

RESEARCH REPORT

TITLE: **THE EFFECT OF A BREASTFEEDING
INTERVENTION PROGRAM ON THE
KNOWLEDE OF PREGNANT WOMEN
AT THE BISHOP LAVIS CLINIC.**

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the requirements for the M Cur Degree

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education,quasi-experimental,barriers,
advantages, knowledge, exclusive, low birth
weight.

DECLARATION:

I declare that *'The effect of a breastfeeding intervention programme on the knowledge of pregnant women at the Bishop Lavis clinic'* is my own work, that it has not been submitted for any degree or examination at any other university, and that all sources I have used or quoted have been indicated and acknowledged by complete references.

SONJA LYNN WALKER

MAY 2001

SIGNED:

S. Walker



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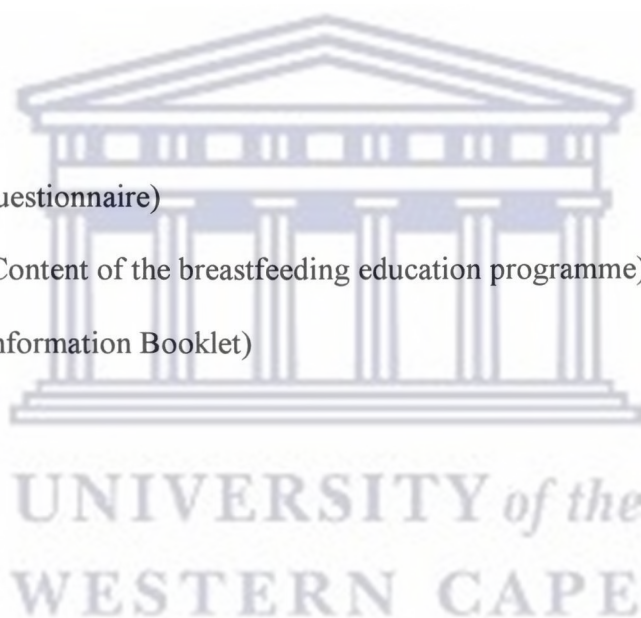
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ABSTRACT:

Introduction: Breastfeeding is an important child survival strategy. Many mothers choose not to breastfeed their babies or do so for only a short duration, despite the undisputed physiological, social, psychological, economic, immunological and nutritional benefits to mother and infant. The study was conducted in Bishop Lavis, a low socio-economic community in the City of Tygerberg, Cape Town. Poverty, unemployment and inadequate housing are a few problems which this community faces.

Aim: To implement an antenatal group breastfeeding education programme and evaluate the knowledge gained by participants.

Methodology: A quasi-experimental design was used. Before-after studies were used to measure the knowledge of breastfeeding before and after the implementation of the breastfeeding education programme.

Study population: All primigravidas attending the Bishop Lavis antenatal clinic.

Sampling: A total of 58 primigravidas were sampled, using systematic random sampling over a four-week period.

Data Analysis: Statistical analyses were carried out using the Statistical Analysis Software. Means, percentages and p-values were calculated.

Results: The results proved that there was a significant increase in the participants' knowledge after the breastfeeding education education.

Conclusion: There is a need to educate all pregnant women regarding the advantages of breastfeeding and to establish permanent breastfeeding education and support systems.

CHAPTER 1

INTRODUCTION

For the past decade there has been a growing interest in breastfeeding and other infant feeding practices. The promotion of breastfeeding has had high priority on the agenda of the Sub-directorate of the Department of National Health and Population Development .¹ A National health promotion disease prevention objective for the year 2000 was to increase the proportion of mothers who breastfed their infants in the early postnatal period to at least 75% and to increase the proportion who continued to breastfeed until their infants were 5 to 6 months old to at least 50%.²

In South Africa, breastfeeding initiation rates are generally high, however, there does appear to be a problem with the duration and the introduction of supplementary feeds at an early stage.³

Factors found to be associated with early cessation of breastfeeding and / or early use of supplements include: (i) milk insufficiency, (ii) maternal employment, (iii) breast related problems, (iv) a dissatisfied baby or a baby that refuses milk, (v) maternal illness and (vi) infant illness or prematurity.³

Research has indicated that the health benefits of this feeding method are especially important to children of low-income mothers, since these children are at a higher risk for a variety of problems that could be reduced through breastfeeding.⁴

The predominance of formula feeding over breastfeeding may be due in part to:

- A lack of knowledge about the benefits of breastfeeding,
- A lack of confidence in one's skills to breastfeed successfully,
- And a perceived lack of support towards breastfeeding.⁴

This study was conducted to determine the effects of a breastfeeding education programme on the knowledge of primigravidas at the Bishop Lavis antenatal clinic, with the intension of improving breastfeeding practices.

BACKGROUND:

Bishop Lavis is a low socio economic community in the City of Tygerberg, Cape Town. Poverty, unemployment and inadequate housing are a few problems, which this community faces. The Bishop Lavis antenatal clinic, managed by two fulltime-registered midwives provides antenatal care to women in this area. There has been an increase in the number of mothers who attend the antenatal clinic for follow up visits, approximately 80-100 per week. An average of 15 (15%) of these mothers are primigravidas. At the time of the study there was no formal breastfeeding education program in place at this clinic.

SIGNIFICANCE OF THE STUDY:

Despite the advantages of breastfeeding for both mother and infant, many mothers choose not to breastfeed or do so for a short duration only. Data from the Department of Health, South African Demographic and Health Survey, revealed that, only 10% of infants under the age of 3 months were exclusively breastfed and by the age of 4-6 months this number decreased to only 2%.⁵

A previous study conducted in Bishop Lavis in 1995 provides the following information regarding breastfeeding practises: It was found that there was a high initiation rate of breastfeeding among mothers, with a rapid decrease in the duration of breastfeeding. The study also found that only one baby was exclusively breastfed. The study concluded that breastfeeding knowledge, practices and the mothers attitudes towards breastfeeding needs to be improved during antenatal visits.⁶

South Africa has six times the number of very low birth weight babies than developed countries.⁷

At the Bishop Lavis Maternity Obstetric Unit, a total of 193 low birth weight infants were born from January to December the year 2000.⁸ The total number of deliveries from January to December of the same year was 1611. The percentage low birth weight infants for this period therefore equalled (8,4%).

Low birth weight babies, defined as weighing less than 2,5 kilograms, are at greater risk of dying than infants of average weight. If they survive, they will have more episodes of illness, their cognitive development may be impaired and they are also more likely to become malnourished.⁹

There are currently children being treated on the Protein Energy Malnutrition Programme. The total number of children on the programme is not available.

Although often an invisible phenomenon, malnutrition casts long shadows, affecting close to 800 million people - 20% of all people in the developing world.¹⁰

Considering the many advantages of breastfeeding and the findings and recommendation of previous research, the purpose of this study was to introduce a formal breastfeeding education programme aimed at increasing the proportion of mothers who breastfeed their infants in the early postnatal period, and who will continue to breastfeed until their infants are 5 to 6 months old through an increase in their knowledge.

Although breastfeeding is an ancient art, mothers need knowledge and support to carry out this new role.¹¹ Breastfeeding is a learned skill which women obtain through education, observation and experience.¹² Prenatal breastfeeding group education is an additive, significant and important component of breastfeeding support, especially among women with no previous breastfeeding experience.¹³

Efficacy of prenatal breastfeeding skills group education, are the greatest among primigravidas, this may be due in part to the fact that they are less influenced by past experiences.¹³ This would support the National health promotion disease prevention objective for the year 2000.

AIM OF THE STUDY:

To implement an antenatal group breastfeeding education programme and evaluate the knowledge gained by participants regarding breastfeeding.

THE OBJECTIVES OF THE STUDY WERE TO:

- ◆ To establish the level of knowledge of primigravidas regarding breastfeeding, through a pre-test.
- ◆ To educate primigravidas regarding the advantages of exclusive breastfeeding, through the implementation of a breastfeeding education programme.
- ◆ To determine after the breastfeeding education sessions, by means of a post-test, whether there was an increase in the knowledge of mothers.

