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Access and Utilisation of Child Nutrition Information by Mothers in Rural Delta State, Nigeria

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Abstract

Infant and Young Child nutrition information is an aspect of health that covers a wide range of issues, including what a child should consume, when, how, and under what circumstances. Although intake of nutritious food is essential for the physical, mental and psychological wellbeing of children, there exists gaps nutrition-related information in Nigeria. The paper examines mothers' access to, and utilisation of, under-two child nutrition information in selected rural communities of Delta State. Findings reveal hygiene (94.1%) and exclusive breastfeeding (80.8%) as the most "always" accessed information, and breastfeeding-related messages constituting a half of all available messages to nursing mothers. Utilisation of child nutrition information is also high but modulated. While 70% of the information is utilised, feeding the child to full satisfaction before stopping (94.0%) is highest and breastfeeding for two years is the least (28.9%) utilised. However, access is incongruous with utilisation. Pearson Correlation Coefficient shows no significant relationship between information access and feeding patterns as the information accounted only for 7.3 percent of the adopted feeding methods. Implementation of child nutrition information is related to mothers' sociodemographic background and sociocultural beliefs, which have implications for child health and development. The paper calls for a more inclusive approach to child nutrition information, education and intervention.

Keywords: Nutrition information, feeding patterns, breastfeeding, child health, nursing mothers in rural communities

Introduction

Infant and young child (IYC) aged under-two years are a vulnerable group that require age-specific feeding plans for proper growth and wellbeing. Their intake of nutritious food would meet their daily dietary needs for physical, mental and psychological development. The 2018 report of the National Nutrition and Health Survey (NNHS) shows that many children in Nigeria are malnourished and diverse health complications, including stunting (NNHS, 2018). Stunting is a feeding deficiency emanating from a long-term nutritional problem. For NNHS, the prevalence rates of malnutrition have stagnated above 30 percent since 2014, with some northern states recording above 40 percent, which is regarded a critical level by the World Health Organisation (WHO). This points to the significance of the study because children in rural areas are more likely to be stunted (NNHS, 2018; USAID, 2018), hence, the interrogation of access to, and utilization of, under-two nutrition information by mothers in the rural communities of Delta state.

While actualisation of child feeding largely depends on mothers due to their traditional gender roles in African families, they have very low perception on ways of improving children's health (Ngwu, Ezech and Iyiani, 2014) and seek little or no nutrition-related information beyond pregnancy (Szwajcer, Hiddink, Koelen & Woerkum, 2005). In addition, nutrition studies in Nigeria have largely focused on nutritional value of children's food, nutritional practices among mothers, malnutrition, and stunting in children (NNHS, 2018; USAID, 2018; Imonikebe, 2012; Oyibo, Okperi & Oyibo, 2011; Babatunde, Olagunju, Fakayode & Sola-Ojo, 2011; Imonikebe, 2009; Eboh & Boye, 2006). Research generally examined nutritional facts, especially food labels (Sacks, Rayner & Swinburn, 2013; Cowburn & Stockley, 2005) and side-lined mothers' access and utilization of child nutrition information that has implications for child health.

The study is significant as it examines the study phenomenon, which has implications on knowledge, attitude and practice for improved child health, including the development of antibodies that fight against common ailments, diseases and infections. Utilisation of accessed information is crucial as babies aged one to four months are identified as the most vulnerable to health risks, including infant death syndrome (Goldberg, Hurnung, Yamashita & Wehrmasha, 1986). Because infants are at risk of dying during the first 28 days of life, WHO suggests appropriate feeding and care to improve their survival. Young children form the bulk of those affected and with higher risks of malnutrition (NNHS, 2018). Their vulnerability and susceptibility to early deaths require appropriate actions to minimise the scourge. Child, in this paper, refers to new-born, infant, toddler and babies aged under-two years. Limiting age to two years is because, by this time most children become more mobile and independent to explore their environment. The study is significant because acquisition and application of information would enhance child health and

development because information empowers appropriate action while behaviour change communication would minimise health challenges.

Statement of the problem

Previous studies on child nutrition in Nigeria have focused on food labels, nutritional value of food, and malnutrition. They examined nutrition information-seeking behaviours of women during pregnancy without corresponding attention to the issues beyond pregnancy. Research indicates that most mothers seek little or no information, leading to gaps between the type of children nutrition information available to mothers and the adopted practices. While exposure to the information can enhance practice, little is known about the relationship between information access and feeding patterns, hence, the gaps in knowledge. The study, therefore, opens inquiry into the phenomenon among mothers in the rural communities of Delta State, Nigeria. It was guided by the following research objectives. To:

1. examine mothers' access to, and utilisation of, infant and young child nutrition information in selected rural communities of Delta State.
2. determine the relationship between received child nutrition information and adopted feeding patterns by mothers in selected rural communities of Delta State.

