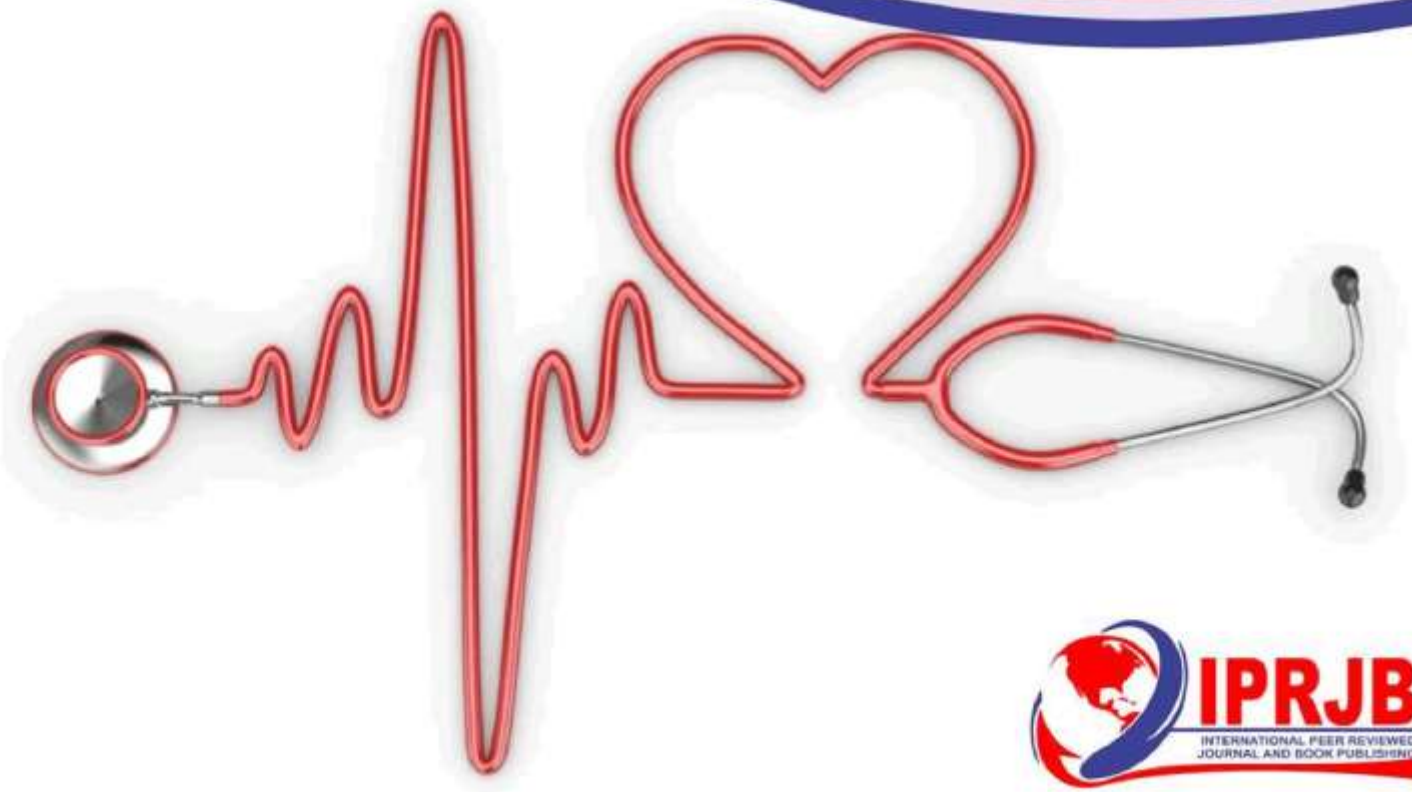
Journal of
Health, Medicine and Nursing
(JHMN)

RELATIONSHIP BETWEEN KNOWLEDGE IN INFANT NUTRITION AND INFANT FEEDING PRACTICES AMONG LACTATING MOTHERS IN SIAYA COUNTY

JOHN OBWOGI OMBOGO



IPRJB
INTERNATIONAL PEER REVIEWED JOURNAL AND BOOK PUBLISHING

Journal of Health, Medicine and Nursing
ISSN 2520-4025 (Online)
Vol.1, Issue 2 No.2, pp 15-26, 2017

www.iprjb.org

RELATIONSHIP BETWEEN KNOWLEDGE IN INFANT NUTRITION AND INFANT FEEDING PRACTICES AMONG LACTATING MOTHERS IN SIAYA COUNTY

JOHN OBWOGI OMBOGO

Abstract

Purpose: Poor infant feeding practices contribute to infant morbidity and mortality. The purpose of this study was to examine the relationship between knowledge and attitudes on infant nutrition and infant feeding practices. Pender and Pender's Health Promotion Model was utilized to provide a theoretical framework to guide this study.

