5.4 Identifying the target audience***

Using the information obtained from the CCWs on the nurturers within their communities, and the recommendations of the PEN-3 model, there was need to identify those people who could be potential targets for BF promotion in these communities. From the analysis of the results from the SSIs, the whole community needed to know about BF and EBF practices. The community was said to have an influence on the mother's ability to adopt BF or EBF, and so it was necessary to convey BF and EBF information to everyone. Through member checks and group discussions, the CCWs also highlighted and agreed that everyone in their community should be their target audiences for BF and EBF information. Doherty et al. (2012) and Kakute et al. (2005), in their findings, also recommend that BF and EBF information and education should be shared with every adult, male or female, as well as with age appropriate young girls and boys (23,80). The hope is that if everyone has the correct information, they will appreciate

BF and EBF more, and issues such as the beliefs and attitudes associated with BF and EBF would be understood, addressed, and will not form hindrances to BF and EBF. Other studies also mention that mothers who have support from family, friends, neighbours, or health care professionals have better chances of BF than those who do not (79,152).

During the guided implementation phases, the data collected by the CCWs showed that men were indeed becoming part of the BF campaigns (Figure 4-3). The guided implementation data (Figure 4-4) also shows places where BF and EBF promotion was taking place. As mentioned in the positive enablers section, facilities such as schools, the clinic, and homes were essential, and were used by the CCWs during BF promotion. The results obtained during the implementation stages endorse the results obtained during the SSIs on the facilities being positive enabling factors to BF. The fact that CCWs continued to use these facilities also enhances the point that existing resources should be used to strengthen the promotion of BF and EBF practices (80).

This current study focuses on educating and training CCWs on BF and EBF, so as to empower them with the knowledge required to educate the community on BF and EBF during BF promotion campaigns identified in section 4.4.1. This was particularly important to allow for improved BF information provision to the society by CCWs who are knowledgeable and confident. From the discussions that took place during the workshops, and the implementation data, it became apparent that the CCWs wanted more information about BF and EBF.

In a study conducted in South Africa, it is mentioned that existing CCWs require continuous training on BF and EBF, as well as support to enable them to do their job efficiently (80). Referring to the current study, the researchers also identified that some of the CCWs were working with had no prior experience or training on BF or EBF - which concurs with the results obtained in this study. This amplifies the importance of CCWs' need for training on BF and EBF, mainly because they are the agents of change for health and wellbeing in their communities, and, as such, require information in order to be fully equipped for their jobs.

### ***5.5 The importance of community care workers in the promotion of breastfeeding***

Due to the scarcity of health human resources in South Africa, there has been an increase in the use of CCWs in health and social development. CCWs are easily integrated into the health

care system, due to their lack of a formal tertiary education. For them, it is usually an opportunity to obtain formal employment. Notwithstanding the lack of training as discussed in section 5.4, there is a high dependence on CCWs for promoting health, due to the shortage of health care professionals, especially in the government sector.

Community care workers have a significant role in community based health services within rural, peri-urban, and even urban communities in South Africa (155,156). According to studies conducted in various provinces in South Africa, CCW involvement in the health sector has contributed positively to the improvement of outcomes in managing HIV/AIDS, tuberculosis, diabetes, and hypertension (18,155,156). Furthermore, Friedman (2002) report that the involvement of CCWs in infant and young child programs has positively contributed to a reduction of morbidity and mortality in South Africa (155). Research shows that the emphasis given to nutrition, BF, immunisation, and oral rehydration by CCWs reinforces these as the foundation to good child health and development, hence the reduction in infant mortality (18,155,156).

According to the CCW policy framework of 2009, CCWs need supervision from people who are attached to non-profit organisations, who have a professional health or social worker background (19). In our study, we identified the Ubunye Foundation family health coordinator, who has a nursing background, to take up the role of CCW supervisor in communities A and C. The supervisory role of the CBO liaison / family health coordinator was extremely valuable, because CCWs need specialised guidance. The CBO assisted in the provision of health promotion material for different health topics, refresher courses, and provided much needed problem solving skills.

The role of a CBO in community-based research is essential for the sustainability of the research. While academic researchers are important in the provision of evidence based health promotion interventions, any continuity of implementation depends on the involvement of the CBO as well as on that of the community members concerned. This current study facilitated the involvement of the CBO liaisons in the guided implementation focus groups as well as in the final FGDs. This proved to be useful, as the CCWs mentioned the need for continued support and supervision, which the CBO liaison noted as important for the future.

## ***5.6 The need for training of community care workers on breastfeeding***

The WHO, UNICEF and the NDoH South Africa emphasize that HCWs require training in order to implement strategies that are essential for the promotion of BF and EBF (2,22,35). Unfortunately, literature shows that the training of CCWs in South Africa is highly dependent on whether they work for the government or for a NGO (157). The training of CCWs by the government is not consistent, as reported by Shah et al. (2005), who conducted a study in South Africa (158). This result concurs with the results outlined in Table 4-2, which shows that one (7%) out of the 14 CCWs was not formally trained, and, in her words, was ‘briefed on the job’ before commencing work as a CCW in a PHC clinic. Five (35%) of the CCWs received formal government CCW training, whilst five (35%) received home based care training; two (14%) received lay-counselling training; and one had formal nursing training. In the North West province, 17% of the CCWs were also working without training, which is higher than the results obtained in this current study. However, 78% of the CCWs in this present study did not obtain formal or intensive CCW training, which was also the same with the study in the North West province, where 80% had also not received formal CCW training (18). The type of training that the CCWs get with respect to the duties that they are expected to perform within their communities is thus cause for concern. Since most of the CCWs received targeted training, such as home based care or lay counselling (HIV/AIDS), the quality of health care they delivery becomes questionable due to a lack of knowledge in other health care matters, and the expanded roles that they have to perform (18,63). All of the CCWs said that they are involved in BF promotion campaigns, and yet only one had actually attended BF training.

One key strategy to improving health outcomes and the quality of health care delivery is improved patient-provider information. Improving resource provision for CCWs and provision of training to improve their knowledge, directly impacts on the quality of health care they provide to people, especially people with low health literacy (159,160). In this study, the training of CCWs took place during the workshops conducted over two days in each of the three communities, and was continuously reinforced for 14 months during the guided implementation and final FGDs. These workshops were evaluated as useful by the CCWs, as gathered from the responses given in Section 4.8. From their responses, the CCWs each learnt new concepts with regard to BF and EBF, and they described it as a form of CCW development program important for the promotion of EBF. The SAQ administered before and after the workshops also gave an overview of how much the CCWs knew with regard to BF. The

knowledge scores (Figure 4-1) show a general increase in knowledge when comparing the workshop based post-intervention scores to the pre-interventions scores. The student t-test conducted also showed that there was a difference in the mean scores before and after the workshops, which means that the workshops made a difference in the CCWs knowledge on BF and EBF. This was essential as it meant that the CCWs were continuously being empowered in BF promotion during this study.

Other studies recommend that the provision of refresher courses or the training of HCWs such as CCWs on the knowledge, attitudes and beliefs surrounding BF and EBF is essential for the improvement of the practices (67,156,158,161). A study conducted in Bangladesh found that mothers who were attended to by trained CCWs faced lower chances of BF problems than those mothers who did not (162). Breastfeeding problems and challenges such as improper positioning of the infant lead to reduced breast milk production, which ultimately interferes with BF and infant growth. The result is usually the same – mothers embark on alternative feeding modes (72,79). The promotion of BF and EBF by trained and skilled CCWs assists mothers to have the knowledge they need to adopt BF, and communities to support BF women.

### ***5.7 HIV/AIDS - gap between policy and practice***

Due to the high prevalence of HIV in South Africa amongst adults between the ages of 15-49 years (18.9%), BF and HIV transmission of the virus during BF is of concern (163). With the constantly changing recommendations of BF for HIV positive mothers, there is heightened need to ensure that HCWs, such as CCWs, are up to date with the current recommendations from the WHO, UNICEF and NDoH. From the interview data, it was important to note that the CCWs encouraged mothers to breastfeed exclusively for the first six months of life, and then to halt all BF completely and to initiate complementary feeding (section 4.5.3). These recommendations are not consistent with the most recent IYCF policy of 2013. The nurses at both PHC clinics confirmed that the current South African 2013 IYCF policy (2), which they also referred to as the Integrated Policy, is the one that is being implemented at their facilities – although the interview data from the CCWs indicated otherwise. The gap between policy and practice was evident from the information provided by the nurses, which was further confirmed by the Ubunye Foundation liaison and the Deputy Director of Human Resources from the Department of Health District office in Grahamstown. Both personnel also emphasized the need for training of CCWs on updated information, as discussed in section 5.6. The training

workshops were accompanied by the facilitator's manual as a reference resource for the CCWs to use in the promotion of EBF and BF.

### ***5.8 The facilitator's manual***

The provision of material for use in the promotion of BF is fundamental for any intervention aiming to promote EBF (67). Several booklets, manuals, pamphlets, etc. have been developed by various organisations around the world for the promotion of BF and EBF practices (123–126,128,142). Such resources are useful as reference materials for mothers who want to breastfeed, or for HCWs who want to promote the practice, and it is very important that such materials are developed taking the target community into consideration (83,142). In a study conducted in Zimbabwe, it was found that the use of material for the promotion of BF, coupled with training of village health workers, complemented the efforts of EBF promotion (67). Shah et al. (2005), in a study conducted in South Africa, concluded that HCWs, including CCWs, require information through training and resources if they are supposed to 'care' for mothers and their infants (158).

The development of the facilitator's manual was a necessary step to ensure the availability of a culturally appropriate, community specific resource for the promotion of BF and EBF in the communities researched. This is despite the various manuals that have been developed worldwide for the promotion of BF and EBF practice, which are usually developed by the government or NGOs, for a diverse population at a country or organisational level (83,124,164,165). The idea of developing a facilitator's manual for CCWs, with CCWs, is that the result is considered as acceptable by them and, because it was developed with them, they have complete ownership of the manual. The CCWs' input was essential in identifying appropriate language, images, layout and content options. This was very important, as outlined by Kreuter et al. (2003), for the development of culturally appropriate health promotion material (25).

This manual is also important, because a lack of BF material was also identified as a barrier to the promotion of BF (Section 4.4.2.). Some CCWs stated the need for information material to use during the promotion of BF and EBF practices. The resulting facilitator's manual (Appendix N) was as a result of a cyclical and participatory process through the collaboration mentioned in Section 3.3.2. Haines et al. (2007) suggest that participatory methods improve chances of intervention acceptability by the recipients, who are the CCWs and the CBOs in

this research (157). The success of the intervention depends entirely on its acceptance by and applicability to the community. The roles of CBOs as intermediaries who assist in the integration of CCWs in the health care system, in the provision of health promotion materials and supervision is evident, important and required - which enhances the need for their involvement in the development process (156).

### ***5.8.1 The development and modification of the facilitator's manual***

The development and modification of the facilitator's manual was possible with the input and feedback from the CCWs. Table 4-4 shows the modifications made to the draft facilitator's manual, based on the CCWs' input. It is important to note that the CCWs would either ask for more information to be added, for further explanation of content, or pictures, or for some content to be removed, due to it being not applicable or culturally inappropriate to the communities being researched. The involvement of the CCWs was essential, as it facilitated and fulfilled the principles of CBPR and the PEN-3 model. Their input improved the content of the facilitator's manual through consistent interaction, which made it a culturally appropriate, community specific BF promoting resource. The modifications made to each section of the facilitator's manual for the promotion of BF and EBF are discussed below.

#### **Section 1: The roles of community care workers**

This section was included as an introduction to CCWs, for them to understand why CCWs are important, crucial, and required as a human resource for health in BF and EBF promotional practices. As part of task shifting, CCWs are especially useful in the provision of health care services in poor, rural, and underserved communities in South Africa – where clinics and hospitals are not easily accessible (143,157,165). The subsection on the target population of those people who should receive information on BF and EBF emerged from the CCWs, who agreed that everyone, including males, had to be involved in the BF campaigns. If men are well informed about BF and EBF, they would accept the practice, and encourage their partners to practice it. The involvement of the whole community in BF and EBF promotion has been reiterated by other studies (23,80,152).

#### **Section 2: Skills in educating the community**

While it is expected by the general public that a HCW 'knows' how to talk to clients, this is not always the case (127). One CCW mentioned the need for a 'skill' on how to talk to the people in the community on BF and EBF practices (Section 4.6.1). Good communication skills

cannot be expected from everyone in the health care sector, because it is a learned skill which develops over a period of time (143). The need for communication skills amongst HCWs has also been emphasized by UNICEF, who concluded that, before counselling or educating mothers on BF and EBF, the necessary skills such as positioning of the baby during BF, need to be taught to the people concerned (22).

### **Section 3: Overview of breastfeeding**

Information in this section is significant in any BF and EBF promotional material, and is found in all sources used as reference guides for the development of the facilitator's manual (83,123–125,128,164). Of particular importance in this section is the text box containing the recommendations of the NDoH South Africa on the duration of EBF and BF beyond six months, for up to two years. These recommendations formed part of the modifications of the facilitator's manual, as they emphasized the recommendations made by the NDoH South Africa (2). These recommendations were included after some CCWs mentioned having stopped BF because they had been 'told to stop by their mother', and another CCW having encountered a mother who just stopped BF at one year. The duration was emphasized mainly because of the heightened effects of BF as the duration increases. The suggestion of using a wet nurse was also removed from Section 3.1.1 of the manual, after a CCW was concerned about the infectious diseases and their prevalence in South Africa, which could potentially affect the baby (87,146). A unique finding from this study, which required clarification, was the insertion of breast milk directly into the baby's ear as a remedy for ear infections. 'How' BF assists the infant with infections such as ear infections was explained in Sections 3.2.2 in the facilitator's manual. This was important to clear up the misconception that breast milk should be used directly in the ears. Literature on BF and ear infections concludes that BF the baby is sufficient to provide the baby with anti-infective properties to fight such infections (83,142). The discussions on how BF helps with ear infections took place during the workshops, and the information was added to the manual (Table 7).

### **Section 4: Breastfeeding patterns**

Breastfeeding on demand is encouraged for all BF mothers, as it ensures that a baby does not get hungry. It is extremely important for mothers to understand that, as long as they are BF on demand, there is no such thing as 'my baby drinks too much milk' (83). Normal baby behaviours were included in the manual as also found in other BF promotional material (83,124). The importance of correct attachment of the baby to the breast is a non-debatable

one, especially because poor attachment results in the baby not being able to suckle fully, and also leads to breast health problems (83,142). The picture which was in the mother's booklet which showed the correct attachment of the baby to the breast (Table 4-4) was not clear to one of the CCWs. A picture which showed the same concept, but with less detail, was used in the facilitator's manual to enhance understanding. Research suggests that the use of pictures and visual aids which illustrate concepts and provide visual memory can enhance understanding, and therefore the CCWs needed to understand and relate to all the pictures in the facilitator's manual (100).

Most reference sources on BF and EBF describe four major BF positions, i.e. the cradle hold, the cross-cradle hold, the football hold, and the side-lying hold (83,123,128,166). The CCWs expressed that the cross-cradle hold is not appropriate to use in the isiXhosa culture. Within this culture, mothers are expected to hold the breast and guide the baby to the breast whilst BF. Through consensus with all CCWs, the cross-cradle hold position was removed from the facilitator's manual, due to its inappropriateness in their communities. Another major modification to this section was the explanation of the side-lying hold. Concerns were raised on how this position is potentially fatal for new-borns and babies less than three months old. An in-depth explanation and a text box were included to highlight the instances in which the side-lying hold could be used. Although the option of completely removing the side-lying hold was there, it could not be removed because CCWs raised a question on where the baby should sleep at night. The CCWs concurred with other studies, which highlight that bedding in and rooming in are encouraged for maintaining BF and EBF, especially during the night (83). The use of the side-lying hold during the first three months of a baby's life was cautioned as inappropriate due to the high possibility of the infant choking on breast milk.

### **Section 5: Breast health problems**

Breast health problems occur in most BF mothers, and are the reason why a lot of women stop BF early (80). Management of breast health problems is essential for the maintenance of BF and EBF practices, especially in first time mothers (83,123,127). Inclusion of the section on breast health problems was also endorsed by one CCW, who inquired as to what mothers who have sore nipples should do (Table 4-4).

Breast and nipple examination had been included in this section, but the CCWs expressed that this was not within their scope of practice. The CCWs asked that this section be removed.

Breast and nipple examination are necessary to determine the specific breast health problem that a mother is experiencing, in order to give proper advice on managing and treating them (80). Although the CCWs did not perform this examination, they still require information on the signs and symptoms of breast health problems, and how to manage or treat problems so as to better inform mothers on the necessary step to take, should they be faced with such problems.

### **Section 6: Other recommendations with regard to breastfeeding**

Weaning and 'how' to wean were included, because studies have shown that most mothers practice abrupt weaning, because they do not know how to wean over time (167). A text box was added, with information on why cup feeding is preferred to bottle feeding, after one CCW inquired which one was better. Cup feeding is recommended by the South Africa NDoH and WHO, because cups are easier to clean and to sterilise than feeding bottles. Feeding bottles also have a teat, which acts as a dummy, which is not advised for use in infants (2,83). While recommendations on the duration of storage of breast milk in freezers by various organisations (123,125,128) extends to 12 months, the CCWs expressed that this is not remotely practical. Recommendations to store breast milk in freezers were then removed at the request of the CCWs. This is inappropriate to the cultural context as well as socio-economic context, where mothers may not have access to uninterrupted electricity and freezers.

The issue of pictures which were used in the mother's booklet not being understood by the CCWs prompted for the use of the same picture in the facilitator's manual, but with a step by step, in-depth explanation of expressing breast milk manually - which is what the pictures (Figures 12 and 13 in the facilitator's manual) were referring to. The concept of using the same pictures was part of the peripheral strategy to enhance cultural appropriateness (25). Two new sections were included at the request of the CCWs. The first section was on the cases when a mother cannot produce enough breast milk, and the second was on foods that can be eaten to increase breast milk supply.

### **Section 7: Maternal influences on the growth and development of the baby**

One of the most important factors that result in the proper nourishment of a baby through BF is the mother's diet (123). Not all food and drinks are safe for the baby during BF (83,123). The use of alcohol by some BF mothers was raised as a concern in the communities researched. CCWs needed information on the effects of alcohol during pregnancy and BF, so as to be able to educate the mother in the communities on such effects. The section on BF in the context of

HIV/AIDS was expanded to include information on ARV treatment defaulters, and emphasis was given on HIV positive mothers and babies taking their treatment. Information on HIV was especially important to highlight, since a gap between policy and practice was identified during the study (section 4.5.3).

### **Section 8: The role of family in supporting breastfeeding**

Beliefs that had been raised by the CCWs which could potentially hinder BF were also discussed in this section. Kakute et al. (2005) suggest that the beliefs in communities about BF and EBF need to be discussed and clarified (23). The discussions which took place with regard to the cultural beliefs and values within the communities were also a measure to ensure the cultural appropriateness of the facilitator's manual (25).

#### ***5.8.2 Modification through readability testing***

The readability of written health information is often evaluated if the materials are intended for the general public. Limited literature is available on the readability of written health information for HCWs, or on the applicability of readability tests on health information in South Africa (132). Other publications suggest that there is no need to test the readability of materials intended for HCWs (130). Taking such recommendations into consideration, there was need to consider our target audience. The facilitator's manual was developed for HCWs who normally do not have any tertiary education. Out of the 14 CCWs who took part in the study, only four had matriculated (completed high school / grade 12), while only 9 had completed grade 11, and one had completed grade 10. The majority of the CCWs had completed grade 11, which is similar with a study by Ogunmefun C et al. (2011) in South Africa, who found that the majority of CCWs who worked in the North West province did not complete high school, and most of them had passed between grades 8 and 11 (18). Through observations during the SSIs, which were conducted in English with the assistance of an interpreter, and the results from the SAQ, there was need to improve the readability level of the materials for the CCWs. Although the final facilitator's manuals are going to be translated into IsiXhosa, some CCWs had mentioned that they also wanted the manuals in both languages, explaining that English was easier to read, and another mentioning that the English version would also be an opportunity for them to learn English. Thus it was important that the English version of the facilitator's manual had an acceptable readability level.

Using guidelines suggested by other authors (133,168–170) on improving the readability of patient oriented material, modifications were made to the manual's layout, bulleted and numbered lists were increased, the number of text boxes increased, complicated words were avoided, and more pictures and graphics were used in the explanation accompanying text. The use of medical jargon has been found to reduce the readability of health information. The study by Sand-Jecklin (2007) suggests that reducing the amount of medical terminology in health information significantly improves readability levels (169). The difference between the study by Sand-Jecklin and this current study is that they focused on patient information, whilst our information is targeted at CCWs. From the results of the SSIs, workshops, and the guided implementations, the CCWs were familiar with most of the medical terms that were used, such as engorgement, mastitis and inverted nipples. This was not, however, taken for granted. Although some of the medical terminology was retained in the facilitator's manual, definitions and clear explanations were given to accompany the text.

The overall document readability of the final facilitator's manual improved to, at most, a high school level (grade 11) and, at least, middle school level - grade 8 (Table 4-7), which is reasonable according to the recommendations stated by Riordan (1985), recommending that BF literature should be written at a grade 8 level (171). Although the facilitator's manual was intended for HCWs and not BF mothers, the information therein could be deemed appropriate for people with basic health literacy. Of particular interest from the results, was the increase in the average scores of the CLI, from [10-11] in the draft facilitator's manual, to [11-12] in the final facilitator's manual – although both results are categorised as high school level. A possible explanation to the slight increase in the score is the fact that the number of characters in the text of the draft facilitator's manual was less than those in the final facilitator's manual. This result is, however, is an acceptable result, since it still falls under the high school level of reading. Due to limited literature on readability of BF promotional material for HCWs, no comparisons and contrasts were made with the readability levels obtained in this study.

A major limitation to readability tests done on the facilitator's manual sections is that the results are not directly comparable between the first results from the draft facilitator's manual (Table 4-5) and the results from the final facilitator's manual (Table 4-6). This is because of the modifications made: new sections were added, while some sections were removed – hence either more or less content appeared in the final facilitator's manual when compared to the draft manual.

## ***5.9 Evaluation of the research***

Community based health promotion programs are complex to evaluate. It also goes without saying that, through implementing a health promotion program, new ideas, questions and concepts emerge and interventions evolve, which aggravates the difficulty of evaluating such programs (54). Health promotion programs are long-term, ongoing, and evolving processes and not necessarily outcomes themselves, and, as such, they cannot be completely and properly evaluated in a short period of time (54,172). Nutbeam (1998) suggests the implementation of process evaluation for health promotion programs (172). The process evaluation took place during the four main phases of the research i.e. Problem identification and confirmation, Intervention, Implementation and Programme evaluation and feedback.

One of the most important aspects of CBPR is that it is research benefits the communities researched, and that it is sustainable (174,175). The CBO liaison assured the CCWs of continued support in the implementation of BF and EBF promotion. She referred to using the facilitator's manual together with the CCWs to assist in solving problems encountered in the work setting. This promotes sustainability, which is one of the key elements emphasised in BPR and by the PEN-3 model. The finalised version of the facilitator's manual will be sent to the School of Languages at Rhodes University, where it will be translated into IsiXhosa and Afrikaans. This will also fulfil the requests made by the CCWs of having BF promotion material in the local languages.

## **6 CHAPTER 6: CONCLUSION**

This final chapter will focus on the conclusions reached as a result of this study, as well as on the significance, strengths, limitations and recommendations based on the results obtained by it.

