

## **Knowledge and practices of mothers regarding exclusive breastfeeding in the Mahwelereng local area of the Limpopo Province, South Africa**

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### **Abstract**

The aim of this study was to determine the knowledge and practices of exclusive breastfeeding and the challenges facing mothers in the Mahwelereng local area of Limpopo Province, South Africa. A simple random sampling method was used to select 275 mothers with babies younger than six months old from six primary health care clinics. A self-structured questionnaire was used for data collection. Less than half (74; 42.3%) of the mothers practised exclusive breastfeeding and 137 (78.3%) had been given information about exclusive breastfeeding. There is an association between knowledge of exclusive breastfeeding (Chi-Square= 14.039; Sig=0.000; p<0.05) and exclusive breastfeeding practice. There is no association between exclusive breastfeeding practice and HIV status (Chi-Square=2.444; Sig=0.118; p>0.05). Challenges that mothers faced in relation to practising exclusive breastfeeding were work, school and health-related and,-pressure from family to mix-feed. However, 42.9% of the respondents indicated that they did not have any challenges with regard to the practice of breastfeeding. One-on-one counselling about exclusive breastfeeding needs to be intensified and maternity leave should be extended from four to six months. The majority of respondents showed adequate knowledge of what exclusive breastfeeding was because they had been counselled about breastfeeding although they were not practising it.

**Keywords:** Exclusive breastfeeding, mothers, knowledge, practices, mix-feeding.

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### **Introduction**

The importance of exclusive breastfeeding is emphasised by the World Health Organization (Holtzman, 2010; WHO, 2011; Setegn et al., 2012). Breastfeeding has been proven to be the single most effective way of obtaining optimal nutrition for infants (Setegn et al., 2012). It is also beneficial for both mother and child. The benefits for the baby include reduced risk of gastro-intestinal infections, reduced allergic reactions and reduced stunted growth. For mother the benefits include

accelerated weight loss after delivery, facilitation of child spacing and strengthening of bonding between mother and child. Infants who are not breastfed have a six time higher risk of dying from diarrhoeal and acute respiratory infections than those who are exclusively breastfed (Mihreshahi et al., 2007).

According to Holtzman (2010), exclusive breastfeeding is important because the epidermal growth factor found in breast milk helps to mature the intestinal lining. Breast milk has immunoglobulins A (IgA) which prevents attachment of pathogens and Lactoferrin (easily absorbed iron found in breast milk) which has broad anti-microbial properties. According to Doherty et al. (2006), some mothers do not practise exclusive breastfeeding even though they understand its importance. These mothers fail to practise exclusive breastfeeding because they think their babies will go hungry when they feed on breast milk alone and they are also afraid of being asked by their families to explain their reasons for choosing to exclusively breastfeed their babies until they reach the sixth month mark. Furthermore, failure to disclose to their families their HIV-positive status due to stigma attached to living with HIV and the community norms of introducing solids to babies earlier than six months have been mentioned as some of the difficulties of practising exclusive breastfeeding. Infant mortality rate remains high in South Africa in spite of efforts to reduce it and meet the targets of United Nations Millennium Developmental Goal number 4. Diarrhoeal diseases are the leading cause of death (Nannan et al., 2012). The Department of Health in South Africa has outlined principles for safe infant feeding that seek to maximise child survival (South Africa, 2010). Furthermore, pregnant women should receive counselling about infant feeding practices at every antenatal clinic visit to encourage them to practise exclusive breastfeeding and discourage mixed feeding. Mixed feeding predisposes babies to infections and increases the risk of HIV transmission from breast milk if the mother is HIV-positive.