Method: This was a cross-sectional study employing a descriptive correlation research design conducted in Siaya County. Simple random sampling was used to select 80 mothers whose infants are aged 6 months to 12 months. The relationship between knowledge on infant nutrition and infant feeding practices among mothers with infants 6 months to 12 months was examined. Data was collected quantitatively and qualitatively. Selfadministered questionnaire were utilized to collect quantitative data while focus group discussion was employed to gather qualitative data. On analysis of data on the relationship descriptive statistics was used that is, percentages and frequencies. Relationship will be examined using inferential statistics.

Results: Findings were of public health concern. Since women of child bearing age should be educated by trained nutritionists on the types of locally available foods that promote growth in children.

Conclusion: A study like this is very much essential to estimate graveness of the situation so that effective and adequate measures can be taken at the individual, family, community and government levels to combat the curse of malnourishment.

Key Words: *knowledge, infant nutrition, infant feeding practices, lactating mothers*

INTRODUCTION

BACKGROUND OF THE STUDY

Poor infant feeding practices coupled with high rates of infectious diseases are the major causes of malnutrition during the first two years of life. Appropriate breast feeding and complementary feeding practices and access to adequate amounts of appropriate foods are essential for optimal infant nutrition. Breast feeding provides infants with superior nutritional content that is capable of improving infant immunity and possible reduction in future health care spending. Child mortality remains high in low and middle income countries. It has been reported that 17% of Kenyan children were exclusively breastfed for less than 4 months, while 13% were exclusively breastfed for less than 6 months (KDHIS 2014). All these figures are still far below average levels (WHO2009). Children need complementary foods in addition to breast milk from the age of six months. Infancy period is a critical nutritional period for children, in which they should be transitioning from exclusive breast feeding to receiving complementary foods in addition to continued intake of breast milk.

The nutrition education given to mothers should emphasize the importance of breast milk only for the first six months of life and promote appropriate and timely complementary foods at six months with increased feeding frequency and change in food consistency, quality and

diversity as the child ages. However, inadequate knowledge of appropriate foods and feeding practices is often a greater determinant of malnutrition than lack of foods. It has been observed that mothers who are nutritionally educated bring up their children in a healthier way than those who lack nutrition knowledge.

The need to assess the mothers' breastfeeding and complementary feeding practices and the nutritional status of children in Kenya state has become important since malnutrition can result from sub-optimal breastfeeding practices, poor quality complementary foods, detrimental feeding practices and contamination of feeding utensils and the effect of such practices on the growing child and mother.

Problem Statement

Sub optimal breastfeeding practices often results from inconsistency messages and information as well as inadequate counseling on infant feeding among others. For instance, while WHO recommendation 2010 is to practice exclusive breastfeeding 0-6 months the current data indicates that in Kenya among the infants aged 4-5 months only 23percent of them are exclusively breastfed, the median duration of exclusive breastfeeding is only 2.4 months and the use of pre-lacteal feeds is prevalent in 31 percent of infants born in the rural areas and 24percent in urban area (ICF Macro, 2010). Moreover, only 49percent of infants initiate breastfeeding as recommended within 1 hour of birth, this reflects delayed initiation (KDHIS, 2010). Furthermore, KDHIS 2010 shows that only 41.1 percent of mothers in Siaya County Referral Hospital initiate breastfeeding within 1 hour of birth. The prevalence of practice of giving infants some prelacteal feeds is 44.3 percent.

This study will provide baseline information about issues related to infant feeding in the context of knowledge and practice. The study will help the policy makers including Ministry of Health and Social Welfare and other partners to strategize interventions to improve the situation. In addition, the study will provide baseline indicators that will be used to monitor and evaluate the outcomes and impact of the interventions in the next two years. Furthermore, the study will provide information that will be used to design appropriate behaviour change communication messages and interventions that are relevant to the beneficiaries.

