

Knowledge, Attitude and Practices of Infant and Young Child Feeding Practices Among Caregivers in Ekiti State (A South-Western State) in Nigeria

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Abstract

The knowledge of caregivers is an important factor when it comes to the maintenance of both the nutritional status of children and protection of their nutritional needs to ensure a sound foundation and secure future of any healthy society. This research thus aimed at investigating the trends in Infant and Young Child Feeding practices for children aged 0 to 23 months to evaluate how the nutrition education and counselling received during contact with health workers have contributed to the Knowledge, Attitudes and Practices of the caregivers regarding appropriate nutrition in Ekiti State. The assessment was done using a cross-sectional survey method, and FAO's guideline for assessing nutrition related KAP5 was adopted and used. Cochran's equation was used to calculate the sample size, and three households were randomly picked in each political ward. Data was collected and analysed using EPI Info 7. 94.3% of the respondents breastfeed their children on demand, and 47.2% of the mothers had skin contact with their babies after delivery. 78.2% believed that exclusive breastfeeding is very good. 68.2% believed that their children could get diarrhoea from the use of a feeding bottle. 88.3% are aware that 5-9 months are the appropriate age for the introduction of semi-solid and solid food. There is a high level of knowledge, attitude and practice among the caregivers and an improvement was observed in most of the infant and young child feeding practices in Ekiti State.

Keywords: *Breastfeeding, Caregivers, Complementary Feeding, Malnutrition, Optimum feeding, Under-five.*

Introduction

Nutrition has been described as an important factor that affects health and development. Improved nutrition is related to optimum infant growth, child and maternal health, stronger immune systems, safer pregnancy, and childbirth, and lowers the risk of non-communicable diseases and longevity. When children are healthy, they have improved and better cognition and learn better. Adequate nutrition results in better productivity and creates more opportunities which break the cycles of poverty and hunger. Optimum nutrition is important to a child's health well-being which

leads to future human capital development, and this has since been well-recognized, but unfortunately, child undernutrition has consistently been one of the cogs in the wheel of progress of public health, and these has been identifies as a problem in economic disadvantaged countries [1, 2].

Whereas malnutrition in children results from poor infant and child feeding practices, and this has been confirmed by several studies that suboptimal feeding practice is associated with stunting and poor nutritional status of children under five [3, 4]. The growth and development of children under five is determined by the important roles played by optimum feeding

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practice. It has been reported that children with poor growth contribute to high rates of morbidity and mortality, and they can encounter a delay in motor and mental development [5]. Undernutrition has been identified as one of the most common causes of morbidity and mortality among children in developing countries [6]. Studies have shown that more than 1/3 of the under-five mortality in developing countries are dying because of under nutrition-related diseases [7,8]. Poor complementary feeding practices by caregivers due to their lack of adequate nutrition knowledge and information eventually contribute to the scourge of malnutrition [9, 10].

Infant and Young Child Feeding plays important role in the determination of the nutritional status of children, maximizing the growth rate of a child during their first 1000 days [11, 12], and it can reduce under-five undernutrition and hence positively affects child mortality rates. Findings have shown the crucial importance of improved Infant and Young Child Feeding to their health and development, most especially in poorly resourced communities [13]. Adequate and optimum supply of nutrients and calories is, therefore, necessary to mitigate against malnutrition [14], which has been reported to have devastating effects on the health and development of children, impairs their intelligence, educability, and productivity at adulthood. Malnutrition has been implicated as the heightened risk of chronic non-communicable diet-related diseases in later life [14, 15]. Therefore, knowledge, attitude, and practice (KAP) of mothers/caregivers on infant and young child feeding in this curtailed time are very important for the child's health, growth, and development [16-20].

The outcome of a complementary feeding regime administered to children are critical elements that are determined by the nutritional knowledge, attitude, and practices of caregivers [22, 23]. It has been revealed by research that good knowledge would be related to good attitude and proper nutritional practices [24, 25]. Good knowledge and attitude in some situations

do not necessarily translate into good practices [26]. However, the proper outcome of complementary feeding can be achieved through adequate and appropriate nutritional knowledge, attitude, and practices.

