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Nutrition Knowledge, Attitude, and Childcare Practices of Mothers in Kaduna South Local Government Area, Kaduna State

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Abstract

Nutrition significantly impacts the different areas of human development. Appropriate nutritional knowledge, attitude, and practices are necessary to achieve a proper outcome of infant and young child feeding. This study assessed the nutrition knowledge, attitude, infant and young child feeding and childcare practices of mothers in Kaduna South Local Government Area, Kaduna State. A descriptive cross-sectional survey design was employed. A sample size of 130 women of childbearing age that visited health centres in Kaduna South was selected using a multi-stage sampling method. Data were collected with a pre-validated questionnaire. Data were analyzed with the statistical product for service solution SPSS) version 21 using descriptive statistics. The majority (94%) of the mothers had excellent nutrition knowledge and more than half of the mothers (62.3%) had a good nutrition attitude score. About one-quarter of the mothers had poor knowledge of nutrition, attitude and childcare practice. A significant relationship existed between respondents' occupation and their nutrition knowledge, attitude and practice ($p<0.05$). More so, a positive significant relationship was observed among nutrition knowledge, attitude and child-feeding practices of the mothers ($p<0.05$). The study concludes that many of the mothers had good knowledge and favourable attitude and practices towards young children's nutrition and care. However, more awareness should be created by nutritionists on the importance of good infant and young child feeding practices as well as childcare practices should be undertaken.

Keywords: Nutritional knowledge, Attitude, Childcare practices, Mothers

Introduction

There is an evident impact of nutrition on the health and development of humans throughout their life course. This impact is mostly observed in early childhood in the aspects of cognitive and social development (Black et al., 2013). Therefore, nutrition is an important factor in healthy development in childhood. The growth and immune

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status of children can be compromised by inadequate nutrition, which can lead to recurrent and increasingly severe infectious diseases (Kapantais et al., 2011). At the household level, the nutritional status of a child is affected by the household's ability to provide adequate food in quality and quantity, the mother's pattern of child upbringing and knowledge of nutrition and other sociocultural factors (Dessie et al., 2019). Every time a child suffers the scourge of malnutrition, the responsibility goes to the mother, the family and the community. This is usually due to a lack of knowledge regarding the harmful effects of pre-lacteal feeding, the benefits of exclusive breastfeeding, timely initiation of complementary feeding and dietary practices. The mothers, however, bear the majority of the responsibilities. Good nutritional knowledge will enable mothers to easily apply them to their households thereby creating a healthy generation in which children can grow and develop optimally (Agho et al., 2011).

Nutrition knowledge refers to an individual's understanding of nutrition, including the intellectual ability to remember and recall food and nutrition-related terminology, specific pieces of information and facts (Food Agricultural Organization [FAO], 2014). Mothers are the foremost providers of primary care for children. Their understanding of basic nutrition and health measures strongly influences the care they provide. The mother's level of education has a positive impact on her knowledge and how she deals with childcare issues (Ibrahim, 2010). A good knowledge of nutrition will encourage a mother to provide good feeding patterns for her children. Family nutrition to an extent is affected by the application of the mother's nutrition knowledge. Several studies in Nigeria have shown that mothers of childbearing age have good nutrition knowledge of infant and young child feeding (Alemayehu & Tesema, 2016; Ojiugo, 2010; Kever, et al. 2015). Nutritional knowledge, attitude, and childcare practices of caregivers are vital determiners of the outcomes of complementary feeding regimes administered to children (Saha et al., 2008; Turyashemererwa, 2009). Attitude is defined as the emotional, motivational, perceptive, and cognitive belief that positively or negatively influences the behaviour or practice of a caregiver toward complementary feeding (FAO, 2014) and proper childcare practices. Attitude may be a predictor of practice. Therefore, the Nutritional attitude of mothers is required to improve children feeding patterns for optimal child health and development.