Results

Respondents Demographic Characteristics

The subjects involved in the study were age range was between 19 and 40 years. The mean age was 25 and standard deviation was 8.64, the mode was 20, and the median was 20.00. The results reflected the age group which is among the reproductive age and teenage pregnancy were revealed in the results. Also the age ranged from 19 to 40 years which was generalizable. According to WHO (2008), this age group is among the reproductive age.

The majority of the women had attained up to primary level. Some 39(11.6) had attained up to tertiary level. A few indicated that they had attained up to secondary level 121(35.9%). Thinking in terms of women empowerment this is a very good achievement and one would talk about 90% empowerment. The only controversial issue is despite 90% empowerment, the majority of these participants are not employed as indicated by 108 (32%) of them. One would wonder why the situation is like this and would also seek to assess whether the primary level indicated was a full certificate or not. According to Smith et al, (2006), women with low status tend to have weaker control over household resources, tighter time constraints, less access to information and health services, poorer mental health and lower self-esteem. These factors are thought to be closely tied to women's own nutritional status and the quality

of care they give, and in turn, to children's birth weights and quality of care they give. The low status could be due to low income or no income.

The majority of the subjects in the study had an income of below Kshs 8000 denoted by 228(67.7). This implied that their infant feeding practices were limited due to lack of money. This was followed by 66(19.6%) who earned below Kshs 8,000 to Kshs 12,000, 7(2.1%) who earned Kshs 12,000 to Kshs 16,000. Even if the subjects had knowledge on infant nutrition they could not engage in recommended infant feeding practices due to inadequate financial support. Those who earned above Kshs 24,000 were 1(0.3%) and those who earned Kshs 16,000 to Kshs 24,000, was only 35(10.4%). Looking at the figures on the amount earned monthly it reflects that the minority of the participants are in managerial positions. These are, those earning Kshs 16,000 to Kshs 24,000 and those earning above Kshs 24,000, denoted by 36(10.7) out of 337 (100%). Such a scenario can reduce the status of women in society. Smith et al (2006) stated that women's status makes by far the greatest contribution to regional gap in children's nutritional status. In the interest of sustainably improving the nutritional status of children, women's status should be improved in all regions. They went on to discuss that accomplishing of this task requires policies that eradicate gender discrimination and policies that reduce power inequalities between women and men by proactively promoting catch-up for women.

Some families 93(27.6%) had three members in a household, 155(46%) had four members in a household, 71(21.1%) had five members in a household and 18(5.3%) had above 5 members in a household. This could have a negative impact on the availability of food to feed infants. Despite the knowledge on infant nutrition one might have acquired, it becomes impossible to meet the standard infant feeding practices when the food is inadequate.
Some subjects had delivered through normal vertex delivery 283(84%) and most of them 273(81%) and 61(18.1%) were delivered by midwives (nurses) and obstetricians (doctors) respectively. 54(16%) delivered by caesarean section, 2(0.6%) were attended by traditional birth attendants and 1(0.3%) delivered themselves. Kashaija (2008) states that it is important to note that the practice that impedes or facilitates exclusive breastfeeding begins in the health facility where the baby is delivered. To some extent health professionals support early initiation of breastfeeding. Most hospitals took up the Baby Friendly Hospital Initiative stance which recommends initiating breastfeeding within half an hour. This is a way of promoting breast feeding. In some cases religion affects one's behaviour. (Kashaija, 2008). Most participants stated that they were Christians 281(83.4%), hence with Christians there are few beliefs relating to infant nutrition.

Infant Feeding Practices

On the question , at what age did the participant wean her infant, 23(6.8%) weaned their infants at seven months, 251(74.5%) weaned at six months, 39(11.6%) weaned their infants at 5 months, 22(6.5%) weaned off their infants at 4 months, 2(0.6%) weaned their infants before months. Coutsoudis (2005) recommends weaning of infants at six months following exclusive breastfeeding especially to HIV positive mothers. However, mothers may find it difficult to stop breast-feeding earlier than the norm , and it is, therefore, important to prepare mothers considering early cessation of breast-feeding to be given sufficient preparation and support (Coutsoudis, 2005), through information on knowledge of infant nutrition.