Mothers' and caregiver's knowledge and attitude on complementary feeding have important roles to play for the maintenances of nutritional status of the children and the protection of their nutritional needs to ensure a sound foundation and secure future of any healthy society [27]. The promotion of optimal complementary feeding practices has long been recommended globally and has been a health priority aimed at improving child feeding practices, particularly in economically disadvantaged countries [28]. The capability of caregivers in the application of the recommended complementary feeding practices could be linked with their knowledge and attitude regarding adequate and optimal complementary feeding [29]. Hence, factors such as the knowledge, attitude, and practice (KAP) of mothers/caregivers on infant and young child feeding in this critical time are very important for the child's health, growth, and development [12, 16, 30, 31].

Methods

Three-stage sampling technique was employed. The first stage being the purposively selection of 177 wards followed by lottery system to select one Primary Health Care Facility per Local Government Area with a catchment area where the survey was conducted and finally the respective households was randomly selected.

Before the commencement of the actual data collection, the facility nutrition liaison officers (a designated health worker station in each PHC facility to handle nutrition activities) were tasked to enlist those households living in the catchment of their facility. The list was compiled and put into a roaster where 3 household in each ward were selected using a simple random sampling method. Ethical approval was taken

from Ekiti State Primary Health Care Development. Agency. Before the respondents were included in the study, verbal and written consent was obtained. The assessment was a cross-sectional survey utilizing quantitative and qualitative methods of data collection. The primary source was household surveys using a structured questionnaire for mothers/caregivers of infants and children aged 0-23 months old. The principal tool to understand or define previous and current KAP towards recommended nutrition practice was adopted from the FAO's guideline for assessing nutrition related KAP5. The state was grouped into two (eight LGAs each). Each enumerator worked in two LGAs with each Local Government Nutrition Focal Persons (designated nutrition manager in each LGA) and one Facility Nutrition Liaison Officer per facility/ward who facilitated the groundwork and assigned the 3 households that was interviewed per ward. The household questionnaire, adopted from the FAO manual for assessing nutrition related KAP9, was used for the collection of quantitative data from mothers/caregivers of infants and young children aged 0-23 months old.

Household survey data was entered in EPI info 7 software and transferred to MS-Excel for

cleaning. The entries for the three variables for all the questionnaires was re-checked and cleaned again. Post data cleaning was done by randomly sampling five questionnaires from each of the LGA's visited. All data entries from these questionnaires were compared with the data on the physical/hard copy of the questionnaires. Perfect matching between the physical copy and data entries was confirmed. The differences in the wards were statistically compared using Phi and Cramer's V Statistics (for categorical variables) and Analysis of Variance (ANOVA) (for the numerical variables), where the number of counts is not less than 20%. P-values of less than 0.05 depict a significant statistical difference of the estimates by background characteristics. Multivariate regression analyses for binary variables depict the associations between the background characteristics and the KAP variables through the generation of adjusted Odds Ratio (aOR) and the attendant p-values. aOR of lower values of more than 1 or/and P-values of less than 0.05 depict statistical significance in the specific estimate by the binary variable.

Results

Table 1. Schedule of Breastfeeding

Variables	Responses	
	Frequency	Percentage
According to schedule	16	3.0%
Whenever the baby wants	511	94.3%
Whenever the mother wants	6	1.1%
Don't know	9	1.7%
Total	542	100%

Source: Survey, 2021

Table 1 shows the schedule in which the mother follows in feeding the baby. From the total of 542 respondents, 16 (3.0%) breastfeed their babies according to schedule, 511 (94.3%) mothers breastfeed their babies on demand

(whenever the baby wanted), 6 (1.1%) breastfeed their babies at the convenience of the mother. However, 9 (1.7%) don't know the frequency at which they breastfeed their children.

Table 2. Skin Contact with the baby after Delivery

Response	Frequency	Percentage
Yes	256	47.2%
No	232	42.8%
Don't know	5	0.9%
No response	49	9.0%
Total	542	100%

Source: Survey, 2021

Table 2 shows the response of the mothers when asked if they had skin to skin contact with the baby after delivery. 256(47.2%) said they had skin to skin contact with the baby by placing them on their chest, while 232(42.8%) said they

totally do not have skin to skin contact with the baby immediately after delivery, while only 5 (0.9%) do not know if they really had skin to skin contact with their babies.