HYPOTHESIS:

It was hypothesized that breastfeeding education sessions would increase the knowledge of primigravidas regarding breast-feeding.

DEFINITION OF TERMS:

- ◆ Breastfeeding: The secretion of milk from a mother's breast and the suckling of the infant to secure nutrition one or more times a day.
- ◆ Exclusive breastfeeding: The provision of only breast milk for infant nutrition, excluding all supplements, such as juice, formula and solid food, except water for medication or hydration.
- ◆ Primigravida: A women who is pregnant for the first time.
- ◆ The levels of knowledge regarding breastfeeding in this study was measured according to a Likert scale.

Participants were asked questions whereby they could answer yes/no or true/false.

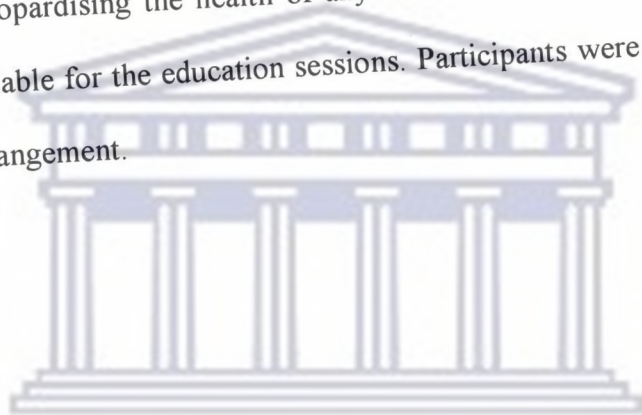
If 0-49% of their answers for questions 1-14 were correct, participants were regarded as having 'poor' knowledge of breastfeeding.

If 50-69% of their answers for questions 1-14 were correct, participants were regarded as having 'fair' knowledge of breastfeeding.

If 70-100% of their answers for questions 1-14 were correct, participants were regarded as having 'good' knowledge of breastfeeding.

Ethical considerations:

- ◆ Participation was voluntary. Participants gave consent for their participation.
- ◆ All participants were informed of the objectives of the study.
- ◆ Anonymity and confidentiality of the participants was assured.
- ◆ Non-participants received breastfeeding information as is currently offered.
- ◆ The researcher ensured that participants received the same follow up dates, without jeopardising the health of any individual. This was to ensure that they were available for the education sessions. Participants were informed beforehand of this arrangement.



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CHAPTER 2

LITERATURE REVIEW:

The current worldwide decline in breastfeeding initiation and duration has increased the need for effective breastfeeding promotion. Nutrition and nurturing during the first three years are crucial for both lifelong health and well being. In infancy no gift is more precious than breastfeeding, yet barely one in three infants are exclusively breastfed during the first four months of life.¹⁴

Globally, children who are poorly nourished often come from large families whose mother are not well educated and well nourished, who have, or will have many dependent children, and who produce low birth weight infants.¹⁵ The antecedent of the sick malnourished child is low birth weight. According to Dr. Namja Shaikh, Deputy Director of the Sub-directorate of Epidemiology and Biostatistics, some 18% of babies born in the Western Cape during the year 1999 were low birth weight.⁷

Low birth weight results from pregnancies that are too short, too close together, too many or too long. To improve the nutrition status of children, we must increase birth spacing and the rate of exclusive breastfeeding of infants. The combination of malnutrition and infectious disease is deadly.¹⁵

The debilitating effects of malnutrition are worldwide. It maims, cripples and blinds on a massive scale especially amongst the poor and vulnerable and plays a major role in half of the 10,4 million annual child deaths in the developing world.¹⁰

The following are proven and effective strategies in reducing and eliminating malnutrition:

- Promoting breastfeeding and caring for the socio economically deprived and nutritionally vulnerable.
- Ensuring of household food security, including food and nutrition as a human right.
- Preventing and managing infectious diseases.
- Preventing and eliminating micronutrient malnutrition.
- Promoting healthy diets and lifestyles.
- Assessing, analysing and monitoring nutrition status.¹⁵

Breastfeeding is regarded as an effective strategy in the prevention of malnutrition as the quality, quantity and frequency of infant feeds can be controlled through breastfeeding. Breastfeeding also provides the infant with a high energy and nutrient density food.¹⁶ It was decided by the Advisory Committee of health issues that breastfeeding will be promoted in South Africa through yearly breastfeeding weeks.¹ However, breastfeeding cannot be promoted during this week only. It is important that breastfeeding education be provided to mothers on a continual basis. Breastfeeding requires very little investment and has tremendous pay backs for the nation.¹⁷ The evidence is clear that breastfeeding lowers healthcare cost and reduces human suffering.¹⁵

Breastfeeding increases social interaction between mother and infant. Other advantages for the mother include increased maternal uterine tone, quick return to pre-pregnancy weight convenience and increased intervals between pregnancies.¹⁸

Breastfeeding enhances the emotional feeling of confidence among mothers, especially if the mother has made an informed decision to breastfeed and if she gets the necessary support.¹⁹

Health costs can run into millions of rands because of a decision not to breastfeed. This is a result of only a few of the following diseases: intestinal disease, respiratory disease and diarrhoeal disease. Available data regarding infant mortality in South Africa indicates the following:

Intestinal infection accounts for 19% of infant deaths, respiratory disease 8% of infant deaths and diarrhoeal disease 6,4%.³

Due to breast milk's nutritional and anti-infective advantages the household can save on hospital bills since the infant is less prone to disease. This protective effect of breastfeeding is more striking in settings where poverty, malnutrition and poor hygiene are prevalent.²⁰

Furthermore breastfeeding also has economic benefits for households, employers and for the nation.¹⁷ It saves the unnecessary purchasing of breast milk substitutes and feeding equipment. Employers also experience less absenteeism and greater productivity among workers who breastfeed their infants, because artificially fed babies are often more sick and for longer periods.¹⁷

A study done in New Zealand revealed that breastfeeding is associated with a small, but detectable increase in the cognitive ability and educational achievement in children.²¹

A study done in Santiago, Chile, revealed that efficacy of prenatal education regarding breastfeeding was greatest among primigravidas and that a successful first time experience with breastfeeding created a greater likelihood that a mother will choose to breastfeed any future children.¹³

The positive effects of prenatal breastfeeding education can furthermore be supported by the fact that practical breastfeeding problems, such as flat or inverted nipples and engorgement of the breast can most effectively be addressed and corrected when identified during the antenatal period.²²

Another study done in Western Australia revealed that through enabling primigravidas to position and attach their baby correctly on the breast antenatally through simulation, they will have less nipple pain and trauma and will be able to feed their babies to at least six weeks postpartum.¹²

A study done regarding the infant feeding practices in a low socio-economic, disadvantaged community in the Cape Peninsula in 1994 suggested the need for improved support and education of mothers during the prenatal period.²³ A program such as this was introduced and the study was repeated two years later.

The results were as follows:

1st study: 52,7% of mothers breastfed their infants up to the age of six weeks.

2nd study: 75,8% of mothers breastfed their infants up to the age of six weeks.

A significant increase in the rate of breastfeeding had occurred.

Despite the well-understood benefit of choosing to breastfeed, there are however, real barriers to the initiation and continuation of breastfeeding. Socio-cultural factors such as lack of traditional knowledge and support, today's grandmothers often have no firsthand breastfeeding experience. Cultural aspects must therefore be considered in the effort to promote breastfeeding.²⁵

Maternal knowledge and attitudes, socio economic and employment status, other maternal factors, urbanization, health services, and the aggressive marketing and availability of breast milk substitutes all act in varying degrees to influence a woman's breastfeeding decisions.²⁵ No breast milk substitute, not even the most sophisticated and nutritionally balanced formula can begin to offer the numerous unique health advantages that breast milk provides for babies. Nor can artificial feeding do more than approximate the act of breastfeeding in physiological and emotional significance for babies and mothers alike. Feeding with formula remains a deviation from the biological norm for virtually all infants.²⁶

Other influences include the availability of breastfeeding education, embarrassment about breastfeeding in public, various perceptions and lack of support.¹⁵ There is a need to create public awareness of breastfeeding, promoting it as the natural way whereby a mother aims to ensure optimal health for her infant.