Even though breastfeeding is a norm in South Africa, research by the Human Science Research Council indicates that only 25% of babies are exclusively breastfed for six months (Holtzman, 2010). This means that the majority of babies (75%) are either formula-fed or mixed-fed. WHO (2011) indicates that more babies die from illnesses such as diarrhoea than from HIV infection resulting from breastfeeding by an HIV-positive mother. As such WHO encourages mothers to exclusively breastfeed their babies for the first six months of their lives to reduce the high infant mortality risk associated with formula and mixed feeding. In South Africa, pregnant women attending antenatal clinics are counselled on feeding choices which are exclusive breastfeeding for the first six months of their babies' lives, formula feeding and mixing breast feeding with formula feeding. These pregnant women are expected to have made a choice about a feeding method for their babies by the time they are admitted to the hospital or primary health (PHC)

clinic for delivery. While working as a midwife in the maternity ward of one of the local hospitals where most of those mothers delivered, the first author of the current study observed that some mothers appeared reluctant to exclusively breastfeed their babies for six months after delivery. Some of those mothers appeared to think that it was not possible to breastfeed their babies exclusively for six months as the babies would starve. This is concerning as it was expected that pregnant women should have made up their minds about their feeding choices by the time they were admitted for delivery. HIV-positive women seem to have no information on the importance of breastfeeding their babies exclusively for the first six months. All mothers who are HIV-positive are expected to breast feed their babies exclusively for six months in order to protect them from HIV infection (Motsoaledi, 2011). Therefore, the aim of this study was to determine the knowledge and practices of mothers with regard to exclusive breastfeeding for six months.

## **Methodology**

### *Study site*

The study was conducted in the Mahwelereng Local Area in the Waterberg District of the Limpopo Province in South Africa. Mahwelereng Local Area is one of the four local areas in the Mogalakwena Local Municipality, which forms part of the Waterberg District Municipality. The local area is made up of a mixture of rural villages, semi-urban areas and an urban area. The area includes the town of Mokopane and according to the Mogalakwena Local Municipality (2012) review, it had an unemployment rate of between 45% and 70% in the 2011-2012 financial year. There were six PHC clinics and two hospitals all of which were run by the government in the local area. There were also several private health practitioners in the area charging user fees for health services, which included maternal and child health.

### *Population and sampling*

The population of the study were all mothers who consulted at the six PHC clinics and who had babies six months old or younger at the time of the study. A total number of 327 mothers met the inclusion criteria, since they had babies who were six months old or younger. Those mothers and their babies were seen once a month at the six PHC clinics in the Mahwelereng Local Area for maternal and child health services. On average, each PHC clinic attended to between eight and ten babies aged six months and under per day. Therefore, the mothers of these babies sampled.

A simple random sampling method was used to select the respondents for the study. The sample was drawn from the population in such a way that each member

had an equal chance of being selected (Fox & Bayat, 2007). Mothers were approached while sitting in the waiting areas at each of the six PHC clinics in order to establish whether they met the criteria for inclusion in the study. Those mothers who met the criteria were then allocated numbers that were then written on square pieces of paper. Random drawing or the hat method was used where the numbered pieces of paper were placed in a container. Members of the research group then mixed the pieces of paper thoroughly followed by withdrawing of numbered pieces of paper until the desired sample size of 175 mothers was reached, as suggested by Brink (2009). Krejcie and Morgan's (1970) table was used to determine the sample size. Of the six PHC clinics in the Mahwelereng Local Area, one had the largest population and attended to twice as many babies each month. Therefore, 60 respondents from that PHC clinic were randomly selected and 23 participants from each of the other five PHC clinics were randomly selected.

#### *Data collection*

A researcher-administered questionnaire adapted from Tan (2011) and modified to suit the study was used to collect data. The questionnaire was divided into five sections namely: demographic data, medical history, feeding practices, knowledge on exclusive breastfeeding and challenges regarding the practice of exclusive breastfeeding. The questionnaire was translated from English to Northern Sotho, which was the language spoken by most people in the area. Data were collected over four weeks from 6 January 2014 to 3 February 2014. An average of two days was spent at each of the five PHC clinics while three days were spent on the PHC clinic with the highest population.

#### *Data analysis*

The questionnaires were manually numbered and grouped according to clinics to ensure that no questionnaire data were captured more than once. Data were then captured on a Microsoft Excel spreadsheet before being transferred to the Statistical Package for Social Sciences (SPSS) software programme, version 21, for analysis. Frequency distribution, percentages and Chi-Square were used to analyse data with the assistance of the University of Limpopo statistician.