### **6.1 Conclusion**

The main focus of this study was to identify the reasons behind EBF being a rare practice in the participant communities, to facilitate participatory training workshops with CCWs, to develop and modify the facilitator's manual designed to promote BF and EBF as well as obtain feedback on the workshops as well as the applicability and appropriateness of the facilitator's manual in the communities researched..

Based on the results from the SSIs one of the main findings confirmed that EBF was not practiced for the first six months of an infant's life as recommended, in Glenmore, Grahamstown, or Ndwayana. This issue was highlighted in the SSIs conducted with the CCWs. The factors that influence BF and EBF practices were also identified by the CCWs. These factors were classified according to the PEN-3 thematic categories

The positive factors identified were the enabling factors to BF and EBF, which include health promotion materials (when available), initiatives, and facilities. Advantages of BF and EBF and the knowledge thereof were the main factors which led to mothers adopting the practice, whilst the CCWs, nurses, and other women in the community were the people who promoted BF and EBF. Utilisation of the existing facilities and resources during the promotion of BF and EBF was emphasized for the CCWs, so as to improve the continued use of available resources. The need to use existing resources is also an important element in the PEN-3 model, which draws attention to the communities' practices promoting the BF behaviour.

The negative, hindering factors were identified as the lack of health promotion material, or the unavailability of these materials in the local language, as well as HIV/AIDS. Attitudes and beliefs within the communities were the perceptions which contributed to the non-adoption of EBF, whilst males in the communities were reported to negatively influence BF and EBF practices. Negative factors were discussed during the workshops, and CCWs suggested various solutions to overcome these barriers to improve BF and EBF practices in the future. This was essential, because it emphasised an important aspect of CBPR, which is concerned with how

participants in a study need to be able to come up with their own solutions to the identified problems. The current ‘existential’ perception according to the PEN-3 model was that breast milk should be expressed after travelling. This was reported by the CCWs that it did not influence negatively or positively - BF and EBF practices, and was acknowledged as existent to the communities in this study.

The workshops were a platform to discuss the importance of BF and EBF. Solutions as to how to handle the various factors identified during the SSIs were also discussed. Emphasis was given to the CCWs and the researchers acknowledging of the positive aspects, and to finding culturally appropriate ways to address the negative aspects. The development of the manual was a cyclic process, involving modification of the materials and consultation with the CCWs, who provided insights regarding the improvement of the manual, so as to make it more culturally acceptable in their communities. The sections included in the manual have also been identified in other BF promoting manuals, pamphlets, and booklets from various organisations as explained in section 5.8.1. The highlight of the modification was the CCWs’ inputs on improving the facilitator’s manual, based on the suggestions relevant to their context.

This study shows that there are various factors that influence any mother’s decision to breastfeed within any community setting. Although the results from this current study cannot be generalised to a larger population, they resound with findings accentuated in other studies conducted in South Africa, and internationally. Results from the guided implementation, as well as the FGDs, highlight that the CCWs found participatory workshops and the facilitator’s manual to be beneficial in improving their understanding of BF and EBF concepts. The CCWs expressed that they were encouraged to do their jobs, and that their confidence and knowledge had increased because of the workshops and the facilitator’s manual they could also rely on as a reference tool. After all the modifications highlighted by the CCWs and CBO liaisons had been completed, they mentioned that the facilitator’s manual was culturally appropriate. The CCWs also mentioned the need for assistance with regard to BF and EBF workshops and refresher training, and the CBO liaisons assured them their continued support in incorporating this manual for BF ad EBF promotion as part of their continued community development projects.

This study emphasizes that, in order to identify and address factors that affect EBF in a specific community, culture has to be considered during the development of materials, programs and

promotion initiatives. This is because the practice of EBF is difficult for a mother, and is influenced by several factors, as identified in the results section. South Africa is still progressing towards the reduction of a high infant mortality, and towards improving the health status of infants and young children. The development and implementation of EBF promotion improves BF practices, which positively contributes to improved nutrition, and a decrease in maternal and child mortality. This is a step towards achieving the SDGs. The empowerment of CCWs through training on BF and EBF, are proactive measures towards achieving SDG 5 in South Africa through female CCWs in PHC clinics.

Pharmacists have an active role in health promotion. Regardless of the PHC re-engineering program, pharmacists remain an untapped human resource for health who are essential for the improvement of knowledge and skills of CCWs and the public. Pharmacists could work with the outreach teams within the PHC centres to assist CCWs in identifying and addressing cultural barriers within localised communities and also to assist in the development of interventions to address the identified priority needs. This forms part of pharmaceutical care which diverts attention from dispensing of medicines only, to the provision of information for the prevention of disease or disease progression and the promotion of health.

## ***6.2 Significance of research***

This research contributes to understanding how CCWs perceive the current factors that influence BF and EBF practices in their communities, and suggests how to address them. It also provides a lens through which a culturally appropriate health promotion intervention for BF and EBF promotion can be developed, through a participatory collaborative approach – to suit one’s local context. The use of the PEN-3 theoretical framework led to the in-depth engagement with the CCWs, understanding that their involvement was crucial for the development of the facilitator’s manual. Not only has the research added to the body of knowledge from the findings obtained as well as the theoretical framework used, the CCWs also gained hands-on, in-depth understanding of BF through the various workshops and FGDs conducted.

The investment that has been placed into the training of CCWs, and the provision of the facilitator’s manual, will assist in the project application beyond academia, as well as aid the sustainability of the translational research project through the involvement of the CBOs, who have integrated the initiatives into their projects. In addition, the facilitator’s manual could have

a broad relevance especially to communities which have similar cultural and socio-economic backgrounds. Primary health care management can see to it that the manual is adopted in such areas and facilities, to also promote BF and EBF practices. This in turn will benefit the BF women who use this information, the infants who are breastfed, and the communities in which they live in. The adoption of EBF for six months, and continued BF for as long as possible thereafter contribute to improved infant and young child health and survival.

### ***6.3 Strengths and Limitations***

The researcher in no way attempts to generalize the findings to the experiences of other CCWs. This research rather attempts to sensitize its readers, including other health researchers, CBOs, and policy makers, on the issues highlighted by CCWs, concerning their experiences from interacting with the community with regard to BF practices. This study's findings do not reflect only ideas and concepts found in literature, but also add to the literature, so, discussions thereof can be useful for other researchers interested in community based research and in the development of culturally appropriate BF interventions in their local context.

This research was strengthened by not involving external 'participants', such as professional interpreters. Although one could argue that the use of participants as interpreters, the concept of participation, and openness of the CCWs were key to their involvement in the research process. To avoid interview bias during the process, the CCWs who assisted with interpretation were interviewed first during the SSIs.

Although the research had a small sample size, and was confined to only three sites, it strived to obtain credible and reliable results. The methods used in the research have been described in-depth for each phase, thus highlighting the rigour with which the study was approached. Findings were validated with the participants through member checks, and the methods through peer feedback.

This study is further strengthened by the involvement of CBOs in the research process, who are essential in promoting the sustainability of BF promotion, through the adoption and ownership of the facilitator's manual for the promotion of BF and EBF developed during this study.

## ***6.4 Recommendations for future studies***

### ***6.4.1 Continued use of facilitator's manual***

One of the key findings was the importance of CBOs in the implementation and management of BF promotion programmes. Without the CBOs' assistance, the training of CCWs and the provision of the facilitator's manual would not be assured of sustainability or continuity.

The manual will benefit other CBOs who work with mothers and infants who adopt this facilitator's manual as a resource for the promotion of BF and EBF. Furthermore, the NDoH could consider adopting and modifying as necessary, this facilitator's manual as a tool for CCWs in South African communities, to use in the promotion of BF and EBF.

### ***6.4.2 Training of community care workers***

There was evidence to show that the training of CCWs is not standardised, affecting the quality of information given to mothers, especially as CCWs do not have the requisite knowledge or resources at their disposal.

It is beneficial to mothers if the NDoH improves the training of CCWs, especially in infant and young child feeding practices, with regard to BF and EBF. The training of CCWs on BF and EBF is essential, and should be a priority for the country to increase the adoption of these practices. It would improve the adoption of BF and EBF if CBOs are more involved in the provision of refresher courses to CCWs, as staff turnaround can result in a PHC clinic not having CCWs who are equipped with the required knowledge on BF and EBF

### ***6.4.3 External evaluation of the study***

This study was process evaluated. This, however, is not sufficient to determine the depth of impact that the BF and EBF promotion had in the communities researched, within the timelines of an academic project.

We recommend that an external evaluation of the study be conducted, to find out if indeed the CCWs are using the facilitator's manual in the promotion of BF and EBF, if they are actually using the facilities they report to be using, if the promotion of BF and EBF is actually assisting people in the community to understand its importance, and if mothers are adopting the practices.

## 7 REFERENCES

1. World Health Organisation. Exclusive breastfeeding [Internet]. World Health Organisation. 2015 [cited 2015 Mar 3]. Available from: [http://www.who.int/nutrition/topics/exclusive\\_breastfeeding/en/](http://www.who.int/nutrition/topics/exclusive_breastfeeding/en/)
2. Department of Health. South Africa Infant and Young Child feeding Policy 2013 [Internet]. Department of Health South Africa; 2013 [cited 2015 May 14]. Available from: [http://www.kznhealth.gov.za/Nutrition/Infant\\_and\\_young\\_child\\_feeding\\_policy.pdf](http://www.kznhealth.gov.za/Nutrition/Infant_and_young_child_feeding_policy.pdf)
3. United Nation Children's Fund. Breastfeeding [Internet]. UNICEF. 2015 [cited 2015 Jun 13]. Available from: [http://www.unicef.org/nutrition/index\\_24824.html](http://www.unicef.org/nutrition/index_24824.html)
4. South Africa: Policy turnaround on breastfeeding [Internet]. IRINnews. 2014 [cited 2015 Mar 3]. Available from: <http://www.irinnews.org/report/93600/south-africa-policy-turnaround-on-breastfeeding>
5. United Nation Children's Fund. Committing to child survival. A promise renewed. [Internet]. United Nations Children's Fund; 2014 [cited 2015 Jun 13]. Available from: [http://data.unicef.org/corecode/uploads/document6/uploaded\\_pdfs/corecode/APR-2014-17Oct14-web\\_194.pdf](http://data.unicef.org/corecode/uploads/document6/uploaded_pdfs/corecode/APR-2014-17Oct14-web_194.pdf)
6. Declaration of Alma-Ata. In Alma-Ata, USSR: World Health Organisation; 1978 [cited 2015 Mar 8]. Available from: [http://www.who.int/publications/almaata\\_declaration\\_en.pdf](http://www.who.int/publications/almaata_declaration_en.pdf)
7. Millennium Development Goals [Internet]. UNDP in South Africa. 2012 [cited 2015 Jun 13]. Available from: [http://www.za.undp.org/content/south\\_africa/en/home/mdgoverview.html](http://www.za.undp.org/content/south_africa/en/home/mdgoverview.html)
8. Progress for Children. Beyond averages: learning from the MDGs [Internet]. UNICEF; 2015 [cited 2015 Jul 16]. Available from: [http://www.unicef.org/publications/files/Progress\\_for\\_Children\\_No.\\_11\\_22June15.pdf](http://www.unicef.org/publications/files/Progress_for_Children_No._11_22June15.pdf)
9. MDG 4: reduce child mortality [Internet]. World Health Organisation. 2015 [cited 2015 Jul 1]. Available from: [http://www.who.int/topics/millennium\\_development\\_goals/child\\_mortality/en/](http://www.who.int/topics/millennium_development_goals/child_mortality/en/)
10. United Nations. Sustainable Development Goals [Internet]. Sustainable Development Knowledge Platform. 2015 [cited 2016 Jan 4]. Available from: <https://sustainabledevelopment.un.org/?menu=1300#>
11. United Nations. Millennium Development Goals Report - 2015 [Internet]. United Nations; 2015 [cited 2015 Jul 12]. Available from: [http://www.undp.org/content/dam/undp/library/MDG/english/UNDP\\_MDG\\_Report\\_2015.pdf](http://www.undp.org/content/dam/undp/library/MDG/english/UNDP_MDG_Report_2015.pdf)
12. World Health Organisation. Breastfeeding [Internet]. World Health Organisation. 2015 [cited 2015 Mar 25]. Available from: <http://www.who.int/topics/breastfeeding/en/>

13. Kramer M, Kakuma R. Optimal duration of exclusive breastfeeding. *Cochrane Database Syst Rev.* 2009;(1).
14. World Health Organisation. Ten facts on breastfeeding [Internet]. World Health Organisation. 2015 [cited 2015 Mar 3]. Available from: <http://www.who.int/features/factfiles/breastfeeding/en/>
15. World Health Organisation. Complementary feeding [Internet]. World Health Organisation. 2015 [cited 2015 Mar 3]. Available from: [http://www.who.int/nutrition/topics/complementary\\_feeding/en/](http://www.who.int/nutrition/topics/complementary_feeding/en/)
16. United Nation Children’s Fund - South Africa. UNICEF welcomes new policy on infant and young child feeding in the context of HIV [Internet]. United Nations Children’s Fund. 2015 [cited 2015 Feb 3]. Available from: [http://www.unicef.org/southafrica/media\\_7298.html](http://www.unicef.org/southafrica/media_7298.html)
17. Minister of Health. Breastfeeding Consultative Meeting (Minister’s Speaking Notes) [Internet]. Health Systems Trust. 2011 [cited 2015 Apr 3]. Available from: <http://www.hst.org.za/news/ministers-speaking-notes-breastfeeding-consultative-meeting>
18. Ogunmefun C, Madale R, Matse M, Jassat W, Mampe T, Tlamama F, et al. An Audit of Community Health Workers in the Districts of the North West Province [Internet]. Health Systems Trust; 2011 [cited 2015 May 20]. Available from: <http://www.jpchcf.co.za/wp-content/uploads/2014/06/Final%20Report-%20Audit%20of%20CHWs%20in%20the%20NWP%2010%20Oct%202011.pdf>
19. Departments of Health and Social Development. Community Care Worker Management Policy Framework 2009 [Internet]. Human Resources for Health South Africa; 2009 [cited 2015 May 20]. Available from: <http://www.hrhresourcecenter.org/node/2857>
20. Department of Health South Africa. Provincial guidelines for the implementation of the three streams of PHC re-engineering [Internet]. Department of Health South Africa; 2011 [cited 2015 May 20]. Available from: <http://www.cmt.org.za/wp-content/uploads/2011/09/GUIDELINES-FOR-THE-IMPLEMENTATION-OF-THE-THREE-STREAMS-OF-PHC-4-Sept-2.pdf>
21. El-Gilany A-H, Shady E, Helal R. Exclusive Breastfeeding in Al-Hassa, Saudi Arabia. *Breastfeed Med.* 2011 Jan;6(4):209–13.
22. World Health Organisation, United Nations Children’s Fund. Protecting, promoting and supporting breast-feeding: the special role of maternity services/a joint WHO/UNICEF statement [Internet]. WHO/UNICEF; 1989 [cited 2015 Mar 31]. Available from: <http://apps.who.int/iris/handle/10665/39679>
23. Kakute PN, Ngum J, Mitchell P, Kroll KA, Forgewei GW, Ngwang LK, et al. Cultural barriers to exclusive breastfeeding by mothers in a rural area of Cameroon, Africa. *J Midwifery Women’s Health.* 2005;50(4):324–8.
24. Kannan S, Webster D, Sparks A, Acker CM, Greene-Moton E, Tropiano E, et al. Using a Cultural Framework to Assess the Nutrition Influences in Relation to Birth Outcomes

- Among African American Women of Childbearing Age: Application of the PEN-3 Theoretical Model. *Health Promot Pract*. 2008 Mar;10(3):349–58.
25. Kreuter MW, Lukwago SN, Bucholtz DC, Clark EM, Sanders-Thompson V. Achieving Cultural Appropriateness in Health Promotion Programs: Targeted and Tailored Approaches. *Health Educ Behav*. 2003 Apr 1;30(2):133–46.
  26. Kreuter MW, McClure SM. The Role of Culture in Health Communication. *Annu Rev Public Health*. 2004;25(1):439–55.
  27. United Nation Children’s Fund. South Africa : Country statistics [Internet]. UNICEF. 2015 [cited 2015 Jul 16]. Available from: <http://data.unicef.org/countries/ZAF>
  28. United Nation Children’s Fund. Nutrition: Current status and progress [Internet]. UNICEF Data: Monitoring the Situation of Children and Women. 2015 [cited 2015 Jul 16]. Available from: <http://data.unicef.org/nutrition/iycf>
  29. Labbok M, Krasoveck K. Toward Consistency in Breastfeeding Definitions. *Stud Fam Plann*. 2015 Mar 18;21(4):226–30.
  30. Hajeebhoy N, Nguyen PH, Mannava P, Nguyen TT, Mai LT. Suboptimal breastfeeding practices are associated with infant illness in Vietnam. *BioMed Cent*. 2014;9(12).
  31. Daniels K, Nor B, Jackson D, Ekström E-C, Doherty T. Supervision of community peer counsellors for infant feeding in South Africa: an exploratory qualitative study. *Hum Resour Health*. 2010;8(6).
  32. Farrel B. Breastfeeding and the Lactational Amenorrhea Method (LAM) [Internet]. Medical Services Pathfinder International; 1997 [cited 2015 Mar 25]. Available from: <http://www.pathfinder.org/publications-tools/pdfs/Module-8-LAM-and-Breastfeeding-Support.pdf>
  33. Breastfeeding: achieving the new normal. *The Lancet*. 2016 Jan 30;387(10017):404.
  34. Grobler F. *Contraception : Theory and Practice*. 4th ed. Van Schaik; 2003.
  35. United Nation Children’s Fund. Innocenti Declaration [Internet]. UNICEF. 2015 [cited 2015 Mar 25]. Available from: <http://www.unicef.org/programme/breastfeeding/innocenti.htm>
  36. The Tshwane declaration of support for breastfeeding in South Africa. *S Afr J Clin Nutr*. 2011;24(4).
  37. United Nation Children’s Fund. The Baby-Friendly Hospital Initiative [Internet]. UNICEF. 2015 [cited 2015 Mar 30]. Available from: <http://www.unicef.org/programme/breastfeeding/baby.htm>
  38. World Health Organisation. International Code of Marketing of Breast-Milk Substitutes [Internet]. World Health Organisation; 1981 [cited 2015 May 11]. Available from: <http://www.who.int/nutrition/publications/infantfeeding/9241541601/en/>

39. United Nation Children's Fund. Celebrating the Innocenti Declaration on the Protection, Promotion and Support of Breastfeeding: Past Achievements, Present Challenges and the Way Forward for Infant and Young Child Feeding [Internet]. UNICEF-Innocenti Research Centre; 2005 Nov [cited 2015 Mar 25]. Available from: <http://www.unicef-irc.org/publications/pdf/1990-2005-gb.pdf>
40. World Health Organisation. Planning guide for national implementation of the Global strategy for infant and young child feeding [Internet]. World Health Organisation; 2007 [cited 2015 Apr 7]. Available from: [http://www.who.int/maternal\\_child\\_adolescent/documents/9789241595193/en/](http://www.who.int/maternal_child_adolescent/documents/9789241595193/en/)
41. World Bank. Mortality rate, infant (per 1,000 live births) [Internet]. World Bank Data. 2015 [cited 2015 May 14]. Available from: [http://data.worldbank.org/indicator/SP.DYN.IMRT.IN/countries/1W-ZA-ZG-A9?order=wbapi\\_data\\_value\\_1980%20wbapi\\_data\\_value%20wbapi\\_data\\_value-first&sort=asc&display=default](http://data.worldbank.org/indicator/SP.DYN.IMRT.IN/countries/1W-ZA-ZG-A9?order=wbapi_data_value_1980%20wbapi_data_value%20wbapi_data_value-first&sort=asc&display=default)
42. World Bank. Mortality rate, under - 5 (per 1,000 live births) [Internet]. World Bank Data. 2015 [cited 2015 Jul 14]. Available from: <http://data.worldbank.org/indicator/SH.DYN.MORT?page=4>
43. Exclusive breastfeeding rate [Internet]. Health Statistics South Africa. [cited 2015 Jun 20]. Available from: <http://www.healthlink.org.za/healthstats/148/data>
44. World Health Organisation. Guidelines on HIV and infant feeding 2010 [Internet]. 2010 [cited 2015 Apr 7]. Available from: [http://www.who.int/maternal\\_child\\_adolescent/documents/9789241599535/en/](http://www.who.int/maternal_child_adolescent/documents/9789241599535/en/)
45. World Health Organisation. Global Health Observatory Data Repository [Internet]. WHO. 2015 [cited 2015 Jul 16]. Available from: <http://apps.who.int/gho/data/node.country.country-ZAF>
46. Barni N. Promotion of exclusive infant feeding in South Africa: Community-Based peer counselling in high HIV prevalent area [Internet]. Uppsala University; 2010 [cited 2015 Jun 18]. Available from: <http://www.diva-portal.org/smash/get/diva2:360322/FULLTEXT01.pdf>
47. Statistics South Africa. Mortality and causes of death in South Africa, 2013: Findings from death notification [Internet]. Statistics South Africa; 2014 [cited 2015 Jun 28]. Available from: <http://www.statssa.gov.za/publications/P03093/P030932013.pdf>
48. World Bank. Mortality rate, Under - 5 (per 1,000 live births) [Internet]. The World Bank. 2015 [cited 2015 Oct 23]. Available from: [data.worldbank.org/indicator/SH.DYN.MORT](http://data.worldbank.org/indicator/SH.DYN.MORT)
49. Millennium Development Goals Country Report 2013 [Internet]. Statistics South Africa; 2013 [cited 2015 Jun 13]. Available from: [http://www.undp.org/content/dam/south\\_africa/docs/Reports/The\\_Report/MDG\\_October-2013.pdf](http://www.undp.org/content/dam/south_africa/docs/Reports/The_Report/MDG_October-2013.pdf)

50. World Health Organisation. The Ottawa Charter for Health Promotion [Internet]. World Health Organisation. 2015 [cited 2015 Apr 13]. Available from: <http://www.who.int/healthpromotion/conferences/previous/ottawa/en/>
51. World Health Organisation, United Nations Children's Fund. Report of the International Conference on Primary Health Care. In Alma-Ata USSR: WHO/UNICEF; 1978 [cited 2015 May 18]. Available from: [http://www.searo.who.int/entity/primary\\_health\\_care/documents/hfa\\_s\\_1.pdf](http://www.searo.who.int/entity/primary_health_care/documents/hfa_s_1.pdf)
52. The National Health Promotion Policy and Strategy [Internet]. Department of Health South Africa; 2014 [cited 2015 Jul 18]. Available from: <http://www.health-e.org.za/wp-content/uploads/2015/09/The-National-Health-Promotion-Policy-and-Strategy.pdf>
53. World Health Organisation. Milestones in Health Promotion Statements from Global Conferences [Internet]. World Health Organisation; 2009 [cited 2015 Jul 7]. Available from: [http://www.who.int/healthpromotion/Milestones\\_Health\\_Promotion\\_05022010.pdf?ua=1](http://www.who.int/healthpromotion/Milestones_Health_Promotion_05022010.pdf?ua=1)
54. Rootman I, Goodstadt M, Hyndman B, McQueen D V, Potvin L, Springett J, et al., editors. Evaluation in health promotion : Principles and perspectives. Denmark: WHO; 2001. 561 p.
55. Jewkes R, Murcott A. Meanings of community. *Social Science & Medicine*. 1996;43(4):555–63.
56. Wilmoth TA, Elder JP. An assessment of research on breastfeeding promotion strategies in developing countries. *Soc Sci Med*. 1995 Aug;41(4):579–94.
57. Bernie K. The Factors Influencing Young Mothers' Infant Feeding Decisions: The Views of Healthcare Professionals and Voluntary Workers on the Role of the Baby's Maternal Grandmother. *Breastfeed Med*. 2013 Dec 20;9(3):161–5.
58. Department of Health South Africa. Provincial Guideline for the Implementation of the Mother-Baby hospital initiative [Internet]. 2012 [cited 2015 Oct 29]. Available from: <http://www.kznhealth.gov.za/Nutrition/cirG94.2012.pdf>
59. Department of Health South Africa. Negotiated Service Delivery Agreement (NSDA): A Long and Healthy Life for All South Africans [Internet]. National Department of Health South Africa; 2013 [cited 2015 Jul 23]. Available from: <http://www.hst.org.za/publications/nsda-long-and-healthy-life-all-south-africans>
60. Health personnel per population [Internet]. Health Systems Trust. 2015 [cited 2016 Jan 3]. Available from: <http://www.hst.org.za/recently-updated-indicators>
61. Ward K, Sanders D, Leng H, Pollock AM. Assessing equity in the geographical distribution of community pharmacies in South Africa in preparation for a national health insurance scheme. *Bull World Health Organ*. 2014 May;4(92):482–9.