The need to address the lack of nursing rooms for mothers at public places such as restaurants and shopping centres and the need to clarify myths and perceptions regarding breastfeeding in a low socio-economic community are essential. Myths and perceptions regarding breastfeeding are barriers in breastfeeding initiation and

duration. In a study conducted by final year dietetic students from Stellenbosch University during August 1999, it was found that mothers believed the following: The introduction of a water bottle soon after birth would satisfy a baby's hunger. Mothers also believed that colostrum, the first milk, must be thrown away, because it is bad for the baby and the mother must not breastfeed the baby when she is upset.²⁷

A review done, using published articles between 1980-1999 among adolescents revealed the following information regarding attitudinal factors influencing breastfeeding decisions:

Breastfeeding is inconvenient, the mother is the exclusive feeder, it ties one down, makes the mother feel run down, it causes breast disfigurement; breasts are sex organs, mother won't lose weight, breastfeeding causes embarrassment, generally mothers dislike breastfeeding, breastfeeding is old fashioned, mothers fear pain, and baby gets fat.²⁸

The most common reason for discontinuing breastfeeding is that of insufficient milk. Psychological factors such as fear, pain and anxiety can also adversely affect the milk ejection reflex necessary for successful breastfeeding.¹⁹

Demographic changes in childbirth and child rearing, such as the increasing number of teenage and single mothers and more reliance on childcare outside the home, are also associated with challenges to successful sustained breastfeeding.²⁴

It is essential for health care professionals who work with mothers and babies to be knowledgeable regarding breastfeeding and ways to deal with problems. Provider's lack of knowledge, non supportive behaviours and attitudes, and inaccurate and

inappropriate advice, have all been cited as flaws in the health care system.²² Midwifery services, therefore, need to target low income women and provide better quality professional support and advice to promote breastfeeding.²⁹

A study done in Arizona to detect the effect of antenatal breastfeeding education among women with a low income revealed an increase in knowledge, initiation and maintenance of breastfeeding. These positive results were possible because incentives such as prizes were used to attract low-income women.⁴ The use of incentives to encourage women to take part in an educational program may not be beneficial, since women might participate for the incentive only, rather than to increase their knowledge. Through educating the community, a contribution will be made to the health of a socially disadvantaged community.

Health workers in community settings are in the unique position to assist, provide support and to develop educational programs to enhance breastfeeding success in the community.

Various studies highlight the positive effects of antenatal group teaching on breastfeeding initiation and duration. Some of these studies were conducted on first time mothers and women with a low income. However, the emphasis of a breastfeeding educational programme as part of existing quality assurance programmes is lacking. The remaining challenge to ensure optimal infant nutrition through the introduction of an effective breastfeeding education programme was taken up.

CHAPTER 3

METHODOLOGY:

STUDY DESIGN:

A quasi-experimental design was used where all the participants received the education, rather than a random allocation of the education. Before-after studies were used to measure the knowledge of breastfeeding, before and after the implementation of the breastfeeding programme, and to determine whether the education had improved the knowledge of the participants.

STUDY POPULATION:

The study group consisted of primigravidas attending the Bishop Lavis clinic. Multigravidas were excluded from the study in an attempt to control the influence of their knowledge and previous feeding methods and experiences of rearing other children. Primigravidas who were more than 28 weeks pregnant, were also excluded, since they might not have been able to attend the full course of the study.

SAMPLE:

A total of 58 primigravidas were sampled, using systematic random sampling over a four-week period. This sampling method was used to overcome bias and to give all participants an equal chance of participating in the study.

Of the 58 participants who were sampled, only 26 completed the study.

To be eligible to participate in the study, the following criteria was essential:

Primigravida status.

A gestation period less than 28 weeks, to enable them to attend the full educational programme.

Must attend the Bishop Lavis antenatal clinic.

DATA COLLECTION:

QUESTIONNAIRES:

A self-administered questionnaire, (see appendix 1), containing open and close-ended questions, were completed by the participants prior to the breastfeeding educational programme. No demographic data regarding participants was collected. The questionnaire was used where participants were able to read and to respond to questions independently. The researcher was available to translate the questions to Afrikaans where necessary. Fourteen questions were asked whereby participants could answer true/false or yes/no or provide certain information.

Process: Breastfeeding Education Programme:

The educational sessions were conducted weekly on a Monday, on the follow up days of participants. None of them had to make special arrangements to attend the session.

The sessions were presented in English, but the researcher translated to Afrikaans where necessary.

The post-test, using the same questionnaire as the pre-test, was conducted one month after each groups' educational session was completed. This allowed the researcher to determine the amount of information the participants were able to retain after one month. The participants were divided into four groups, two groups consisted of eight participants and the other two groups had five participants each.

The participants attended a once off, 3 hour long breastfeeding education session.

A ten-minute break was given between every sixty-minute input. This was to ensure that participants did not become tired, restless or disinterested in the session. An hourly session consisted of a combination of input from researcher, discussions and viewing of videos. Since their antenatal visits are essentially a month apart, the researcher was unable to schedule shorter sessions.

Participants who wanted their partners or other support e.g. mothers or grandmothers to accompany them were welcome to do so. These support persons were not allowed to be present during the completion of the questionnaires for both pre and post tests.

They were allowed during the educational sessions, because it has been reported that the sources of social support of the birth mother, is an important source of breastfeeding initiation and duration.^{3,4}

VALIDITY AND RELIABILITY:

The questionnaire was developed based on available literature regarding breastfeeding, as well as in consultation with an obstetrician. The questionnaire was piloted using a group of women who did not participate in the main study to determine the validity and clarity of the questions. The questionnaire was in English, however the researcher translated for those participants who did not understand. The content of the breastfeeding programme was based on literature, which focused on for example, myths and perceptions, which still exists. This was to ensure content validity.

DATA ANALYSIS:

Categorical data was obtained from both pre and post test questionnaires. A score of one (1) was awarded for a correct answer and zero (0) for an incorrect answer. Statistical analyses were carried out using the Statistical Analyses Software (SAS). Percentages and differences were calculated in the pre and posttest. The Wilcoxon sign rank test (see table 3) was done on the scores shown in table, 2 because of the small sample size. The Mc Nemar test was used to test for significance. A statistical significance level of $p < 0.05$ was used.

CHAPTER 4

RESULTS:

The results of the study will be presented as related to the objectives, with objective one being addressed by the pre-test, objective two by the education (see process for breastfeeding education programme page 17 and 18 and appendix 3) and objective three by the post-test.

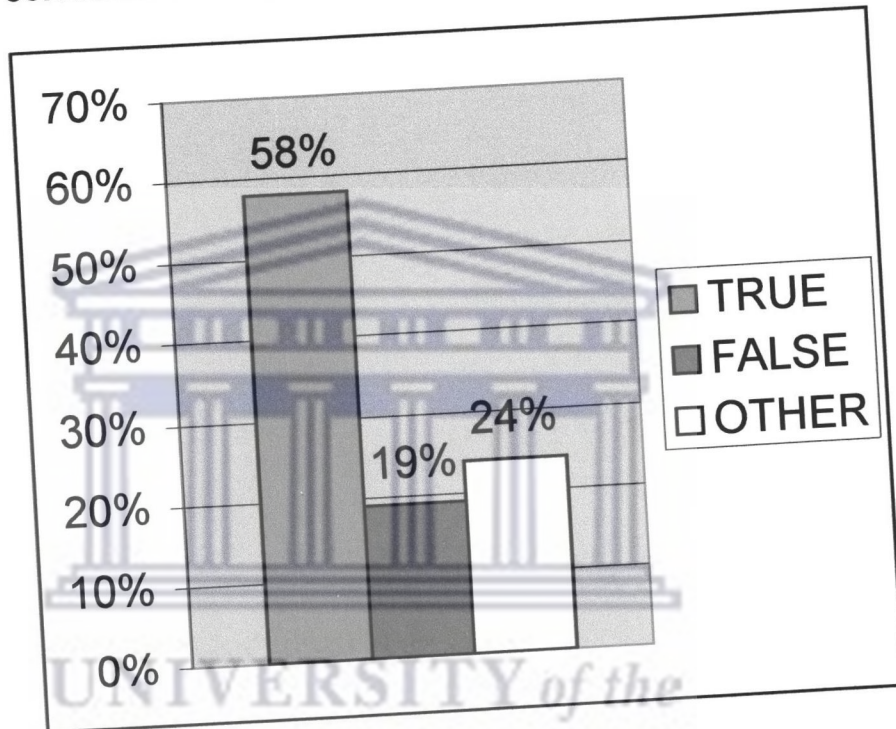
Objective 1: To establish the level of knowledge of primigravidas regarding the breastfeeding through a pre-test:

Question 1

All participants (100%) agreed that breastfeeding is best for mother and infant.