#### *Reliability and validity*

In order to achieve reliability and validity of the questionnaire, a pilot study with 10 respondents was conducted at one PHC clinic that was not part of the PHC clinics selected for the main study. A question about the challenges faced by mothers who were practicing exclusive breastfeeding was added to the questionnaire after the pilot study. Furthermore, the questionnaire used in the

study was adapted from an existing and validated questionnaire used by Tan (2011).

### *Ethical considerations*

The research proposal for the study was approved by the Senior Degrees Committee of the School of Health Sciences before submission for ethical clearance to the Medunsa Research Ethics Committee at the University of Limpopo. Permission for data collection was given by the Limpopo Department of Health, the manager of the local area and the operations managers of the selected PHC clinics. Information about the study was provided to mothers before they were asked to sign a consent form if they agreed to participate. They were further informed of their right to withdraw from the study, as participation was voluntary. A private room or consultation room at the PHC clinics was used for data collection to ensure privacy and confidentiality. The names of participants were not captured on the questionnaires to ensure anonymity. Each respondent was given a number and a clinic name which helped during the data-capturing process.

## **Results**

Shown in Table 1 are the demographic profiles of the participants.

**Table 1:** Demographic data of respondents

<b>Variable</b>	<b>Frequency</b>	<b>Percentage (%)</b>
<b>Age in years:</b>		
12 – 17	3	1.7
18-24	62	35.4
25-35	93	53.1
36-49	17	9.7
<b>Level of education:</b>		
Never been to school	1	0.6
Primary (Grade 1 – Grade 7)	5	2.9
Secondary (Grade 8 – Grade 12)	35	20.0
Tertiary		
<b>Employment status:</b>		
Student	24	13.7
Unemployed	96	54.9
Domestic worker/labourer	34	22.4
Professional	16	9.1
<b>Marital status:</b>		
Married	31	17.7%
Single	144	82.3%

Out of 175 mothers, the majority (53.1%) were between 25 and 35 years, 35.4% were between 18 and 24 years, while only 1.7% were between 12 and 17 years old. The majority of the respondents (76.6%) had acquired secondary school

education, while only 0.6% never attended school. About 22.3% were employed as domestic workers or labourers, 9.1% were holding professional jobs, 54.9% of the mothers were unemployed and 13.7% were students. The majority of the respondents (82.3%) were married as compared to 17.7% who were single.

**Table 2:** The person who cares for the baby most of the time

<b>Carer</b>	<b>Frequency</b>	<b>Percentage (%)</b>
Myself	108	61.9
Family member	52	29.7
Nanny/helper	11	6.3
Day-care centre	4	2.4
<b>Total</b>	<b>175</b>	<b>100</b>

Table 2 indicates that the majority (61.7%) of the mothers were taking care of their babies by themselves followed by 29.7% who were cared for by family members. Only 6.3% of the babies were cared for by babysitters while only 2.3% of the babies were cared for outside the family at a day-care centre.

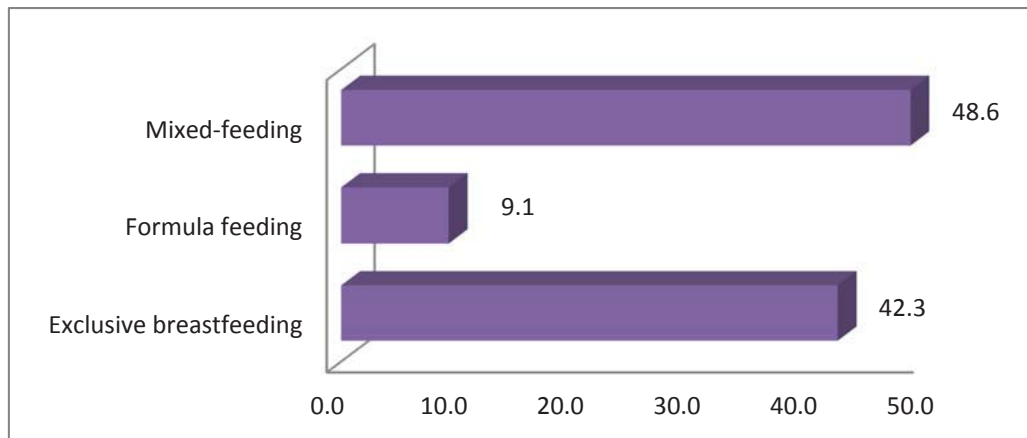
### **Antenatal clinic attendance and Testing for HIV**