62. Lehmann U, Sanders D. Community health workers: What do we know about them? [Internet]. WHO Department of Human Resources for Health; 2007 [cited 2015 May 19]. Available from: [http://www.who.int/healthsystems/round9\\_7.pdf](http://www.who.int/healthsystems/round9_7.pdf)
63. Friedman I, Ramalepe M, Matjuis F, Lungile B, Llyod B, Mafuleka A, et al. Moving Towards Best Practice: Documenting and Learning from Existing Community Health/Care Worker Programmes [Internet]. Health Systems Trust & The National Department of Health; 2007 [cited 2015 Jun 13]. Available from: [http://www.hst.org.za/uploads/files/chws\\_bestpractice.pdf](http://www.hst.org.za/uploads/files/chws_bestpractice.pdf)
64. National Department of Health South Africa. Road to Health Card- Boys. Department of Health South Africa; 2015.
65. Hamm L. The Peer Counsellor Programme in South Africa [Internet]. La Leche League International. 2007 [cited 2015 Oct 24]. Available from: <http://www.llli.org/llleaderweb/lv/lvjunjul01p66.html>
66. Shisana O, Simbayi L, Rehle T, Zungu NP, Zuma K, Ngogo N, et al. South African National HIV Prevalence, Incidence , Behaviour and Communication Survey,2008: The health of our children Shisana O, Simbayi LC, Rehle T, Zungu NP, Zuma K, Ngogo N, Jooste S, PillayVan Wyk V, Parker W, Pezi S, Davids A, Nwanyanwu O, Dinh TH [Internet]. Human Sciences Research Council; 2010 [cited 2015 Jun 20]. Available from: [http://www.healthlink.org.za/indicators/HIV\\_AIDS/HIV\\_Household\\_2008\\_Children.pdf](http://www.healthlink.org.za/indicators/HIV_AIDS/HIV_Household_2008_Children.pdf)
67. Gabida M, Chemhuru M, Tshimanga M, Gombe NT, Takundwa L, Bangure D. Effect of distribution of educational material to mothers on duration and severity of diarrhoea and pneumonia, Midlands Province, Zimbabwe: a cluster randomized controlled trial. *Int Breastfeed J*. 2015 Mar 27;10(1):13.
68. Airhihenbuwa CO, Ford CL, Iwelunmor JI. Why Culture Matters in Health Interventions: Lessons From HIV/AIDS Stigma and NCDs. *Health Educ Behav*. 2013 May 17;41(1):78–84.
69. Thomas SB, Fine MJ. Health Disparities : The importance of culture and health communication. *American Journal of Public Health*. 2004 Dec;94(12).
70. Mojab CG. The cultural art of breastfeeding. *Leaven*. 2000;36:87–91.
71. Sibeko L, Dhansay MA, Charlton KE, Johns T, Gray-Donald K. Beliefs, Attitudes, and Practices of Breastfeeding Mothers From a Periurban Community in South Africa. *J Hum Lact*. 2005 Feb 1;21(1):31–8.
72. Karkee R, Lee AH, Khanal V, Binns CW. Infant feeding information, attitudes and practices: a longitudinal survey in central Nepal. *Int Breastfeed J*. 2014;9(14).
73. Pranee L, editor. *Infant Feeding Practices - A Cross-Cultural Perspective* [Internet]. Springer; 2011 [cited 2015 Jun 13]. Available from: <http://www.springer.com/us/book/9781441968722>

74. Thornton L. Breastfeeding in South Africa: Social and Cultural Aspects and Strategies for Promotion. *Curationis*. 1984 Sep;7(3):33–41.
75. Ware JL, Webb L, Levy M. Barriers to breastfeeding in the African American population of Shelby County, Tennessee. *Breastfeed Med*. 2014;9(8):385–92.
76. Department of Labour. Code of Good Practice on Pregnancy [Internet]. Department of Labour South Africa; 2015 [cited 2015 Dec 12]. Available from: <http://www.labour.gov.za/DOL/legislation/codes-of-good-ractise/Basic%20Conditions%20of%20Employment/code-of-good-practice-on-pregnancy>
77. Department of Labour. Basic Guide to maternity leave [Internet]. Department of Labour South Africa. 2015 [cited 2015 Dec 12]. Available from: <http://www.labour.gov.za/DOL/legislation/acts/basic-guides/basic-guide-to-maternity-leave>
78. Sibeko L, Coutsooudis A, Nzuzza S, Gray-Donald K. Mothers' infant feeding experiences: constraints and supports for optimal feeding in an HIV-impacted urban community in South Africa. *Public Health Nutr*. 2009 Nov;12(11):1983–90.
79. McLeod D, Pullon S, Cookson T. Factors influencing continuation of breastfeeding in a cohort of women. *J Hum Lact*. 2002;18(4):335–43.
80. Doherty T, Sanders D, Jackson D, Swanevelder S, Lombard C, Zembe W, et al. Early cessation of breastfeeding amongst women in South Africa: an area needing urgent attention to improve child health. *BMC Pediatr*. 2012 Jul 24;12(1):105.
81. Massyn N, Day C, Peer N, Padarath A, Barron P, English R. District Health Barometer 2013/2014 [Internet]. Health Systems Trust; 2014 [cited 2015 Jun 19]. Available from: [http://www.hst.org.za/sites/default/files/Complete\\_DHB\\_2013\\_14\\_web.pdf](http://www.hst.org.za/sites/default/files/Complete_DHB_2013_14_web.pdf)
82. Besore CT. Barriers to Breastfeeding for Hispanic Mothers. *Breastfeed Med*. 2014;9(7):352–4.
83. World Health Organisation, United Nation Children's Fund. Breastfeeding Counselling : A Training Course [Internet]. World Health Organisation/United Nations Children's Fund; 1993 [cited 2015 Jun 17]. Available from: [http://www.who.int/maternal\\_child\\_adolescent/documents/pdfs/bc\\_participants\\_manual.pdf](http://www.who.int/maternal_child_adolescent/documents/pdfs/bc_participants_manual.pdf)
84. Reissland N, Burghart R. The quality of a mother's milk and the health of her child: Beliefs and practices of the women of Mithila. *Soc Sci Med*. 1988;27(5):461–9.
85. Kambale MJ. Social determinants of breastfeeding in Italy. *Afr Health Sci*. 2011 Sep;11(3):508–17.
86. Daglas M, Antoniou E. Cultural views and practices related to breastfeeding. *Health Sci J*. 2012;6(2):353–61.

87. Chopra M, Rollins N. Infant feeding in the time of HIV: rapid assessment of infant feeding policy and programmes in four African countries scaling up prevention of mother to child transmission programmes. *Arch Dis Child*. 2008;93(4):288–91.
88. Mahgoub SEO, Bandeke T, Nnyepia M. Breastfeeding in Botswana: Practices, Attitudes, Patterns, and the Socio-cultural Factors Affecting Them. *J Trop Pediatr*. 2002 Aug 1;48(4):195–9.
89. Health Systems Trust. Health Indicators [Internet]. Health Systems Trust. 2015 [cited 2015 Mar 4]. Available from: <http://www.hst.org.za/content/health-indicators>
90. Coutinho SB, Cabral de Lira PI, de Carvalho Lima M, Ashworth A. Comparison of the effect of two systems for the promotion of exclusive breastfeeding. *The Lancet*. 2005 Sep 24;366:1094–100.
91. Trent University. Online History Workbook - Theoretical Frameworks [Internet]. Trent University. 2014 [cited 2015 Sep 3]. Available from: <http://www.trentu.ca/history/workbook/theoreticalframeworks.php>
92. Airhihenbuwa CO. Perspectives on AIDS in Africa: Strategies for prevention and control. *AIDS Educ Prev*. 1989;1(1):57–69.
93. Airhihenbuwa CO, Webster JD. Culture and African contexts of HIV/AIDS prevention, care and support. *SAHARA-J J Soc Asp HIVAIDS*. 2004 May 1;1(1):4–13.
94. Iwelunmor J, Newsome V, Airhihenbuwa CO. Framing the impact of culture on health: a systematic review of the PEN-3 cultural model and its application in public health research and interventions. *Ethn Health*. 2014 Jan 2;19(1):20–46.
95. Fitzgibbon ML, Beech BM. The Role of Culture in the Context of School-Based BMI Screening. *Pediatrics*. 2009 Sep 1;124(Supplement 1):S50–62.
96. Airhihenbuwa CO, Okoror O, Shefer T, Brown D, Iwelunmor JI, Smith E, et al. Stigma, culture, and HIV and AIDS in the Western Cape, South Africa: An application of the PEN-3 cultural model for community-based research. *J Black Psychol*. 2009 Nov;35(4):407–32.
97. Kline KN. Cultural Sensitivity and Health Promotion: Assessing Breast Cancer Education Pamphlets Designed for African American Women. *Health Commun*. 2007 Apr 10;21(1):85–96.
98. Iwelunmor J, Ezeanolue E, Airhihenbuwa CO, Obiefune MC, Ezeanolue CO, Ogedegbe GG. Socio-cultural factors influencing the prevention of mother-to-child transmission of HIV in Nigeria: a synthesis of the literature. *BMC Public Health*. 2014;14(771):1471–2459.
99. Webster JD. Using a cultural model to assess female condom use in Mpumalanga, South Africa [Internet]. The Pennsylvania State University; 2003 [cited 2015 Jun 13]. Available from: <http://etda.libraries.psu.edu/theses/approved/WorldWideIndex/ETD-401/index.html>

100. National Cancer Institute, Public Health Service, National Institutes of Health. Making Health Communication Programs Work [Internet]. United States Department of Health and Human Services; 2002 [cited 2015 Jun 19]. Available from: <http://www.cancer.gov/publications/health-communication/pink-book.pdf>
101. Creswell J W. Research Design: Qualitative, Quantitative, and Mixed Methods Approaches [Internet]. 4th ed. California: SAGE; Available from: <https://books.google.co.za/books?hl=en&lr=&id=EbogAQAAQBAJ&oi=fnd&pg=PR1&dq=Designing+and+conducting+mixed+methods+research.+Thousand+Oaks:+Sage+&ots=cacOqSQBya&sig=YWzkcww3WceeMI4cdpsmhKtJRaE#v=onepage&q&f=false>
102. Hardon A, Boonmongkon P, Streefland P, Tan M L, Hongvivatana T, van der Geest S, et al. Applied Health Research. 3rd ed. Amsterdam, The Netherlands: Het Spinhuis; 2001. 386 p.
103. Koshy E, Koshy V, Waterman H. Action Research in Healthcare. London, California, New Delhi, Singapore: SAGE; 2011.
104. Creswell J, Plano Clark V. Designing and conducting mixed methods research. 2nd ed. Thousand Oaks, California: SAGE; 2011.
105. Reason P, Bradbury H. The SAGE Handbook of Action Research Participative Inquiry and Practice [Internet]. 2nd ed. SAGE; 752 p. Available from: <http://www.uk.sagepub.com/booksProdDesc.nav?prodId=Book228865#tabview=google>
106. Koch T, Kralik D. Participatory Action Research in Health Care. Blackwell Publishing; 2006.
107. Labaree R. LibGuides. Organizing Your Social Sciences Research Paper. Types of Research Designs. [Internet]. 2013 [cited 2015 Mar 6]. Available from: <http://libguides.usc.edu/content.php?pid=83009&sid=818072>
108. Banks S, Armstrong A, Carter, K, McNulty, A, Holland, T, Moore, N, et al. Community based participatory research, a guide to ethical principles and practice [Internet]. National co-ordinating centre for public engagement-Durham University; 2012 [cited 2015 May 18]. Available from: [https://www.publicengagement.ac.uk/sites/default/files/publication/cbpr\\_ethics\\_guide\\_web\\_november\\_2012.pdf](https://www.publicengagement.ac.uk/sites/default/files/publication/cbpr_ethics_guide_web_november_2012.pdf)
109. Israel BA, Schulz AJ, Parker EA, Becker AB. Review of Community-Based Research: Assessing Partnership Approaches to Improve Public Health. *Annu Rev Public Health*. 1998;19(1):173–202.
110. Newhall T. Community Based Participatory Research. *Grad Annu*. 2013;1(1):8.
111. Hartwig K, Calleson D, Williams M. Definitions, Rationale and Key Principles in CBPR [Internet]. Developing and sustaining a community based participatory research partnerships: a skill based curriculum. [cited 2015 May 18]. Available from: <https://depts.washington.edu/ccph/cbpr/u1/u11.php>

112. Blumenthal DS. Is community-based participatory research possible? *Am J Prev Med.* 2011 Mar;40(3):386–9.
113. Viswanathan M, Alice Ammerman, Eugenia Eng, Gerald Gartlehner, Kathleen N. Lohr, Derek Griffith, et al. Community-based Participatory Research: Assessing the Evidence [Internet]. Agency for Healthcare Research and Quality; 2004 [cited 2016 Jan 3]. Available from: <http://archive.ahrq.gov/downloads/pub/evidence/pdf/cbpr/cbpr.pdf>
114. Distance and location of Glenmore and Ndwayana from Grahamstown [Internet]. Google maps. 2015 [cited 2014 Aug 25]. Available from: <https://www.google.co.za/maps/dir/Grahamstown/Glenmore/Ndwayana+Primary+School/@-33.218746,26.5679819,11z/data=!3m1!4b1!4m2!4m19!1m5!1m1!1s0x1e64421c50a2e493:0xfa97fd84e8c75ae4!2m2!1d26.533333!2d-33.3!1m5!1m1!1s0x1e64141429fe9369:0x4289e1f03ce7a908!2m2!1d26.874838!2d-33.1323554!1m5!1m1!1s0x1e6415c769988763:0xf3e507478ebef35!2m2!1d26.86849!2d-33.17279!3e0>
115. Chitiga-Mabugu M, Ngepah N, Nhemachena C, Motala S, Mathebula J, Mupela E, et al. State of poverty and its manifestation in the nine provinces of South Africa [Internet]. Human Sciences Research Council (HSRC); 2014 Mar [cited 2015 Jun 15]. Available from: <http://www.nda.org.za/docs/Research%20Report%20-%20State%20of%20poverty%20in%209%20provinces%20of%20SA.PDF>
116. Giving back : The soul of Kwandwe [Internet]. Kwandwe Game Reserve. [cited 2016 Jan 1]. Available from: <http://www.kwandwe.com/giving-back/ubunye-foundation.htm>
117. Ubunye Foundation. Ubunye Foundation : About us [Internet]. Ubunye Foundation. 2014 [cited 2014 Feb 8]. Available from: <http://www.ubunyefoundation.co.za/about-us.htm>
118. St Mary’s Development and Care Centre Annual Report (2012). St Mary’s DCC; 2014.
119. Qualitative Research Methods : A Data Collector’s Field Guide [Internet]. Family Health International; [cited 2015 Feb 2]. Available from: [www.ccs.neu.edu/course/is4800sp12/resources/qualmethods.pdf](http://www.ccs.neu.edu/course/is4800sp12/resources/qualmethods.pdf)
120. University of Kansas. Conducting a workshop [Internet]. Community tool box. 2014 [cited 2015 Jun 21]. Available from: <http://ctb.ku.edu/en/table-of-contents/structure/training-and-technical-assistance/workshops/main>
121. Chapter 10. Questionnaires [Internet]. Oxford journals; 2001 [cited 2015 Feb 26]. Available from: [http://www.oxfordjournals.org/our\\_journals/tropej/online/ce\\_ch10.pdf](http://www.oxfordjournals.org/our_journals/tropej/online/ce_ch10.pdf)
122. Wagner C, Kawulich BB, Garner M. Doing social research: A global context. United Kingdom: Mcgraw-Hill Education; 2012.
123. Your Guide to Breastfeeding [Internet]. United States Department of Health and Human Services, Office on Women’s Health; 2011 [cited 2014 May 25]. Available from: <http://www.womenshealth.gov/publications/our-publications/breastfeeding-guide/breastfeedingguide-general-english.pdf>

124. Caring for the Newborn at Home: A training course for community health workers [Internet]. WHO/UNICEF; 2012 [cited 2014 May 27]. Available from: [http://www.who.int/maternal\\_child\\_adolescent/news/events/2012/CHW\\_Manual.pdf](http://www.who.int/maternal_child_adolescent/news/events/2012/CHW_Manual.pdf)
125. Division of WIC Services. Breastfeeding counseling training manual [Internet]. South Carolina Department of Health and Environmental Control; 2011 [cited 2014 May 26]. Available from: [http://www.nphic.org/about/annual-report?task=doc\\_view&gid=843](http://www.nphic.org/about/annual-report?task=doc_view&gid=843)
126. A Nurse's Guide to Managing Common Breastfeeding Challenges [Internet]. AMN Healthcare Education Services; 2013 [cited 2014 May 16]. Available from: [http://lms.rn.com/getpdf.php/1858.pdf?Main\\_Session=44cae921d6e24e346dbebd2c2291761c](http://lms.rn.com/getpdf.php/1858.pdf?Main_Session=44cae921d6e24e346dbebd2c2291761c)
127. Training of Trainers Manual for Counseling on Maternal, Infant, and Young Child Nutrition [Internet]. USAID's Infant and Young Child Nutrition Project; 2011 [cited 2014 May 25]. Available from: [http://iycn.wpengine.netdna-cdn.com/files/IYCN\\_MIYCN\\_Ethiopia\\_Counseling\\_TOT\\_Manual\\_1211.pdf](http://iycn.wpengine.netdna-cdn.com/files/IYCN_MIYCN_Ethiopia_Counseling_TOT_Manual_1211.pdf)
128. Peer Counselor Handbook [Internet]. California Department of Public Health Women, Infants and Children Program Division; 2005. Available from: <http://www.cdph.ca.gov/programs/wicworks/Documents/BF/WIC-BF-PCHandbook.pdf>
129. Pikulski JJ. Readability [Internet]. Houghton Mifflin; 2002 [cited 2015 Mar 26]. Available from: <http://www.eduplace.com/state/author/pikulski.pdf>
130. Cancer control. Readability Guidelines [Internet]. 2015 [cited 2015 Mar 26]. Available from: [http://cancercontrol.cancer.gov/use\\_what\\_works/mod4/Module\\_4\\_Handout\\_4.pdf](http://cancercontrol.cancer.gov/use_what_works/mod4/Module_4_Handout_4.pdf)
131. Graves M, Graves B. Scaffolding reading experiences : Designs for student success. Christopher-Gordon; 2003. 351 p.
132. Luk A, Aslani P. Tools Used to Evaluate Written Medicine and Health Information: Document and User Perspectives. Health Educ Behav. 2011 Apr 13;1090198110379576.
133. DuBay WH. The Principles of Readability [Internet]. 2004 [cited 2015 Jun 21]. Available from: <http://eric.ed.gov/?id=ED490073>
134. Mc Laughlin HG. SMOG Grading- A New Readability Formula. International Journal of Reading. 1969 May;12(8):639-46.
135. DuBay WH. Smart Language: Readers, Readability, and the Grading of Text [Internet]. 2007 [cited 2015 Jun 21]. Available from: <http://eric.ed.gov/?id=ED506403>
136. McCallum D, Peterson J. Computer-Based Readability Indexes. Texas; 1982.
137. To accurately calculate readability with the Flesch-Kincaid formula [Internet]. 2015 [cited 2015 Mar 26]. Available from:

- <http://coast.contracosta.edu/lor/csc/Shared%20Documents/cscFacResources/Flesch-Kincaid.pdf>
138. Byline Media. The Coleman-Liau Readability Formula [Internet]. Readability Formulas. 2015 [cited 2015 Mar 26]. Available from: <http://www.readabilityformulas.com/coleman-liau-readability-formula.php>
  139. Byline Media. Automated Readability Index (ARI) [Internet]. Readability Formulas. 2015 [cited 2015 Apr 5]. Available from: <http://www.readabilityformulas.com/automated-readability-index.php>
  140. Byline Media. The Flesch Reading Ease Readability Formula [Internet]. Readability formulas. 2015 [cited 2015 Apr 21]. Available from: <http://www.readabilityformulas.com/flesch-reading-ease-readability-formula.php>
  141. QSR International. NVivo [Internet]. QSR international. 2015 [cited 2015 Mar 3]. Available from: [http://www.qsrinternational.com/products\\_nvivo.aspx](http://www.qsrinternational.com/products_nvivo.aspx)
  142. Improving Exclusive Breastfeeding Practices [Internet]. UNICEF; 2010 [cited 2014 May 26]. Available from: [http://www.unicef.org/nutrition/files/C4D\\_in\\_EBF\\_manual\\_\\_6\\_15\\_2010\\_final.pdf](http://www.unicef.org/nutrition/files/C4D_in_EBF_manual__6_15_2010_final.pdf)
  143. Mejia-Rodriguez C, Spink D. Training Curriculum for Community Health Workers [Internet]. Washington State Department of Health; 2012 [cited 2015 Mar 5]. Available from: [http://hcwcommunityhealthworker.org/sites/default/files/sitefiles/CHWT\\_ParticipantManual\\_Final.pdf](http://hcwcommunityhealthworker.org/sites/default/files/sitefiles/CHWT_ParticipantManual_Final.pdf)
  144. Black RE, Allen LH, Bhutta ZA, Caulfield LE, de Onis M, Ezzati M, et al. Maternal and child undernutrition: global and regional exposures and health consequences. *The Lancet*. 2008 Jan 19;371(9608):243–60.
  145. United Nation Children’s Fund. The state of the world’s children 2015 : Executive Summary [Internet]. United Nations Children’s Fund; 2014 [cited 2015 Jul 16]. Available from: [http://data.unicef.org/corecode/uploads/document6/uploaded\\_pdfs/corecode/SOWC\\_2015\\_Summary\\_and\\_Tables\\_210.pdf](http://data.unicef.org/corecode/uploads/document6/uploaded_pdfs/corecode/SOWC_2015_Summary_and_Tables_210.pdf)
  146. Bland R, Rollins N, Coutsoydis A, Coovadia H, Child Health Group. Breastfeeding practices in an area of high HIV prevalence in rural South Africa. *Acta Paediatr*. 2002 Jun 1;91(6):704–11.
  147. Shifraw T, Worku A, Berhane Y. Factors associated exclusive breastfeeding practices of urban women in Addis Ababa public health centers, Ethiopia: a cross sectional study. *Int Breastfeed J*. 2015 Jul 7;10(1):22.
  148. Formula milk [Internet]. Clicks. 2015 [cited 2016 Jan 5]. Available from: <https://clicks.co.za/products/milk-formula>

149. South Africa Government communication and Information System. Salary increase for farmworkers [Internet]. South African New Agency. 2015 [cited 2016 Jan 5]. Available from: <http://www.sanews.gov.za/south-africa/salary-increase-farmworkers>
150. Setegn T, Belachew T, Gerbaba M, Deribe K, Deribew A, Biadgilign S. Factors associated with exclusive breastfeeding practices among mothers in Goba district, south east Ethiopia: a cross-sectional study. *Int Breastfeed J*. 2012;7(1):17.
151. Meedy S, Fahy K, Kable A. Factors that positively influence breastfeeding duration to 6 months: A literature review. *Women Birth*. 2010 Dec;23(4):135–45.
152. Taspinar A, Coban A, Kucuk M, Sirin A. Fathers' knowledge about and attitudes towards breast feeding in Manisa, Turkey. *Midwifery*. 2013;29:653–60.
153. Seidu I. Exclusive breastfeeding and family influences in rural Ghana: A qualitative study [Internet]. Malmö University; 2013 [cited 2015 Jun 18]. Available from: <https://dspace.mah.se/bitstream/handle/2043/15545/Exclusive%20Breastfeeding%20Thesis.pdf?sequence=2>
154. Bofolo R., Johnson C. The identification of “Isicakathi” and its medicinal use in Transkei. *Bothalia Afr Biodivers Conserv*. 1988;18(1):125–30.
155. Friedman I. Community Based Health Workers [Internet]. Health Systems Trust; 2002 [cited 2016 Jan 6]. Available from: <http://indicators.hst.org.za/uploads/files/chapter9.pdf>
156. Schneider H, Hlope H, Rensburg D van. Community health workers and the response to HIV/AIDS in South Africa: tensions and prospects. *Health Policy Plan*. 2008;23:179–87.
157. Haines A, Sanders D, Lehmann U, Rowe AK, Lawn JE, Jan S, et al. Achieving child survival goals: potential contribution of community health workers. *Lancet*. 2007;369:2121–31.
158. Shah S, C RN, Bland R. Breastfeeding knowledge among health workers in rural South Africa. *J Trop Pediatr*. 2005;51(1).
159. DeWalt DA, Berkman ND, Sheridan S, Lohr KN, Pignone MP. Literacy and Health Outcomes. *J Gen Intern Med*. 2004 Dec 1;19(12):1228–39.
160. Nutbeam D. The evolving concept of health literacy. *Social Science & Medicine*. 2009;67:2072–8.
161. Curtale F, Siwakoti B, Lagrosa C, LaRaja M, Guerra R. Improving skills and utilization of community health volunteers in Nepal. *Soc Sci Med*. 1995;40(8):1117–25.
162. Mannan I, Rahman S.M, Sania A, Seraji H.R, Arifeen S.E, Winch P.J, et al. Can early postpartum home visits by trained community health workers improve breastfeeding of newborns? *J Perinatol*. 2008;28:632–40.