Table 3. First Breastfeeding after Delivery

Variables	Responses	
	Frequency	Percentage
Immediately	353	65.1%
Within the first day	117	21.6%
More than 24 hours	3	0.6%
When the baby is ready	23	4.2%
Don't remember	8	1.5%
No response	38	7.0%
Total	542	100%

Source: Survey, 2021

The Table above shows how long it takes before the baby was breastfed after delivery. Out of the 542 respondents, 353 (65.1%) breastfed their baby immediately after delivery, 117 (21.6%) claimed that their children were within the first day, while 3 (0.6%) said they breastfed

their babies after 24 hours of delivery and 23 (4.2%) said their babies were breastfed when the babies were ready while the remaining 8 (1.5%) do not remember when they breastfed their babies.

Table 4. Baby's First Meal

Variables	Responses	
	Frequency	Percentage
Colostrum	447	80.5%
Breastmilk that comes after colostrum	63	11.4%
Milk (not breastmilk)	1	0.2%
Infant formula	3	0.5%
Plain Water	13	2.3%
Water with Glucose	21	3.8%
Pap	5	0.9%
Tea/ Infusion	1	0.2%
Traditional Medicine	1	0.2%
Total	555	100%

Source: Survey, 2021

Table 4 above shows the multiple responses gotten from the respondents when asked what the new-born baby's first food or liquid should be, 447 (80.5%) said the baby's first food should be colostrum, 63(11.4%) felt the baby's first food should be breastmilk while 13 (2.3%) believed the child's first food should be plain

water and 21 (3.8%) said the new-born first food should be glucose and water. 1 (0.2%) each suggested that baby's first food should be either Milk (not breastmilk), tea or traditional medicine, while 5 (0.9%) suggested pap and the remaining three suggested infant formulas as the new-born first food or liquid.

Table 5. Did you Squeeze out and Throw Away the First Milk

Response	Frequency	Percentage
Yes	51	9.4%
No	413	88.8%
Missing response	78	14.4%
Total	542	100%

Source: Survey, 2021

Table 5 above shows the response of the mothers when asked if they squeezed out and throw away the first milk. Out of the 542

mothers interviewed, 413(88.8%) do not squeeze out, while only 51(9.4%) squeezed out the colostrum.

Table 6. Exclusive Breastfeeding

Reasons	Frequency	Percentage
Very good	424	78.2%
Okay	21	3.9%
Not Good	4	0.7%
Don't know	5	0.9%
No response	88	16.2%
Total	542	100%

Source: Survey, 2021

Table 6 shows mother's idea about exclusive breastfeeding and how good it is for the child's health. 424(78.2%) of the mothers believed that exclusive breastfeeding is very good for the

child's health, while 21(3.9%) believed exclusive breastfeeding is okay for the child's health while 4 (0.7%) said exclusive breastfeeding is not good for the child's health.

Table 7. Do you think your child could get Diarrhea from using a bottle?

Answers	Frequency	Percentage
Yes	234	68.2%
No	46	13.4%
Maybe	31	9.0%
Don't know	32	9.3%
Total	343	100%

Source: Survey, 2021

Table 7 above shows the response of mothers when asked if they think drinking from a bottle with a nipple can cause diarrhea for the child. 234(68.2%) said yes that it can, while 46(13.4%)

said no, 31(9%) of the respondents said maybe and the remaining 32(9.3%) do not know maybe drinking anything from a bottle with a nipple.

Table 8. Appropriate age for Semi-solid and Solid food introduction

Semi-solid/solid food introduction	Frequency	Percentage
1-4	5	1.6%
5-9	243	88.3%
10-14	14	5.3%
15-19	1	0.4%
20-24	3	1.1%
Total	266	100%

Source: Survey 2021

This Table shows the ages mothers think they should introduce either semi-solid food or solid food to the babies. 5 (1.6%) of the mothers believe that it should be introduced between 1-4 months of age. 88.3% (243) of the mothers believed semi-solid or solid food intro should be between 5-9months. 14 (5.3%) said the food should be introduced to the babies between 10-14 months and, 3(1.1%) believe the mother should wait till the baby is between 20-24 months, and only 1 mother believes the food should be introduced between 15-19 months.