Almost all the respondents (98.9%) had attended antenatal clinics during pregnancy whilst only (1.1%) did not attend. All the respondents indicated that they had tested for HIV and 68.6% tested HIV-negative while about a third (31.4%) had tested HIV-positive. The results were confirmed by the information recorded on the Road-to-Health cards. This is a card where the immunisations given, the weight of the baby and any information regarding the health of the baby when consulting at the PHC clinic from birth to 5 years are recorded.

### **Counselling on feeding practices**

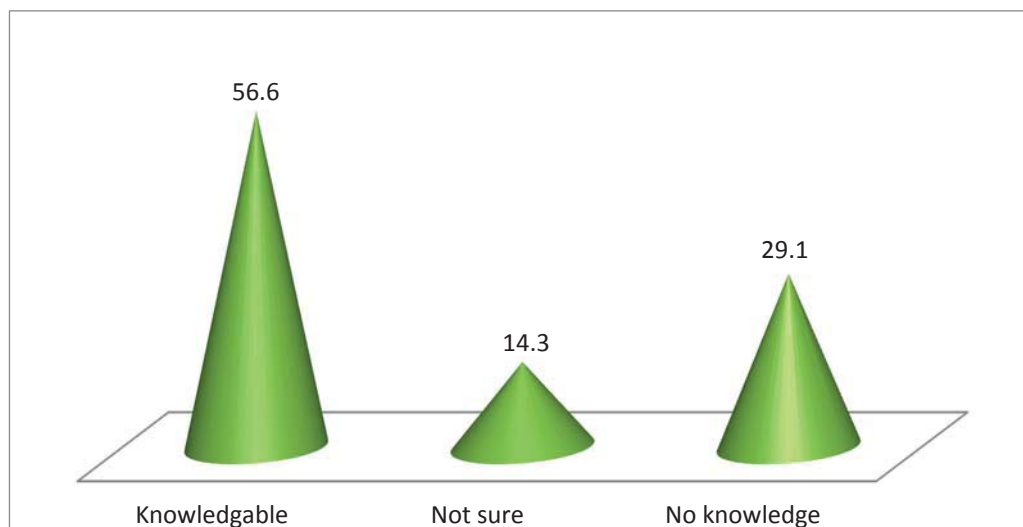
The majority (85.7%) of the respondents were counselled on feeding practices and only 14.3% were not counselled. Figure 1 indicates that 42.3% were exclusively breastfeeding their babies for six months, 48.6% mothers were mix-feeding their babies while only 9.1% were feeding their babies with formula.

The majority of mothers who were practising exclusive breastfeeding did so for less than six months (97.3%) as compared to only 2.7% who practiced it for six months. On the question of who influenced the choice of the feeding method, 40% were influenced by health workers, 37.7% indicated it was a personal choice while 22.3% were influenced by family members.