163. United Nations Programme on HIV and AIDS. South Africa: HIV and AIDS estimates [Internet]. United Nations Programme on HIV and AIDS. 2014 [cited 2016 Jan 1]. Available from: <http://www.unaids.org/en/regionscountries/countries/southafrica>
164. Basic Support for Institutionalizing Child Survival (BASICS) and the Prevention of Postpartum, Hemorrhage Initiative (POPHI). A guide for training community health workers/volunteers to provide maternal and newborn health messages [Internet]. United States Agency for International Development; 2009 [cited 2015 May 12]. Available from: <http://www.basics.org/documents/CHW-training-guide-Final-1.pdf>
165. Languza N, Lushaba T, Magingxa N, Masuku M, Ngubo T. Community Health Workers - A Brief Description of the HST Experience [Internet]. Haynes R, Hunter J, Jassat W, editors. 2011 [cited 2015 May 20]. Available from: <http://www.hst.org.za/publications/community-health-workers-brief-description-hst-experience>
166. Guyon, A., Quinn V. Essential Nutrition Actions Framework Training Guide for Health Workers [Internet]. Core Group; 2011 [cited 2015 Apr 13]. Available from: [http://www.coregroup.org/storage/Nutrition/ENA/IIA.\\_HW\\_Training\\_Guide\\_complete.pdf](http://www.coregroup.org/storage/Nutrition/ENA/IIA._HW_Training_Guide_complete.pdf)
167. Kruger R, Gericke GJ. A qualitative exploration of rural feeding and weaning practices, knowledge and attitudes on nutrition. *Public Health Nutr.* 2003;6(2):217–24.
168. Hoffmann T, Worrall L. Designing effective written health education materials: Considerations for health professionals. *Disabil Rehabil.* 2004;26(19):1166–73.
169. Sand-Jecklin K. The Impact of Medical Terminology on Readability of Patient Education Materials. *J Community Health Nurs.* 2007;24(2):119–29.
170. Shieh C, Hosei B. Printed Health Information Materials: Evaluation of Readability and Suitability. *J Community Health Nurs.* 2008;(25):73–90.
171. Valaitis RK, Shea E. An Evaluation of Breastfeeding Promotion Literature: Does It Really Promote Breastfeeding? *Can J Public Health.* 1993;84(1):24–7.
172. Nutbeam D. Evaluating health promotion progress, problems and solutions. *Health Promot Int.* 1998;13(1).
173. Balaluka GB, Nabugobe PS, Mitingala PN, Cobohwa NB, Schirvel C, Dramaix MW, et al. Community volunteers can improve breastfeeding among children under six months of age in the Democratic Republic of Congo crisis. *Int Breastfeed J.* 2012;7(2).
174. Simmons VN, Klasko LB, Fleming K, Koskan AM, Jackson NT, Noel-Thomas S, et al. Participatory evaluation of a community–academic partnership to inform capacity-building and sustainability. *Eval Program Plann.* 2015;52:19–26.
175. Jagosh J, Bush PL, Salsberg J, Macaulay AC, Greenhalgh T, Wong G, et al. A realist evaluation of community-based participatory research: partnership synergy, trust building and related ripple effects. *BMC Public Health.* 2015;15(1):1.

## 8 APPENDICES

### 8.1 Appendix A: Rhodes University Ethical Approval



**RHODES UNIVERSITY**

Grahamstown • 6140 • South Africa

FACULTY OF PHARMACY

Tel: +27 (0)46 603 8381 • Fax: +27 (0)46 603 7506 • E-mail: dean.pharmacy@ru.ac.za • PO Box 94, Grahamstown, 6140, South Africa

22 May 2014

Dear Miranda Katsinde

**RE: Ethical approval by the Faculty of Pharmacy's Ethics Committee**  
**(Tracking number PHARM 2014 - 7)**

As a registered student in the Faculty of Pharmacy, with student number 10K3956, I am pleased to inform you that the Faculty of Pharmacy's Ethics Committee grants you ethical approval for your research entitled:

**Infant health: The development and implementation of health promotion activities to promote exclusive breastfeeding,**

Please ensure that the Faculty of Pharmacy's Ethics Committee is notified should any substantive change(s) be made, for whatever reason, during the research process.

Sincerely

Carmen Oltmann, PhD  
Chairperson

## 8.2 Appendix B: Department of Health Ethical Approval

From: DEPT~OF~HEALTH~PHARMACEUTICAL To: 0466037506 12/06/2014 11:23 #918 P.002/002



### Eastern Cape Department of Health

Enquiries: Zonwabele Merile

Tel No: 040 608 0830

Date: 12<sup>th</sup> June 2014

Fax No: 043 642 1409

e-mail address: zonwabele.merile@impilo.ecprov.gov.za

Dear Ms SM Katsinde

**Re: The development and implementation of health promotion activities to promote exclusive breast feeding**

The Department of Health would like to inform you that your application for conducting a research on the abovementioned topic has been approved based on the following conditions:

1. During your study, you will follow the submitted protocol with ethical approval and can only deviate from it after having a written approval from the Department of Health in writing.
2. You are advised to ensure, observe and respect the rights and culture of your research participants and maintain confidentiality of their identities and shall remove or not collect any information which can be used to link the participants.
3. The Department of Health expects you to provide a progress on your study every 3 months (from date you received this letter) in writing.
4. At the end of your study, you will be expected to send a full written report with your findings and implementable recommendations to the Epidemiological Research & Surveillance Management. You may be invited to the department to come and present your research findings with your implementable recommendations.
5. Your results on the Eastern Cape will not be presented anywhere unless you have shared them with the Department of Health as indicated above.

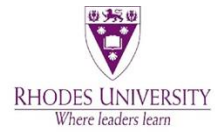
Your compliance in this regard will be highly appreciated.

DEPUTY DIRECTOR: EPIDEMIOLOGICAL RESEARCH & SURVEILLANCE MANAGEMENT



### 8.3 Appendix C: Invitation to participate in study

#### **INVITATION TO PARTICIPATE IN RESEARCH THAT INVOLVES PROMOTION OF EXCLUSIVE BREASTFEEDING.**



**Provisional title of research:** Infant health: The development and implementation of health promotion activities to encourage exclusive breastfeeding.

My name is **Shingirai Miranda Katsinde**. I am a Master of Pharmacy student in the Faculty of Pharmacy, Rhodes University.

#### **Dear participant**

You are kindly invited to take part in this study. This invitation serves to inform you about the research and what will be required of you throughout the study. Please feel free to stop me and ask any questions about the study. If you wish to take part in this study, you will be asked to sign a consent form which will be explained to you.

#### **What is the research about?**

The research aims to identify and address the factors that affect exclusive breastfeeding practices in your community. Once we have identified this problem, through a participatory approach, we will develop a breastfeeding manual for the promotion of breastfeeding.

#### **What is expected of you?**

I will ask you to read through a booklet that has information about exclusive breastfeeding, and after that we will have an interview. During the interview, I will ask you questions about the experiences you have whilst working with the community on exclusive breastfeeding. Your input will be useful in developing the manual for breastfeeding. I will also ask you to participate in workshops that are meant to inform you about how the manuals will be useful when promoting exclusive breastfeeding, and discussions on how the activities were successful. In all sessions, a voice recorder will be used and if at any point you would like to withdraw from participating, you may do so.

#### **Confidentiality**

Personal information such as your name will not be used in the reports. A participant number will be assigned to you, for identification purposes. The information obtained will be used for research purposes only.

#### **Why should you participate?**

The information gathered will be useful in the development of a facilitator's manual that will be used in workshops with other community care workers who are involved in the promotion of breastfeeding within the communities. These manuals will help you to implement activities that promote exclusive breastfeeding.

**Thank you for your time**

**Name of researcher:** Shingirai Miranda Katsinde

**Contact details:** g10k3956@campus.ru.ac.za

**Name of supervisor:** Prof Sunitha Srinivas

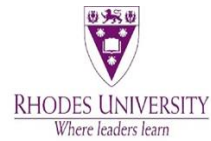
**Contact details:** s.srinivas@ru.ac.za

Faculty of Pharmacy

Rhodes University

## 8.4 Appendix D: Participant informed consent form

### PARTICIPANT INFORMED CONSENT FORM



**Provisional title of research:** Infant health: The development and implementation of health promotion activities to encourage exclusive breastfeeding

Name of Researcher: **Shingirai Miranda Katsinde**, Faculty of Pharmacy, Rhodes University

1. I confirm that Ms Katsinde has explained the purpose of the invitation letter, the interviews and the discussions. I understand that the research is on exclusive breastfeeding. I will have the opportunity to ask questions and those questions will be answered to the best of her ability.

2. I understand that my participation is voluntary and that I may withdraw at any time.

3. I understand that data collected during the study will only be used for research purposes and details such as my name and identity will be kept confidential.

4. I give consent to Ms Katsinde to ask relevant questions when I participate in the interviews, in the workshops as well as the discussions held during the educational interventions.

4. I understand that a voice recorder will be used during the interviews and discussions held during the educational interventions and I give my consent to be recorded.

5. I agree to take part in this research project

Name of Participant: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

### DECLARATION

I, **Shingirai Miranda Katsinde** (the researcher), swear that any personal details obtained during this study will remain strictly confidential.

Signature (Researcher) \_\_\_\_\_

Date: \_\_\_\_\_

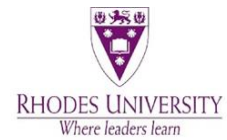
Witness name: \_\_\_\_\_

Signature (witness): \_\_\_\_\_

Date: \_\_\_\_\_

## 8.5 Appendix E: Semi-structured interview guide

### QUESTION GUIDE FOR SEMI-STRUCTURED INTERVIEWS



**Provisional title of research:** Infant health: The development and implementation of health promotion activities to encourage exclusive breastfeeding.

Name of researcher: **Shingirai Miranda Katsinde**, Faculty of Pharmacy, Rhodes University

Participant identification: \_\_\_\_\_ Date of interview: \_\_\_\_\_

*Note for researcher: The following questions are a guideline and more questions can be asked as required and deemed necessary. Make sure the consent form has been explained and signed.*

#### A. Demographics

1. Age \_\_\_\_\_ Gender \_\_\_\_\_
2. Education level \_\_\_\_\_ Affiliated organisation \_\_\_\_\_

#### Background of the participant

3. How long have you been working in the community?
4. How long have you been involved in health promotion activities/community development?
5. Do you work with mothers and infants with regard to health-related issues?
6. How long have you been working with mothers and infants on health related issues?
7. Are you aware of exclusive breastfeeding? Definition?

*Note to researcher: Explain what EBF is if participant does not know.*

8. Have you been conducting health promotion activities for exclusive breastfeeding?

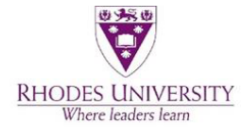
#### B. Model based questions

*Note for participant: the questions asked in this section require information that is relevant from the community that you work in, so the perceptions, beliefs, values and attitudes of the community in relation to your work experience.*

9. In your opinion, is breastfeeding a common practice within the community?
10. Is exclusive breastfeeding commonly practiced for six months?
11. What information is available to the community about exclusive breastfeeding?

12. Who is/are the most influential people in issues relating to the feeding of infants within the community? Why do you say so?
  13. Are there individuals in the community who discourage exclusive breastfeeding?
  14. Is the issue of exclusive breastfeeding discussed within the community? If yes, what do you talk about?
  15. What factors encourage exclusive breastfeeding within the community?
  16. What are the barriers experienced by the mothers who want to practice exclusive breastfeeding?
  17. What are the perceived benefits of exclusive breastfeeding by the community?
  18. Which factors within your community discourage EB?
  19. What are the challenges that the breastfeeding mothers face during exclusive breastfeeding?
  20. What are the cultural aspects that affect exclusive breastfeeding within the community?
  21. What has been done within the community to promote exclusive breastfeeding?
  22. Has implementing these activities helped in the promotion of exclusive breastfeeding?
  23. What does the community think should be done differently/done/added to EBF promotion activities?
  24. What does the community think should be done or added to the exclusive breastfeeding activities?
- C. Questions based on the breastfeeding booklet**
25. Is there information that you do not understand? Words that are not clear? Images that you do not understand?
  26. Do you like the booklet?
  27. Is the information within the booklet acceptable culturally?
  28. Any comments or questions?

## 8.6 Appendix F: Workshop timetable



### Infant health: The development and implementation of health promotion activities to encourage exclusive breastfeeding.

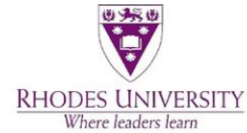
#### Program for the exclusive breastfeeding workshops

Date	Time	Information
Day 1	9.00 am – 10.45 am	<p><b>Introduction</b></p> <ul style="list-style-type: none"> <li>Familiarize with everyone, introducing names and roles</li> <li>Set ground rules</li> <li>Overview and expectations from facilitator and then the participants</li> <li>Give the questionnaire and explain the importance</li> <li>Allow time to complete the questionnaire – explain that they can fill in the form in isiXhosa if they are comfortable</li> <li>Give manual and start the workshop</li> </ul> <p><b>Initial section</b></p> <ul style="list-style-type: none"> <li>The role of the community care worker in the community</li> <li>How to provide basic counseling skills</li> </ul> <p><b>Section A</b></p> <ul style="list-style-type: none"> <li>Go over objectives –explain why the objectives are important and that this information should be what they learn and hopefully know by the end of the session</li> <li>What is breastfeeding and why is important</li> <li>Activity 1-importance of breastfeeding</li> </ul>
	11.00am-13.00pm	<p><b>Section B</b></p> <ul style="list-style-type: none"> <li>Go over objectives</li> <li>Activity 2: breastfeeding patterns</li> <li>Normal breastfeeding patterns</li> <li>Activity 3: positioning and latching</li> <li>Positioning and latching</li> <li>Give the feedback form-ask to fill in 2/3 points</li> <li>Thank all for coming and encourage to read and get involved</li> </ul>
Day 2	9.00 am – 10.45 am	<p><b>Section C</b></p> <ul style="list-style-type: none"> <li>Go over objectives</li> <li>Activity 4: lets discuss</li> <li>Breastfeeding recommendations</li> </ul>
	11.00am-13.00pm	<p><b>Section D</b></p> <p>Go over objectives</p> <ul style="list-style-type: none"> <li>Activity 5: Common breast health problems</li> <li>How to assist a mother with breastfeeding</li> <li>Activity 6: lets discuss and role play ( use of counselling skills also practiced)</li> <li>Give the feedback form-ask to fill in 2/3 points</li> <li>Thank all for coming and encourage to read and get involved</li> <li>Give the post-intervention questionnaire</li> </ul>

## 8.7 Appendix G: Workshop guideline

### **Infant health: The development and implementation of health promotion activities to encourage exclusive breastfeeding.**

#### **Guideline for participatory workshops**



1. Welcome participants and thank them for their attendance.
2. Ask everyone to introduce themselves and their role (translators, participants and facilitators).
3. Agree on a set of rules which suits all parties. Also clarify the start and end times, lunch and tea times.
4. Setting ground rules for workshops is helpful for managing group discussions. Ask participants to brainstorm norms/ground rules. Feel free to add any important rules that they may have omitted e. g.
  - Participate actively.
  - Respect each other's opinions and experiences. Do not judge people because of what they do or say.
  - In general, questions may be asked at any time unless the trainer indicates that in a particular presentation questions should come at the end. The latter will definitely apply for observation of role plays.
  - Be on time for all activities.
  - Turn mobile phones off during the training.
  - Where opportunities present, feel free to discuss and exchange ideas with other participants at the training.
  - If at any time you do not agree with the recommendations/advice noted on the manual or presented in the session, raise these issues with the trainer during the sessions so that everyone can listen and participate in the discussions.
5. Present the learning objectives and compare them to participants' expectations. Allow participants to ask questions. Where realistic, note the additional, relevant objectives based on participants' expectations.
6. Review the training schedule with participants.
7. Explain that in order to accomplish all the learning objectives, this training guide will include demonstrations, role plays, and real life situation scenarios that will be useful to improve understanding.

## 8.8 Appendix H: Pre- and post-intervention questionnaire

### QUESTIONNAIRE; KNOWLEDGE OF THE COMMUNITY CARE WORKERS ABOUT EXCLUSIVE BREASTFEEDING



RHODES UNIVERSITY  
Where leaders learn

**Researcher:** Shingirai Miranda Katsinde, Faculty of Pharmacy, Rhodes University

**Provisional title of research:** Infant health: The development and implementation of health promotion activities to encourage exclusive breastfeeding

#### Background

Participant number.....Date.....Clinic name.....

Marital status.....Number of children.....

#### EBF Focused questions

*Note to participant: please answer to the best of your ability, do not hesitate to ask any questions should you have any. This is not a test, it is a set of questions that will help me to explain the manual more thoroughly to you.*

**Circle all the answers that you think are correct.**

1. What do you understand by exclusive breastfeeding
  - a. When the baby is not given breast milk
  - b. When the baby is given breast milk for six months
  - c. When the baby is not given water or artificial food for the first six months
  - d. B and C
2. How long should a baby be exclusively breastfed?
  - a. 3 months
  - b. 6 months
  - c. 9 months
  - d. 12 months
3. What are the advantages of exclusive breastfeeding
  - a. It encourages mother and child bonding
  - b. It does not help the mother in any way
  - c. It delays a new pregnancy
  - d. Assists child development
4. What are the disadvantages of not breastfeeding exclusively for 6 months?
  - a. The baby has a higher chance of getting sick
  - b. The baby will not get sick
  - c. There is nothing wrong with not breastfeeding for 6 months
  - d. A mother has higher chances of being depressed
5. What is mixed feeding?
  - a. When a baby is given breast milk and formula milk
  - b. When a baby is given breast milk and other solid food
  - c. When a baby is not given breast milk
  - d. A and B

6. Which of the following are signs that a baby is hungry?
  - a. Crying
  - b. Restlessness
  - c. Sleeping
  - d. All of the above
7. Why is correct attachment of the baby to the breast important?
  - a. It helps the baby to get enough milk
  - b. It is not important
  - c. The mother will not feel pain when breastfeeding
  - d. It prevents breast health problems

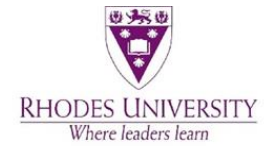
**For the following questions, either answer true or false**

8. The community is also affected negatively if a baby is not breastfed	
9. Colostrum is the first milk that a mother produces baby suckles when they are born.	
10. Mixed feeding is not good for the baby.	
11. A new born baby breastfeeds more times than a baby who is 5 months old	
12. Crying and spitting are normal baby behaviours	
13. When a baby is crying, it always means that they are hungry.	
14. When tired, a mother can lie down whilst feeding the baby if the baby is more than 3 months old	
15. A mother who is HIV positive should not exclusively breastfeed.	
16. A breastfeeding mother cannot take any medicines which are not approved by the doctor/nurse.	
17. When a mother is not home during the day, she can express her milk so that the baby can have some milk to drink	
18. Most breast health problems occur because the mother does not know how to breastfeed properly.	
19. When a mother has sore nipples, they should not breastfeed	
20. After the healing process of giving birth, when a mother is breastfeeding, they cannot have sexual intercourse with their husband or partner	
21. Breastfeeding does not cause breasts to sag	
22. After travelling (from work , from visiting relatives or from a funeral), a mother should not breastfeed unless they discard the first milk that comes from the breast	
23. Mothers should be encouraged to breastfeed often to avoid breast health problems such as sore nipples or engorgement	
24. The common cause of breast health problems is that of not breastfeeding often	

## 8.9 Appendix I: Workshop feedback form

### WORKSHOP FEEDBACK FORM

**Researcher:** Shingirai Miranda Katsinde, Faculty of Pharmacy,  
Rhodes University



**Provisional title of research:** Infant health: The development and  
implementation of health promotion activities to encourage exclusive breastfeeding

Date.....

1. What are the 3 new learning points that you have learnt today, that you will be able to use when encouraging mothers to practice exclusive breastfeeding?

2. What information do you think should be made clearer in the guide/manual on the topics that we covered today?

## 8.10 Appendix J: Guided implementation Focus group discussion guide

### GUIDED IMPLEMENTATION GROUP DISCUSSION

#### GUIDE



RHODES UNIVERSITY  
Where leaders learn

**Provisional title of research:** Infant health: The development and implementation of health promotion activities to encourage exclusive breastfeeding

**Researcher:** Shingirai Miranda Katsinde, Faculty of Pharmacy, Rhodes University

#### 1. Facilitator's manuals

- Do you consider the information provided in the facilitator's manual to be adequate and culturally appropriate?
- Is the information clear?
- What can you say about (i) language (ii) pictures (iii) overall impression?
- Is the manual useful in the promotion of breastfeeding and exclusive breastfeeding?