Delta state is located in the Niger-Delta region of Nigeria. It is made up of twenty-five local government areas with approximately 55,132 mothers registered for antenatal in 2012 (Delta State Ministry of Health, 2013). Most mothers receive information at these centres for prenatal and postnatal care. Studies show a significant relationship between maternal health centre utilisation and maternal education (Mekwunye & Odetola, 2020). The importance of conducting this research among mothers attending healthcare centres lie in their availability and participation in motherhood affairs at the clinics.

Literature Review

Nutrition information consists of what, how and when to take food. It covers a range of activities, including nutritional content, right food for children; food preparation, quantity and quality; timing and patterns of feeding; hygienic practices; and malnutrition (NNHS, 2018; USAID, 2018; Sacks *et al.*, 2013; Imonikebe, 2012; Oyibo *et al.*, 2011; Babatunde *et al.*, 2011; Imonikebe, 2009; Eboh & Boye, 2006; Cowburn & Stockley, 2005). This information is provided and facilitated by healthcare professionals, health organizations, food labels, food vendors, family and friends. While some sources provide science-based information, others are products of intuition, tradition and myth. It is, therefore, pertinent that mothers expose themselves to health professionals and allied-based information for proper feeding of children. Nutrition interventions elicit behaviour change, hence, programmes aimed at improving feeding practices and growth are commonly referred to as "nutrition education".

The rate of malnutrition in Nigeria is alarming. While it is multifaceted and has adverse effect on child survival and long-term well-being, food insecurity adds to poor child feeding practices (USAID, 2018). Acute and chronic malnutrition remains at alert levels in Nigeria (NNHS, 2018), differing across residence and sociodemographic backgrounds. Children in rural areas, North West residents, educational level of mothers, first born children of adolescent girls, and children from poorest families are more likely to be stunted, with children aged 0-24 years suffering more from malnutrition (USAID, 2018).

Because malnutrition is high among under-two children in Nigeria (NNHS, 2018), nutrition information, education and intervention is important to reduce infant mortality and malnutrition (Sawyer, Ordinioha & Abuwa, 2013). Implementation of the information would lay a healthy and disease-free foundation for children. To avoid malnutrition, therefore, the National Policy on Infant and Young Child Feeding in Nigeria (NPIYCF) was introduced in 2005, with health organizations, like WHO and USAID, flagging programmes to inform and educate mothers.

Although some of the propagated feeding methods are challenging to working mothers, practice is good for child's wellbeing. The NPIYCF and WHO propose exclusive breastfeeding for the first six months and safe complementary foods after six months for optimal health development. The emphasis on breastfeeding is based on its health benefits. The milk contains agents that fight against infant diseases and WHO considers it the best food for healthy infant growth and development. Nwosu, Odubango and Osinusi (2009) state that optimal breastfeeding is the best intervention to child morbidity and mortality.

There is need for increased access to infant and young child nutrition information and intervention. Women who obtained nutrition education alongside standard education tend to breastfeed longer (Kandiah, Burian & Amend, 2011). Nutrition education and intervention encompass information delivery to community engagement, understanding of women's perceptions and constraints, and identifying solutions to nutritional problems (USAID, 2011). It transcends the education of mothers on appropriate feeding patterns to the appreciation of knowledge systems. To achieve maximum intervention, Nwosu *et al.* (2009, p. 77) note:

Holistic nutrition education is required which emphasizes the essential nutrition actions, namely optimal (exclusive) breastfeeding, complementary feeding, nutritional care of the sick child, growth monitoring, vitamin and mineral deficiency control, improvement of key household practices and dietary diversification.

Nutrition education includes feeding patterns, child care, and exposure of a child to foods that provide the essential dietary needs. While access and household practices would foster child growth, a lack of accurate knowledge

would adversely impact child health. Under the USAID flagship project on Infant and Young Child Nutrition (IYCN), complementary feeding is between six and 23 months (USAID, 2011), respectively, periods for termination of exclusive breastfeeding and complementary breastfeeding.

Cereal-based diets, legumes and locally-produced foods are essential in meeting the energy and protein needs of children. The WHO (2013) extends nutrition practice to good hygiene, including, deliberate washing of hands of both caregiver and child, before food preparation and consumption. Children should be served with clean cups and bowls, and their food safely stored immediately after preparation.

Theoretical Framework

The study was hinged on Information Processing Theory, which emanates from the Yale University framework for studying persuasion during the 1940s and 1950s (Heimann, 2010). In this theoretical explanation, persuasive messages are mediated by three processing components: attention to the message, comprehension of its propositions, and acceptance of the content. The message is expected to elicit the desired response if the three steps are realized by the receiver. Williams McGuire (1968) proposed a model of attitude change that helps in understanding the Yale approach to persuasion. McGuire's six-step model of the persuasion process proposes that attitude change involves six chronological steps of the message – exposure, attention, comprehension, acceptance, retention and corresponding behaviour. In other words, the message must be sent and received for appropriate action, hence, child nutrition information must be sent, accessed and utilised. Communication and practise respectively reflect the beginning and end points of information processing.