Discussion

Schedule of Breastfeeding

The result of this study testifies to the fact that 96% of the caregivers know that it is important to breastfeed their children on demand. Study have shown that new-borns stomachs are small and because breastmilk is easily digested. Hence, they eat frequently every 2 to 3 hours and about 8-12 times in a 24 hours' period [32]. It has been reported that frequent feedings, most especially during the first few weeks after putting to bed, leads to high milk intake and weight gain in new-born [33]. Breastfeeding on demand also delivers more important non-nutritive benefits, for example, during breastfeeding, there is skin-to-skin contact between the mother and the new-born, which definitely helps the new-born to regulate their body temperature and blood glucose level [34]. Apart from helping babies to cope with pain, skin-to-skin contact during breastfeeding has shown to reduce a new-born's levels of the stress (cortisol) hormone [35,36]. Researchers have

reported that mothers that feed their new-born on a schedule are more likely to say they were getting enough sleep during the early months [37]. But when the long-term outcomes on infants was considered, they found that newborns fed on a schedule showed modest lags in cognitive development. And by the time they are 8 years old, children who have been fed on a schedule as young infants scored an average of 4.5 points lower on an IQ test [38].

Skin – to – Skin Contact

Evidences from several decades of research by the World Health Organization and United Nations Children's Fund [39] recommended that regardless of feeding preference and methods at birth, healthy mothers and babies should have uninterrupted skin-to-skin care right immediately after birth, for at least one hour and after the first feeding for breastfeeding women. According to some findings, skin-to-skin care increases oxytocin significantly. This in turn promotes maternal/newborn attachment, assists the newbon transits to be postnatal, and reduces maternal and newborn stress [40, 41]. It has also been reported that the basic biological need is met, neuroprotective mechanisms are activated, self-regulatory neurobehavioural are enabled early when new-born is placed skin-to-skin with the mother [40, 42]. The result from this study indicated that less than 50% of the respondents had skin-to-skin contact with their babies after delivery, and this implies that fast numbers of new-born are prevented from enjoying the opportunities accrued from skin-to-skin contacts such as crying less, enhanced cardio-respiratory

stability, oxygen saturation level, stable blood glucose levels and enhanced thermal regulation [41]. National Demographic Health Survey [43] showed that only 9.6% of children had skin-to-skin contact immediately after delivery, but the findings from this research revealed that 47.2% of children had skin-to-skin, which is an improvement. Therefore, there is a need for more education and sensitization of mothers because of the many advantages they will be missing out [40, 42].

First Breastfeeding after Delivery

Sustainable optimal breastfeeding and exclusive breastfeeding practices are attained through timely initiation of breastfeeding [44]. The largest percentage (65.1%) of the respondent in this study introduced their newborn to the breast immediately after birth which implies that they are attached to the mother's breast early, and hence the infant thermal care will be promoted and their risk of hypothermia immediately after birth would have been reduced [45]. Findings have shown when the initiation of breastfeeding is delayed, and there is a biological plausibility that could lead to chronic illness because of the importance of breastfeeding in the enhancement of immune functions during the early stage of life [44]. Multiple Indicator Cluster Survey (MICS) [46] revealed that 27.6% of children in Ekiti State were introduced to the breast within one hour of birth, while 80.2% were breastfed within one day of birth, whereas from this study, it was shown that 65.1% introduced their babies to the breast immediately after birth while 21.6% were breastfed within the first day. The result of this study is an improvement over the report of MICS [46]. The importance of early initiation of breastfeeding cannot be over emphasized because the delay has been reported to further compounded early exposure to pre-lacteal feeding [47,48]. This adverse effect could be detrimental to the immune system and hence lead to infections and suspected sepsis [49]. Intake of colostrum is enhanced by exposure to breastmilk and this

milk contains high concentration of lactoferrin, immunoglobulin A (IgA), leukocytes and specific developmental factors [50, 51].