Childcare practices refer to the quality, quantity, diversity and availability of health care services given to a child which must not be necessary from the health services providers and parents but from other older adults (Sanders, 2009). Childcare practices are always part of a system of care that covers the whole cycle of childbearing and childrearing in the family. According to WHO (2013), childcare practices are the physical, social, and health care given to a child (World Health Organization, 2013). Child care practices include exclusive breast-feeding or other forms of breastfeeding, complementary feeding, hygiene, immunizations, micronutrients, use of

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bed nets for malaria prevention, psychosocial development, compliance with medical/health advice, antenatal care, home care for illness, home treatment of minor infections and care-seeking practices (World Bank, 2012; United Nations Children's Fund, 2011). According to Qayyum et al. (2015) childcare practices should focus on feeding, sleeping, and toileting, among other things. Very young children depend on adults for care and protection. This includes providing safe sleep environments (Davis et al., 2004). Studies have shown that alongside nutrition and exercise, sleep is a principal factor of health that affects daily functioning and life-long well-being (Galland et al., 2012; Wong et al, 2013). In early childhood foundation for sleep, and development is laid and sleep patterns are increasingly sensitive to the environment (Touchette et al., 2013). It can be difficult for children to get to sleep if they are not feeling safe and secure, have just been very active, a lot is going on around them, or if their sleep and rest times vary a lot from day to day. Therefore, good sleep practice is paramount.

Toilet use is one of the early childhood developmental milestones (Baird et al., 2019). Parents are caregivers are saddled with that responsibility. Parents, however, find toilet training to be a stressful process; there are a variety of different training methods to choose from, with little evidence of the best approach, and complications can arise for the child such as stool toileting refusal, hiding to defaecate, and nighttime bedwetting (Baird et al., 2019; Kiddoo, 2012; Vermandel et al., 2008). Failure of toilet training may result in significant physical and psychological consequences like a sense of failure through partial loss of autonomy(Kinservik & Friedhoff, 2000). Play, one of the childcare practices is an important part of a child's early development. This is because playing helps young children's brains to develop and their language and communication skills to mature. Lack of play and communication, known as "under-stimulation", can have long-term negative consequences on a child's learning and physical and mental health. Appropriate feeding practices during childhood, especially in the preschool years, are important for maintaining proper nutrition, health, and development of children (Saha et al., 2008). Feeding practice is defined as the observable actions of the caregiver that could affect the nutrition of the child undergoing complementary feeding such as eating, feeding, washing hands, cooking, and selecting foods (FAO, 2014). Poor infant feeding practices coupled with high rates of infectious diseases are the major causes of malnutrition during the first two years of life (Demowozet al., 2015). In developing countries, under-nutrition-related diseases account for more than 1/3 of under-five mortality (Daelmans et al., 2013; Mesfin et al., 2015). To a large extent, this situation has been attributed to inappropriate complementary feeding practices by caregivers who in most cases lack adequate nutrition knowledge and information (Khanal et al., 2013; Shi & Zhang, 2011).

Child undernutrition has remained one of the main public health problems in developing countries despite the well-recognized importance of proper child

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nutrition to health well-being and human capital development (Müller & Krawinkel, 2005; Semahegn et al., 2014). This leads to child mortality which has been seen to remain high in low and middle-income countries. It has been reported that 17% of Nigerian children were exclusively breastfed for less than 4 months, while 13% were exclusively breastfed for less than 6 months. All these figures are still far below average levels (Oly-Alawuba&Nwuzi, 2018). Researchers have pointed out that good knowledge should be associated with a good attitude and proper nutritional practices (Azizi et al., 2011; Mowe et al., 2008). Nevertheless, good knowledge and attitude do not necessarily translate into good practices in some situations (Bukusuba et al., 2010). More so, inadequate knowledge of appropriate foods and feeding practices is often a greater determinant of malnutrition than a lack of food (Akeredolu et al., 2010). Demand for effective child care has increased markedly in proportion to the number of mothers with young children employed outside the home. Therefore, the need to assess the mothers' breastfeeding, complementary feeding practices and the nutritional status of children in Kaduna South 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.

Objectives of the study: The general objective of the study is to access the nutritional knowledge, attitude, and childcare practices of mothers in Kaduna South, Kaduna State. Specifically, the study sought to:

i. ascertain the nutritional knowledge of mothers in Kaduna South.
ii. identify the attitude of mothers in Kaduna South towards child nutrition.
iii. ascertain the child care practices adopted by mothers in Kaduna south

Hypotheses

Two null hypotheses guided the study

$H_0$1: There is no significant relationship among socio-demographic characteristics, nutrition knowledge, and attitudes of the mothers.

Ho2: There is no significant relationship between nutrition knowledge and the attitude of the mothers.