Following some of the propositions of the theory, the study examined the extent to which mothers of under-two children access and utilise nutrition information. It infers attention to, comprehension of, and behavioural response to nutrition messages. The theory is suitable for the study because it is assumed that mothers' exposure to, retention of, and practice of, the recommended feeding patterns would ameliorate the nutritional stance of health professionals and under-two child nutrition advocates in Nigeria.

Methodology

A triangulation of quantitative and qualitative research approaches was used for the study. Data was gathered through the survey questionnaire and in-depth interview (IDI) for in-depth and holistic understanding of the study phenomenon. It adopted a multistage sampling technique. After purposively selecting Delta state, Delta Central Senatorial District was selected from the three senatorial districts of the state through simple random sampling by balloting. This was followed by a random selection of Ughelli North Local Government Area (LGA) from the nine LGAs in the senatorial district. Following this, six communities - Afiesere, Agbarha-Otor, Amekpa, Edjekot,

Oteri, and Ughelli - were selected from the LGA. Sixty-six mothers were purposively selected from each community, leading to a total of 396 survey respondents. The selected mothers were those that attended primary health centres and had under-two years old children at the time of the study.

In-depth interviews were the major avenues for retrieving detailed information about the study problem. The IDIs were conducted with a mother from each health centre with focus on child nutrition information. Mothers were purposively selected because they have a vast level of knowledge, understanding, detailed and in-depth information about the phenomenon. A representation from each study community was selected for robust revelation about individuals' and mothers' perspectives and perceptions about under-two child nutrition information and feeding practices. The information was recorded on tape and reported thematically. Mothers that were selected for the IDI are different from those the questionnaire was administered on.

Using primary healthcare centres is important because most women in rural areas could easily access the facilities for prenatal and postnatal services. Women utilise primary healthcare services for pregnancy and reproductive health-related issues (Ngangbam & Roy, 2019). A combination of self- and researcher- administered questionnaire was adopted because of the peculiarity of the study population. While some women personally filled their responses, many others depended on the assistance of the researcher. Accordingly, face-to-face interviewer-administered questionnaires became relevant for such mothers. One of the strengths of this method of questionnaire administration is its association with higher response rates. Copies of a questionnaire were administered to mothers at the healthcare centres, with a 100 percent return rate. Quantitative and qualitative data sets included, sociodemographic characteristics of respondents, and access and utilisation of child nutrition information. The data from IDI complemented the survey findings.

Quantitative data were analysed using descriptive and inferential statistics. Pearson correlation measured the relationship between nutrition information access and feeding patterns adopted by mothers. Qualitative data, on the other hand, were analysed through dominant theme mapping. Themes across the different interviews were identified, defined, interpreted and reported descriptively, taking cognizance of naturally occurring patterns.

Result

Mothers have different sociodemographic characteristics but all the women are in their reproductive age, with a peak between 20-40 years (93.4%). Most are married (82.1%) and have only one under-two old child (85.9%). Their marital status is expected as most people in Nigeria frown at pregnancy out of wedlock, thus, the low presentation of single mothers (4.1%) for antenatal and postnatal care. Although mothers reside in the rural communities of Delta state, majority of them received formal education (94.2%), implying that most could receive and process under-two child nutrition information. Because the highest level of education for most women is secondary school, they would also be

exposed to jobs within that occupational category. Accordingly, the primary occupation of most mothers is trading (28.9%) and artisanship (28.4%). Table 1 captures the diversity and specifics of women's sociodemographic background.

Table 1. Socio-demographic characteristics of respondents

Variables	Percentage (n=391)
Age	
Below 20	4.1
20-30	37.9
31-40	55.5
41-above	2.5
Marital Status	
Single	4.1
Married	82.1
Divorced	2.3
Separated	2.6
Cohabiting	8.9
Religion	
Christianity	95.7
Islam	0.3
Traditional	3.3
Others	0.8
Level of Education	
No formal education	5.9
Primary education	12.3
Secondary education	49.4
Higher education (NCE, OND, HND, B.A./B.Sc.)	32.5
Occupation	
Civil servant	18.2
Artisan	28.4
Farmer	11
Trader	28.9
Student	5.9
Full-time housewife	3.3
Corporate private sector	4.3
Monthly income	
Below 10,000	11.5
Between 10,000-50,000	64.2
Above 50,000	24.3
Number of under-two children	
1	85.9
2	14.1

Education and occupation play a role in determining the financial status of women. The majority of them do unskilled labour jobs, affecting their highest monthly income, which is between 10,000 and 50,000 naira (64.2%). This low

income would affect the general wellbeing and ability to feed children appropriately. Residing in the South-south region automatically presents most mothers as Christians (95.7%) because it is the prevalent religion in the region. Having a few mothers (14.1%) with more than a child suggests that they either have twins or successive births. Education, occupation and income may influence women's thought processes, attitude and behaviour about child nutrition information access and utilisation.