Question 2:

Fig. 1 Responses of participants to the statement that colostrum is not good for the baby.



Other relates to those participants who did not answer the question. Some of the reasons given by participants who agreed that colostrum is not good for the baby included: 'It is watery', 'It is bad for the baby'.

Question 3:

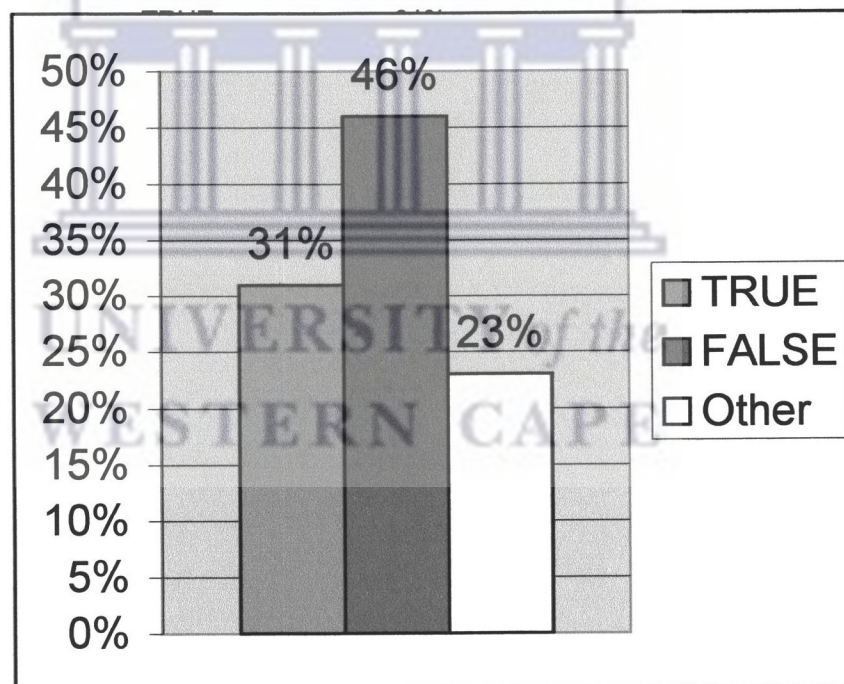
A total of 15 (58%) participants did not answer the question relating to formula milk is as good as breast milk. Five (19%) participants agreed that formula milk is as good as breast milk and 6 (24%) participants disagreed that formula milk is as good as breast milk. The 5 (19%) who agreed, did not provide reasons why they believed that formula is as good as breastmilk

Question 4:

Eleven (42%) participants agreed that a baby should get a water bottle to be comforted, even though the baby has just been fed, 15 (58%) participants disagreed.

Question 5:

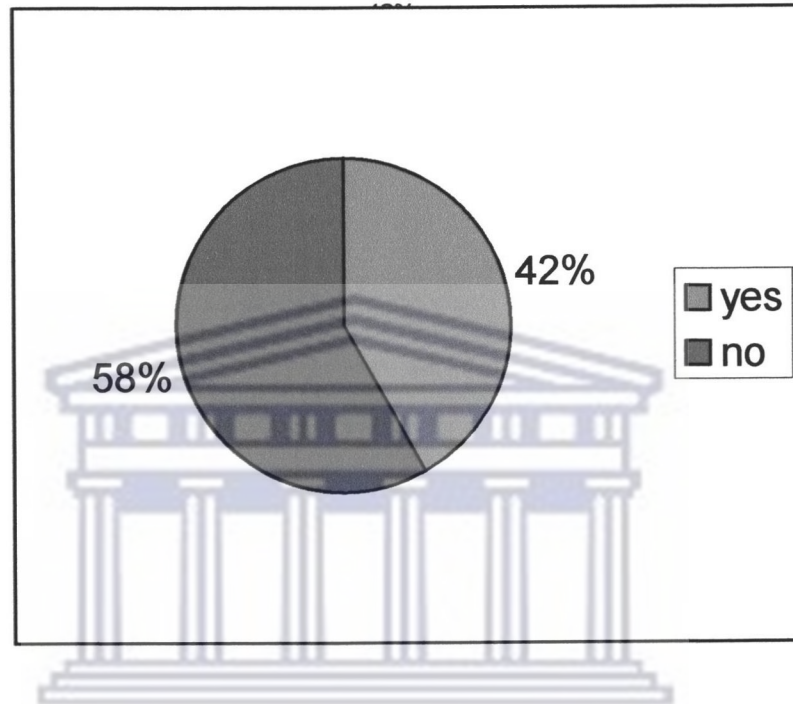
Fig. 2 The number of participants who agreed or disagreed to the statement, that you should stop breastfeeding when your nipples are sore or cracked.



Other relates to those participants who did not answer the question.

Question 6:

Fig. 3 The number of participants who agreed that it is advisable to breastfeed your infant at least up to the age of 5-6 months.



Question 7:

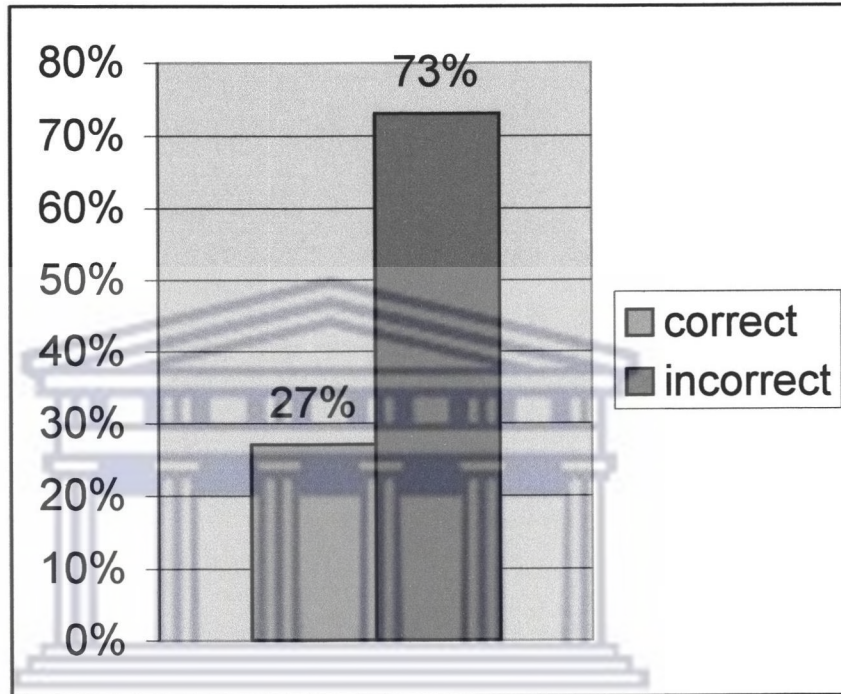
Participants were asked to list at least five advantages of breastfeeding. A total of 4 (15%) participants could list at least five advantages; 10 (39%) participants did not answer the question. The remaining 12 (46%) participants were only able to list three or less advantages of breastfeeding.