#### 2. Implementation process

- Is the programme implemented as planned? i.e. At schools, clinics, homes?
- Who are you talking to? What proportion of the target group has received the program? Are you able to talk to the intended target i.e. both males and females of all age groups?
- What problems are you facing? Suggestions on how to tackle such problems?
- Do the people in the community take time to listen to you?
- Acceptability of breastfeeding in the community now vs before the workshops.
- What are the challenges you face when promoting breastfeeding and exclusive breastfeeding?
- What factors (both positive and negative) have affected the promotion of breastfeeding and exclusive breastfeeding?

**8.11 Appendix K: Guided implementation data collection form**

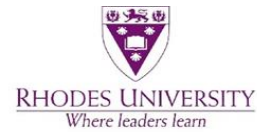
EXCLUSIVE BREASTFEEDING				
IMPLEMENTATION DATA COLLECTION				
FORM				
<p><b>Provisional title of research:</b> Infant health: The development and implementation of health promotion activities to promote exclusive breastfeeding.</p> <p>Name of researcher: <b>Shingirai Miranda Katsinde</b>, Faculty of Pharmacy, Rhodes University</p>				
Date	Sex /Age		Where the information was given.	What information was given /what information was asked by the client?
	F ____years	M ____years	<input type="checkbox"/> Clinic <input type="checkbox"/> Home <input type="checkbox"/> School <input type="checkbox"/> Other	
	F ____years	M ____years	<input type="checkbox"/> Clinic <input type="checkbox"/> Home <input type="checkbox"/> School <input type="checkbox"/> Other	
	F ____years	M ____years	<input type="checkbox"/> Clinic <input type="checkbox"/> Home <input type="checkbox"/> School <input type="checkbox"/> Other	
	F ____years	M ____years	<input type="checkbox"/> Clinic <input type="checkbox"/> Home <input type="checkbox"/> School <input type="checkbox"/> Other	



RHODES UNIVERSITY  
Where leaders learn

## 8.12 Appendix L: Focus group discussion question guide

### FINAL FOCUS GROUP DISCUSSION QUESTION GUIDE



**Provisional title of research:** Infant health: The development and implementation of health promotion activities to encourage exclusive breastfeeding

**Researcher:** Shingirai Miranda Katsinde, Faculty of Pharmacy, Rhodes University

#### **Project evaluation**

- Has the program been implemented as intended? / How is the intervention being implemented?
- What are you doing to promote breastfeeding now that you did not do before the workshops?
- Has the process strengthened your capabilities, skills or knowledge with regard to breastfeeding and exclusive breastfeeding?
- Do you feel empowered to tackle problems with regard to breastfeeding and exclusive breastfeeding?
- What can be improved to make the health promotion activities sustainable?
- Are you satisfied with the project as a whole?
- To what extent do you think the programme has been successful?

#### **Any other questions arising**

## ***8.14 Appendix M: Research outputs***

### **Published article**

**Katsinde SM, Srinivas SC, Hornby D. The need for culture sensitive participatory health promotion activities to promote breastfeeding. *Indian Journal of Pharmacy Practice*, 2014; 7(2):2-9 DOI: 10.5530/ijopp.7.2.2**

### **Conference presentations**

**Katsinde SM, Srinivas SC. Strategies to effect changes in behaviour towards exclusive breastfeeding. *Canon Collins Scholars' Conference*. Webber Wentzel, Cape Town, South Africa. 24-26 July 2015.**

**Katsinde SM, Srinivas SC. Community engaged participatory research in the promotion of exclusive breastfeeding. *1<sup>st</sup> Rhodes University Community Engaged Learning Symposium*, Rhodes University, Grahamstown, South Africa, 4-6 May 2015.**

**Katsinde SM, Srinivas SC. Use of a cultural model in identifying and addressing factors affecting exclusive breastfeeding. *29<sup>th</sup> Annual South African Association of Hospital and Institutional Pharmacists (SAAHIP) Conference*, Drakensberg, South Africa, 12-15 March 2015**

**Katsinde SM, Hornby D, Srinivas SC. Exclusive breastfeeding in Eastern Cape communities. *14<sup>th</sup> Rhodes University Faculty of Pharmacy Research Symposium* Grahamstown, South Africa, 11 November 2014**


**Katsinde SM, Hornby D, Srinivas SC. Perceptions of community care workers of the factors that affect exclusive breastfeeding in two rural communities. *6<sup>th</sup> Inter-disciplinary Post-Graduate (PGLSC) Conference*, Rhodes University, Grahamstown, South Africa, 8-10 October 2014.**

**Katsinde SM, Hornby D, Srinivas SC. Exclusive breastfeeding; community care workers' perspectives. *35<sup>th</sup> Conference of the Academy of Pharmaceutical Sciences South Africa (APSSA)*, Summerstrand Hotel, Port Elizabeth, South Africa, 12- 14 September 2014.**

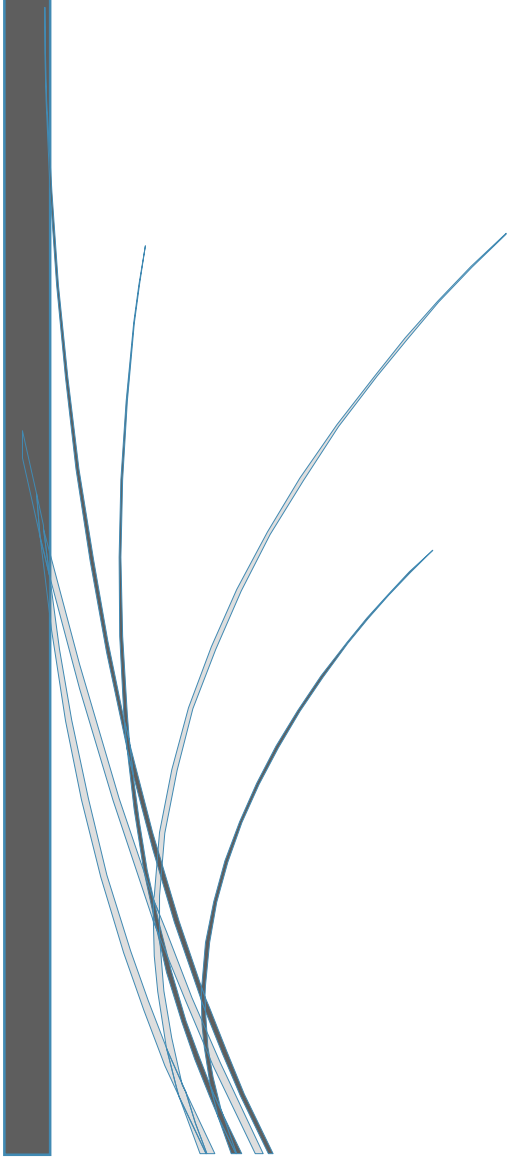
Research is featured in a **UNESCO** publication on community-university partnerships in South Africa: **Strengthening community university research partnerships: global perspectives.**

**Available at:** [https://www.academia.edu/15060687/One\\_bangle\\_cannot\\_jingle\\_community-university\\_research\\_partnerships\\_in\\_South\\_Africa](https://www.academia.edu/15060687/One_bangle_cannot_jingle_community-university_research_partnerships_in_South_Africa) (Chapter 4: South Africa; pages 213-217)

***8.15 Appendix N: Facilitator’s manual***

A dark grey vertical bar runs down the left side of the page. A blue arrow points from the bar towards the text.

*Breastfeeding:  
A facilitator's  
manual for  
community care  
workers*

Several thin, curved lines in shades of blue and grey extend upwards from the bottom left corner, resembling grass or reeds.

## Table of Contents

Table of Contents.....	1
List of Figures .....	4
List of Tables .....	5
Introduction .....	6
1 The roles of community care workers .....	7
1.1 Who is a community care worker? .....	7
1.2 What are the duties of a community care worker in the community? .....	7
1.3 What are the duties of a community care worker with regard to breastfeeding? ....	7
1.4 Who should receive information about breastfeeding?.....	7
1.5 Why should information about breastfeeding be given to everyone?.....	8
2 Skills in educating the community .....	9
2.1 Useful communication skills.....	9
2.1.1 Use of open-ended questions.....	9
2.1.2 Use of closed-ended questions.....	9
2.1.3 Being respectful .....	10
2.1.4 Listening .....	10
2.1.5 Showing empathy .....	11
2.2 Confidence and support skills in breastfeeding.....	11
2.2.1 Use of simple language .....	11
2.2.2 Giving relevant information to a mother.....	11
2.2.3 Praising what is right.....	12
2.2.4 Giving practical help to the mother .....	12
2.3 Breastfeeding assessment.....	13
2.4 Discussion: Useful communication skills.....	13
3 Overview of breastfeeding .....	15
3.1 What is breastfeeding? .....	15
3.1.1 What is Exclusive Breastfeeding? .....	15
3.2 Why is breastfeeding important? .....	16
3.2.1 Advantages of breast milk .....	16
3.2.2 Advantages of breastfeeding .....	16
3.2.3 Disadvantages of not breastfeeding exclusively.....	16
3.3 Breast milk versus artificial feeding .....	17

3.3.1	Colostrum – the first milk .....	18
3.3.2	Mature breast milk .....	18
3.3.3	Artificial foods .....	18
3.3.4	Mixed feeding / partial breastfeeding .....	19
3.3.5	How does breast milk help fight infection? .....	19
3.4	Discussion: Overview of breastfeeding .....	20
4	Breastfeeding patterns .....	21
4.1	Normal breastfeeding patterns .....	21
4.2	Normal baby behaviour .....	22
4.2.1	Spitting .....	22
4.2.2	Burping .....	22
4.2.3	Hiccoughs .....	22
4.2.4	Crying .....	23
4.2.5	Night waking .....	23
4.3	Breastfeeding positioning and techniques .....	23
4.3.1	Football / clutch hold .....	24
4.3.2	Cradle hold .....	25
4.3.3	Side-lying hold .....	25
4.4	Correct attachment position .....	26
4.4.1	Differences in attachment of the baby to the breast .....	27
4.5	Rooming in .....	28
4.6	Activity: Positioning the baby .....	28
4.7	Discussion: Match the best position with the scenario .....	29
5	Breast health problems .....	30
5.1	How to manage breast health problems .....	30
5.1.1	Flat and inverted nipples .....	30
5.1.2	Sore /cracked nipples .....	31
5.1.3	Engorgement / overfilled breasts .....	32
5.1.4	Blocked ducts .....	33
5.1.5	Mastitis .....	34
5.2	Discussion: Common breast health problems .....	34
5.3	Activity: using a syringe in inverted or flat nipples .....	35
6	Other recommendations with regard to breastfeeding .....	36

6.1	Weaning .....	36
6.2	What can mother do when she cannot be home to feed the baby?.....	36
6.2.1	How long can milk be stored after being expressed? .....	39
6.2.2	How to warm breast milk .....	39
6.3	How much milk is enough? .....	40
6.4	What happens if a mother does not produce enough milk? .....	40
6.5	What can a mother do to increase milk supply? .....	41
6.6	Discussion: Breastfeeding recommendations.....	42
7	Mothers' behaviours which affect the growth and development of the baby .....	43
7.1	Food, drinks and behaviours that should be avoided by breastfeeding mothers ....	43
7.1.1	Advocating for behavioural change during breastfeeding .....	44
7.2	Can a breastfeeding mother take medicines? .....	45
7.2.1	Breastfeeding in the context of HIV/AIDs.....	45
7.3	Effects of alcohol during pregnancy.....	46
7.3.1	Physical Effects.....	47
7.3.2	Neurological effects (effects to the brain).....	47
7.3.3	Social and behavioural effects .....	47
7.4	Discussion: Maternal influence on the growth and development and growth of the baby	48
8	The role of family in supporting breastfeeding .....	49
8.1	Beliefs that could potentially hinder breastfeeding or exclusive breastfeeding .....	49
8.2	General discussion .....	52
9	Workshop guideline .....	53
10	References .....	54
11	Acknowledgements.....	57

## List of Figures

Figure 1: Breastfeeding is important for the mother and the baby .....	15
Figure 2: Breast milk is best for the baby .....	17
Figure 3: Examples of artificial foods .....	18
Figure 4: Baby being burped or comforted by the father/guardian.....	23
Figure 5: Football/clutch hold.....	24
Figure 6: Cradle hold.....	25
Figure 7: Side-lying hold.....	26
Figure 8: Correct attachment of the baby to the breast .....	27
Figure 9: Wrong attachment of the baby to the breast .....	27
Figure 10: Normal vs flat vs inverted nipples .....	30
Figure 11: How to use a syringe to pull out inverted nipples.....	31
Figure 12: How to hold the breast when expressing breast milk .....	37
Figure 13: Expressing breast milk .....	38
Figure 14: Sterilising containers by boiling .....	38
Figure 15: Warming breast milk.....	39
Figure 16: Examples of healthy food .....	43
Figure 17: Breastfeeding mothers or pregnant women SHOULD NOT drink alcohol .....	44
Figure 18: Medicines should be taken only after consulting with a doctor or a nurse.....	45
Figure 19: Pregnant mothers SHOULD NOT drink alcohol .....	46
Figure 20: Fetus in the womb .....	46
Figure 21: A father supporting a breastfeeding partner .....	49

## List of Tables

Table 1: Counselling skills checklist .....	12
Table 2: Summary of overview of breastfeeding.....	19
Table 3: Summary of breastfeeding patterns .....	28
Table 4: Summary of breast health problems .....	35
Table 5: Summary of other recommendations with regard to breastfeeding .....	41
Table 6: Summary of maternal influences to the growth and development of the baby.....	47
Table 7: Some of the common beliefs about breastfeeding .....	50

## Introduction

Breastfeeding is the most effective, affordable, and available form of infant feeding that is recommended for every new born infant. The South African Department of Health and the World Health Organisation (WHO) recommend that breastfeeding be initiated within the first hour of birth, and that it be exclusively used for the first six months of life. This is because breastfeeding has a lot of advantages for infant health, development, and growth.

The practice of breastfeeding and exclusive breastfeeding are common worldwide. Exclusive breastfeeding for six months is, however, not very common, because of a lot of cultural, social, economic, and personal influences on breastfeeding mothers and their communities. It is therefore important to understand both how and why breastfeeding and exclusive breastfeeding are important, in order to promote the practice.

Community care workers (CCWs) play a crucial role in the promotion of breastfeeding because of their position in society as well as in the healthcare system. They are an important human resource, promoting health and social wellbeing, and, as such, it is important that they are well equipped with information on breastfeeding.

---

*This facilitator's manual contains useful information on breastfeeding and exclusive breastfeeding, and can be used to understand these topics relatively easily. The information is therefore useful for personnel who want to promote breastfeeding, and who want to know more about breastfeeding.*

*This manual was developed through a collaboration between the Faculty of Pharmacy and the Community Engagement Office at Rhodes University (South Africa), the Ubunye Foundation, and St Mary's Development and Care Centre. Feedback from CCWs who worked with these two organisations was obtained through a participatory approach, encompassing principles adopted from the PEN-3 model in conjunction with the Community Based Participatory Approach to research. Special attention has been paid to culturally appropriate and context specific development of this facilitator's manual for over one year of regular interaction and feedback from all the collaborating partners.*

# 1 The roles of community care workers

## 1.1 Who is a community care worker?

- A person who works in the community in which he / she resides, and is involved in health and social activities within that community.
- A CCW can be employed by the government, a non-governmental organisation, or a community based organisation which works to serve the community in social and health related issues.

## 1.2 What are the duties of a community care worker in the community?

- To promote the health and well-being of the community
- To conduct health promotion campaigns
- To provide information on diseases and health needs
- To raise awareness within the community about health and healthy lifestyles
- To identify conditions that require referral to a clinic
- To advocate positive changes with regard to health and social wellbeing
- To follow-up on patients who are on life-long medication

## 1.3 What are the duties of a community care worker with regard to breastfeeding?

- To perform regular home visits with mothers and babies
- To encourage antenatal and postnatal visits
- To provide health education, promoting the health and well-being of mothers and their babies
- To participate in community campaigns to promote breastfeeding
- To provide information to mothers and the community about breastfeeding, and to emphasize the importance of breastfeeding and the disadvantages of not breastfeeding or mixed feeding
- To assist mothers with breastfeeding problems
- To assist mothers with breast health problems
- To refer mothers to the clinic if more specialised assistance is required

## 1.4 Who should receive information about breastfeeding?

- Pregnant mothers
- Mothers with babies
- Fathers of the babies, husbands / boyfriends of new mothers, and grandfathers to the babies
- Grandmothers, friends and siblings
- Teenagers
- Everyone within the community

## 1.5 Why should information about breastfeeding be given to everyone?

- Breastfeeding is important for the baby, the mother and the community as a whole.
- If the community has the right knowledge about breastfeeding, they will be able to support mothers, wives, sisters, and daughters who are breastfeeding.
- Myths, misconceptions and beliefs about breastfeeding can be spoken about freely.
- Breastfeeding mothers will not be embarrassed to breastfeed, and they will not fear breastfeeding due to any stigma.

## 2 Skills in educating the community

- Educating the community is an ongoing process. During this process, it is advised that the CCW listens to the individual, or group of individuals, and helps them to come up with an appropriate solution.
- It is important that information is not imposed on any individual. It is better for a CCW to state the facts, and help that individual realise the changes that they need to make (if any) with regard to the issue being discussed.
- Skills in educating the community are important for CCWs because they work with the community in their everyday lives.

Please note: "Individual" in this facilitator's manual refers to anyone who is being given information, or is being assisted by a CCW. This could be a patient or any community member, in any capacity.

- Below are a list of some of the skills that are useful in educating the community. These skills can be used when educating about any health scenario.

### 2.1 Useful communication skills

#### 2.1.1 Use of open-ended questions

- When talking to an individual, follow up questions are important to understand what he / she might be going through, or trying to express.
- Open-ended questions allow the individual to speak freely. They usually start with 'what', 'why', 'when', 'where' or 'how'.

***Examples of open-ended questions:***

1. What are the challenges you are facing when breastfeeding?
2. How do you usually feed your baby?

- The individual can give an answer which can then be explored.
- The use of the word HOW allows the individual to reply freely, and to talk about what they want. The answer that the individual gives can then be unpacked using either open-ended questions or closed-ended questions.

#### 2.1.2 Use of closed-ended questions

- Sometimes closed-ended questions can be asked to make sure of a fact or to get a better understanding of what the individual means.

***Examples of closed-ended questions:***

1. Are you giving your baby any other solids?
2. Did you breastfeed your baby today?

- When a closed-ended question is asked, the answer is usually ‘yes’ or ‘no’. An open-ended question can then be asked to follow up on the response.

### 2.1.3 Being respectful

- Every person is different and has their own beliefs. It is important to acknowledge the individual’s beliefs without being judgemental.
- When educating, it is sometimes necessary to let the individual know that you respect their position in the matter, although you still need to give them the correct information.
- It is important to avoid judgemental words or sentences. Judgemental words / sentences can intimidate an individual, and he / she will not be forthcoming about his / her behaviour.

#### **Examples of judgemental words / sentences that should be avoided when educating:**

1. *You do not know how to wash the baby, you are doing it wrong!*
2. *You should know how to hold a baby by now!*

- If an individual senses that a CCW is judging him / her, it will be difficult for him / her to ask for advice.
- Encouraging words or sentences should be used, because they are useful to building the individual’s confidence.

#### **Examples of encouraging words or sentences:**

1. *You are holding the baby in the right way, which is a good improvement from the last time we met.*
2. *Thank you for allowing me to talk to you about breastfeeding.*

### 2.1.4 Listening

- Listening to an individual when he / she talks, and being interested in what he / she is talking about is important during any educational session.
- When listening, certain verbal and non-verbal actions can be used. Some suggestions are listed below.

#### **a) Non-verbal communication**

- The CCW needs to sit comfortably, and also to respect the individual’s personal space – they should not sit too close to the individual, as this might be uncomfortable for them. Practicing what is culturally appropriate in that situation is of great importance.
- It is also advised for a CCW not to sit too far from the individual, so as to be able to hear and understand what they are saying.
- Remaining quiet when an individual is talking is required. The CCW should not interrupt the individual, because this might result in missing some important information during the dialogue.
- Nodding or smiling can be used to allow the individual to understand that the CCW is listening to them.

### **b) Verbal communication**

- There is need to focus on the topics of concern raised by the individual.
- Language that is familiar to the individual should be the language of choice.
- The individual has to be allowed to ask questions.
- The CCW can also reflect on the individual's comments, to show that he / she has understood what was said.

#### **2.1.5 Showing empathy**

- Empathy is showing an individual that you understand how he / she feels.
- It is a way of reassuring an individual, and it is not feeling sorry for them.

##### **Example of being empathetic:**

If a mother says:

*“My baby likes to feed a lot and it makes me feel tired.”*

##### **An example of an empathetic response would be to say:**

*“So you feel tired often then?”*

- This response shows that you understand how she feels. This is an example of being empathetic.

## **2.2 Confidence and support skills in breastfeeding**

- Breastfeeding mothers sometimes lose confidence in themselves or in their ability to breastfeed. This is because they might not know how to breastfeed properly, or they might not have the support they need to breastfeed.
- Mothers can also experience pressure from family and friends that can make them lose confidence in themselves or their ability to breastfeed.
- It is therefore important to encourage a mother, to help her build her confidence in breastfeeding as well as to support her to breastfeed as much as possible.
- Given below are some of the ways which can be useful in supporting a mother and helping her to build her confidence in breastfeeding practices.

### **2.2.1 Use of simple language**

- Using words that are easy to understand, and which are familiar to an individual makes it easy for them to understand.
- Examples of incidences which are familiar to the mother within a community context can be useful to explain some of the concepts. These can be such as positions in breastfeeding the baby or holding the breast when breastfeeding.

### **2.2.2 Giving relevant information to a mother**

- Relevant information is the information that a mother requires to assist her in breastfeeding.

- It is suggested to focus on the issue that has been raised by the mother.
- It is vital to give relevant information. Telling a mother multiple new and different ideas at the same time could confuse her.
- It is also advised to give information in a positive way, so that a mother does not feel like everything she is doing is wrong.

### 2.2.3 Praising what is right

- Listening to what a mother has to say, and acknowledging it, increases her confidence.
- Praising what has been done right also assists a mother's confidence in that she knows that she is on the right track.
- When a mother has been praised for what she is doing, it is easier for her to accept correction and suggestions.
- Acknowledging what she says makes her feel at ease. This is crucial, especially when she has a mistaken idea that needs to be corrected.

### 2.2.4 Giving practical help to the mother

- When a mother complains about an issue or a problem, sometimes just telling her that it will be okay and empathising with her is not sufficient help.
- It is suggested that practical assistance is given to a mother whenever applicable.
- An example is given below of how to provide practical assistance.

#### **Example of a problem:**

A mother has sore nipples and is complaining that she cannot feed her baby.

#### **Suggested examples of providing practical help:**

1. The mother can be assisted by assessing her breastfeeding techniques, and making sure to correct feeding and latching positions.
2. If this has been going on for a while, then a suggestion for the mother to go to the clinic to obtain help from the nursing sister can be made.

Below is a checklist that was adopted in part from UNICEF/WHO, and could be used when educating an individual in the community, or a breastfeeding mother.