Under-two child nutrition information

Different kinds of nutrition information are available to mothers of under-two children in the rural communities of Delta state. Exposure of mothers to the information is to equip them with the right knowledge and attitude towards child health care and reduction of health risks associated with poor nutrition in children. Hygienic practices, including proper washing of hands before feeding the child, sterilization of feeding plates and bottles, and feeding children in a clean environment, emerged the highest (22.3%) nutrition information available to mothers (Table 2). Women's exposure to hygienic practices is vital because hygiene is fundamental to wellbeing, hence its high discourse. The table shows that mothers are exposed to the right IYC nutrition information, including exclusive breastfeeding, complementary feeding and the required infant formula.

Table 2: Child nutrition information available to mothers

Nutrition information	Frequency	Percentage
Hygienic practices	87	22.3
Complementary feeding after the first six months of life	78	19.9
Required infant formula	75	19.2
Exclusive breastfeeding for the first six months of life	73	18.7
When to introduce adult food to under-two children	59	15.1
Mixed feeding for the first six months of life	19	4.9
Total	391	100

Mixed feeding for the first six months is the least available information to mothers (4.9%), likely because it is not promoted by child health professionals.

The availability of child nutrition information is further highlighted by participants, whose narratives emphasised the premium placed on exclusive breastfeeding by health care workers. Their opinions are summarised by a 41-years old mother of four, a university degree holder and teacher from Ughelli. She explained the nitty gritty of the messages received by giving prominence to exclusive breastfeeding before complimentary feeding. Describing the process, including protein intake, the Ughelli-based mother noted:

They tell us that as mothers, we should do exclusive breastfeeding for the first six months of life. After the first six months, we should introduce light proteinous food, not

immediately but bit by bit. The child may resist at first, since it is new to them but with time, they will get used to it. You consider the intake of food by the child to determine when to introduce adult food, especially as some of them will struggle to get food from you as you are eating.

In addition to the prominence given to exclusive breastfeeding for the first six months, a 27-years old student and mother at the Maternity Centre, Agbarha-Otor, reiterated the frequency with which health care givers expose mothers to the topic, thus:

The only thing they keep telling us here every day is that we should feed our children with only breast milk for six months before we add other things.

Qualitative data, therefore, showcased exclusive breastfeeding as the frequently occurring information available to mothers. Mothers reported their exposure to different kinds of young child nutrition information but with varying degree of access.

Frequency of nutrition information access

Mothers have high access to child nutrition information, made available to them by health care givers in health care centres. Although they are exposed to the different kinds of nutrition information, frequency of access varies. Table 3 reveals that the main information “always” accessed is washing of hands before feeding children (94.1%) and exclusive breastfeeding (80.8%). However, viewing frequency generally to accommodate “sometimes” access, washing of hands (99.2%), feeding till the child is fully satisfied (94.9%), complementary feeding after the first six months of life (91.0%) and exclusive breastfeeding (89.5%) were accessed. This shows that mothers were deliberately exposed to diverse nutrition information not limited to food.

On food specifically, exclusive breastfeeding became the highest accessed nutrition information, with breastfeeding-related information constituting almost a half of the total child nutrition information accessed by nursing mothers in the study communities. The findings show the premium placed on breastfeeding in the Nigerian healthcare system, hence, the push on women to breastfeed till the child is two years old.

Table 3: Frequency of access to child nutrition information

Nutrition Information	Always	Sometimes	Never
Exclusive breastfeeding for the first six months of life	316 (80.8%)	34 (8.7%)	41 (10.4%)
Breast feeding with water for the first six months of life	9 (2.3%)	123 (31.5%)	259 (66.2%)
Mixed feeding for the first six months of life	26 (6.6%)	83 (21.2%)	282 (72.1%)
Complementary feeding after the first six months of life	239 (61.1%)	117 (29.9%)	35 (9.0%)
Breast feeding till the child is two years old	90 (23.0%)	136 (34.8%)	165 (42.2%)
Feeding till the child is fully satisfied before you stop	256 (65.5%)	115 (29.4%)	20 (5.1%)
Feeding the child on demand	246 (62.9%)	117 (29.9%)	28 (7.2%)
Deliberately adding vitamin/mineral to infants' food	173 (44.2%)	172 (44.0%)	46 (11.8%)
Feeding with the required infants' formula	215 (55.0%)	154 (39.4%)	22 (5.6%)
Essential Nutrients needed by toddlers	110 (28.1%)	164 (41.9%)	117 (29.9%)
Calories needed by under-two children daily	38 (9.7%)	153 (39.1%)	200 (51.2%)
Introducing adult foods to under-two children	89 (22.8%)	194 (49.6%)	108 (27%)
Feeding with food rich in fats	51 (13.0%)	162 (41.4%)	178 (45.5%)
Washing of hands before feeding children	368 (94.1%)	20 (5.1%)	3 (0.8%)