Baby's First Meal

Colostrum plays important role in making new-born healthy, part of the role includes helping babies fight infection because about two-thirds of the cells in colostrum are white blood cells that guard against infections [52]. SIgA is an important and crucial antibody that is present in colostrum, it protects babies against disease by lining the gastrointestinal tract, and the prebiotics present in colostrum feeds and helps to build up beneficial bacteria in the baby's gut [53,54]. Above 80% of the respondents affirmed that the first food given to their newborn was the first milk (colostrum) which implies that they know the importance of colostrum and do not discard it contrary to the believe in many developing countries where mothers throw away colostrum because of their traditional belief [55-60]. The result of this study is also contrary to studies that showed that between 15 -65% of mothers in different regions of the world had not given colostrum to their babies [61-63].

Squeezing Out and Throwing away the First Milk

Colostrum is a thick and bright yellowish milk secreted in the first three to six days after birth [57]. There are different beliefs and understanding about colostrum. Contrary to some findings, the result of this research showed that only 9.4% of the mothers discard their colostrum unlike in India, where between 30-40% of their mothers engage in the same practice [64, 65]. The result of these findings shows that the prevalence of colostrum avoidance is higher than the studies done in Aksum town (6.4%) in Ethiopia [66] but lower than the findings from Shire Endaslassie town 14% [67] and Raya Kobo district 13.5% [68]. The difference in the results could be linked to the following: socio-economic, cultural, ethnic and levels of

education of the caregivers [69]. Colostrum is viewed or perceived negatively as religiously forbidden milk as revealed by a study conducted in Turkey in 2001 [70]. It could therefore be deduced from this result that the majority of the new-born in Ekiti State accessed colostrum and hence would have taken the opportunities provided in terms of nutrients and immunity build up.

Exclusive Breastfeeding

Findings from this research showed that the perception of mothers about exclusive breastfeeding is good among women whose children are less than two years. More than 78% of the respondents believed exclusive breastfeeding is good for their children, and this is higher than 55% has been reported [71]. This result is in line with a previous study conducted by [72] in Southern Nigeria. Although none of the three national surveys (National Demographic Health Survey, Multiple Indicator Cluster Survey and National Nutrition and Health Survey) disaggregated their data on Exclusive Breastfeeding on a State basis but the result from this research showed that mothers in Ekiti State have good knowledge of the importance of exclusive breastfeeding.

Do you Think your Child could get Diarrhoea from Using a Bottle?

Conventional bottle-feeding methods has been identified and hence becoming an important topic because it can be a source of problem for both the breastfeed and bottled fed babies. Part of the disadvantages of using a feeding bottle is the risk of gastrointestinal infections and diarrhoea, and according to WHO [73], babies who are bottled fed are 2.8 times more likely to develop a gastrointestinal infection than those who are exclusively breastfed. The result of this research showed that 68.2% are aware that bottle-feeding can cause diarrhoea, and this is in tandem with previous studies that continued breastfeeding at 1 year and bottle feeding were associated with an

increased likelihood of diarrhoea episodes [74, 75]. Bottle feeding has been considered as a breastfeeding indicator because of the association between increased diarrhoea morbidity, mortality, and breastfeeding [76,77].

Introduction of Semi-Solid and Solid Food

An appropriate and timely transition to complementary feeding is of significant importance for the growth and development of an infant. World Health Organization recommended that exclusive breastfeeding should be practiced for the baby's first six months of life and continued till 2 years, while complementary foods are to be introduced at 6 months [78]. The report from this research showed that 88.3% of the mothers are aware of when to introduce complementary feeding while only 1.6% did earlier (between 1-4 months), which is lower than 31.9% in U.S reported by Centre for Disease Control and Prevention [79]. Various evidence has indicted the timing of the commencement of complementary food, among other factors, including the type of complementary food and the timing of the health outcome assessment [80-84]. Findings have revealed that the time of the commencement of complementary food was affected by maternal age [81], the difference in socio-economic status [81], maternal education [81-83], frequent antenatal care visits [81], duration of breastfeeding [80], birth order [81] and cultural characteristics [81].

Conclusions

Two main conclusions could be drawn from the assessment of the survey. First there is a high level of knowledge among the caregivers. This implies that awareness was significant and hence the high level of knowledge. Secondly there was a substantial improvement in some of the infant and young child feeding practices such as, schedule of breastfeeding, skin contact with baby after delivery, baby's first meal, squeezing out colostrum, EBF to six months, and timely

introduction of complementary feeding knowledge and practices.

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Conflict of Interest

The author declares no conflict of interest.

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