Question 8:

When participants were asked what they understood by the term exclusive breastfeeding, only 4 (15%) could provide the meaning. Six (23%) participants gave incorrect answers and 16 (62%) did not answer the question.

Question 9:

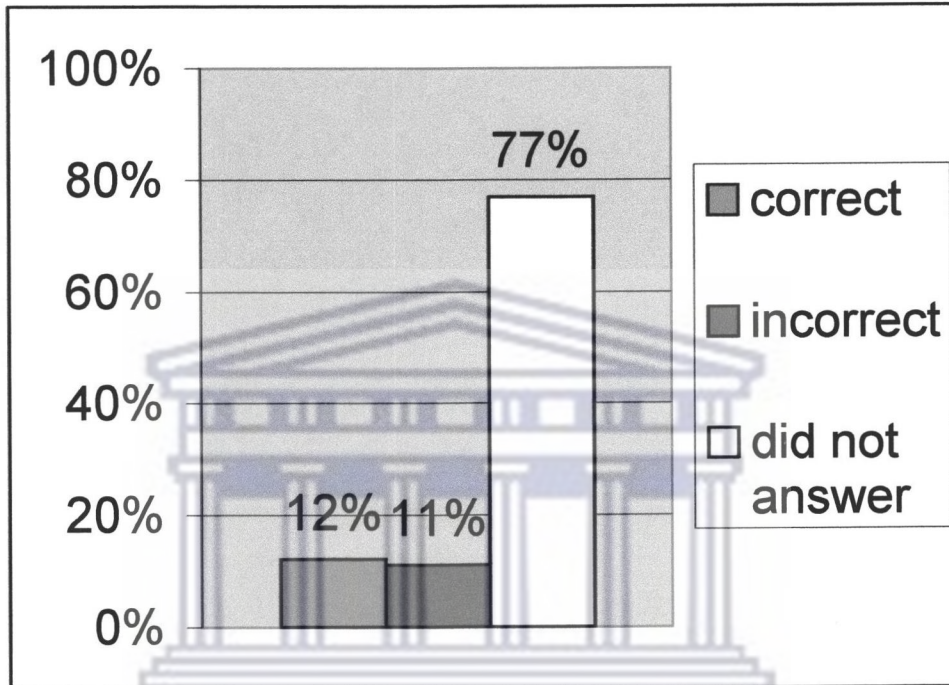
Fig. 4 The number of participants who knew how often they should breastfeed the baby.



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Question 10:

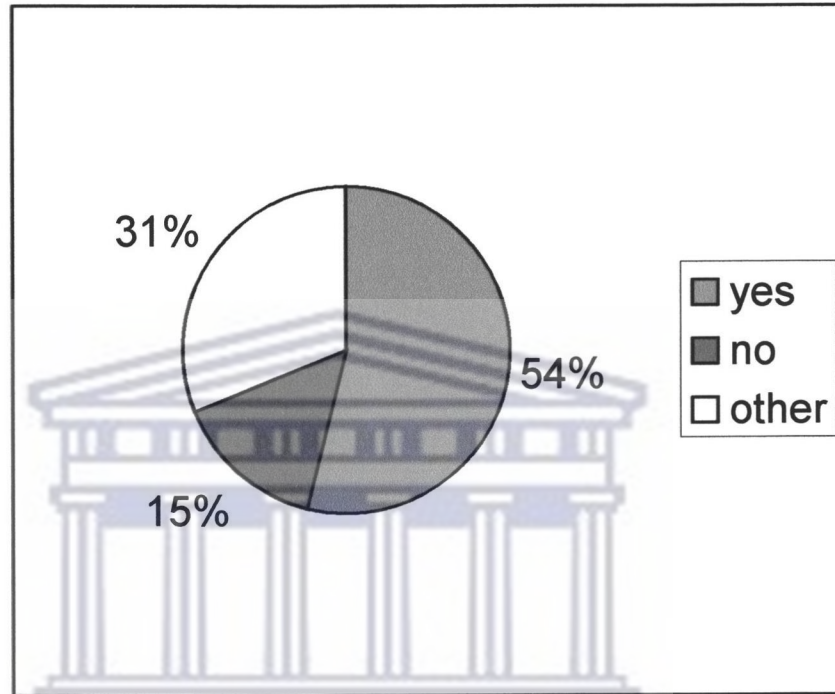
Fig. 5 The number of participants who knew what to do when they do not have enough breastmilk.



Some of the incorrect answers given by the participants included:
' Give the baby a water bottle ', ' Give the baby formula milk ',
' Stop breastfeeding '.

Question 11:

Fig. 6 The number of participants who intended to exclusively breastfeed their infants.



Other relates to those participants who did not answer the question.

Question 12:

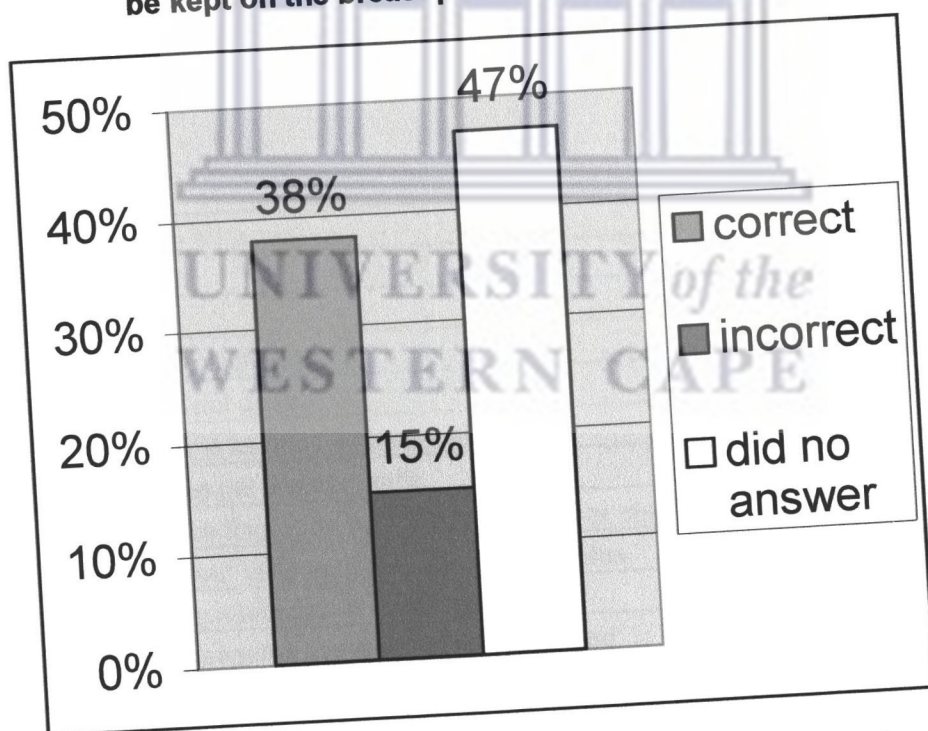
When participants were asked, 'how would they know that the baby is getting enough milk per day', only 4(15%) participants answer the question correctly. Twenty-two (85%) participants did not answer the question.

Question 13:

Participants were asked to indicate at what age they thought solid foods should be introduced to the baby. Only 3 (12%) participants answered correctly, 7 (26%) participants answered incorrectly and 16 (62%) participants did not answer the question.

Question 14:

Fig. 7 The number of participants who knew how long a baby should be kept on the breast per breastfeeding session.



*Some of the incorrect answers given by the participants:
' One hour ', ' Three minutes ', ' The whole day '.*

Table 2: The scores obtained by participants for their level of knowledge in the pretest and posttest.