The question on feeding options , the participant is practicing, 6(1.8%) was using heat treated milk, 1(0.3%) were using breast milk, 10(3%) were using formula feeding, 5(1.5%) were using cows' milk, 6(1.8%) were using goat's milk, 309(91.7%) were using mixed breast

and artificial feeding. Ministry of Health (2008) in Kenya PMTCT module, recommends exclusive breast feeding with early cessation, expressing and heat treating breast milk as some of the practices in under 1 year nutrition. Also replacement feeding during the first 6 months of life, exclusive home modified animal milk and exclusive commercial infant formula are some of the feeding options described. So mothers are aware of the feeding options and choose what is suitable, acceptable and what they can afford. The issue still goes back the status of women in society as Smith (2006) puts it that, women's status makes by far the greatest contribution to regional gap in children's nutritional status. If there is no money to buy food the women cannot engage in approved infant feeding practices.

The issue on whether mothers get some counseling on infant feeding revealed that the majority of the participants 239(70.9%) had information delivered to them on infant feeding, 38(11.3%) at times got some counseling, and 60(17.8%) did not get counseling. Ndola Demographic Health Project (2005) provides, counseled all mothers, on complimentary feeding regardless of knowledge of HIV status.

The results indicated that mothers of infants 6 to 12 months old had knowledge of foods that can be used to enrich infants diet among community mothers and they knew some of the foods. According to Horizons (2005), clinic attendants who were exposed to intensive counseling, increasingly adopted the safer practice of exclusive breast feeding and the riskier practice of mixed feeding declined. In relation to knowledge on infant nutrition and infant feeding practices, as knowledge increases practices improves. This implies that there is a change in infant feeding for every unit change in the level of infant nutrition. In other words it means that knowledge on nutrition has a positive influence on the infant feeding practices.

Distance away from the nearest health centre revealed that 254(75.4%) are within 3km away from the health centre, 80(23.7%) are 4km away from the health centre, 3(0.9%) are 5km away from the health centre and none was above 5km away from the health centre. UNICEF (2005) carried out survey with 209 mothers. These mothers were staying within a radius of ten kilometres from the health centres. Those who were within 5km radius were at an advantage as compared to those who were within a radius of ten kilometres from the health centre. As a result mothers may fail to attend under-fives clinic due to distance away from the health centre and lack of transport.

The question was whether giving cooking oil was helpful in the first 6 months. 311(92.4%) strongly disagreed with the idea, 8(2.4%) disagreed somewhat, 7(2.1%) neither agreed nor disagreed, 4(11.2%) agreed somewhat, 7(2.1%) strongly agreed. In analyzing the frequencies and percentages, the majority of the participants were for this idea, and automatically it revealed that they had practiced it. A study on improved breast feeding practices by Homana (2003), states that education stressing the overall benefits of breast milk enables mothers, to evaluate relative risks and benefits and still make the health choice of exclusive breast feeding. However, in this current study, mothers have knowledge on improved feeding practices but they still believe that giving cooking is helpful. The results of the study reveals that as knowledge increases the mother's infant feeding practices improved. On the other hand not only knowledge can influence the infant feeding practices but there are other factors involved. For instance the subjects under study were in the low income bracket hence, they might have limited resources to practice approved infant feeding practices.

The question on, in my family breast feeding in the first 6 months is acceptable was the concept. 3(0.9%) strongly disagreed, 1(0.3%), disagreed somewhat, 2(0.6%) neither agreed nor disagreed, 2(0.6%) agreed somewhat, 329(97.6%) strongly agreed. In families there are significant others who hold the 'executive' powers and have a final say in certain issues. As

a result pressure from executive members in family can bear a negative or positive impact on the infant's nutrition.

On the idea of thick foods causing constipation, 23(6.8%) strongly disagreed, 9(2.7%) disagreed somewhat, 13(3.9%) neither agreed nor disagreed, 14(4.2%) agreed somewhat, 278(82.5%) strongly agreed. USAID (2006), states that feeding practices included in this update are related to breast feeding practices, feeding solid and semi- solid food to breastfed and non-breastfed infants, micronutrient intake, and feeding during diarrheal episodes. The statement supports that solid foods are good for infants. Infant and Young Children Counseling (2005), states that, after six completed months, infants need to learn to eat porridge, puree and mashed foods since these foods fill in the energy gap more than liquids. In addition the digestive system is mature to digest a range of foods; hence the idea of constipation is out ruled by this statement. Also UNICEF (2006), states that at six months of age infants should start to receive complimentary foods in addition to breast milk. These should be safely prepared from locally available foods that are rich in energy and micronutrients to meet the infant's changing nutritional requirement.
Breast milk can be pre-heated before giving to infants, was a cause of concern. 336(99.7%) strongly disagreed and 1(0.3%) neither agreed nor disagreed. According Tlou and Shapiro, (2005), heat-treating breast milk is culturally unacceptable which prevents the mothers from using the option. On the other hand the MOH (2008) describes heat-treating breast milk as among the practices in under 1 year nutrition. So, when clients are given this information they are left in a dilemma because culturally they are bound to something which makes it not practical.