Methodology

***Design of the study*:** The study adopted a cross-sectional survey research design. A cross-sectional study analyses data from a population, or a representative subset, at a specific point in time *(Schmidt &Kohlmann, 2008).*

***Population for the study*:** The population for the study was all women of childbearing age that visited the 41 primary health centres in Kaduna South. These health centres usually provide basic health services such as antenatal and postnatal care as well as immunizations, nutrition and family planning education for mothers and children.

***Sample and sampling technique*:** The study adopted a multi-stage sampling technique. Stage one involved the selection of four (30%) out of 13 towns in the study area. The second stage involved a systematic sampling of 15% (6) of the 41 primary health centres. Every registered mother in the health

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centre present during the time of the study was selected. This gave a total of 130 mothers who formed the sample for the study.

***Instrument for data collection*:** Data were collected with a pretested, semi-structured, questionnaire. The questionnaire comprised five sections. Section one addressed the socio-demographic characteristics, section two; the nutritional knowledge of mothers, section three; the nutrition attitude of mothers and section five the child care practices adopted by the mothers. The items of the questionnaire were adapted from the Food and Agriculture Organization questionnaires for assessing knowledge, attitudes and practices concerning nutrition and feeding of infants and young children. Duration of continued breastfeeding, age of start of complementary feeding, and ways of making complementary foods more nutritious among others were some of the components of nutrition knowledge that were assessed. The nutrition knowledge scale had 12 items scored on a 5-point Likert scale which ranged from strongly agree to strongly disagree. The attitude scale had 5 items scored on a 5- point Likert scale which ranged from strongly agree to strongly disagree. Components of the attitude towards infant and young child feeding recommendations that were assessed were: complimentary feeding pattern, giving a variety of meals, and feeding frequency amongst others. Total scores were generated for each participant and categorized. The childcare practice sub-scale comprised 21 items with multiple-choice answers. Five areas were addressed which include: feeding practices, personal hygiene, toilet training practices, play practices and sleeping practices. A sample item is; *Do you change an infant's diaper when soiled and do you provide enough toys and play materials for the children?*

***Method of data collection*:** Data were collected using a questionnaire. Three research assistants were recruited and briefed on the modalities of administering the questionnaire. A hundred and thirty copies of the questionnaire were distributed to the mothers who visited the centres on the day of the study to fill and return immediately. Mothers who could not read or write were interviewed by the research assistants and their responses were recorded. The filling of questionnaire took 5-10 minutes to complete. All the distributed questionnaires were retrieved and thus a 100% return rate was recorded.

Informed consent and ethical approval: A prior visit was made to the chief medical directors of the selected primary health centres in the selected towns to get approval for the study. Permission was obtained and a day was given for the visit. Mothers who visited the centres on the day of the study and gave their consent were admitted into the study. An informed consent form was given to them to fill out after explaining the objectives of the study, the procedures involved, assurance of confidentiality and that participation is voluntary. Those who could not fill out the forms gave their oral consent.

***Data and statistical analysis*:** Data obtained were coded and analyzed with statistical products for the social sciences (SPSS) version 21. Data were analyzed using descriptive statistics (frequencies

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and percentages) and inferential statistics (Pearson's correlation and Chi-square) at a significance level of $p < 0.05$. A knowledge score less than 41 was considered poor, 41-60; good, 61-79; very good and 81-100; excellent. An attitude score of 1-40 was considered poor, 41-60; good and 80-100; excellent. The childcare practices were analyzed using frequencies and percentages.

Results

Socio-demographic data of the respondents

The majority (60%) of the respondents were between 20 -34 years. Half (50%) of them were students and only 3.1% were Artisans. About 43.8% are single, while the least (1.5%) are widows. The highest educational level of the respondents was BSC/Higher degree (33.1%). About 32.3% earned less than ₦20,000, while 27.7% earned above ₦50,000.

Nutrition knowledge of the respondents

Figure 1 shows the nutrition knowledge of the respondents. From the figure, the majority (71.8%) of the respondents had excellent nutrition knowledge, 19.1% had very good knowledge while a few (8.4%) had good nutrition knowledge. No respondent showed poor nutrition knowledge.