Participants	Pretest	Posttest	Difference
1	35,7%	100%	64,3%
2	42,8%	85,7%	42,9%
3	50%	92,8%	42,8%
4	28,5%	100%	71,5%
5	42,8%	57,1%	14,3%
6	28,5%	71,4%	42,9%
7	28,5%	100%	71,5%
8	35,7%	100%	63,4%
9	35,7%	64,2%	28,5%
10	42,8%	85,7%	42,9%
11	64,2%	100%	35,8%
12	64,2%	100%	35,8%
13	42,8%	100%	57,2%
14	64,2%	100%	35,8%
15	42,8%	92,8%	50%
16	57,1%	92,8%	35,7%
17	50%	100%	50%
18	50%	100%	50%
19	64,2%	92,8%	28,6%
20	64,2%	100%	35,8%
21	35,7%	100%	64,3%
22	28,5%	100%	71,5%
23	7,1%	71,4%	64,3%
24	7,1%	57,1%	50%
25	28,5%	100%	71,5%
26	64,2%	92,8%	28,6%
Average score	42,4%	90,6%	48,2%

Table 3 Mean total scores before and after.

Variable	Mean	Std. Deviatio	Median	P value
Pretest	5,615	2,467	6	<0,0001
Posttest	10,778	1,739	11	<0,0001
Difference	-51,544	2,618	-5	<0,0001

CHAPTER 5

DISCUSSION:

The discussion will focus on pre-test and post-test findings as well as a comparison between the findings of both tests.

The sample consisted of twenty-six primigravidas (26) who lives in a low socio-economic community. The sample size was small, therefore, findings of the study does not reflect the general population of Bishop Lavis, but it was assumed that they represent a group of women who intended to breastfeed.

The aim of the study was to implement an antenatal group breastfeeding education programme on the knowledge of pregnant women at the Bishop Lavis antenatal clinic. The knowledge gained by the participants was evaluated one month after the breastfeeding education programme.

It was pleasing to note that all the participants (100%) agreed that breastfeeding is best for both mother and infant. However only 6 (23%) participants disagreed in another question that formula milk is as good as breast milk and 15 (58%) participants did not answer the question. The 5 (19%) remaining participants who agreed that formula milk is as good as breast milk did not give reasons why they believed so. The fact that 5 (19%) participants agreed and 15 (58%) did not answer the question indicates that although they know breastfeeding is best for mother and infant, they might not be knowledgeable about breast milk's nutritional and anti-infective advantages.

According to the results of the questions regarding myths and perceptions (see fig. 1,2 and 5), it is clear that the participants still have myths regarding breastfeeding and that their perceptions regarding breastfeeding are poor. For example, when participants were asked what they would do when they do not have enough breast milk, they gave the following answers: 'Give the baby a water bottle', 'Give the baby formula milk', 'Stop breastfeeding'. The number of participants, who did not answer, referred to as 'other' in fig. 1, 2 and 5, is relatively high and this may be due to participants being unsure of the answer. Because unanswered questions were calculated as incorrect, the knowledge of participants appears to be even poorer.

The reasons given by the 15 (58%) participants, who believed that colostrum is not good for the baby, were similar to the findings of a study conducted by dietetic students in 1999.²⁷ There is however concern regarding clarity of the term colostrum and firstmilk. However colostrum's protective value is what a baby needs for the first few days. When participants were asked whether it is true that a baby should get a water bottle to be comforted even though the baby has just been fed, eleven (11) participants said that it is true. They gave the following reasons:

'To prevent constipation', 'To give baby enough fluids', 'It is good for the baby'.

The knowledge regarding breastfeeding's advantages is lacking, because breast milk of the correct quantity, and given frequently, should provide sufficient nutrients for the baby. It is therefore not necessary for a water bottle.

Fourteen (54%) participants (those who answered true as well as those who did not answer the question) believed that they should stop breastfeeding immediately when their nipples are sore or cracked (see fig. 2). On stopping breastfeeding because of

sore or cracked nipples, supplementary feeding will begin and exclusive breastfeeding will be terminated. The information booklet (see appendix 3) issued to the participants contained information on how to prevent and treat sore or cracked nipples.

According to literature, it is important to ensure that mothers are shown during pregnancy through simulation, the correct positioning of the baby on the breast to lessen nipple pain and nipple trauma.¹⁹

The participants' myths and perceptions contribute to relatively short-term breastfeeding and are cited in the literature as reasons for early cessation of breastfeeding.^{23,26,27} When participants were asked, whether it was advisable to breastfeed their baby to at least six months (see fig. 3), 15 (58%) of the participants disagreed with this statement, this means that they might not have intended to breastfeed for such a long period. This could have been due to some of them had to go back to work or school. Participants did not have to provide any reason for their answers. Participants were asked to list at least five advantages of breastfeeding. Although all (100%) participants agreed that breast milk is good for mother and baby, only 4 (15,38%) participants could list five (5) advantages. 10 (38,46%) listed less than three (3) advantages and 12 (46,15%) did not list any advantages. However all participants were able to list five advantages in the post-test. This indicates that participants were able to retain information shared in the breastfeeding programme.

The following are a few of the advantages listed by participants: 'Breast milk is healthy', 'Reduces the risk of infections', 'Makes baby stronger', 'It is free', 'At all times available'.

In the pre-test participants were asked the meaning of the term exclusive breastfeeding. This term was not clarified before the pre-test.

Four (15,38%) of the participants knew the meaning. Six (23,07%) were incorrect and 6 (61,53%) did not answer the question. Those participants who were incorrect, gave the following explanation for the term exclusive breastfeeding: 'Breast milk and formula milk', 'Giving the baby food', 'No breast milk', 'Giving the baby a medicine bottle'. However when asked who intended to exclusively breastfeed their baby, 14 (54%) of the participants in the pre-test indicated that they would exclusively breastfeed their infants. There is a difference of ten participants who did not know before the education session what the meaning of exclusive breastfeeding is; yet they intended to exclusively breastfeed their babies. This might be due to a lack of clarity in this particular question or that the participants might have focussed on the word 'breastfeeding' rather than on the word 'exclusive'. This term was better understood in the post-test where (84,62%) of participants gave the correct meaning of the term exclusive breastfeeding. In the post-test 22 (85%) of the participants indicated that they will exclusively breastfeed their infants. This is an increase of 30,76%. This increase could be due to the fact that the breastfeeding education programme motivated the participants or that the term was clarified for them during the programme. To increase the rates of exclusive breastfeeding in this community there is a need to educate mothers regarding exclusive breastfeeding.

The clarification and understanding of the term exclusive breastfeeding could have a positive impact on the findings of questions 4, 6, 8 and 11 in the post-test, which all relate to exclusive breastfeeding. Participant's responses to how often they should breastfeed their infants per day varied (see fig. 4). Those participants (4) who answered incorrectly gave the following answers: 'Three times a day', 'In the morning', 'Only when the baby is awake', 'When the baby does not want to take the bottle'. This question is also addressed in the information booklet see (appendix 3). The poor knowledge depicted in (questions 9,10,12,13 and 14 in the pre-test) relate (according to literature) to primary reasons for early cessation of breastfeeding.

Twenty participants did not answer the question on (what to do if mothers did not have enough breast milk,) (see fig. 5) and those who were incorrect gave the following answers: 'Give the baby a water bottle', 'Give the baby formula milk'.

The information booklet explains in simple terms the mechanism of milk production: Frequent suckling is needed to provide enough milk, the mother should remember to drink enough water and eat healthy food, see pages 50-56.

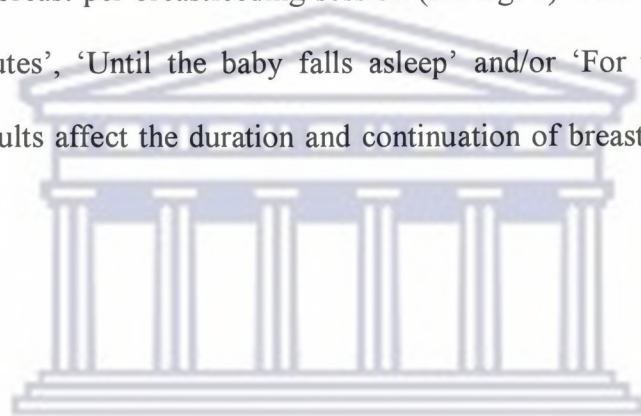
Only four participants were able to answer question 12, 'How will they know that the baby is getting enough breast milk per day?' Incorrect responses were the following: 'When the baby sleeps a lot', 'When the baby is quiet'.