*Table 1: Counselling skills checklist*

<b>Skill</b>	<b>Yes</b>	<b>No</b>
<b>Communication skills</b>		
Non-verbal communication		
Open-ended questions		

Reflection		
Empathy		
Avoiding judgemental words		
<b>Confidence and support skills</b>		
Using simple language		
Giving relevant information		
Giving practical help		
Praising what is right		

Source: UNICEF/WHO (1989)

### 2.3 Breastfeeding assessment

- Before offering assistance on breastfeeding, observing how a mother breastfeeds her baby can help identify the assistance she requires. It is good to offer assistance, especially when there is a concern about either how:
  - ✓ The mother holds / supports the baby
  - ✓ The baby latches on the mother's breast
  - ✓ The baby suckles
- Information should be specific, and address the concerns that the mother has.
- Open-ended questions can be asked with regard to how the mother feels about breastfeeding. This could be useful in addressing issues such as the embarrassment faced when breastfeeding in public places.
- If the assistance required by the mother cannot be given, she should be referred to the clinic for further assessment.

### 2.4 Discussion: Useful communication skills

**Practice how to respond to different scenarios that are faced every day when you come across different people in the following scenarios.**



1. Pregnant women who are attending an antenatal clinic day.
2. A breastfeeding mother and her husband, with their baby, who are at home during a home visit.
3. A breastfeeding teenager who brought her baby to the clinic or to the community centre and wants help.
4. A community meeting focusing on breastfeeding with mothers and fathers from the community.
5. Other CCWs from the neighbouring community.

**The following is a list of questions that could be used as a starting point.**

1. What sort of information on breastfeeding would you give them?

2. How would you ask questions so that you can get the information that you need in order to help them?
3. How do you respond when you do not know the answer to the question asked?
4. How do you respond when you are asked about your own breastfeeding history?

### 3 Overview of breastfeeding

**At the end of this section, participants will understand the following:**

- ✓ Breastfeeding and exclusive breastfeeding
- ✓ The importance of breastfeeding
- ✓ The advantages of exclusive breastfeeding, and the disadvantages of not breastfeeding exclusively
- ✓ The differences between breast milk and artificial food

#### 3.1 What is breastfeeding?

- Breastfeeding is when an infant or a child receives breast milk, either directly from the mother's breast or as expressed milk.

##### 3.1.1 What is Exclusive Breastfeeding?

- Exclusive breastfeeding is when an infant only receives breast milk, with no additional fluids (including water) or solids, with the exception of vitamins, mineral supplements or medicine.
- Breast milk can either be given by the mother directly from the breast or from a feeding cup (expressed milk).



*Figure 1: Breastfeeding is important for the mother and the baby*

**The South African National Department of Health recommends that:**

- Breastfeeding should start as soon as possible after birth.
- An infant should be exclusively breastfed for the **first six months of life**.
- Complementary foods and liquids can be given from six months onwards.
- Mothers can continue breastfeeding for **two years** and beyond. This is especially beneficial for the infant, as they will continue to receive the benefits of breast milk, whilst also getting nutrition from the other foods that are added at six months.

## 3.2 Why is breastfeeding important?

### 3.2.1 Advantages of breast milk

- Contains all the nutrients that a baby needs
- Contains enough water for the baby
- It is at the correct temperature
- Protects the baby against infections
- Easily digested by the baby without causing constipation
- Prevents hypoglycaemia (low blood sugar)



Breast milk has every food that a baby needs for the first six months!

### 3.2.2 Advantages of breastfeeding

- Encourages mother and baby bonding
- Assists in physical and mental development of the baby
- Cost effective and saves money – there is no need to buy formula milk
- Soothes and comforts a baby who is fussy, tired or sick

Breastfeeding has advantages for the baby, the mother, and their community.

#### Added advantages of exclusive breastfeeding

- The process delays a new pregnancy – so there is good child spacing
- The more a mother breastfeeds, the more the baby benefits

### 3.2.3 Disadvantages of not breastfeeding exclusively

The baby will be at risk of getting the following illnesses:

- Diarrhoea
- Respiratory diseases, e.g. asthma
- Otitis media – infection of the ear
- Bacteraemia – bacteria in the blood

- Juvenile diabetes – diabetes in children
- Allergies – such as hay fever
- Dental carries – tooth decay
- Sudden Infant Death Syndrome (SIDS) – a condition where a baby just suddenly dies

**The mother is likely to experience the following:**

Immediate effects:

- Slower postpartum weight loss – weight loss after pregnancy is slower compared to when a mother breastfeeds
- Postpartum depression - depression that occurs after giving birth, resulting from the hormonal changes before and after birth. Signs and symptoms of postpartum depression include sadness of the mothers, extremely irregular sleeping patterns, and increased anxiety.

Long-term effects:

- Ovarian and breast cancer are more likely to occur
- Osteoporosis – bone disease

**The community and society experience the following:**

- Vaccine ineffectiveness - children who are not breastfed fall sick all the time, and this can lead to vaccines not being effective in the long-term.
- Ecological and financial costs - the costs of producing and / or buying breast milk substitutes (formula milk) are higher than breastfeeding.

### 3.3 Breast milk versus artificial feeding



*Figure 2: Breast milk is best for the baby*

### 3.3.1 Colostrum – the first milk

- This is the first milk that is produced by the mother when she gives birth. It is a yellow or clear, thick, and sticky fluid that is produced for a few days after birth.
- Colostrum is vital for the baby, as it is highly nutritious and is rich in antibodies<sup>1</sup>.
- This milk is important, and should be fed to the baby. Colostrum coats the baby's stomach and intestines, protecting the baby from bacteria, and helps get rid of meconium<sup>2</sup>.
- Colostrum also helps the baby's stomach to develop, and provides minerals and vitamins for the baby's growth.

### 3.3.2 Mature breast milk

- This contains nearly 90% water, and all of the nutrients necessary for the baby's growth and development.
- This is the milk that is produced after the colostrum. It starts to be produced three to four (3-4) days after birth.

### 3.3.3 Artificial foods

- Artificial foods are the types of food which are usually used to replace breast milk when a baby is not breastfed. They are also known as replacement feeds.



Figure 3: Examples of artificial foods

- The nutrients that are found in artificial foods are already found in breast milk, so the foods given in Figure 3 **SHOULD NOT BE GIVEN** to a baby who is less than 6 months old.
- Breast milk is easier to digest than artificial food, especially during the first six months of life.
- Water is also found in the breast milk, and for six months there is no need to give the baby extra water.

<sup>1</sup> Antibodies - proteins that are found in the body which are responsible for fighting infections. Antibodies are found in mother's milk but not in formula milk or any other artificial foods.

<sup>2</sup> Meconium – the first stool that a baby passes when they are born. It is usually black in colour and is sticky.

### 3.3.3.1 Dangers of artificial feeding

- It interferes with the mother and child bonding process
- The baby is at risk of being overweight, having diarrhoea, and allergies
- There is a higher risk of malnutrition<sup>3</sup> and vitamin deficiency
- The baby is more likely to fall ill, because artificial foods do not have antibodies which help the baby to fight infections

### 3.3.4 Mixed feeding / partial breastfeeding

- This is when a baby is given breast milk as well as other artificial foods such as porridge, pap, water, and drinks.
- Mixed feeding is not good for the baby, because it exposes the baby to illnesses and conditions such as those listed in section 3.2.3.
- A baby has little immunity<sup>4</sup> when recently born. By mixed feeding, the baby is exposed to bacteria from outside their body that they are not able to fight yet, because their immune system has not fully developed.

### 3.3.5 How does breast milk help fight infection?

- When a mother falls ill, she produces antibodies to help her fight the illness. These antibodies are passed from the mother to her baby through breast milk, so it helps the baby fight infection / illness as well.
- Examples of infections are ear or eye infections.

*Table 2: Summary of overview of breastfeeding*

- ✓ Exclusive breastfeeding is important for the baby, and should be promoted.
- ✓ It is important for a mother to start her baby breastfeeding as soon as possible after birth.
- ✓ Exclusive breastfeeding is important, because the baby gets all the nutrients that are good for growth.
- ✓ If a mother decides not to breastfeed exclusively, this affects the baby, the mother and the community negatively.
- ✓ Artificial foods are not good for the baby, and are much more difficult to digest than breast milk.
- ✓ Mixed feeding is not encouraged for babies younger than six months.

<sup>3</sup> Malnutrition – a condition where the diet has too little or too many nutrients, which cause health problems

<sup>4</sup> Immunity – the ability of the antibodies to resist infections

### 3.4 Discussion: Overview of breastfeeding

**Discuss the following with other CCWs.**



1. What are the advantages of exclusive breastfeeding?
2. What happens to the baby if a mother does not exclusively breastfeed?
3. What happens to the mother if she does not breastfeed at all?
4. Why is breastfeeding important for the community?
5. Why is it important to avoid artificial foods during the first six months of a baby's life?
6. What are the dangers of mixed feeding?

## 4 Breastfeeding patterns

**At the end of this section, participants will understand the following:**

- ✓ Normal breastfeeding patterns.
- ✓ Normal baby behaviours.
- ✓ The correct attachment of the baby to the breast, and why it is important.
- ✓ The different positions useful when breastfeeding, and when each position can be used comfortably.

### 4.1 Normal breastfeeding patterns

- It is normal that the frequency of breastfeeding decreases as a baby grows older.
- A new-born baby has a smaller stomach, and can only drink small amounts of breast milk at a time, so it breastfeeds more often.
- An older baby has a bigger stomach, and can drink more breast milk at a time, so the frequency of feeds can be decreased.
- Below is a guide for breastfeeding frequencies.

**Expected least frequencies for breastfeeding in 24 hours (one day) – when breastfeeding on demand**

- New-born: 8-12 feedings
- 1 month: 7-10 feedings
- 2-5 months: 6-9 feedings
- 6-8 months: 6-8 feedings (plus complementary feeds)

Please note: Frequencies given above are useful as a guide, so that when a mother is breastfeeding, she does not feel as if she is overfeeding her baby. The baby can be fed more or less than the abovementioned times, as long as feeding is on demand.

- It is therefore encouraged that a baby is 'breastfed on demand'. This means that a baby is breastfed whenever it is hungry.
- Because babies cannot talk, they usually show signs of hunger. For example:
  - A baby suckling on its finger
  - When the baby constantly brings its hands to its mouth, and shows increased restlessness
  - Frequent moving of the baby's head from side to side,

- When the baby is crying. This is usually the last sign that a baby gives to show that it wants to be fed.

**During breastfeeding, a mother should take note of the following:**

- Audible swallowing (it can be heard) - this shows that the baby is suckling and swallowing milk.
- Relaxation of baby - shows that the baby is suckling well and could also mean he / she is full.
- Baby falling asleep - usually a sign that the baby is full.

## **4.2 Normal baby behaviour**

### **4.2.1 Spitting**

- It is normal for a baby to spit up after breastfeeding, and mothers should not have to worry, especially if the baby is healthy and is gaining weight.
- A mother should notice the difference between vomiting and normal spitting. When a baby spits, it is not forceful or painful.
- Vomiting, however, is different from spitting because it will be forceful, there is more volume than the spit, and it causes discomfort to the baby.
- If the baby vomits regularly (one or more times in one day), then the baby should be taken to the clinic / hospital.

### **4.2.2 Burping**

- Burping is normal, and necessary, for a baby, because it results in releasing gas / air that the baby could have swallowed during breastfeeding.
- This gas makes the baby uncomfortable and very irritable, causing them to cry. A guardian should assist the baby to burp in-between or after feeding.

### **4.2.3 Hiccoughs**

- These are also common in breastfeeding babies.
- When a baby has hiccoughs during feeding, the mother should change the position in which she is feeding.
- Although hiccoughs are common, persistent hiccoughs should not be ignored. If a baby has hiccoughs continuously for more than 24 hours, then there is a need to take the baby to the clinic.
- If hiccoughs are accompanied with coughing, spitting up, or irritability, then this should be mentioned during the clinic visit.

#### 4.2.4 Crying

Crying is a baby's normal response to a lot of situations. Whenever a baby cries, the person who is taking care of the baby needs to make sure that it is not just general baby fussiness. For instance, the following can be done:

- Breastfeeding - because the baby could be hungry
- Burping the baby (Figure 4)
- Checking if baby needs a diaper / nappy change
- Rocking or carrying the baby
- Taking the baby to the clinic if the baby is sick

#### 4.2.5 Night waking

- It is also normal for a baby to wake up during the night. Most babies will not sleep throughout the night.
- When a baby wakes up during the night, he / she should be fed, or rocked until they fall asleep.



*Figure 4: Baby being burped or comforted by the father/guardian*

### 4.3 Breastfeeding positioning and techniques

Mothers can breastfeed whilst sitting, lying down on a bed, or standing. Babies can be breastfed in several positions, but it is important to remember that:

- The baby is always brought to the breast, and not the breast to the baby.
- The baby's head, shoulders and hip should be in a straight line.
- The baby's face should face the breast.
- To initiate feeding, the nipple can be rubbed on the baby's upper lip until they open their mouth fully.
- The mother should support the baby's whole body, especially if the baby is a newborn.

### 4.3.1 Football / clutch hold



This position is ideal for mothers who:

- Have large breasts
- Have inverted nipples
- Are first-time mothers
- Had a caesarean section

*Figure 5: Football/clutch hold*

- The baby's ears, shoulders, and hips should be in a straight line, and the body should be under the armpit of the mother's supporting arm.
- The baby's face should be in line with the nipple, and the neck should be supported by the mother's palm (as shown in Figure 5 above).
- Pillows can be used to support the mother's hands, so that she can hold the baby comfortably.

### 4.3.2 Cradle hold



This position is ideal for:

- Full term babies
- Babies older than one month

Figure 6: Cradle hold

- This is the most common position that mothers use.
- The baby's head, shoulders, and hips should be in a straight line, so that he / she can swallow easily.
- The mother's forearm supports the baby's head, and the rest of the arm supports the baby's body.

### 4.3.3 Side-lying hold

**\*\*It is important to AVOID this position for a baby who is less than 3 months old.**

\*\*New-born babies or babies less than three months old can choke from breastfeeding when a mother uses the side-lying position.



Figure 7: Side-lying hold

This position is ideal for

- Night feeding
- A sick or tired mother
- Babies older than three months

- The mother lies on her side and places the baby in front of her.
- The baby is supported by pillows or a rolled blanket, but the baby should have space to move in the case that she / he is full, and no longer wants to breastfeed.

#### 4.4 Correct attachment position

##### **Why it is important to make sure that the baby is correctly attached to the breast**

- Correct attachment of the baby to the breast will give comfort to both the mother and child.
- It will help prevent breast health problems, such as sore nipples and engorgement<sup>5</sup>.
- It allows the baby to suckle fully.

##### **If a baby does not attach to the breast properly, both the mother and the baby will experience problems. A few examples are given below:**

- The mother's nipple will become sore
- Milk will not be removed from the breast properly, and engorgement will occur
- The breast will not produce enough milk for the baby to feed
- The baby will not feed properly, and will be very hungry
- The baby will not gain weight

---

<sup>5</sup> Engorgement – this is when the breasts are over filled with breast milk because of not breastfeeding often enough (see section 5.1.3)

**If a baby is attached to the breast correctly, then**

- The mouth should be wide open
- The upper and lower lips should be turned out
- The chin must touch, or nearly touch, the breast
- The nipple should not be visible, so it should be fully in the baby's mouth

**4.4.1 Differences in attachment of the baby to the breast**

Figure 8 shows a picture of a baby who is correctly attached to the breast

- Nipple fully in the baby's mouth
- Baby's chin is touching the breast
- Most of the dark area on the breast is not visible



*Figure 8: Correct attachment of the baby to the breast*

Figure 9 shows a picture of the wrong attachment of the baby to the breast.

- Most of the darker area on the breast can be seen
- Baby's chin is not touching the breast
- The baby is holding on to the nipple only



*Figure 9: Wrong attachment of the baby to the breast*

## 4.5 Rooming in

- Rooming in is when a mother shares the room with her baby (baby sleeps in a baby cot bed or on the mother's bed).
- The practice is usually practiced in hospitals and clinics when a mother has recently given birth.
- When a mother goes back home, they should also practice rooming-in, i.e. the baby sleeps in the same room with the mother.
- This allows the mother to breastfeed on demand, and breastfeeding can continue for longer periods.
- Bedding-in is also encouraged for babies older than 3 months, as it allows the mother to rest whilst breastfeeding, and the baby to suckle as much as they need. (Bedding-in is bringing the baby to the bed, and feeding whilst lying down.)

*Table 3: Summary of breastfeeding patterns*

- ✓ A baby should be breastfed whenever they are hungry - breastfeeding on demand.
- ✓ Mothers can look out for signs that a baby is hungry, so that they can practice breastfeeding on demand.
- ✓ Different positions can be used when breastfeeding. It is important to advise a mother as to which position best suits her, according to her situation and condition.
- ✓ Correct attachment of the baby to the breast is crucial, so that the baby can be breastfed until full, as well as to avoid breast health problems.
- ✓ Rooming in is a good way to encourage breastfeeding on demand.

## 4.6 Activity: Positioning the baby

Need: A dummy baby or doll

Pillow



**Practice the different positioning techniques that are mentioned above.**

**Discuss how each position is suitable or not suitable for the intentions that are stated in the notes for the different positions.**

## 4.7 Discussion: Match the best position with the scenario

Which position is best for mother and baby, and why?



Inathi is a first time mother of a baby boy.

Lenni, a baby girl who is one month old.

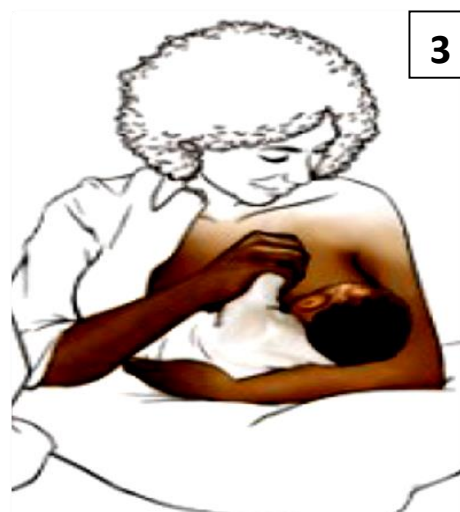
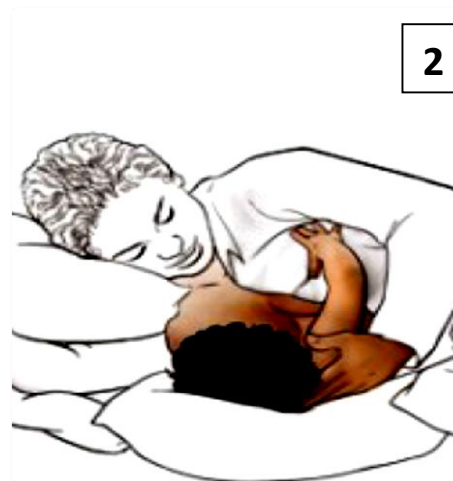
Akhona, a mother who gave birth to twins.

A mother who has big breasts and had a caesarean section.

Minenhle, a mother who gave birth to twins and had caesarean section.

A mother who is tired and needs to go to work the following day.

Abongile, a mother who has inverted nipples.



## 5 Breast health problems

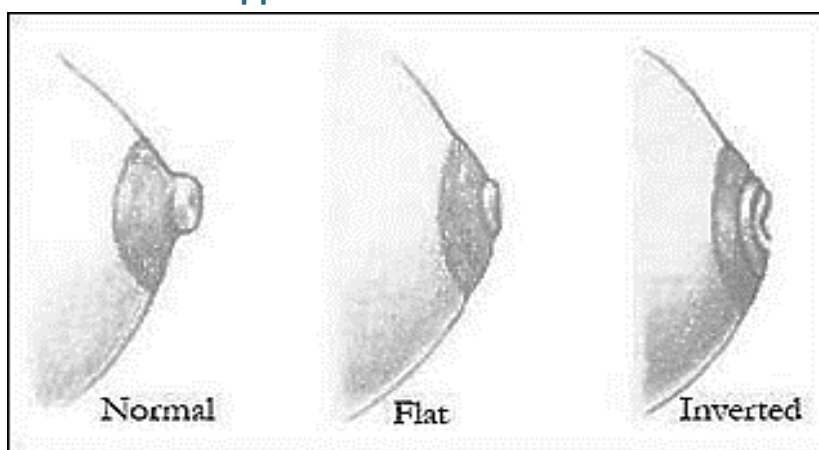
**At the end of this section, participants will understand the following:**

- ✓ Common breast health problems.
- ✓ How to manage common breast health problems.

### 5.1 How to manage breast health problems

- Breastfeeding should not be painful, and pain that persists during or in-between feeding should not be tolerated.
- A mother should always report these to a CCW, nurse or doctor, because a number of factors might be causing these problems. Factors resulting in painful breastfeeding are discussed in sections 5.1.1 to 5.1.5.
- It is important to address breast health problems, as these could lead to rushed decisions, such as early weaning<sup>6</sup> due to unnecessary pain and discomfort.

#### 5.1.1 Flat and inverted nipples



*Figure 10: Normal vs flat vs inverted nipples*

- Flat nipples or inverted nipples are nipples that are not protruding (see figure 10).
- When compared to normal nipples, flat or inverted nipples are not erect and they need special attention when a mother needs to breastfeed.

#### What causes flat / inverted nipples?

- Flat or inverted nipples are not an abnormality.
- They are common in women, due to differences in how the body develops.
- Women with flat or inverted nipples can breastfeed successfully.

#### How to manage flat / inverted nipples

- The nipple can be massaged with a warm towel, or pulled out gently, using the hands.

---

<sup>6</sup> Weaning – stopping breastfeeding

- Breastfeeding should not be stopped; it helps the nipple to come out.
- If suckling of the baby or pulling out using hands does not help the nipple to come out, the following can be done to pull the nipple out:

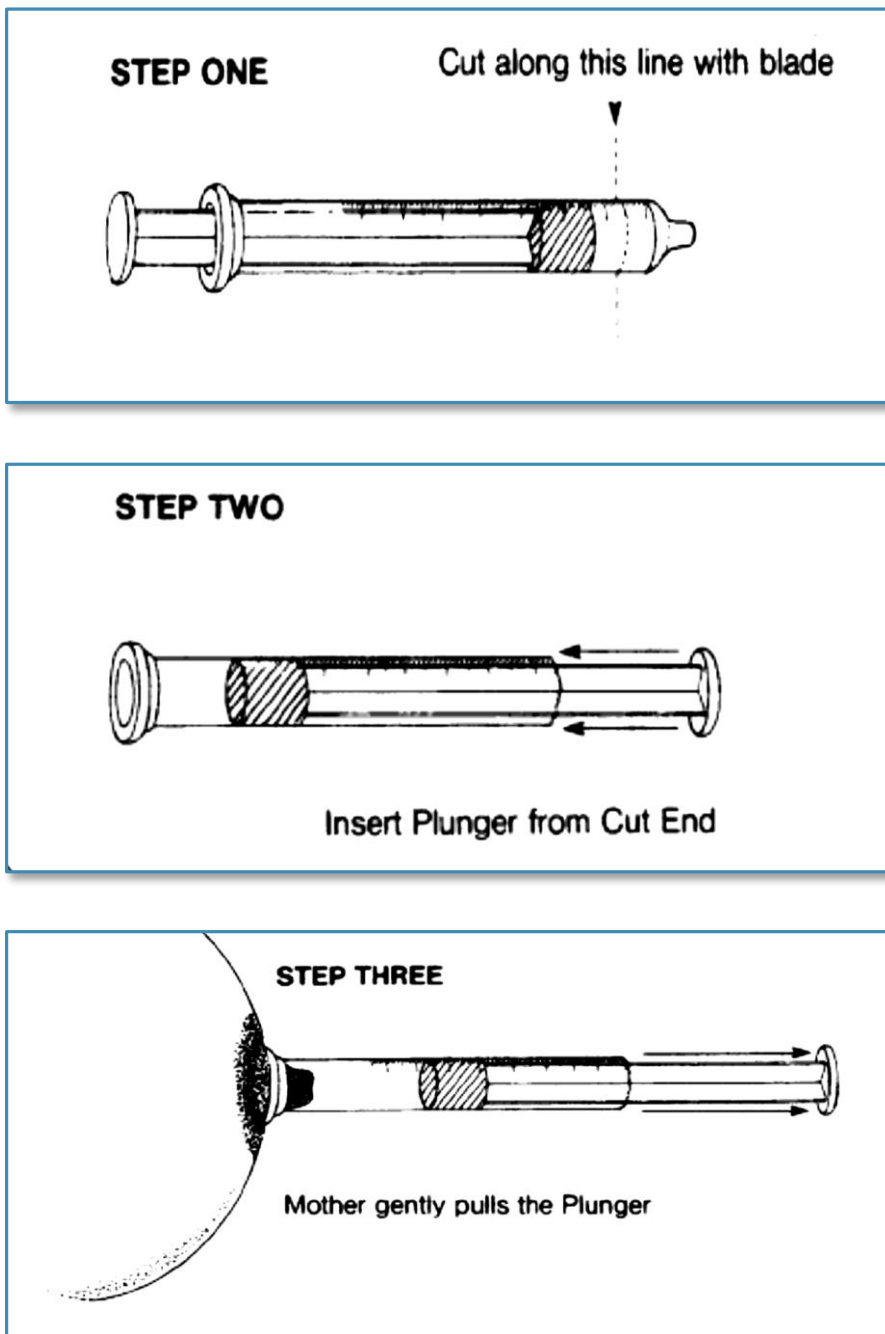


Figure 11: How to use a syringe to pull out inverted nipples

(Source: World Health Organisation)

### 5.1.2 Sore /cracked nipples

- This is when the nipples are painful, which in turn causes breastfeeding to be painful.
- Sore nipples can result from breastfeeding, especially during the first few days.