Although there is high access to the information, mixed feeding for the first six months (27.8%) is least accessed. In the order of “never” accessed nutrition information, mixed feeding for the first six months (72.1%), breastfeeding with water for the first six months (66.2%) daily calories needed (51.2%) and feeding with fat-rich foods (45.5 %) are the highest. While the highest two are practices that are not supported by health care givers but are already existing feeding practices, the last two are encouraged by health workers but are unfamiliar feeding terrains in Nigeria. Interestingly, breastfeeding till the child is two years is above average in access (57.8%).

All qualitative study participants also highlighted the information received, emphasising and bringing to prominence specific information. All the mothers talked about exclusive breastfeeding before mentioning other issues like hygiene and complementary feeding. Their discussion on other nutrition issues was anchored on breastfeeding as highlighted in the words of a 36-year-old woman, an Ordinary National Diploma (OND) holder and teacher at Shepherd Maternity centre, Amekpa. She remarked that feeding utensils, hands and breast are expected to be washed before breastfeeding, thus:

They teach us that before you breastfeed a child, wash your hands and clean the breast with water before you feed the child.

Another woman reiterated the emphasis on hygienic practices as captured in the utterance of a 27-years old mother and a hairdresser at the Cottage Hospital, Edjekota:

The information they give us is that before you feed your child, you need to wash your hands well and the things you will use to feed the child should be clean too.

The narratives of mothers show that hygienic behaviour is incorporated in breastfeeding to eliminate ingestion of harmful substances that will cause

disease and health challenges for the child. The qualitative finding complements quantitative data that breastfeeding and hygiene are at the forefront of child nutrition information. Frequent access of hygiene information corroborates the World Health Organization that it is practiced before food preparation and eating (WHO, 2013). This knowledge accounts for food quality, feeding patterns and healthy practices. Mothers are endowed with the relevant nutrition information for child health and development. All participants had similar knowledge of dietary composition and feeding expectations.

Elaborating, a 25-years old mother of five, an interior decorator from Afiesere Health Centre, noted the procedure for breastfeeding and complimentary feeding, including feeding on demand and till the child is satisfied. Also, the yoke of egg should be added to the carbohydrate maize meal for proper child growth, thus:

I get nutrition information. Some of the information is that, we should feed the children well with only breast milk from the day of birth till the sixth month; that we should feed them any time they cry or ask for food; that we should let them suck till they remove their mouth from the breast on their own before we stop. If we want to start giving the child complementary food like *akamu* (maize pap), we should add the yoke of egg to it to enable the child grow well.

In addition, a 27-year-old mother at Maternity Centre, Agbarha-Otor submitted that every mother has access to nutrition information because it is provided to them during antenatal visits and trickles down to mothers who do not attend healthcare centres. She stated:

I believe every mother has access to this information because any time we come for immunization and antenatal, they tell us these things. Even the ones who do not come to the health centre can get the information from other mothers. You know, as mothers, we talk to each other or even friends.

Although mothers who do not attend clinics benefit from child nutrition information, the messages may be limited or distorted due to the selectivity processes of the informant. Misinformation may deter child health. Accordingly, a 25-years old mother, an interior decorator at Afiesere Health Centre, observed that most of the information is from nurses, who are experts in the field.

Mothers have access to this information but most of the information is from nurses. Those who do not register for

antenatal will not get this information and they will feed their children using their own initiative.

Healthcare workers disseminate child nutrition information for informed action. Mothers, therefore, have access to child nutrition information, intervention and education. Its knowledge corresponds with the 2005 NPIYCF, which highlights the best ways to attaining healthy living in children. Despite access, some women are faced with the challenges of accessing some particular nutrition information. A 28-years old mother, a business owner from Oteri community, explained the difficulty of accessing information on the introduction of adult food.

They tell us that we should feed our children with only breast milk until the child is six months old before we introduce other supplementary food ... but they don't specify... After that, how you feed your child is really up to you.

While child nutrition knowledge-gaps exist, it is advisable that mothers be exposed to all information to develop the physical, mental, emotional, social and psychological wellbeing of infants and young children in rural communities.

Utilisation of Child Nutrition Information

Most mothers utilise child nutrition information but their level of practice vary with individual situations, perceptions and worldviews. Table 4 presents some of the salient nutrition issues and the frequency of utilization by nursing mothers. Summarily, the table shows that 70% of child nutrition information is utilised by most mothers except feeding with the recommended complementary food and breastfeeding for two years. In other words, many mothers utilise child nutrition information following professional.