Some mothers believed that when a baby is sleeping the baby should not be woken up for a feed. This is a myth, which can have disastrous effects on the baby's development and can lead to malnutrition.

Some participants thought that babies should be introduced to solid foods (see question 13) at: 'Three months', 'Twelve months', 'When the baby just want to drink

milk' and/or 'When the baby is thin'. These answers are not uncommon because there are beliefs among mothers that if a baby is thin, cries a lot and the milk is too little the mother must give the baby solid foods. Clarification of these myths and perceptions during the antenatal period will have a positive impact on the rates of exclusive breastfeeding.

Answers provided by the participants to the question on how long the baby should be kept on the breast per breastfeeding session (see fig. 7) were as follows: 'One hour', 'Three minutes', 'Until the baby falls asleep' and/or 'For the whole day'. These negative results affect the duration and continuation of breastfeeding, sin



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Table 2 describes the scores obtained by participants for their level of knowledge in pre-test and the post-test. Knowledge was measured according to a Likert Scale (see page 6).

In the pre-test sixteen (61,5%) of the participants had 'poor' knowledge scoring < 49%.

Ten (38,5%) of the participants had 'fair' knowledge scoring >50% but <69%.

None of the participants had 'good' knowledge of breastfeeding in the pre-test. Although there were participants with 'fair' knowledge, they still received the education, because their 'fair' knowledge were only reflective on the fourteen questions, which were asked. Therefore the information given during the education could only enhance their knowledge further.

In the post-test three (11,5%) of the participants had 'fair' knowledge scoring >50% but <69%.

Twenty-three (88,5%) of the participants had 'good' knowledge scoring >69% up to 100%.

None of the participants had 'poor' knowledge in the post-test.

It was found that the differences between the scores pre and post-test were significant.

Table 3: Non-parametric tests (Wilcoxon sign rank test) were done on scores which indicates significant differences between the pre-test and post-test scores.

These results support previous studies, which have been done to prove the efficacy of prenatal breastfeeding education,^{19, 21,22} and emphasise the importance of an

established breastfeeding promotion and education programme during the antenatal period.

It was encouraging to see that some of the participants had other sources of support during the educational sessions e.g. mothers, grandmothers, boyfriend or husband. Previous studies suggest that breastfeeding rates are low, not only due to lack of knowledge and confidence in breastfeeding, but also due to lack of social support from significant others. The importance of quality professional support is also crucial, since mothers rely on proper information from health workers. Policies and programmes aimed at promoting breastfeeding should therefore focus on determining the source of support, evaluate their influence (positive/negative), strengthen existing types of positive support and provide new and appropriate types of support for breastfeeding.

This analysis demonstrates that prenatal breastfeeding education is an important ingredient for successful breastfeeding initiation, exclusivity and duration especially among primigravidas, because they have no previous breastfeeding experience.

It was hypothesised that a breastfeeding education session would increase the knowledge of primigravidas regarding breastfeeding. The results of the study support this hypothesis.

CHAPTER 6:

LIMITATIONS:

The study population was associated and representative of a low socio-economic group only. The findings are therefore limited and cannot be generalised to the wider population.

Limitations: Sample.

At the beginning of the study fifty-eight (58) participants were sampled. The drop out of thirty-two participants was not anticipated and as a result, weakened the study.

The drop-out of the 32 participants were due to the following:

- ◆ Four (4) women were referred to the high-risk clinic, for high-risk pregnancy conditions.
- ◆ Four (4) women delivered prematurely.
- ◆ Four (4) moved to other residential areas.
- ◆ Eight (8) indicated that they were not interested in the education sessions. This could not be controlled due to the voluntary nature of the study.
- ◆ Two (2) intra-uterine deaths occurred.
- ◆ Two (2) miscarriages occurred.
- ◆ Eight (8) did not return for follow-up visits during the period which the education was conducted. The reasons were unknown. This however is not uncommon taking into account that the study took place during the winter season.

During winter months there is usually a decrease in the number of mothers who attends the antenatal clinic at Bishop Lavis. The researcher was unable to replace the lost participants, because of the long period between follow up visits (eight weeks if the mother is less than 28 weeks pregnant). Those participants, who were available for the replacement of those who dropped, did not meet the criteria for participation. Some of the questions were not answered by participants this might have been due to the participants low level of education.

Limitations: Questionnaire.

Demographic data regarding the educational level of participants however was not obtained. To improve face validity participants should have been asked to give reasons for their answers to questions in questionnaire, irrespective of whether their answer was true or false.

Limitations: Educational sessions.

The researcher gave a once off 3 hour long breastfeeding education session, to prevent the inconvenience of participants having to make special arrangements to attend the sessions. From an educational point of view three hours might be too long for the participants to concentrate, therefore the researcher ensured a variation during the educational sessions (see page 18).

More contact time however, would have allowed the researcher give the participants more information needed to ensure that breastfeeding will be initiated and continued

until the infant is at least 5-6 months age. There was a lack of time to develop relationships with the participants, which as cited in literature, is necessary to enhance breastfeeding success.

It is acknowledged that the use of a control group would have strengthened the study.

RECOMMENDATIONS:

Health care professionals and general workers who works with mothers and babies need to attend refresher courses on a continual basis to ensure that proper and up to date information and advice is given to mothers.

Further studies on the impact of breastfeeding education on exclusive breastfeeding and duration is necessary.

The implementation of support systems prenatally as well as postnatally especially in the low socio economic communities is important.

Continued efforts are necessary to meet the Department of National Health and Population Development objective for 2000 to increase the proportion of mothers who breastfeed their infants in the early postnatal period to at least 75% and to increase the proportion who continue breastfeeding until their infants are 5-6 months old to at least 50%.

CONCLUSION:

This study highlighted the effect of an antenatal breastfeeding programme on the knowledge of mothers and recognises the need for a well-established and permanent educational programme for prospective breastfeeding mother in Bishop Lavis. Ethnic and cultural background, maternal knowledge and attitudes, employment, availability of breast milk substitutes and maternal factors affects a woman's breastfeeding decision in varying degrees. This needs to be taken into consideration when breastfeeding promotion programmes are into place.

It is important to promote and protect breastfeeding as part of population activities, for maternal and child health and for the development in our communities. The challenge is to ensure that there are permanent breastfeeding education programmes in place, to ensure and encourage exclusive breastfeeding, as well as to promote longer duration of breastfeeding.

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APPENDIX 1:

QUESTIONNAIRE:

TITLE: ***The effect of a breastfeeding intervention program on the knowledge of pregnant women at the Bishop Lavis antenatal clinic.***

Indicate with an x whether the following statements are true or false:

1 Breastfeeding is best for both mother and infant. TRUE FALSE
If your answer is false, give reasons. FALSE

2 Colostrum (firstmilk) is not good for the baby. TRUE FALSE
If your answer is true, give reasons. FALSE

3 Formula milk is as good as breastmilk. TRUE FALSE
If your answer is true give reasons. FALSE

4 A baby who cries after he/ she have just been fed, TRUE FALSE
should get a water bottle to be comforted. FALSE

5 When your nipples are sore and cracked, you TRUE FALSE
should stop breastfeeding immediately. FALSE

6 Is it advisable to breastfeed your baby until YES
the age of 5- 6 months? NO

Please answer the following questions:

7 Breastfeeding has definite advantages. List at least five advantages which are familiar to you.

8 What do you understand by the term 'exclusive' breastfeeding.

9 How often should you breastfeed per day?

10 What can you do when you do not have enough milk?

11 Do you intend to exclusively breastfeed your baby?

YES
NO

12 How will you know that your baby is getting enough milk per day?

13 At what age should solid food be introduced to your baby?

14 How long are you suppose to keep the baby on the breast per breastfeeding session?

THANK YOU FOR YOUR COOPERATION.