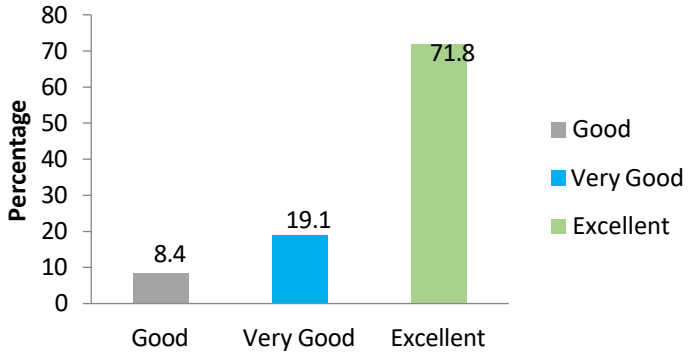

Figure 1: Nutrition knowledge of the respondents

Nutrition attitude of the respondents

Figure 2 shows the nutrition attitude level of the respondents. The result showed that more than half (62%) of the respondents had an excellent nutrition attitude and only a few (8%) had a poor nutrition attitude

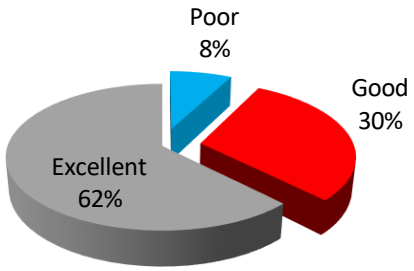

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Fig 2: Attitude level of the respondents

Table 1 shows the childcare practices of the mothers. Underfeeding practices, the majority (70.8%) of the mothers give their children breast milk immediately after delivery. More than half (55.8%) breastfeed their child on demand and 90.6% use infant formula in place of breast milk. In the area of personal hygiene, hand washing before feeding was the predominant (96.2%) practice among the respondents. The majority (91%) change their children's diaper once it is soiled and (96.9%) of the respondents engage more in teaching their children words for urinating and defecating as toilet training practices. Most of them (94.6%) create time for children's indoor and outdoor play activities and 86.9% provide enough toys and play materials for the children. Among sleeping practices, providing for a child what he/she needs to sleep (96.2%) and ensuring sleep/rest environments and equipment are safe and free from hazards (96.2%) were the two most reported practices.

Table 1: Childcare practices of the respondents

Practice Items	F	%
Feeding Practices		
What did you give the child immediately after delivery?		
Breast milk	92	70.8
Warm water	23	17.7
Glucose water	10	7.7
Infant formula	3	2.3
Nothing	3	1.5
How many times in a day do you breastfeed your child		
< 4 times	4	3.1
4-7times	27	20.8
8-10 times	11	8.5
On demands	72	55.4
Don't know	16	12.3
What kind of food are you giving in place of breast milk?		
Infant formula	116	90.6
Solid food	10	7.8
Others	4	3.9
Personal Hygiene		
Do you wash the baby's hands with soap before feeding?		
Yes	72	55.4
No	55	40.8
Don't know	3	2.3
Toilet Training Practices		
Do you change an infant's diaper when soiled?		
Yes	118	91

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No	5	4
Don't know	7	5
Do you teach children words for urinating and defecating?		
Yes	126	96.9
No	4	2.1
Play Practices		
Do you specially create time for children's indoor and outdoor play activities?		
Yes	123	94.6
No	3	2.3
Don't know	4	2.1
Do you provide enough toys and play materials for the children?		
Yes	113	86.9
No	16	12.3
Don't know	1	0.8
Sleeping Practice		
Do you provide for a child what he/she needs to sleep such as singing, rocking, or a special toy?		
Yes	125	96.2
No	4	3.1
Don't know	1	0.8
Do you ensure sleep and rest environments and equipment are safe and free from hazards?		
Yes	125	96.2
No	1	0.8
Don't know	4	3.1

F= frequency, %= percentage

Hypothesis 1: There are no significant relationships among socio-demographic characteristics, nutrition knowledge and attitude of the mothers.

Table 2 shows the relationship among nutrition knowledge, attitude and socio-demographic status of the respondents. From the table, a significant relationship was seen to exist between the nutrition knowledge of the respondents and their occupations. Most (90.9%) of the respondents who had excellent nutrition knowledge were unemployed. Only occupation had a significant relationship with the attitude of the respondents ($\chi^2 = 20.53$, $p = 0.03^*$) among other socio-demographic characteristics of the respondents $p < 0.05$. The null hypothesis was then rejected for another socio-demographic status except for occupation which is related to nutrition knowledge and attitude.