Unbundling the findings, the table reveals specific child nutrition information mostly utilised by mothers. These include; feeding children to full satisfaction before stopping (94.0%), feeding child on demand (89.3%), deliberate adding of vitamins and minerals to complementary foods (88.0%), feeding child with any food after six months of life (81.3%) and exclusive breastfeeding for the first six months (67.0%).

Table 4: Child nutrition information practices by mothers

Utilised nutrition information	Frequency (%)		
	Always	Sometimes	Never
I practice exclusive breastfeeding for the first six months of life	183 (46.8%)	79 (20.2%)	129 (33.0%)
I practice mixed feeding for the first six months	86 (22%)	80 (20.5%)	225 (57.5%)
After six months, I feed with any kind of food	191 (48.8%)	127 (32.5%)	73 (18.7%)
After six months, I feed with only the recommended complementary food	75 (19.2%)	96 (24.6%)	220 (56.3%)
I deliberately add vitamins and minerals to complementary food	163 (41.7%)	181 (46.3%)	47 (12%)
I breastfeed till the child is two years old	45 (11.5%)	68 (17.4%)	278 (71.1%)
I start giving adult food when the child is still below six months old	115 (29.4%)	130 (33.2%)	146 (37.3%)
I feed my child on demand	209 (53.5%)	140 (35.8%)	42 (10.7%)
I have a time table for feeding my child	55 (14.1%)	137 (35.0%)	199 (50.9%)
I feed till my child is fully satisfied before I stop	247 (63.2%)	120 (30.7%)	22 (5.6%)
I stop feeding the child once I am tired or I think it is enough	20 (5.1%)	122 (31.2%)	249 (63.7%)

Breastfeeding for two years is ‘never’ practised (71.1%), making it the least utilised child nutrition information (28.9%). Beyond numerical interpretation, it would be right to say that its use is moderately high due to the circumstances that make its workability challenging. In today’s social realities, some women become pregnant before the child is two years, hence, their inability to continue with breastfeeding based on cultural beliefs, which debar breastfeeding in pregnancy. Early school enrolment also makes it impossible for mothers to breastfeed children who are already in day-care or nursery. Placing children in schools at such early ages accord mothers the needed opportunity for economic pursuits. In other words, the engagement of mothers in different kinds of economic activities limit their physical presence to breastfeed child till two years. In other words, education, economy and social behaviour have a toll on breastfeeding till two years.

On complementary feeding after six months of life, only 43.8 percent of mothers gave the recommended complementary diet. This may also be need based as some mothers cannot afford the recommended complementary meals. It is important to note that while most of the utilised child nutrition information are those engineered by health care professionals, there exists a few feeding patterns that are discouraged but highly utilised by mothers, like mixed feeding for the first six months (44.5%) and feeding under six-months-old children with adult food (62.9%).

Generally, utilisation of child nutrition information is high but modulated. While some of the information is highly utilised, others are lower in use. A majority of mothers use the recommended feeding patterns but a few did not, indicating that, mothers’ access to child nutrition information is higher than its utilisation. The findings, therefore, show convergence and divergence between information access and utilisation. For instance, while feeding child to full

satisfaction before stopping is almost at par in access (94.9%) and utilisation (93.9%), 80.8 percent and 46.8 percent of mothers 'always' accessed and practiced exclusive breastfeeding, respectively, despite its appellation as the best feeding option for infants. In essence, six-months exclusivity goals and other practices are above averagely met by mothers in the rural communities of Delta.

Relationship between child nutrition information access and feeding patterns

Having described mothers' access and utilisation of child nutrition information, it is important to establish whether there exists a relationship between the two variables. Pearson Correlation Coefficient was used to determine the relationship between under-two nutrition information access and the feeding patterns adopted by mothers. Table 5 reveals an insignificant relationship as the accessed nutrition information accounted only for 7.3 percent of the adopted feeding patterns. This implies that, mothers in the communities adopted feeding practices that suited them. In essence, their exposure to nutrition information did not automatically translate to utilisation because mothers receive, interpret and give meaning to messages based on their decisions and discretions.

Table 5: Correlation between nutrition information accessed and feeding patterns

Variables	N	Mean Score	Std. Deviation	R	Sig.
Nutrition information accessed	391	26.93	3.305	0.073	0.149
Feeding patterns adopted	391	25.43	1.172		

Information access is higher than practice, hence, access is incongruous with utilisation. Although mothers are exposed to a range of messages, they determine practice. Their behaviour is a social reality, suggesting that human beings have the right to choose and act in ways that correspond with their beliefs, convictions and pre-existing notions.