Answering the question on when one washes her hands, 28(8.3%) stated that whenever they dirty , 252(74.8%) stated that before handling food, 57(16.9%) said whenever they feel like doing so. Washing of hands whenever necessary promotes health through prevention of diarrhea to the infant which will result in reduced absorption and malnutrition.

Knowledge on Infant Nutrition

Infants whose mothers were involved in the study had different patterns of graphs according to their monthly weights. A good graph on the infant's card increased as the infant grew, and these were 315(93.5%). Some had a dangerous graph, which remains static, at the same level despite the infant's advancement age wise 22(6.5%). Infant weighing monitors infant's weight which monitors infant nutrition, and mothers are aware of this measure and it motivates them to take their infants for weighing regularly at health centres. WHO, (2006) recommends daily weights for severely malnourished infants and that it is useful to mark the point that is equivalent to -1 Standard Deviation (90%) of the median National Child Health Status WHO reference values for weight-for –height on graph. According to WHO and UNICEF (2006), growth charts can reflect past and present conditions including food intake and health status. Also Infant and Young Child Feeding Counseling, Participants Manual (2005) described the growth charts in assessment of feeding practices. Three curves are on this chart.

The question on urine output was attempted by all participants. Urine flow diminishes as dehydration worsens. In severe dehydration no urine is formed (WHO, 2006). Five (6.3%) indicated that their infants passed urine 3 times per day and also this indicated some form of dehydration. 180(53.4%) indicated that their infants pass urine 4 to 5 times a day. 73(21.7%) stated that their infants passed urine 5 to 6 a day and others 84(24.9%) stated that their infants passed urine 3 times a day. The more fluids taken the more the urine output. Infant and Young

Child Feeding Guidelines (2005) stated reliable signs that indicate that an infant is not getting enough milk as, poor weight gain of less than 500grams per month and also small amounts of concentrated urine of less than six times per day.

On number of feeds per day, 42 (12.5%) indicated that their infants fed 3 times a day and 163 (48.4%) indicated that their infants fed 4 times a day, 116(34.4%) revealed that their infants feed 5 times a day and 16(4.7%) stated they feed their infants 6 times a day. WHO (2008) recommends that for the average health infant, meals should be provided 4 to 5 times per day, with additional nutritious snacks (such as pieces of fruit or bread) offered 1 to 3 times a day, as desired. Also the appropriate number of feeds depends on the energy density of the local foods and usual amounts consumed at each feeding. MOH (2005) states that feeding the infant frequently, 5 to 6 times a day with health snacks like bread with peanut butter, fruits, and milk provides the infant with nutrition.
On advantages of exclusive breast feeding, 190(56.4%) stated that infants get enough nutrients, 147(43.6%) stated that breast feeding encourages growth and development.

In the current study, on knowledge on infant nutrition and infant feeding practices, 266(78.9%) subjects breast fed their infants within the first hour of birth, 60(17.8%) breast fed their infants after 2 hours of birth, 1(0.3%) breast fed their infants after 3 hours of birth, 9(2.7%) breast fed their infants after five hours of birth and 1(0.3%) breast fed their infants after 6 hours of birth. Deshpande and Gazmararian (2005), suggests that health plans and employees may promote breast feeding by providing breast feeding education and support. A study to identify factors associated with the initiation and duration of breast feeding in managed enrollees who had had a normal vaginal delivery was carried out by these two. The findings were that those women who were more likely to breast feed were those who had attended childbirth classes, and those who received postnatal breast feeding assistance.

On the definition of exclusive breast feeding most subjects defined it correctly and this accounts for 334(99.1%) of participants. This matches with the majority of subjects who were delivered by nurses 273(81%). This indicates that during their encounter with nurses the participants get some counseling on infant feeding. 3(0.9%) defined it as giving the baby breast milk substitutes.