**Figure 1:** Feeding practices

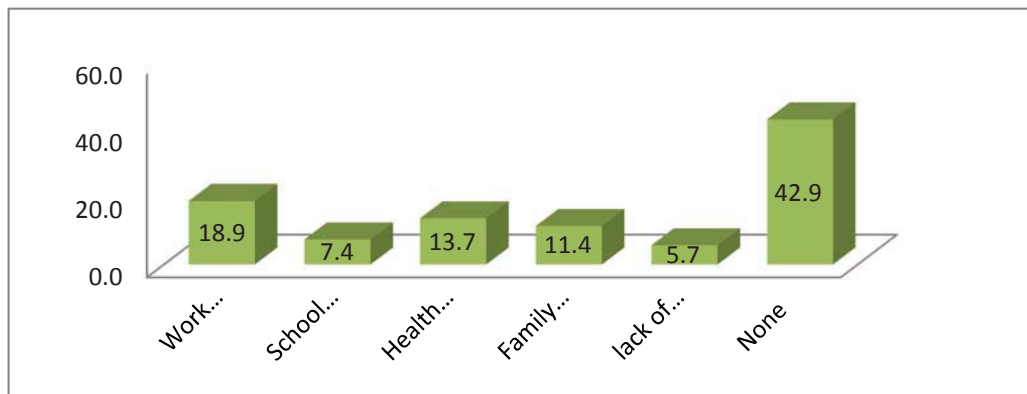
Figure 2 indicates that 56.6% mothers were knowledgeable about exclusive breastfeeding, 14.3% were not sure of what it referred to while 29.1% did not have knowledge on exclusive breastfeeding.



**Figure 2:** Knowledge of exclusive breastfeeding

### **Challenges that prevented mothers from exclusively breastfeeding**

Figure 3 indicates that 18.9% were experiencing work-related challenges that prevented them from exclusively breastfeeding for six months (13.7%) reported health-related issues, 11.4% were experiencing family pressure to mix-feed, 7.4% indicated school-related challenges and 5.7% reported lack of knowledge while 42.9% had no challenges that hindered them from exclusively breastfeeding.



**Figure 3:** Challenges that prevented mothers from exclusively breastfeeding

### The association between age, marital status and employment and being knowledgeable about exclusive breastfeeding

Tables 3 and 4 indicate no association between age of the mother and having knowledge of exclusive breastfeeding and practices Chi-Square= 3.177, Sig=0.365 and  $p > 0.05$ .

**Table 3:** Association between age, marriage, HIV status and knowledge on exclusive breastfeeding

Age in years	Knowledge on exclusive breastfeeding		Total
	No knowledge	Knowledgeable	
12 – 17 years	1	2	3
18 – 24 years	32	30	62
25 – 35 years	35	58	93
36 – 49 years	8	9	17
<b>Total</b>	<b>76</b>	<b>99</b>	<b>175</b>

Chi-Square= 3.177; Sig = 0.365;  $p > 0.05$ .

Marital status	Knowledge on exclusive breastfeeding		Total
	No knowledge	Knowledgeable	
Single	68	76	144
Married	8	23	31
<b>Total</b>	<b>76</b>	<b>99</b>	<b>175</b>

Chi-Square= 4.762, Sig= 0.029;  $p < 0.05$ .

Mothers' HIV-status	Knowledge on exclusive breastfeeding		Total
	No knowledge	Knowledgeable	
Negative	47	73	120
Positive	29	26	55
<b>Total</b>	<b>76</b>	<b>99</b>	<b>175</b>

Chi-Square= 2.823; Sig= 0.093;  $p > 0.05$ .

Being married was associated with having knowledge and practicing exclusive breastfeeding Chi-Square= 4.762, Sig=0.029 and  $p < 0.05$ . HIV-status was not associated with having knowledge and practicing exclusive breastfeeding with a Chi-Square= 2.823, Sig=0.093 and  $p > 0.05$ . Being employed was not associated



with the knowledge and practice of exclusive breastfeeding Chi-Square=7.250, Sig=0.64 and  $p>0.05$ .

**Table 4:** Association between age, marriage, employment, HIV-status and the practice of exclusive breastfeeding

Age in years	Feeding practice		Total
	Improper practice	Proper practice	
12 – 17 years	2	1	3
18 – 24 years	43	19	62
25 – 35 years	48	45	93
36 – 49 years	8	9	17
<b>Total</b>	<b>101</b>	<b>74</b>	<b>175</b>

Chi-Square= 5.750; Sig= 0.124;  $p>0.05$ .