- As the mother learns more about how to make sure that the baby is correctly attached to the breast, and how to position the baby correctly, sore nipples can be avoided.

### **Causes of sore / cracked nipples**

- Incorrect attachment or positioning of the baby when feeding (see figure 9)
- Applying ointments or creams to the breast
- Thrush<sup>7</sup>
- If a baby holds on to the breast when he / she falls asleep whilst feeding
- Teething baby

### **How to manage or treat sore / cracked nipples**

*When a mother has sore nipples, the following measures can be used:*

- Use of pain medications if the pain is unbearable
- Reassurance that sore nipples can heal
- Suggest changing the position in which the baby is being breastfed
- Start breastfeeding with the less sore breast first
- Lubricate the damaged tissue with expressed milk
- If a nipple is cracked, apply warm, salty water after feeding the child, to speed up healing.

If the baby has candida (check mouth for creamy white patches in the baby's mouth), then refer the mother to the clinic immediately.

### **A breastfeeding mother with sore nipples should not:**

- Stop breastfeeding, or reduce the duration or frequency of breastfeeding. This can cause engorgement (which is another breast problem described below).
- Apply creams or ointments to the breast (without consulting the clinic staff first), because these could be harmful to the baby.

### **5.1.3 Engorgement / overfilled breasts**

- This is the fullness of breasts that is experienced when a mother is breastfeeding.
- Engorgement is common, and normal, in mothers who have just started breastfeeding or are within the first months of breastfeeding.

### **Causes of engorgement**

- Infrequent feeding
- Too much milk being produced
- Poor attachment and positioning of the baby when feeding

---

<sup>7</sup> Thrush – yeast infection which forms white spots in the baby's mouth.

## Symptoms of engorgement

- Swelling of the breasts
- Tenderness
- Pain and fever
- Milk not flowing or difficult to express from the breast

## How to treat or manage engorgement

- Frequent breastfeeding
- Applying a warm compress to the breast (warm towel or bottle with warm water)
- Expressing milk into a bottle or jar
- Massaging the breast
- Placing cabbage leaves to the breast after expressing breast milk to reduce swelling
- Improve position of the baby when feeding

Engorgement can be relieved by frequent breastfeeding. If engorgement is not corrected, it could lead to other complications, such as blocked ducts and mastitis (sections 5.2.4 and 5.2.5)

In some cases, a mother decides not to breastfeed at all, and they will be more likely to experience engorgement. When this is the situation:

- The mother should express the milk regularly (only enough to make her feel comfortable, without actually emptying the breast).
- Emptying the breast is not a good idea because it will stimulate more milk production.
- The breasts should be supported comfortably, with non-tight fitting bras or clothing.
- Mild analgesics can be used if engorgement is painful, but expressing the milk is the recommended action.
- Massaging the breast could also help relieve the tension.

### 5.1.4 Blocked ducts

- Blocked ducts are also known as plugged ducts. They result when breast milk is not removed from that part of the breast.

#### Causes of blocked ducts

- Irregular feeding
- Engorgement
- Stress
- Tight fitting clothes or brassieres (bra)

#### Symptoms of blocked ducts

- Swelling
- Pain on the affected area

- Redness of the skin over the lump

#### **How to manage or treat blocked ducts**

- Massage the area with the blocked duct
- Let the baby suckle on the breast with the blocked duct first
- Continue to breastfeed as normal
- Change positions during breastfeeding
- Avoid tight fitting clothing
- Report it to the clinic if it does not clear up.

Note: if a blocked duct is not managed and the milk in the breast is not removed, it can cause breast infection known as mastitis.

#### **5.1.5 Mastitis**

- This is the inflammation of the breast due to an infection.

#### **Causes of mastitis**

- Infrequent feeding or decreased durations of breastfeeding
- Pressure on the breast, e.g. car seatbelt or tight brassieres
- Poor attachment of the baby to the breast
- Rapid weaning (stopping breastfeeding suddenly)
- Stress
- Blocked ducts

#### **Symptoms of mastitis**

- Redness, swelling and pain.

#### **How to manage or treat mastitis**

- Mother should be referred to the clinic / hospital to be given a course of antibiotics
- Mother can drink plenty of water
- Encourage massaging of the breast, if it is not too painful
- The affected breast can be used to breastfeed first
- A mild analgesic (pain medication) can be used

### **5.2 Discussion: Common breast health problems**

1. What is the most common cause of all breast health problems? How can this be solved?
2. How can mothers be assisted with breastfeeding?
3. What questions could be asked by a CCW who needs to establish an individual's need for assistance?

### 5.3 Activity: using a syringe in inverted or flat nipples

Need: Syringes of any size (2ml, 5ml or 10 ml)

A razor blade or scissors.

**Using the steps shown in Figure 11, cut the syringe and invert it as shown.**

**Use the syringe on the hand / arm.**

**The action of drawing out the skin on the hand / arm will show how the nipple will come out if this technique is used on the breast.**

*Table 4: Summary of breast health problems*

- |  |
|--|
| <ul style="list-style-type: none"><li>✓ All the common breast health problems listed above are caused mainly by not breastfeeding.</li><li>✓ Breastfeeding is the main solution to avoid breast health problems.</li></ul> |
|--|

## 6 Other recommendations with regard to breastfeeding

### **At the end of this section, participants will understand the following:**

- ✓ When and how to wean a baby.
- ✓ Ways to express and store breast milk.
- ✓ Breastfeeding in public, and ways to make the experience comfortable.
- ✓ Misconceptions with regard to insufficiency of breast milk.

### 6.1 Weaning

- This is when a mother stops breastfeeding, or breastfeeding exclusively, and introduces complementary foods.
- Mothers should avoid abrupt weaning because it results in the engorgement of breasts (section 5.1.3), and can cause an infection in the long term.
- It is also advisable not to wean suddenly, because the baby needs time to adjust to eating foods other than breast milk.
- During the weaning process, the baby should be breastfed first and then given complementary foods.
- If the baby is NOT breastfed, then it should be given formula milk or full cream milk (cow's milk can be given from 9 months of age).
- If a mother falls pregnant whilst breastfeeding, they can continue to breastfeed. If she has any concerns, then she should consult a nurse or doctor.

When a mother wants to stop breastfeeding, it should be gradual – spread over a one month period. Abrupt stopping of breastfeeding is not encouraged.

### 6.2 What can mother do when she cannot be home to feed the baby?

- When a mother cannot be home to breastfeed the baby, expressing the milk is a good way to make sure that the baby can still get breast milk, even without the mother's presence.
- Expressing milk is quite easy, and can be done at home, or anywhere a mother is comfortable.



*Figure 12: Washing hands is important before handling the baby and expressing milk from the breast*

The following steps can be used by mothers who want to express breast milk:

1. Washing hands thoroughly, using soap and warm water.
2. Choosing a container in which to express the breast milk. The container could be a cup, tumbler, or a bottle with a wide opening. The container should be cleaned thoroughly with soap and hot water. Ideally, the container should be sterilised<sup>8</sup> by boiling it before use (Figure 14)
3. The breast can be 'prepared' so that milk can be expressed. The following can be done:
  - Applying warm compress (a clean, warm towel or cloth)
  - Taking a warm shower
  - The nipple can be massaged with a rolled fist or it can be pulled out gently
4. The mother needs to sit down comfortably and hold the container close to the breast.
5. One hand is placed on the breast, with the thumb above the areola<sup>9</sup> and the first finger just below the areola, to make a C shape as shown in Figure 12. The other hand can be used to support the breast.



*Figure 12: How to hold the breast when expressing breast milk*

---

<sup>8</sup> Sterilising is intensive cleaning, and can be done by boiling the bottles/feeding cups. See Figure 14

<sup>9</sup> Areola – the dark area on the breast, that surrounds the nipple



Figure 13: Expressing breast milk

6. To get the milk out, the area on the breast behind the areola is pressed and released continually. (Figure 13)
7. Pressing the nipple or the areola will not cause any breast milk to come out.
8. Breast milk will come out slowly at first, and 20-30 minutes might be required for the first few days. With more time, more milk will come out at a much quicker pace.
9. Expressing breast milk should not hurt. If pain is experienced, care should be taken to note what is being done wrong and correct it.
10. Expressing milk from all sides of the breast is important to avoid breast health problems.
11. After expressing the breast milk, it can be stored in a clean bottle<sup>10</sup>.

Babies should be fed from a baby feeding cup, and not bottles with artificial teats. Artificial teats and dummies may interfere with suckling, are difficult to clean, and may carry germs that could make the baby sick.

Sterilising feeding cups or containers used for storing breastmilk is very important for good hygiene.

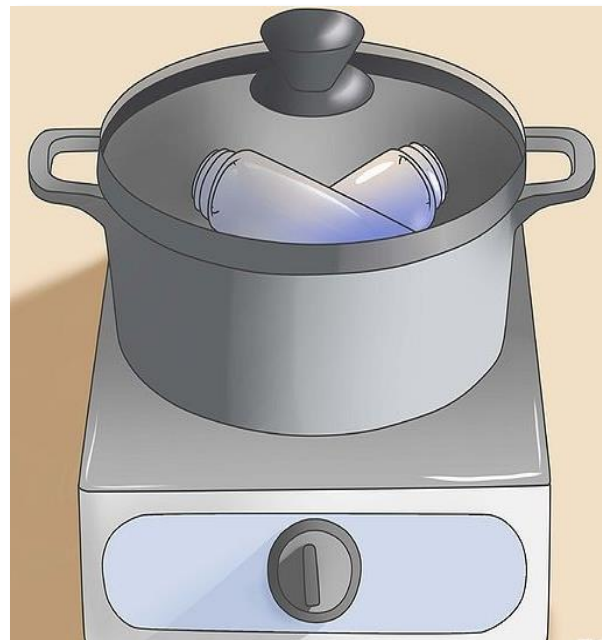


Figure 14: Sterilising containers by boiling

<sup>10</sup> Clean bottle – clean bottle ideally refers to a sterilised bottle.

### 6.2.1 How long can milk be stored after being expressed?

If a mother is going to be away from home for an extended period of time, milk can be stored so that the baby can always have some whenever he / she is hungry.

- At room temperature: for four to six (4-6) hours.
- In a fridge: for up to five days (5 days).

This is when the fridge is always on, and no thawing of the milk is allowed. If there are any power cuts, then it is better to express the milk as needed, i.e. daily, rather than storing the breast milk for a long time.

### 6.2.2 How to warm breast milk

- Breast milk should not be microwaved or heated on a stove.



To warm breast milk:

- Warm water is placed in a container.
- The closed bottle of breast milk is placed in the container until the milk is warm. (figure 15)
- Swirling the bottle can help to speed up the warming process.

Figure 15: Warming breast milk

- The temperature of the breast milk can be tested by squirting a little milk on the skin of the back of the hand of the mother / guardian, so as not to burn the baby.
- To feed the baby, the breast milk can then be transferred to a baby feeding cup.

#### **When embarrassed to breastfeed in public, a mother can:**

- Wrap a towel or shawl around the shoulder to cover the baby whilst feeding.
- Find a place that is private, and removed from a lot of people.
- Express milk at home, and then use a feeding cup to feed the baby if she is still uncomfortable with breastfeeding in public.

There is no need to be embarrassed when breastfeeding, it is a normal feeding practice which saves money and helps the baby to grow healthy!

### 6.3 How much milk is enough?

- Almost all mothers are able to produce enough milk to breastfeed their babies.
- A lot of mothers worry about their milk not being sufficient for the baby, but it does not mean that the baby is not receiving enough milk.

#### Signs that a baby might not be getting enough milk

- Poor weight gain - The Road to Health card, issued by the Department of Health, has a weight-for-age chart. This can be used to determine if the child is gaining weight at a steady and appropriate rate.
- If the baby passes a small amount of concentrated urine (if the urine is yellow, smelly, and passed less than 6 times a day).
- If the baby produces hard, dry or green stools.
- If the mother tries to express milk and no milk comes out.

#### Reasons why a baby might not be getting enough milk

- Poor attachment to the breast (see Figure 9)
- Delayed initiation of breastfeeding – if babies do not learn how to breastfeed as soon as they are born, it becomes difficult for them to breastfeed properly.
- Short feeds, or no night feeding
- Giving the baby complementary feeds
- Use of pacifiers and bottles during feeding. The baby has to learn to suckle from the breast, because using bottles affects the suckling process.

### 6.4 What happens if a mother does not produce enough milk?

- Although most mothers are able to produce enough breast milk to feed their baby, some do not.
- These situations are rare, but do happen.
- If a mother does not produce milk at all, medicines called galactagogues can be given to her to try and assist in producing milk. This medicine can be obtained from the clinic / hospital.
- If these medicines do not work, then a mother might have to use breast milk substitutes to feed her baby.
- If a mother, however, does produce some milk, suggest activities that can assist in continuous breast milk production.

## 6.5 What can a mother do to increase milk supply?

Breastfeeding stimulates breast milk production – the **BABY SHOULD BE BREAST FED ON DEMAND.**

- Feeding the baby more often stimulates breast milk production.
- The baby should be positioned properly at the breast, and care should be taken to ensure that the baby is attached to the breast, and not just the nipple (see Figure 8)
- The baby should be allowed to feed until it does not want any more milk. The baby should not be removed from the breast while still feeding.
- There are foods which are commonly believed to help the mother with breast milk, such as:
  - Adding garlic or ginger to the food when cooking
  - Vegetables and stew
  - Carrots, beets and yam
  - Dark green leafy vegetables
  - Grains and legumes
  - Nuts
  - Porridge and oats
  - Lots of fluids – warm water, and milk

Mothers should be encouraged to eat a healthy balanced diet (section 7), because this promotes sufficient production of breast milk. If a mother insists that she does not produce enough breast milk, then the foods above can be suggested as supplements to her meals.

*Table 5: Summary of other recommendations with regard to breastfeeding*

- ✓ Weaning the baby should be done over an extended period of time, preferably over a month, so that the baby gets used to other forms of feeding.
- ✓ Breast milk can be expressed and stored for a short period if a mother cannot be home to feed the baby.
- ✓ Almost every woman can produce enough milk to feed their baby, and a healthy diet should be eaten to ensure constant production of milk.

## 6.6 Discussion: Breastfeeding recommendations



1. What is weaning, and why is it important to avoid abrupt weaning?
2. How can a mother warm up previously stored breastmilk?
3. Why is important to sterilise the containers that are used to store breast milk, or that are used for baby feeding?
4. Give examples of food that are believed to assist in breast milk production.



- Coffee and colas - they contain caffeine which can affect the baby.
- Cigarettes - they contain nicotine, which also affects the baby.
- Other drugs, such as marijuana and snuff.
- Alcohol - causes slowed growth of the baby, changes in sleep patterns, decreased milk intake, and may damage the development of the baby's brain.



Figure 17: Breastfeeding mothers or pregnant women **SHOULD NOT** drink alcohol

### 7.1.1 Advocating for behavioural change during breastfeeding

- Sometimes mothers find it difficult to change their behaviour when tasked with breastfeeding. If a mother persists not to change her behaviour (e.g. if she does not want to stop smoking or to stop drinking alcohol), then it is better to give alternate advice.

#### **Below are some suggestions:**

- In the case of coffee and colas, amounts can be reduced to one or two cups a day.
- It is better to breastfeed either before or after smoking, to avoid exposing the baby to cigarette and drugs smoke.
- In the case of alcohol, it is better that a mother expresses the milk before they drink alcohol, or that she waits 3-4 hours (or until sober) before resuming to breastfeed.
- Alcoholics<sup>11</sup> ARE NOT ENCOURAGED to breastfeed, because excessive amounts of alcohol cause decreased development of the baby.

Please note: breastfeeding still remains the best feeding for a baby. It is therefore important to educate the mother on the advantages of breastfeeding, and the importance of stopping behaviours such as those listed above, so that the baby gets the full benefits of breast milk.

---

<sup>11</sup> Alcoholics are people who are always drinking alcohol and have no control over their actions when they do drink.

## 7.2 Can a breastfeeding mother take medicines?

- When a mother is sick, she needs to go to the clinic and get medicine. She also needs to tell the clinic staff that is breastfeeding.
- It is not advised to use herbal medicines or medicines from any store / pharmacy without consulting the nurse / doctor first, because medicine can get into breast milk and can cause harm to the baby.



Figure 18: Medicines should be taken only after consulting with a doctor or a nurse

### 7.2.1 Breastfeeding in the context of HIV/AIDs

#### When a mother is HIV negative

- The baby should be breastfed exclusively for six months, and then complementary foods and drinks can be introduced, slowly, from six months.
- The mother can continue to breastfeed for two years or longer.

#### When a mother is HIV positive

- The baby should be exclusively breastfed for six months only if the mother is taking antiretroviral (ARV) medication.
- The baby should also be on ARV medication.
- The mother can continue to breastfeed until 12 months, with the introduction of complementary foods at six months.
- If the mother is only taking antiretrovirals (ARVs) because she was breastfeeding, then she can stop taking the medicines only one week after all breastfeeding has been stopped.
- If a mother is not on ARV treatment, it is better for them not to breastfeed at all, as this increases the chances of the baby contracting HIV.

#### ARV treatment defaulters and interrupters

- Mothers who are ARV treatment defaulters, or who are interrupters, are not encouraged to breastfeed.
- Defaulting or interrupting ARV treatment causes an increase in viral load.
- Once viral load increases, the chances of transmission of HIV from the mother to the baby are increased.

- HIV positive mothers should be encouraged to take their ARV treatment every day during the period that they are breastfeeding.
- Taking ARV treatment will decrease the chances of infecting the baby with HIV.

### 7.3 Effects of alcohol during pregnancy



Figure 19: Pregnant mothers **SHOULD NOT** drink alcohol

- It is very important to educate mothers that alcohol **SHOULD NOT** be taken anytime during a pregnancy.
- When a pregnant mother drinks alcohol, it is passed to the baby through the placenta<sup>12</sup>, and it causes harm to the development of the fetus<sup>13</sup>.

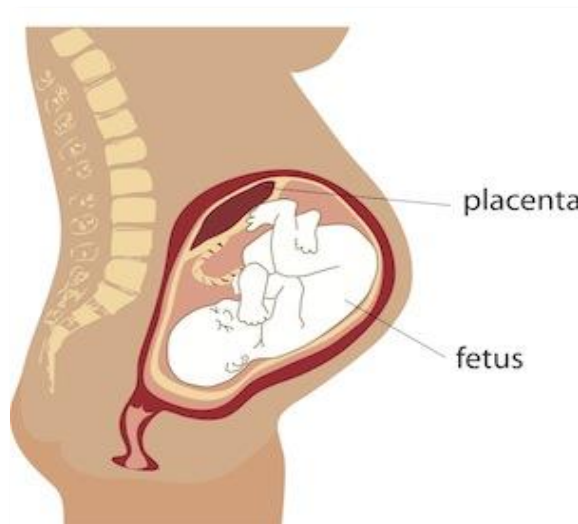


Figure 20: Fetus in the womb

Food and drinks that a pregnant mother eats or drinks are passed to the fetus through the placenta shown in Figure 20

<sup>12</sup> Placenta - the organ that connects the foetus to the uterine wall, which allows for gas exchange, nutrient uptake and waste elimination

<sup>13</sup> Fetus – an unborn baby / baby in the mother's womb

- It is very serious, especially in the first three months of pregnancy (because that is when the baby develops the most), but the effects still occur even after the first three months.
- Drinking alcohol during pregnancy places the fetus at risk of conditions such as fetal alcohol syndrome. This is a combination of problems that may occur in a baby / infant or child, if the mother drinks alcohol when they are pregnant. The problems encountered include physical, mental, emotional, and growth problems.

### 7.3.1 Physical Effects

- Slow growth (before and after birth)
- Joints, limbs, and fingers can be deformed
- Hearing and seeing problems
- Small head
- Heart, kidney, and bone problems

### 7.3.2 Neurological effects (effects to the brain)

- Poor coordination and balance - walking and talking will be difficult
- Changing moods - moods rapidly change and are difficult to control
- Poor memory - difficulty in learning and remembering concepts at school
- Difficulty in problem solving

### 7.3.3 Social and behavioural effects

- Poor social skills - cannot relate to other children well,
- Difficulty in adapting to new environments,
- Difficulty in completing tasks.

*Table 6: Summary of maternal influences to the growth and development of the baby*

<ul style="list-style-type: none"> <li>✓ Breastfeeding is still safe even when a mother is taking other medicines, however a mother MUST visit the clinic, and let the nurse know which medicines they want to take.</li> <li>✓ Alcohol and smoking should be avoided during pregnancy, and during breastfeeding, as both negatively affect the health of a baby.</li> <li>✓ A healthy diet is encouraged for every breastfeeding mother, including lots of water, fruits, and vegetables, so that they can be able to produce good breast milk for their baby.</li> </ul>
--

## 7.4 Discussion: Maternal influence on the growth and development and growth of the baby



1. Is it safe for an HIV positive mother to breastfeed? What information should she be given?
2. Why is it important to avoid alcohol during pregnancy?
3. Give examples of food or drinks that should be avoided when breastfeeding.

## 8 The role of family in supporting breastfeeding

- Breastfeeding mothers need support from family members, friends, and healthcare workers for them to be able to breastfeed efficiently.
- The role of family, friends, and healthcare workers is to ensure that mothers feel comfortable with breastfeeding anywhere, whenever the need arises.
- It is therefore important that education on breastfeeding and its importance is not only given to pregnant mothers, or mothers with infants, but also to everyone in the community.
- This is because it helps them to accept breastfeeding mothers, and the practice of breastfeeding, within their communities, and enables them to support mothers who are breastfeeding.
- Support does not only give confidence to the breastfeeding mothers, but it also allows them to be comfortable with breastfeeding, due to the practice being perceived as acceptable.