In other words, mothers have the freewill to make independent decisions about child care as observed in nutrition information access and practice. The disparity between both variables is buttressed by participants who reported that the feeding patterns they adopt sometimes differ from the recommended. Capturing their opinions, a 41-years old degree holder from Ughelli and a mother of four, observed that although they are taught the modalities of feeding, many mothers do not conform due to ignorance, tradition and their educational status. She states that:

People in this environment get this information but the application is the problem. Many, particularly the uneducated will say 'let the doctors say what they know, I will do what I

like'. They do this out of ignorance. They refer to the way their grandmothers fed their mothers, saying it didn't do any harm to them in those days, so it won't now.

Reasons for the gaps between received and practiced nutrition information are diverse. Beyond the low level of education and knowledge in the field of child nutrition, some women would rather adopt traditional feeding practices recommended by their mothers than "modern" techniques advocated by health care professionals. Accordingly, knowledge is higher than practice due to affordability, cultural factors, sociodemographic background, and preconceived notions of mothers. Some of these issues are reflected in the utterances of a 25-years old mother of five and an interior decorator from Afiesere. She noted that while some mothers practice what they receive, others object to their utilisation because their inability in acquiring the recommended food and fear that the child may reject intake of other foods after exclusive breastfeeding. For this young adult:

Some people [mothers] do all of the things they tell us to do, others do not do all because they do not like feeding the child with just breast milk till six months. Some mothers said that if they give their child only breast milk for six months, the child may not want to eat any other food when the time comes for them to eat other foods. As for me, I do the exclusive for three months after which I give my child any kind of food... Although they tell us the kind of food to give at every stage, some people do not follow because they do not have money for the recommended foods. The prominent feeding in this community is *eba* [cassava flour] as from six months. Others start from three months to give their children *eba*, saying it is what they have that they will use to feed their children.

The issue of affordability is key to practice. Based on the highlighted challenges, mothers are selective in processing and utilising nutrition information, hence, the feeding of young child with mostly carbohydrate-based meals rather than balanced diet. From mothers' perspectives, low education, economic challenges and tradition debar total utilisation of child nutrition information, hence, the discrepancies between information access and feeding patterns.

Similarly, some women narrated the challenges in utilising child nutrition information including, financial constraints, busy work schedules, laziness, impatience, and stressors like consistent crying of babies. This is captured by a 36-years old mother of four, a diploma certificate holder, and teacher from Amekpa:

One of the things that make some mothers to feed their children this way is the cry of the child. When the child cries too much, some mothers think it is due to hunger, so they feed the child with adult food. Another thing is the lack of opportunity. Some mothers do not have the time to faithfully feed their children the way they were told because of their busy schedules. Some do not have the patience. It is laziness for some... Their reason is that sitting up through the night to breastfeed is too difficult

She highlighted the challenges of exclusive breastfeeding as well as early introduction of carbohydrate-based meals to infants. Poverty and automatic translation of crying for hunger make mothers feed babies with available carbohydrate meals, not minding the timing and nutritional composition. She adds:

Some do not feed their children according to how we were told. Some say they cannot endure till six months before they give the child real food especially if the child cries a lot. Some even give their children pap [corn puddy] within the first month of life. Some, if they are eating garri [*eba*], they will also give to their children because they think the child is hungry and because they do not have enough money to buy all that is recommended for the child.

Giving under-six-months old child carbohydrate-full meals devoid of the recommended vitamins is an aberration that may increase infant morbidity and mortality. Mothers' behaviour is, however, inevitable as cassava and corn meals, are staple and affordable meals in Nigeria. Poverty hinders effective nutrition practice. A 27-years old mother of two, an undergraduate from Agbarha-Otor puts the nonpractice blame on both mothers and health personnel. In addition to the discrepancies in child nutrition information utilisation, she blames health care educators for deficiencies in providing information on the exact kinds of food to feed children with:

For the first child, I didn't breastfeed for long because I was pursuing my admission into school. But for this one, maybe I will do the exclusive breastfeeding... After six months, I feed the child with *pap* till she is one year old. But as I give the *pap*, I also give other foods. The only thing they tell us is to feed our children with breast milk till the child is six months old and after then, you can feed your child with any food you have.

Using the phrase, "any food you have", is nonspecific, hence, the feeding of infant and young child (IYC) with readily available food, especially carbohydrate-only meals. Some mothers, therefore, feed children based on

convenience, affordability and availability. Generally, the inhibitors to IYC nutrition information utilisation are sociodemographic, cultural and human factors including, traditional values; perceptions that the child is old enough to consume adult food by the fourth month, breastmilk alone cannot satisfy the child, association of crying with hunger; poverty; minimal income and educational level of mothers; and heavy work schedules of mothers, who have dual responsibilities of production and reproduction (Obono, 2001).