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Table 2: Relationship among nutrition knowledge, attitude, and socio-demographic status of the respondents

	Nutrition Knowledge			Attitude		
	Good F (%)	**V.Good F (%)**	**Excellent F (%)**	**Poor F (%)**	**Good F (%)**	**Excellent F (%)**
Age						
15–19years	3(10.7)	4(14.3)	21(75.0)	4(14.3)	8(28.6)	16(57.1)
20–34years	8(9.2)	19(21.8)	60(69.0)	6(6.9)	24(27.6)	57(65.5)
35 years above	0(0.0)	2(13.3)	13(86.7)	0(0.0)	7(46.7)	8(53.3)
χ^2 = 3.02, p = 0.56				χ^2 = 4.82, p = 0.30		
Occupation						
Student	6(9.2)	18(27.7)	41(63.1)	6(9.2)	20(30.8)	39(60.0)
Civil servant	1(4.3)	4(17.4)	18(16.6)	0(0.0)	11(47.8)	12(52.2)
Trader	2(8.7)	1(4.3)	20(87.0)	4(17.4)	0(0.0)	19(82.6)
Unemployed	0(0.0)	1(9.1)	10(90.9)	0(0.0)	6(54.5)	5(45.5)
Farmer	0(0.0)	1(25.0)	3(75)	0(0.0)	1(25.0)	3(75.0)
Artisans	2(50.0)	0(0.0)	2(2.9)	0(0.0)	1(25.0)	3(75.0)
χ^2 = 18.84, p = 0.04*				χ^2 = 20.53, p = 0.03*		
Marital Status						
Single	6(10.5)	15(26.3)	36(63.2)	7(12.3)	14(24.6)	36(63.2)
Married	4(6.3)	9(14.3)	50(79.4)	2(3.2)	22(34.9)	39(61.9)
Divorced/separated	1(12.5)	1(12.5)	6(75.0)	0(0.0)	3(37.5)	5(62.5)
Widow	0(0.0)	0(0.0)	2(100.0)	1(50.0)	0(0.0)	1(50.0)
χ^2 = 5.12, p = 0.53				χ^2 = 10.38, p = 0.11		
Highest Educational Qualification						
SSCE	1(2.8)	10(27.8)	25(69.4)	3(8.3)	9(25.0)	24(66.7)
OND/NCE	3(21.4)	1(7.1)	10(71.4)	4(28.6)	4(28.6)	6(42.9)
HND	5(13.9)	6(16.7)	25(69.4)	1(2.8)	12(33.3)	23(63.9)
B.Sc	2(4.7)	8(18.6)	33(76.7)	2(4.7)	14(32.6)	27(62.8)
M.Sc/Ph.D	0(0.0)	0(0.0)	1(100.0)	0(0.0)	0(0.0)	1(100.0)
χ^2 = 9.30, P= 0.32				χ^2 = 11.72, p = 0.16		
Number of Children						
Less than 3	4(6.2)	14(21.5)	47(72.3)	7(10.8)	22(33.8)	36(55.4)
3 to 5	6(10.7)	11(19.6)	39(69.6)	3(5.4)	13(23.2)	40(71.4)
6 and above	1(11.1)	0(0.0)	8(88.9)	0(0.0)	4(44.4)	5(55.6)
χ^2 = 3.13, P= 0.53				χ^2 = 5.09, P= 0.29		

V. Good= very good, F= frequency, %= percentage, df = degree of freedom, p = level of significance, χ^2 = chi-square value

Hypothesis 2: There is no significant relationship between nutrition knowledge and the attitude of the mothers.

Table 3 shows the relationship between nutrition knowledge and the attitude of the respondents. From the table, a significant positive relationship was seen between nutrition knowledge and the attitude of the respondents (r = 0.30**, P = 0.00). This implies that the more knowledge the respondents acquire on infant and young child nutrition, the better their attitudes towards that. The null hypothesis was therefore rejected.

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Table 3: Relationship among nutrition knowledge, attitude and infant and young child feeding practices of the respondents

		Attitude	Nutrition Knowledge
Attitude	Pearson Correlation	1	0.30**
	Sig. (2-tailed)		0.00
Nutrition Knowledge	Pearson Correlation	0.30**	1
	Sig. (2-tailed)	0.00	

** = significant at 0.05

Discussion

A greater percentage of the respondents were between 20 -34 years. This is in line with the study by Egenti et al. (2018) and Somefun and Ibisomi (2016) in northern Nigeria, whose respondents were between 25-34 years. Half of the respondents were students. This could be attributed to the location of the research, as Kaduna State is in the northern part of Nigeria and the northern part of Nigeria is known for early marriage. The highest educational level of the respondents was BSC/Higher degree. This reveals the impact of the girl child education advocacy programme in the study area. However, the finding contradicts that of Somefun and Ibisomi (2016) that revealed no formal education among the majority of the respondents.