*Figure 21: A father supporting a breastfeeding partner*

### 8.1 Beliefs that could potentially hinder breastfeeding or exclusive breastfeeding

- Within each and every culture, there are certain beliefs which promote or hinder breastfeeding practices.
- There is need for health workers to respect the cultural beliefs towards breastfeeding within any community.

- Being culturally sensitive and respectful implies that CCWs are more knowledgeable and sensitive to cultural and social beliefs that the community may raise as reasons for not accepting or practising breastfeeding.
- It is therefore important to understand these beliefs, and to find ways to promote breastfeeding, without being disrespectful to the community's cultural and social values.

*Table 7: Some of the common beliefs about breastfeeding*

Belief	Explanation
Many women do not produce enough milk	Most women produce enough milk for their baby. The size of the breast does not determine the amount of breast milk that a mother produces. Increasing the frequency and duration of breastfeeding stimulates more breast milk to be produced.
Formula milk, animal milk, and breast milk are the same.	Breast milk is not the same as formula or animal milk. Breast milk contains nutrients, minerals and antibodies that boost the baby's immune system and fights infection.  It is recommended that a baby is given formula milk only when they are six (6) months or older, as a supplement for breast milk.  Cow's milk can only be given at nine (9) months, together with other foods.
After travelling, the mother needs to remove some milk from the breast before feeding the baby.	For hygiene purposes, a mother is encouraged to clean themselves before breastfeeding the baby. This can be done by taking a shower, washing hands and wiping the breast with a clean towel before breastfeeding. If the mother wants to express a bit of milk before feeding the baby, this is acceptable.
Women cannot have sex when breastfeeding.	Soon after giving birth, it is important for the mother wait for at least 6 weeks before having sexual intercourse. Mothers who have had caesarean sections or an episiotomy should wait for the surgical wound to heal completely before attempting sexual intercourse.  After the healing process, sexual intercourse can resume, and this has no effect on the mother, the

	<p>baby, or the partner. It is however advised that mothers clean themselves before handling the baby.</p> <p>Situations vary, and therefore a mother should always consult with their nurse or doctor for advice.</p>
When it is hot, a breastfeeding baby needs more water	Breast milk is made of about 90% water. This water is sufficient for a baby even when it is hot (only for the first six months of life).
If the baby is vomiting or has diarrhoea, the mother should stop breastfeeding	Breast milk is the best medicine for a baby when they are sick, because it contains nutrients and antibodies that help the baby to fight the infections that cause diarrhoea or vomiting. Mothers should continue to breastfeed when the baby has diarrhoea or is vomiting, and they should take the baby to the clinic.
Breastfeeding causes breasts to sag.	When a woman falls pregnant, the hormones in her body causes her breasts to prepare for breastfeeding. The size and shape <i>can</i> change during pregnancy, but this does not happen to every woman.
Breast milk should be placed in the ear when a baby has an ear infection	Breastfeeding the baby will assist in treating an ear infection if the baby has one. There is no need to put the breast milk directly into the ear.

## 8.2 General discussion

1. Noluthando, a mother with a 3 month year old baby, is having difficulty with breastfeeding because she has inverted nipples. How would you assist Noluthando with her problem?
2. Cynthia, a 34 year old mother, has recently lost her aunt and needs to go to the funeral out of town, and will be away for three days. She is concerned that her four month old baby will not have enough milk to last her for three days. What would be the best advice to give to Cynthia?
3. Sihleko, a 39 year old father, does not want his wife to breastfeed, because he heard that when women are breastfeeding, they cannot have sex. How would you advise Sihleko?
4. Takura is a 23 year old woman who just gave birth to a premature baby boy. This is Takura's first baby, and she does not know how to breastfeed, and which positions to use when breastfeeding her baby. What advice would you give to Takura?



## 9 Workshop guideline

**The following is a guideline that can be used if formal training sessions or workshops will be conducted:**

1. Welcome participants and thank them for their attendance.
2. Ask everyone to introduce themselves and their role (translators, participants and facilitators).
3. Agree on a set of rules which suits all participants / facilitators. Also clarify the start and end times, lunch, and tea times.
4. Setting ground rules for workshops is helpful for managing group discussions. Ask participants to brainstorm norms / ground rules. Feel free to add any important rules that they may have omitted, e. g:
  - Participate actively and equally - everyone's input is important.
  - Respect each other's opinions and experiences. Do not judge people because of what they do or say.
  - In general, questions may be asked at any time, unless the trainer indicates that in a particular presentation questions should come at the end. The latter will definitely apply for observation of role plays.
  - Be on time for all activities.
  - Turn mobile phones off during training.
  - Where opportunities present themselves, feel free to discuss and exchange ideas with other participants at the training.
5. Present the learning objectives, and compare them to participants' expectations. Allow participants to ask questions. Where realistic, note the additional, relevant objectives, based on participants' expectations.
6. Review the training schedule with participants.
7. Explain that, in order to accomplish all of the learning objectives, this training guide will include demonstrations, role plays, and real life situation scenarios that will be useful to improve understanding for all participants and trainer.

## 10 References

1. A Nurse's Guide to Managing Common Breastfeeding Challenges [Internet]. AMN Healthcare Education Services; 2013 [cited 2014 May 16]. Available from: [http://lms.rn.com/getpdf.php/1858.pdf?Main\\_Session=44cae921d6e24e346dbebd2c2291761c](http://lms.rn.com/getpdf.php/1858.pdf?Main_Session=44cae921d6e24e346dbebd2c2291761c)
2. Alcohol Consumption Among Breastfeeding Women Rosalind A. Breslow, Daniel E. Falk, Sara B. Fein, And Laurence M. Grummer-Strawn breastfeeding Medicine Volume 2, Number 3, 2007 © Mary Ann Liebert, Inc. DOI: 10.1089/bfm.2007.0012
3. American pregnancy association .Fetal alcohol spectrum syndrome. [Internet]. No date [updated 2014 Aug 15; cited 2014 Aug 25]. Available from: <http://americanpregnancy.org/pregnancycomplications/fetalalcohol.html>
4. Australian Breastfeeding Association. Increasing supply. [Internet]. No date [updated 2012 Oct; cited 2015 Feb 05]. Available from: <https://www.breastfeeding.asn.au/bf-info/common-concerns%E2%80%93mum/supply>
5. Basic counselling skills [internet]. No date [cited 2014 Aug 17]. Available from: <http://www.uccs.umn.edu/Training/docs/Basic%20Counseling%20Skills.pdf>
6. Breastfeeding counseling training manual [Internet]. South Carolina Department of Health and Environmental Control; 2011 [cited 2014 May 26]. Available from: [http://www.nphic.org/about/annual-report?task=doc\\_view&gid=843](http://www.nphic.org/about/annual-report?task=doc_view&gid=843)
7. Breastfeeding Inc. Herbal remedies for milk supply. [Internet]. 2012 [cited 2015 Feb 06]. Available from: <http://www.mobimotherhood.org/lactogenic-foods-and-herbs.html>
8. California Department of Public Health Women, Infants and Children Program Division. Peer counsellor handbook: mothers helping mothers [Internet]. California; 2005 January [updated 2010 August; cited 2014 may 26]. Available from: <http://www.cdph.ca.gov/programs/wicworks/Documents/BF/WIC-BF-PCHandbook.pdf>
9. Care New England Health System. Women and Infants; rooming in. [internet] 2011 [Cited 2015 Feb 05]. Available from: <http://www.womenandinfants.org/havingababy/Rooming-In.cfm>
10. Caring for the Newborn at Home: A training course for community health workers [Internet]. WHO/UNICEF; 2012 [cited 2014 May 27]. Available from: [http://www.who.int/maternal\\_child\\_adolescent/news/events/2012/CHW\\_Manual.pdf](http://www.who.int/maternal_child_adolescent/news/events/2012/CHW_Manual.pdf)
11. Community Care Worker Management Policy Framework 2009 [Internet]. [Cited 2015 May 20]. Available from: <http://www.hrresourcecenter.org/node/2857>
12. Drab KJ. Top ten basic counselling skills [internet]. No date [cited 2014 Aug 17]. Available from: <http://www.people.vcu.edu/~krhall/resources/cnslskills.pdf>
13. El-Gilany A-H, Shady E, Helal R. Exclusive Breastfeeding in Al-Hassa, Saudi Arabia. Breastfeed Med. 2011 Jan 8; 6(4):209–13.
14. Farrel B. Breastfeeding and the Lactational Amenorrhea Method (LAM) [Internet]. Medical Services Pathfinder International; 1997 [cited 2015 Mar 25]. Available from: <http://www.pathfinder.org/publications-tools/pdfs/Module-8-LAM-and-Breastfeeding-Support.pdf>
15. Health Systems Trust. Community Health Workers - A Brief Description of the HST Experience [Internet]. A leading resource on health systems and primary health care in southern africa. [cited 2015 May 20]. Available from: <http://www.hst.org.za/publications/community-health-workers-brief-description-hst-experience>
16. Healthy children.org. Burping, Hiccups and spitting up [Homepage on internet]. 2014 [updated 2014 July 09; cited 2014 July 17] Available from: <http://www.healthychildren.org/English/ages-stages/baby/feeding-nutrition/Pages/Burping-Hiccups-and-Spitting-Up.aspx>
17. Healthy Lifestyle. Infant and toddler health. Breastfeeding and alcohol. [Internet]. 1889-2015 [cited 2015 Feb 06]. Available from: <http://www.mayoclinic.org/healthy-living/infant-and-toddler-health/expert-answers/breast-feeding-and-alcohol/faq-20057985>
18. Kramer M, Kakuma R. Optimal duration of exclusive breastfeeding. Cochrane Database Syst Rev [Internet]. 2002 [cited 2015 Mar 3];(1). Available from: <http://apps.who.int/rhl/reviews/langs/CD003517.pdf>
19. La Leche League. What about drinking alcohol and breastfeeding? [Internet]. 2008-2014 [updated 2014 Oct 27; cited 2015 Feb 06]. Available from: <http://www.llli.org/faq/alcohol.html>
20. Languza N, Lushaba T, Magingxa N, Masuku M, Ngubo T. Community Health Workers A Brief Description Of The HST Experience. Health systems trust [Internet]. 2011 February [cited 21 July 2014]. Available from: [http://www.healthlink.org.za/uploads/files/CHWs\\_HSTexp022011.pdf](http://www.healthlink.org.za/uploads/files/CHWs_HSTexp022011.pdf)
21. Le Leche League. How to wean my baby [internet]. [Updated 2011 Sep 09; cited 2015 Jun 04]. Available from: <http://www.llli.org/faq/weanhowto.html>

22. Lehmann U, Sanders D. Community health workers: What do we know about them? [Internet]. WHO Department of Human Resources for Health; 2007 [cited 2015 May 19]. Available from: [http://www.who.int/healthsystems/round9\\_7.pdf](http://www.who.int/healthsystems/round9_7.pdf)
23. Making Health Communication Programs Work [Internet]. U.S. Department of Health and Human Services; [cited 2015 Jun 19]. Available from: <http://www.cancer.gov/publications/health-communication/pink-book.pdf>
24. Mayo clinic. Fetal alcohol syndrome [internet].1998-2014[updated 2014; cited 2014 Aug 25]. Available from: <http://www.mayoclinic.org/diseases-conditions/fetal-alcohol-syndrome/basics/symptoms/con-20021015>
25. MedlinePlus: Fetal alcohol syndrome [internet].No date [updated 2014 Aug 15; cited 2014 Aug 25]. Available from: <http://www.nlm.nih.gov/medlineplus/ency/article/000911.html>
26. Mejia-Rodriguez C, Spink D. Training Curriculum for Community Health Workers [Internet]. Washington State Department of Health; 2012 [cited 2015 Mar 5]. Available from: [http://hcwcommunityhealthworker.org/sites/default/files/sitefiles/CHWT\\_ParticipantManual\\_Final.pdf](http://hcwcommunityhealthworker.org/sites/default/files/sitefiles/CHWT_ParticipantManual_Final.pdf)
27. Minister's Speaking Notes: Breastfeeding Consultative Meeting. Health Systems Trust South Africa; 2011. Available from: <http://www.hst.org.za/news/ministers-speaking-notes-breastfeeding-consultative-meeting>
28. National Department of Health South Africa. Infant and young child feeding policy [Internet]. 2013 [cited 2014 July 17]. Available from: [http://www.kznhealth.gov.za/Nutrition/Infant\\_and\\_young\\_child\\_feeding\\_policy.pdf](http://www.kznhealth.gov.za/Nutrition/Infant_and_young_child_feeding_policy.pdf)
29. National Department of Health South Africa. Road to Health Card- Boys. Department of Health
30. NHS choices. What is a healthy balanced diet? [Internet].No date [cited 2014 Aug 25]. Available from: <http://www.nhs.uk/chq/pages/1127.aspx?CategoryID=51&SubCategoryID=166>
31. NHS choices. Your health, your choice. Expressing and storing breast milk [Homepage on internet]. No date [updated 2012 October 02; cited 2014 July 07]. Available from: <http://www.nhs.uk/Conditions/pregnancy-and-baby/pages/expressing-storing-breast-milk.aspx#close>
32. Pathfinder International. Module 8: Breastfeeding and the Lactational Amenorrhea Method (Lam) [Internet]. 1997 [1997 December; cited 2014 may 26]. Available from: <http://www.pathfinder.org/publications-tools/pdfs/Module-8-LAM-and-Breastfeeding-Support.pdf>
33. Peer Counselor Handbook [Internet]. California Department of Public Health Women, Infants and Children Program Division; 2005. Available from: <http://www.cdph.ca.gov/programs/wicworks/Documents/BF/WIC-BF-PCHandbook.pdf>
34. South Carolina department of health and environmental control. Breastfeeding counselling training manual [Internet]. Columbia; 2011 [cited 2014 May 26]. Available from: [http://www.nphic.org/about/annual-report?task=doc\\_view&gid=843](http://www.nphic.org/about/annual-report?task=doc_view&gid=843)
35. The Presidency, Republic of South Africa. Situational analysis of children in South Africa. [Internet]. 2009 Apr [cited 2014 May 26]. Available from: <http://www.thepresidency.gov.za/docs/pcsa/gdch/situation-analysis.pdf>
36. The sphere project. Infant and young child feeding standard 2: Basic and skilled support [Homepage on internet]. No date [cited 2014 July 21]. Available from: <http://www.spherehandbook.org/en/infant-and-young-child-feeding-standard-2-basic-and-skilled-support&display=print/>
37. Training Guide for Health Workers - Essential Nutrition Actions Framework 2011 [Internet]. 2011 [cited 2015 Apr 13]. Available from: [http://www.coregroup.org/storage/Nutrition/ENA/IIA\\_HW\\_Training\\_Guide\\_complete.pdf](http://www.coregroup.org/storage/Nutrition/ENA/IIA_HW_Training_Guide_complete.pdf)
38. Training of Trainers Manual for Counseling on Maternal, Infant, and Young Child Nutrition [Internet]. USAID's Infant and Young Child Nutrition Project; 2011 [cited 2014 May 25]. Available from: [http://iycn.wpengine.netdna-cdn.com/files/IYCN\\_MIYCN\\_Ethiopia\\_Counseling\\_TOT\\_Manual\\_1211.pdf](http://iycn.wpengine.netdna-cdn.com/files/IYCN_MIYCN_Ethiopia_Counseling_TOT_Manual_1211.pdf)
39. U.S. Department of Health and Human Services, Office on Women's Health. Your guide to breastfeeding [Internet]. 2011 January [updated 2011; cited 2014 May 26]. Available from: <http://www.womenshealth.gov/publications/our-publications/breastfeeding-guide/breastfeedingguide-general-english.pdf>
40. UNICEF. Committing to child survival. A promise renewed. [Internet]. UNICEF; 2014. Available from: [http://data.unicef.org/corecode/uploads/document6/uploaded\\_pdfs/corecode/APR-2014-17Oct14-web\\_194.pdf](http://data.unicef.org/corecode/uploads/document6/uploaded_pdfs/corecode/APR-2014-17Oct14-web_194.pdf)
41. UNICEF. Nutrition [internet]. No date [cited 2014 Aug 25]. Available from: [http://www.unicef.org/nutrition/index\\_role.html](http://www.unicef.org/nutrition/index_role.html)
42. UNICEF. UNICEF welcomes new policy on infant and young child feeding in the context of HIV [Internet]. UNICEF. No date [cited 2015 Feb 3]. Available from: [http://www.unicef.org/southafrica/media\\_7298.html](http://www.unicef.org/southafrica/media_7298.html)
43. United Nation Children's Fund. Committing to child survival. A promise renewed. [Internet]. UNICEF; 2014. Available from: [http://data.unicef.org/corecode/uploads/document6/uploaded\\_pdfs/corecode/APR-2014-17Oct14-web\\_194.pdf](http://data.unicef.org/corecode/uploads/document6/uploaded_pdfs/corecode/APR-2014-17Oct14-web_194.pdf)
44. United Nations Children's Fund. Improving exclusive breastfeeding practices [Internet]. 2010 June [updated 2010 June; cited 2014 may 26]. Available from: [http://www.unicef.org/nutrition/files/C4D\\_in\\_EBF\\_manual\\_\\_6\\_15\\_2010\\_final.pdf](http://www.unicef.org/nutrition/files/C4D_in_EBF_manual__6_15_2010_final.pdf)

45. United Nations children's fund. The baby-friendly hospital initiative [Internet]. No date [updated 2014 May 26; cited 2014 May 26]. Available from: <http://www.unicef.org/programme/breastfeeding/baby.htm>
46. WHO, UNICEF, others. Protecting, promoting and supporting breast-feeding: the special role of maternity services/a joint WHO/UNICEF statement [Internet]. 1989 [cited 2015 Mar 31]. Available from: <http://apps.who.int/iris/handle/10665/39679>
47. World Health Organisation, United Nations Children's Fund. Breastfeeding Counselling : A Training Course [Internet]. WHO/UNICEF; 1993 [cited 2015 Jun 17]. Available from: [http://www.who.int/maternal\\_child\\_adolescent/documents/pdfs/bc\\_participants\\_manual.pdf](http://www.who.int/maternal_child_adolescent/documents/pdfs/bc_participants_manual.pdf)
48. World Health Organisation. Exclusive breastfeeding [Internet]. WHO. [Cited 2015 Mar 3]. Available from: [http://www.who.int/nutrition/topics/exclusive\\_breastfeeding/en/](http://www.who.int/nutrition/topics/exclusive_breastfeeding/en/)
49. World Health Organisation. 10 facts on breastfeeding [Internet]. WHO. [Cited 2015 Mar 3]. Available from: <http://www.who.int/features/factfiles/breastfeeding/en/>
50. World Health Organisation. Breastfeeding [Internet]. WHO. [Cited 2015 Mar 18]. Available from: <http://www.who.int/topics/breastfeeding/en/>
51. World Health Organisation. Breastfeeding. [Homepage on internet]. ©WHO; 2014 [updated 2014; cited 2014 June 20] Available from: <http://www.who.int/topics/breastfeeding/en/>
52. World Health Organisation. Complementary feeding [Internet]. WHO. [Cited 2015 Mar 3]. Available from: [http://www.who.int/nutrition/topics/complementary\\_feeding/en/](http://www.who.int/nutrition/topics/complementary_feeding/en/)
53. World Health Organisation. Complementary feeding [Internet]. World Health Organisation. 2015 [cited 2015 Mar 3]. Available from: [http://www.who.int/nutrition/topics/complementary\\_feeding/en/](http://www.who.int/nutrition/topics/complementary_feeding/en/)
54. World Health Organisation. Exclusive breastfeeding [Internet]. World Health Organisation. 2015 [cited 2015 Mar 3]. Available from: [http://www.who.int/nutrition/topics/exclusive\\_breastfeeding/en/](http://www.who.int/nutrition/topics/exclusive_breastfeeding/en/)
55. World Health Organisation. Guidelines on HIV and infant feeding 2010 [Internet]. WHO. [Cited 2015 Apr 7]. Available from: [http://www.who.int/maternal\\_child\\_adolescent/documents/9789241599535/en/](http://www.who.int/maternal_child_adolescent/documents/9789241599535/en/)
56. World Health Organisation. Indicators for assessing breastfeeding practices [Internet]. Geneva: WHO; 1991 [updated 1991; cited 2014 June 20]. Available from: [http://whqlibdoc.who.int/hq/1991/WHO\\_CDD\\_SER\\_91.14.pdf](http://whqlibdoc.who.int/hq/1991/WHO_CDD_SER_91.14.pdf)
57. World Health Organisation. Ten facts on breastfeeding [Internet]. World Health Organisation. 2015 [cited 2015 Mar 3]. Available from: <http://www.who.int/features/factfiles/breastfeeding/en/>
58. World Health Organisation/United Nations Children's Fund. Breastfeeding counselling a training course [Internet]. No date [cited 2014 June 30]. Available from: [http://www.who.int/maternal\\_child\\_adolescent/documents/pdfs/bc\\_participants\\_manual.pdf](http://www.who.int/maternal_child_adolescent/documents/pdfs/bc_participants_manual.pdf)
59. Your Guide to Breastfeeding [Internet]. U.S. Department of Health and Human Services, Office on Women's Health; 2011 [cited 2014 May 25]. Available from: <http://www.womenshealth.gov/publications/our-publications/breastfeeding-guide/breastfeedingguide-general-english.pdf>

**Compiled by Shingirai Miranda Katsinde**

Master of Pharmacy Research Project

(2014 -2015, Rhodes University)

Email: [smkatsinde@gmail.com](mailto:smkatsinde@gmail.com)

## 11 Acknowledgements

**Rhodes University**

**Faculty of Pharmacy**

P.O Box 94

Grahamstown, 6140

South Africa



**RHODES UNIVERSITY**

*Where leaders learn*

Tel: +27(0)46 603 8496

Fax: +27(0)46 603 7506

Contact: Prof S.C Srinivas (Supervisor)

Email: [s.srinivas@ru.ac.za](mailto:s.srinivas@ru.ac.za)

**Rhodes University**

**Community Engagement**

P.O box 94

Grahamstown

South Africa



Tel: +27 (0) 46 603- 7229

Fax: +27 (0) 46 603 8869

Contact: Ms D Hornby (Co-supervisor)

Email: [d.hornby@ru.ac.za](mailto:d.hornby@ru.ac.za)

**Ubunye Foundation**

25 Hill Street, P. O. Box 448

Grahamstown 6140

South Africa



Tel: +27 (0)46 622 7896

Fax: +27 (0)46 622 7889

Contact: Mrs. K Court (Liaison)

Email: [kathryn@ubunyefoundation.co.za](mailto:kathryn@ubunyefoundation.co.za)

**Community Care Workers** from the **Glenmore**  
and **Ndwayana** Primary Health Care Clinics,  
Eastern Cape Province  
South Africa



**St Mary's Development and Care Centre**  
P.O Box 634  
Grahamstown 6140  
South Africa

Tel: +27 (0)46 622 6443  
Fax: +27 (0)46 622 6443  
Contact: Mrs. M.C Keeton (Liaison)  
Email: [keeton@icon.co.za](mailto:keeton@icon.co.za)

The logo for St Mary's Development &amp; Care Centre. It features the text "St Mary's" in a blue, cursive font at the top. Below it, "DCC" is written in large, bold, blue, block letters. At the bottom, "Development &amp; Care Centre" is written in a blue, cursive font.