The question on why breast milk is best for the infant first days of life, 333(98.8%) participants knew that colostrums contains enough nutrients and antibodies and 4(1.2%) stated that baby likes it. Fraser and Cooper, (2003) state that colostrum contain vitamin A, vitamin D, Vitamin E, vitamin K, water soluble vitamins and immune globulins as well as anti-infective factors.

Some subjects knew foods contained in a balanced diet 299(88.7%) were able to name all foods in the food square. 35(10.4%) gave a balanced diet as comprising of vitamins, starch and vegetables, and 3(0.9%) stated a balanced diet contained vitamins. MOH National Nutrition Unit (2005) defined healthy and balanced diet as one that provides the right foods in the right amounts and combinations and is safe and free from disease and harmful substances. A variety of foods that constitute a balanced diet are given starch food, protein sources, fats and oils, sugars and sugary foods, drinking lots of clean and safe water.

The question on whether thick foods give more energy to infants was given as 176(52.2%) strongly disagreed to this concept, 126(37.4%) strongly agreed, 3(0.9%) neither agreed nor agreed, 31(9.2%) disagreed somewhat 1(0.3%) disagreed somewhat. Infant and Young Child, (2006), clearly gives an illustration on how thick food is given as one of key messages in module.

Poor infant feeding practices contribute to infant morbidity and mortality. Infants continue to die despite the government effort in putting across strategies such as infant feeding and development of millennium goals 4, 5 and 6 which aim at reducing child mortality. One would wonder whether mothers have correct, current knowledge on infant nutrition, and which feeding practices they engage in.

The purpose of the study was to examine the relationship between knowledge on infant nutrition and infant feeding practices among mothers with infants 6 months to 12 months at Siaya County. This study utilized Pender's Health Promotion Model to enhance understanding.
In the model, individual characteristics (personal factors and prior related behaviour) influence behaviour, specific cognitions and affect, which will later influence behavioral outcome. The study used a descriptive co-relational design to examine the relationship between knowledge on nutrition and infant feeding practices.

The sample included 337 participants aged between 19 and 40 years, who had infants 6 months to 12 months old. The study sample was selected using simple random selection which is a probability sampling method.

Data was collected using a questionnaire which was administered to subjects. The questionnaire comprised of three sections namely demographic variables, dependent variables and independent variables. The dependent variable was infant feeding practices, and the independent variable was knowledge on infant nutrition.

Data analysis was done by using descriptive statistics whereby there were mean, mode, range, standard deviation, frequencies and percentages. Inferential statistics involved Pearson correlation co-efficient, r=.259 at .05 level of significance.

Pearson correlation co-efficient was used to examine the relationship between the level of knowledge on infant nutrition and infant feeding practices. The effect of the level of knowledge on nutrition is indicated by R2 was .067, F was 5.625, b was .253, and significance level .05, and it indicated a linear relationship. The effect of level of knowledge on infant nutrition is 6.7% of the variance in infant feeding practices Beta. (.253) represents a change in the level of knowledge on nutrition.

Relationship between Knowledge on Infant Nutrition and Infant Feeding Practices

From the results of this study there is a positive weak correlation r=.259, p<.05.The results indicate that as knowledge on infant nutrition improves the mothers' capability to engage into approved practices also improves. While the results could be true, the weakness of the relationship shows that not only knowledge can influence the infant feeding practices but that there are other factors involved. Such factors like culture can have negative impact on infant feeding practices. Tlou & Shapiro (2005) stated that heat-treating breast milk is culturally unacceptable and mothers will not use the option, thereby, exposing their infants to HIV infection. 2(0.6%) of the participants had low knowledge on infant nutrition, 85(25.22%) had moderate knowledge on nutrition and 250(74.18%) had high knowledge.

Regression analysis was done to examine the strength of the relationship between the level of knowledge on infant nutrition and infant feeding practices. The significant R2 supports that knowledge on infant nutrition explains 6.7% of the infant feeding practices that mothers engaged on. A significant positive effect (b=.253) of knowledge on infant nutrition improves infant feeding practices. The significant regression coefficient shows a change. The

significant R2 of .067 indicates that knowledge on infant nutrition explains 6.7% of variance on infant feeding practices. F=5.625 p<0.05. The adjusted R was 0.055. Beta (0.253) represents a change in infant feeding practices for every unit change in the level of knowledge on infant nutrition. The significance (b) indicates the relative importance of the independent variable (knowledge on nutrition). The bigger the value of significant (b) the more important in terms of its contribution to the dependent variable (infant feeding practices). The importance of level of knowledge in this study, therefore, was 0.253 which is 25.3% in terms of its contribution to the utilization of infant feeding practices. The knowledge on infant nutrition has a positive influence on the infant feeding practices though it was an imperfect one.