Marital status	Feeding practice		Total
	Improper practice	Proper practice	
Single	87	57	144
Married	14	17	31
<b>Total</b>	<b>101</b>	<b>74</b>	<b>175</b>

Chi-Square= 2.433; Sig= 0.119;  $p>0.05$ .

Employment status	Feeding practice		Total
	Improper practice	Proper practice	
Student	19	5	24
Unemployed	48	48	96
Labourer/Domestic worker	24	15	39
Professional	10	6	16
<b>Total</b>	<b>101</b>	<b>74</b>	<b>175</b>

Chi-Square=7.250; Sig= 0.64;  $p>0.05$ .

HIV-status	Feeding practice		Total
	Improper practice	Proper practice	
Negative	74	46	120
Positive	27	28	55
<b>Total</b>	<b>101</b>	<b>74</b>	<b>175</b>

Chi-Square= 2.444; Sig=0.118;  $p>0.05$ .

Knowledge about feeding practice	Feeding Practice		Total
	Improper feeding	Proper feeding	
No knowledge	54	45	99
Knowledgeable	20	56	76
<b>Total</b>	<b>74</b>	<b>101</b>	<b>175</b>

Chi-square=14.039; Sig= 0.000  $p<0.05$ .

Lastly, having knowledge about exclusive breastfeeding had an influence on the practice of exclusive breastfeeding Chi-Square=14.030, Sig=0.000 and  $p<0.05$ .

## **Discussion**

Most women in this study were between 26 and 35 years of age while an insignificant number was between 12 and 17 years. The fact that only a small percentage of mothers was above 35 years is a good childbearing practice as advanced maternal age is associated with higher rates of maternal hypertension, diabetes and worse perinatal outcomes, such as stillbirth, preterm birth and low birth weight (Carolan & Frankowska, 2011; Carolan, 2013). Similarly, young maternal age of below 17 years is also associated with negative maternal and perinatal outcomes (Redshaw, Hennegan & Miller, 2014).

It is encouraging that many women had knowledge about exclusive breastfeeding in comparison with those who did not have such knowledge. It is not surprising that they had knowledge about exclusive breastfeeding because nearly all of the women attended antenatal health consultations. It was during these sessions that they were supposed to be given health education about exclusive breastfeeding. The study did not find any association between the age of mothers and their knowledge of exclusive breastfeeding as well as practice of exclusive breastfeeding.

There was an association between marital status and knowledge of exclusive breastfeeding, though there was no association between marital status and practice of exclusive breastfeeding. This is in contrast to the findings by Maru *et al.* (2009) that reported that a lack of emotional support by a partner leads to mixed feeding. It is not known in this study whether the women who were single had partners who supported them emotionally or not.

Most women were unemployed and this is not surprising as figures provided by Mogalakwena Local Municipality, under which Mahwelereng Local Area falls, indicate that between 45% and 70% of the economically active people are unemployed with women forming the greatest number of those affected (Mogalakwena Local Municipality, 2012). There was no association between employment status and knowledge and practice of exclusive breastfeeding. This was surprising, since we would expect that those respondents who were unemployed and who had knowledge about exclusive breastfeeding would breastfeed their babies exclusively. In contrast Amin *et al.* (2011) found that 51% of mothers who were employed were unlikely to breastfeed for more than three months due to lack of support and inadequate facilities, such as crèches at their workplaces.

About 80% of the respondents in this study had a normal vaginal delivery in comparison to 20% who delivered by caesarean section. It is expected that most

mothers will have no excuses not to breastfeed after delivery as they delivered normally. This is supported by Khassawneh et al. (2006) who reported that women who have delivered by caesarean section are unlikely to breastfeed.

Most women delivered at the hospitals, a few at the clinics and about 3% delivered outside of the health care services. It was expected that the health professionals would advise the women about the importance of exclusive breastfeeding and that the mothers would be given an opportunity to breastfeed immediately after birth.