Discussion

Infant and Young Child nutrition information is an aspect of health that covers a wide range of child feeding processes, including food and hygiene. It unravels what a child should consume, when, where, how, and under what circumstances. This holistic approach was formerly glossed over in traditional feeding practices but has become the focus of child health care education. Based on the different kinds of nutrition information received, mothers acquire the needed information for child feeding. Nutrition education is all-encompassing. This finding corroborates World Health Organization that nutrition goes beyond what is consumed to hygiene practices (WHO, 2013). Access to the information is facilitated by the proximity of healthcare centres, which makes it easier for mothers to attend and benefit from all pregnancy related care. Mothers and children are beneficiaries of the clinical and nonclinical services, including health talk on child nutrition.

Nutrition education in the state is profound. Its access is higher than practice due to human factors like sociodemographic background, cultural beliefs and female perceptions. Mothers are not passive but active receivers and users of nutrition information. Their practice of three months exclusive breastfeeding, with high carbohydrate complimentary meals, remain their choice, although a deviation from the recommended practice. The finding corroborates Imonikebe's (2009) submission that most mothers introduce semi-solid or solid food to children at the fourth month. Knowledge is higher than practice, supporting Sanusi and Gbadamosi's (2011) submission that mothers' knowledge about the components of child survival strategies was high but low in practice. Mothers' behaviour is a social reality that conforms to their socioeconomic conditions.

The emphasis on breastfeeding, especially exclusive breastfeeding is high, conforms to the National Policy on Infants and Young Child Feeding in Nigeria (NPIYCF, 2005), which encourages breastfeeding because its value to child development. Breastmilk provides essential natural nutrients, facilitates mother-child bonding, and renders physiological, psychological, and immunological benefits for mothers and infants (The American Academy of Paediatrics, 2012). Importantly, breastfeeding is a widespread practice in Nigeria with 97.1% children aged 0-23 months ever breastfed, but only a few mothers breastfeed exclusively (NNHS, 2018). Women are encouraged to continue breastfeeding alongside complementary food until the child is two years (Sawyer *et al.*, 2013; WHO, 2013). Although mothers are not favourably

inclined to the practice, it is not new as it existed in traditional Ugep society where women breastfed beyond two years for contraceptive advantage (Obono, 2010).

Unhealthy feeding is a challenge to human life. Complementary feeding is recommended between six and 24 months but it is unclear if mothers have adequate information about the exact food to feed children with during this phase. Some also feed under-six months babies with adult food. This practice may impede child health, making them vulnerable to sicknesses due to the incompatibility of adult food with child digestive system. Consumption of unbalanced diet would also decrease child immunity but increase infant morbidity and mortality. Some mothers reported never assessing information on fat-rich foods and daily needed calories. Intake of balanced diet is important because insufficient nutrients or dietary energy (calorie) could lead to micro-nutrient malnutrition, which can cause mental and physical disorder in children (Smith & Haddad, 1999). Child nutrition deficiencies exist but attributable to child feeding patterns adopted by mothers.

Minimal access to some of the information is a product of selective exposure. Most mothers opt for practices that are known to them. However, it is advisable that children are fed with vitamins, minerals and fat-rich foods, which constitute the micro-nutrients needed for healthy growth. Knowledge is power. Since child feeding is a deliberate affair, conscious effort and tactical decisions should inform feeding attitudes.

While women are selective in accessing nutrition information, they are also selective in utilising the feeding information based on their preconceived notions. Change is constant; hence, mothers should embrace innovative diffusion. Following the Yale model of information-processing, attitude and behavioural change will occur if the message is persuasively presented, attended to, comprehended, accepted and retained. These selectivity processes play a crucial role in child nutrition information access and utilisation. Corroborating McGuire, “behaviour” is the ultimate goal of persuasive discourse, hence, child nutrition information should transcend access to behaviour. Accordingly, since utilisation of maternal health services has proven to be very effective in the reduction of maternal mortality and morbidity (Mekwunyei & Odetola, 2020), utilisation of child nutrition information would produce similar child health outcomes.

Conclusion

Nutrition information encompasses food consumption to preparation, type, quality, timing and intake of meals that contain the required nutrients. Access to the information is foundational for child care and healthy living. The highly accessed and utilised information are hygienic practices and feeding the child to full satisfaction. On consumables, breastfeeding is the most accessed and utilised information. The qualitative finding supports the quantitative finding that shows hygienic practices and exclusive breastfeeding as the most “always” child nutrition information accessed. While exclusive breastfeeding is highly

accessed and utilised, breastfeeding till the child is two years is the least utilised information. Access is, therefore, higher than utilisation. In other words, despite the exposure of nursing mothers to child nutrition messages, the practise is lower due to the sociodemographic characteristics and sociocultural beliefs of mothers.

To help mothers succeed in child feeding, health professionals, children nutrition specialists and breastfeeding advocates should persuasively educate mothers within existing sociocultural structures. Because exposure to message does not translate to behaviour, persuasive communication should become a key component of child nutrition education. The paper, therefore, calls for a more holistic and inclusive approach to child nutrition information, education and intervention.

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