Theoretical Framework

The Health Promotion Model by Pender (1987) provided the conceptual foundation for the study. The model consists of cognitive conceptual factors, modifying factors and cues to action. The model consists of two phases, that is infant feeding practices phase and knowledge level phase. These constructs in model represent the process an individual goes through during infant feeding practices. In this study the modifying factors were represented by the demographic factors like age, marital status, level of education, income, employment, religion and mode of delivery.

The modifying factors influence the cognitive factors consisting of the importance on health of the infant by mothers. Wallston, Maids and Wallston (1976) found that college students read more on health issues because they placed value on their health. Cognitive perceptual factors are equated to knowledge on infant nutrition. Perceptual control of health, perceived self-efficiency, perceived health status, perceived benefits of health promotion behaviour and perceived barriers to health promotion are other factors on cognitive perceptual factors. Perceived control of health is a factor whereby mothers control infant feeding practices to promote health. The mother acquires knowledge through learning from health care providers, peers, media, and literature if accessible. The second phase of the framework, the action is when the mother puts all the information, that is knowledge on infant nutrition and utilizes it to improve on infant feeding practices, thereby preventing malnutrition.

Mothers' knowledge on nutrition showed that 85(25.22%) had moderate knowledge and 250(74.18%) had high knowledge and 2(0.6%) had low knowledge. Also 6(1.8%) practiced heat treated milk, 1(0.3%) practiced breast feeding, 10(3%) practical formula feeding, 5(1.5%) cows milks, 6(1.8%) goat's milk, 309(91.7%) practiced mixed feeding and artificial feeding. Tlou and Shapiro (2000) stated that heat-treating breast milk is culturally unacceptable. This prevents subjects, from using the option and it becomes a barrier to health promotion. The model suggested perceived barriers included were culture, finance and lack of knowledge. As a result mothers consider their demographic factors, situational and social-cultural factors by opting for other infant feeding practices, such as breast feeding which is natural.

Perceived benefits of health promoting behaviours in this study include the benefits of early weaning of infants from breast milk, benefits of breast feeding, benefits of other options of infant feeding, for example it is advantageous to give thick porridge to infants above 6 months because it provides a lot of energy to the infant. On interpersonal influences, interactions with health professionals have an influence on health promotion. For instance when the mother received health education or counseling from service providers, they benefit more information which will help them to improve their practices.

Although there was an imperfect positive correlation between knowledge on infant nutrition and infant feeding practices, it is considered a health promotion for the wellbeing of infants. This study was based on the premise that health promotion activities are directed towards the development of resources that maintain and enhance an individual's life. Also the acquisition of knowledge on infant nutrition following infant feeding practices, the ability to implement and maintain it enhances an infant's life and hopefully prevents malnutrition. In this study as knowledge on infant feeding increased, the infant feeding practices also improved.

Implications to Maternal Child Health/Midwifery Practice, Research and Education.

Nutrition and Dietetics /Nutrition and Dietetics Practice

The results revealed that 2(0.6%) of the participants had low knowledge on infant nutrition, 85(25.22%) had moderate knowledge and 250(74.18%) had high knowledge. As an example, some subjects 4(1.2%) did not know why breast milk is considered the best for the infant first days of life. Also looking at which foods are contained in balanced diet, 3(0.9%) mentioned vitamins, 35(10.4%) mentioned vitamins, starch and vegetables. This reveals that mothers lack knowledge hence midwives have the obligation to teach these mothers for them to improve the infant feeding practices.

Education

Nutritionists and Dietitians need to be trained on infant feeding counseling, Prevention of Maternal to Child Transmission and other issues pertaining to maternal and child health. In turn this builds their confidence to give information to mothers. Community education offers hope as it opens doors to acceptability of some of the infant feeding practices not considered as culturally normal and thus reducing stigma attached to HIV infected people in communities. The nutritionists need to discourage poor infant feeding practices and encourage good practices to enhance good health. Nutritionists should have knowledge on policies which promote infant nutrition, for example Breast Feeding Policy. If the nutritionists and Dietitians are equipped with correct, current information. Giving correct information will clear misconceptions about infant feeding practices. The provision of literature to read improves knowledge and it is high time nutritionists should have their nutrition journals with current information. Mothers have a trust in nutritionists such that they are free to share their social issues and worries. They receptive to information given to them by health workers.