All mothers in this study reported that they had tested for HIV. Most of them tested when they were pregnant, 21% tested before pregnancy while an insignificant percentage tested after delivery. A significant percentage (31.4%) tested HIV-positive, which is higher than the recorded figure for the Limpopo Province that was found to be 22.1% in 2011 (Limpopo Provincial Government, 2012).

It is worth noting that there is no association between HIV-status and knowledge about exclusive breastfeeding, as well as the practice of exclusive breastfeeding. It was expected that those who tested positive for HIV should have knowledge about exclusive breastfeeding and that they would be practicing it to prevent their babies from being infected with HIV due to mixed feeding. Mothers who have tested HIV-positive are supposed to be provided with counselling as recommended by the Human Science Research Council (2008).

Out of those respondents who were exclusively breastfeeding, only 1.1% of mothers were willing to breastfeed for six months, 41.1% said they would only exclusively breastfeed for less than six months due to the following reasons: work, schooling, ill-health, and family pressure. The highest percentage (42.9%) indicated that they had no reason not to breastfeed exclusively. The majority of women reported that the HIV-status would not influence them to practise exclusive breastfeeding. These findings are supported by the WHO (2011), which estimates that worldwide, only 35% of infants between 0-4 months are exclusively breastfed. Amin *et al.* (2011) reported that even those mothers who are exclusively breastfeeding are willing to do so for less than six months. It is difficult to understand why women would not practise exclusive breastfeeding.

The majority of women (85.7%) in this study reported that they were counselled about feeding practices whereas only 14.3% of the respondents reported that they did not receive such counselling. The counselling on feeding practices also included information about exclusive breastfeeding as confirmed by 78.3% of the mothers. More than three quarters of the women (76%) chose the statement that best explained what exclusive breastfeeding was although 18.9% of the responding mothers thought that exclusive breastfeeding meant feeding the baby with breast milk and water.

This study revealed that there is an association between knowledge and practice of exclusive breastfeeding. This meant that having knowledge about exclusive breastfeeding would influence the woman to practice it. These results are in contrast with the study by Agu and Agu (2011) in a rural population in Nigeria that indicates that while 87% of mothers have good knowledge of what exclusive breastfeeding is, but only 30% of mothers are practising it. In this study, almost half of the women were practicing mix-feeding and those who were practicing exclusive breastfeeding did so for less than six months. In another study in Mozambique, women had the knowledge and were willing to practice exclusive breastfeeding but were discouraged by family members who indicated that it was not feasible (Arts et al., 2010).

### **Recommendations**

Women should be encouraged to attend antenatal classes when they are pregnant and health professionals should be trained on the practice exclusive breastfeeding in order to intensify counselling. Expressing breast milk by mothers, its storage, when and how to feed the baby should be emphasised to ensure that exclusive breastfeeding is maintained even in the absence of the mother. One-on-one counselling on exclusive breastfeeding during each antenatal visit is recommended in addition to group counselling to ensure a thorough understanding of the importance of exclusive breastfeeding. Mixed feeding should be discouraged, since it predisposes babies to infections and increases the risk of HIV transmission. Maternity leave for employed mothers should be extended to six months in order to ensure that mothers exclusively breastfeed for the recommended time period of six months.

### **Conclusion**

The majority of respondents showed adequate knowledge of what exclusive breastfeeding was. Most mothers were counselled on breastfeeding, since the significant number of mothers had attended antenatal clinics whilst pregnant. However, it was disappointing that despite the knowledge acquired almost half of the respondents were mix-feeding, and of the ones who were exclusively breastfeeding, they were only willing to do so for less than six months. Most mothers had disclosed their HIV status, therefore, it could not have been a hindrance to exclusive breastfeeding given that more than half of the respondents were not exclusively breastfeeding.

Some of the reasons given for not exclusively breastfeeding for six months were work related, since mothers had to return to work at four months post-delivery. Some mothers had to return to school and their children were left in the care of

family members. A significant number of mothers revealed that they were pressured into mix-feeding by family members, since they were not receptive to the idea of expressing breast milk for later use. They would rather mix feed their babies.

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