APPENDIX 2:

THE BREASTFEEDING EDUCATION PROGRAMME:

The education programme was designed to address myths and perception about breastfeeding and to provide first time mothers with the knowledge necessary to initiate and to successfully exclusively breastfeeding their infants.

The content of the breastfeeding programme included:

- ◆ Advantages of breastfeeding.
- ◆ Myths and perceptions of breastfeeding
- ◆ Initiation and continuation of breastfeeding.
- ◆ Prenatal care of the breast.
- ◆ Latching on techniques.
- ◆ Management of breastfeeding during the immediate postpartum period.
- ◆ Possible breastfeeding problems and the treatment.
- ◆ Breastfeeding and the working or school going mom.
- ◆ Breastfeeding motivational videos were also shown, as part of the programme.

These videos were obtained from the medical library at the University of Stellenbosh, Tygerberg Campus. The videos focussed on latching on techniques, to correct positioning of the baby on the breast, and the different positions of breastfeeding. Pamphlets regarding breastfeeding, as well as a booklet designed

by the researcher (see appendix3), containing the educational information covered in the programme was given to the participants after they completed the post-test.

The information booklet (see page appendix 3) was written in layman's terms mainly to assist the mothers during the postpartum period, since there are no existing breastfeeding support groups currently available in the area.

Various literature were used, as well as guidelines were obtained from the National Breastfeeding Association of South Africa, to assist the researcher in providing up to date information to the participants.

The participants were encouraged to actively participate in the discussions, as well as to give their view on the various topics.



APPENDIX 3:

CONTENT OF BREASTFEEDING EDUCATION

PROGRAMME BOOKLET:

BREASTFEEDING:

The natural start to a healthy
life!!!

INTRODUCTION:

Breast milk is the miracle food that gives your baby the essentials for growth.

Imagine a fast food that you don't have to go to the store to get. A food that doesn't go bad and is safely packaged. Loaded with nutrients that change, as your baby's needs change. A food that tastes great, doesn't need a recipe, and takes no time to make. The best of all is that it is free!

ADVANTAGES:

- ◆ Mother's milk is the miracle fast food.
- ◆ Breast milk helps fight infections, constipation and allergies, while giving your baby the essentials for growth.
- ◆ Breastfeeding helps you to lose weight and reduces the size of the uterus after birth.

- ◆ Breast milk is cheaper than formula milk.
- ◆ Breast milk is available at all times.
- ◆ Breastfeeding enhances the emotional feeling of confidence among mothers.
- ◆ Breastfeeding ensures a feeling of closeness to your baby.

MANAGEMENT OF THE IMMEDIATE POSTPARTUM PERIOD:

It is important that you should start breastfeeding your baby within half an hour after birth, because during the first hour after birth, a baby's sucking reflexes are very strong and strong sucking can immediately stimulate the hormonal processes for the production of milk. Frequent feeding increases milk supply.

The thick yellow secretion of the breast is called colostrum and contains antibodies, which will protect the baby against most viruses and bacteria.

Although colostrum does not look like milk, it is exactly what a baby needs for the first few days.

You should feed your baby whenever he wants to from birth.

Let your baby suck on the breast for as long as he wants to.

Let your baby finish the first breast, offer the second breast, if he doesn't want to take it, start the next feeding on the breast he didn't want to feed on during the last breastfeeding session.

To prevent later problems correct positioning on the breast and taking off techniques are important.

FIVE PRIME MESSAGES:

- ◆ Breast milk alone is the best food and drink during the first four to six months of life.
- ◆ Start to breastfeed your baby as soon as possible after birth.
- ◆ Frequent suckling is needed to produce enough milk.
- ◆ Bottle-feeding can lead to serious illness and death.
- ◆ Breastfeeding should be continued well into the second year of a child's life and longer if possible.

QUESTIONS USUALLY ASKED:

How will I know that my baby is getting enough milk?

Answer: When your baby wets at least seven or more nappies a day.

Why does my milk look so watery?

Answer: It is called the foremilk. Foremilk is watery to satisfy thirst. Hind milk is creamy to satisfy hunger.

Why does my baby still cry, even though he/she has just been fed?

Answer: Try the following: Make sure that the baby burps.

Check the baby's nappy. Try the other breast.

Can I give my baby a water bottle with medicine to calm him/her down?

Answer: A definite NO!! Water does not contain all the antibodies to prevent illness.

When giving your baby a water bottle, you are then supplementing a feed, which your baby needs.

How often should I breastfeed my baby?

Answer: Feed your baby on demand. In other words whenever your baby wants to feed, offers him/her a feed, ensuring that intervals between feeds do not exceed more than four hours.

POSSIBLE PROBLEMS AND TREATMENT FOR EACH:

ENGORGED BREAST:

Causes:

Poor suckling, giving of supplement feeds and infrequent feeding.

Treatment:

Let the baby continue to feed as often as possible.

Apply warm/cold moist compressor to engorged breast for 10-15minutes before feeding.

If the baby cannot suckle effectively, express the milk by hand or by using a breast pump.

Warm water bottle or cold cabbage leafs can also be used to lessen the pain.

Continue to express as often as necessary, to make the breast comfortable.

SORE AND CRACKED NIPPLES:

Causes:

The baby suckling in a poor position.

Incorrect technique of taking the baby off the breast.

Prevention:

Ensure that the baby is correctly positioned on the breast.

Never pull the baby off the breast, rather put your finger gently in the baby's mouth to break the suction.

Treatment:

Exposure of the nipples to the air and sun as much as possible between feeds.

Express a drop of breast milk on the nipple after each feed.

PLUGGED MILK DUCT:

A plugged milk duct is a tender spot or lump that develops gradually and may move in location.

Causes:

Incorrect positioning of the baby at the breast.

Engorgement.

Irregular feeding patterns.

Use of supplementary feeds and bottles instead of feeding the baby.

Overuse of a dummy, offering the baby a dummy instead of breastfeeding the baby.

Ill-fitting bra.

Treatment:

Apply hot or cold compressor on the breast.

Gently massage the affected breast.

Frequent feeding on the affected breast.

Rest.

Loosen tight clothing, especially bras.

Vary feeding positions.

BREAST INFECTION (MASTITIS)

A localised, tender spot or lump in the breast that develops suddenly. The breast is red, hot and swollen.

The pain is intense, but localised.

Symptoms are flu like.

Causes

Breast infections could result from an untreated plugged duct.

Treatment:

Same as for the plugged duct.

In addition: If the above treatment is unsuccessful or if there is a sudden increase in the fever, seek medical help.

Continue to breastfeed your baby, the breast milk will not harm your baby.

BREAST ABSCESS:

A localised collection of pus formed in an area of the breast that has no opening for drainage.

Causes:

Usually neglected mastitis.

Treatment:

Same as for mastitis.

In addition: It is important to get medical help, it might be necessary to drain the abscess.

KEEP THE FOLLOWING IN MIND:

- ◆ Look well after yourself. Personal hygiene.
- ◆ Eat healthy food.
- ◆ Drink lots of water.
- ◆ Get enough rest.
- ◆ Sit and be comfortable when you are breastfeeding.

WHEN TO SEEK FOR HELP:

BABY:

- ◆ When baby is very sleepy and refuses to feed.
- ◆ When the baby appears sick.
- ◆ When the baby has a temperature higher than 37 degrees, when the baby is extremely hot.
- ◆ When the baby passes watery and smelly stools.
- ◆ When the baby's fontanel (soft part on top of the head) is sunken in.

MOTHER:

- ◆ When you are struggling with breastfeeding.
- ◆ When you detect any lumps in your breast.
- ◆ When you have a temperature above 37 degrees, when you feel feverish and you are feeling sick.

For any problems that may arise, please phone Bishop Lavis Maternity Unit at 021-9346161.