Research

The research findings have shown that only 6.7% of change in infant feeding was explained by knowledge on infant nutrition. This showed that as knowledge on infant nutrition increases, the mother's capability to engage in approved practices also improves. The relationship was weak because there are other factors which can influence infant feeding practices which include attitudes, culture, behaviour and beliefs. Further research would be of benefit to investigate other factors besides knowledge that can affect feeding practices. A study needs to be carried out to assess whether older mothers have more information than young mothers. Nutrition practice should be research based. This implies that there will be a link between practice and research. Research is aimed at improving practice, broaden understanding and provide a base for further research studies.

Recommendations

1. Further studies are recommended by way of replicating the present study using larger samples. There is need to find out what other factors cause poor infant feeding practices.
2. Nutritionists and Dietitians can benefit from field trips through learning from colleagues on current issues and trends on infant feeding practices.
3. Lecturers in Nutrition and Dietetics schools need to be well equipped with current information on infant feeding practices and other issues related to maternal and child health. The lecturers impart current knowledge to their students. More schools of nutrition and dietetics will improve production of qualified staff for better services.

REFERENCES

African Journal of Midwifery and Women Health, October – December 2008 Vol. 2. No. 4. Page 59-64. St Ives, Peterborough,UK.

Bhandari, N., (2008). *Effect of Community Based Promotion of Exclusive Breastfeeding on diarrhoeal Disease* Lancet, 361 (9367) 1418 – 1423. Year book medical publishers Inc, Chicago, USA.

Bisimwa (2005), Food and Nutrition. International Nutrition Foundation for United Nation, University Press: *Nutritional monitoring of pre-school-age children by community volunteers during armed conflict in the Democratic Republic of Congo*.

Burns, N., and Grove, S.K., (2005). *The practice of nursing Research Conduct, Critique and Utilisation*. W.B. Saunders Company. Philadelphia, USA.

Clegg, F., (2006). *Simple Statistics. A course book for the Social Sciences*. 22 Edition Cambridge University Press. Melbourne, Australia.

Coutsoudis ,A., (2005). *The American Society for Nutritional Science J. Nutr*. 135: 956 – 959, April 2005. Infant Feeding Dilemmas Created by HIV: Sout Africa. http://jn.nutrition.org/cgi/content/full/. South Africa.

Deshpande, A. D., & Gazmararian, J.A. (2005), *Breast Feeding education and support: association with the decision to breastfeed*.(Eff. Clinical Practice 2005: 3:116-22.) St Ives. Gillngham.

Evian, C., (2006). *Primary HIV/AIDS care. A practical guide for primary health care personnel in the clinical and supportive care of people with HIV/AIDS*. Tall MacMillan, Malaysia.

Food and nutrition in emergencies. World Health Organisation (WHO) 2006.Geneva, Switzerland.

Fraser and Cooper,(2003), Myles Textbook for Midwives, Churchill, England. Guidelines on Dietary Management for people living with HIV and AIDS. By Nutrition Unit Ministry of Health and Child Welfare. Zimbabwe 2nd Edition February 2005. Harare, Zimbabwe.

Hope Humana Linkages National Food and Nutrition Commission Ndola District Health Management Team Horizons Program Zambia Integrated Health Project 2005. Ndola, Zambia.

Infant feeding and HIV/AIDS 2005. Guidelines for Health Workers in Zimbabwe Ministry of Health and Child Welfare. National Nutrition Unit. Zimbabwe

Jill, M., & Jill, M. C., (2003). Health Promotion: A concept Analysis 1165. Blackwell Science. Ltd, London UK. Kashaija, D.,K.,(2008), Mother with HIV: Attitude to Exclusive Breastfeeding

Kathryn, G., Dewey and Sandra, L., Huffman, (2009). Food and Nutrition Bulletin volume 30, Number 2, June 2009. *Maternal, Infant and Young Children*

T. Mambo, P. Mitangala, C. Schirvel, D. Porignon, M. Dramix, and P Donnen Volume 30. Number 2, June 2009. Democratic Republic of Congo.