The majority of the respondents had excellent nutrition knowledge and nutrition attitude. This could be linked to the fact that governmental and non-governmental agencies over the years have organized nutrition education programmes, especially in rural areas in response to the high burden of nutrition ex-rayed by suboptimal infant and young child feeding (IYCF) practices in developing countries like Nigeria (WHO, 2009; Caetano et al., 2010; Tagbo & Ughasoro, 2009; Safari et al., 2013; Muhimbula, & Issa-Zacharia, 2010). The result of this study is in line with findings from other studies (Mundia, 2012; Bimpong et al., 2020) which revealed that the majority/about half of the mothers had good nutritional knowledge compared to the few that had a low knowledge level. The finding of this study, however, contradicts that of Afolabi et al. (2017) which revealed that most of the mothers had low nutritional knowledge. Another study by Nassangaet al. (2018), revealed that whereas a high proportion of caregivers had good knowledge and attitude regarding complementary feeding, most of them had poor nutritional practices. The good nutrition attitude observed among mothers in this study is in line with that of Bimpong et al. (2020) who found that the attitude of mothers towards infant and young child feeding practices was positive.

The majority of the respondents showed good childcare practices as they reported giving their children breast milk immediately after delivery, and breastfeeding their children on demand. They also reported washing their hands before feeding their children, changing their children's diaper once it is soiled and teaching their children words for urinating and defecating as toilet training practices. Furthermore, they create time for children's indoor and outdoor play activities, provide enough toys and play materials for the children, provide for the child what he/she needs to sleep and ensure sleep/rest environments and equipment are safe and free from hazards. These good practices could be attributed to their occupation as the majority of them are students who have acquired one form of training or the other and have better resources than the less

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educated to provide better health services and practices for their children.

A significant relationship was seen to exist between the nutrition knowledge of the respondents and their occupations. This is contrary to the null hypothesis stated in the study. Those who were unemployed had high nutrition knowledge. This result is, however, not out of place as employed mothers may not have much time to attend nutrition education programmes due to their tight work schedule. This finding is in line with several studies which have shown that the working status and nutritional knowledge level of the mother are positively related to the feeding practices of the mothers (Ozdogan et al., 2012; Ucar et al., 2012; Sunwoong et al., 2000). They opined that mothers who are knowledgeable about good nutrition select the right food for themselves and their children. Similarly, in the study conducted with 324 women living in Swaziland, it was found that employment status was significantly associated with nutritional practices (Masuki & Lan, 2014). The finding of the study is therefore not out of place as one's occupation determines to an extent their income. However, the finding of this study did not corroborate the finding of the study by Özdoğan (2012) which showed that the nutritional knowledge of mothers in the study area increased with a corresponding increase in their education level.

A significant positive relationship was seen between nutrition knowledge and the attitude of the respondents**.** This shows that as the mothers gain more nutrition knowledge, their attitude towards infant and young child feeding becomes more positive. This reaffirms the findings of several studies which revealed that good knowledge should be associated with a good attitude and proper nutritional practices (Azizi et al., 2011; Mowe et al., 2008). Similarly, O'Brien and Davies (2007) highlighted that a high degree of nutritional knowledge is known to influence nutritional intake or practices.

Conclusion

Mothers in the study area had excellent nutrition knowledge, feeding practice and attitude. Hand washing before feeding, more engagement in teaching children words for urinating and defecating, creating time for children's indoor and outdoor play activities, providing for a child what he/she needs to sleep and ensuring sleep/rest environments and equipment are safe and free from hazards were the two most reported childcare practices. The nutrition knowledge of the mothers was seen to be positively related to their occupation. Unemployed mothers had better nutrition knowledge than working mothers. More so, the nutrition knowledge of mothers was related to better nutrition attitudes, and feeding practices adopted by them.

Recommendations

Based on the findings, it was recommended that more infant and young child nutrition information should be made available to the mothers as this will enhance their attitude and practice. Primary health centre workers should develop a framework that will ensure that mothers apply the knowledge gained.

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