

Maternal Nutrition Knowledge And Childcare Practices In Rivers State Nigeria

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ABSTRACT

Background: In most developing countries mothers' inadequate knowledge of childcare practices contributes significantly to negative nutrition outcomes in children. Scanty information about the connection between a mother's knowledge of a child's nutrition and childcare practices in Rivers state is known. Therefore, this study was designed to investigate the association of maternal knowledge on child's nutrition and childcare practices in Rivers state.

Methods: A community-based descriptive cross-sectional design was adopted. Six Local Government Areas were randomly selected for the study. 330 mother/child pairs were included in the study. A structured interviewer-administered questionnaire was used to collect data on maternal nutritional knowledge; categorized as poor (<3), fair (3-5) and good (6-7). Childcare practices were measured using; feeding practice, quality time spent with children, healthcare utilization and safe and healthy environment, and were all scored. Frequencies and percentages were used to describe the data and inferential statistics was at $\alpha_{0.05}$.

Results: The results showed that maternal nutritional knowledge and childcare practice were both fair (63.6% and 61% respectively), mothers who had good knowledge of child nutrition practiced better feeding practices ($p = 0.0003$), spent better quality time with their children ($p = 0.000$) and practiced better safe and healthy environment ($p = 0.006$) than mothers with fair and poor knowledge of child nutrition.

Conclusion: Maternal knowledge of child nutrition in Rivers state was fair. Good maternal knowledge could improve the quality of childcare practiced by mothers. Therefore, it is pertinent to enhance maternal knowledge of child nutrition through appropriate nutrition education to enhance childcare practices in Rivers state.

Keywords: Maternal nutrition knowledge, childcare practices, feeding practice.

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I. INTRODUCTION

Most countries in Sub Sahara Africa are burdened with a high prevalence of under-5 undernutrition and Nigeria is among the worst hit universally (Fadare, et al., 2019). Child nutritional statuses such as underweight, stunting and wasting in particular, are recognized as crucial indicators for tracking the nutrition and health status of under-5 children in a population (De Onis, et al., 2004). Amugsi et al., 2014) informed that maternal socioeconomic status has a graded influence on a child's health. Empirical evidence, suggests that the accessibility of resources such as food and health facilities are not sufficient to produce child health. The nutrition knowledge of the caregiver is also important. The recognition of the need to prioritize policies and programs that improve mothers' ability to provide optimal care for young children has gained some credibility, especially during pregnancy to a child's second birthday (Hadad et al., 2014). This period provides a critical window of opportunity for mothers to deploy both human and material resources for child growth and cognitive development (Victoria, et al., 2010; Prentice et al., 2013 and Sudfeld, et al., 2015). Poor health care utilization contributes significantly to negative nutrition outcomes for children (Fadare, et al., 2019),

The basic role of care in child nutrition has been well-established since 1990 through the UNICEF Model of Care. Caregivers require education (both formal and informal), time, and support (e.g. resource control) to adequately provide care (Saaka, 2014). Some studies have reported that maternal nutritional knowledge is positively associated with the nutritional status of children (Appoh and Krekling, 2005; Black et al., 2008; Müller and Krawinkel, 2005 and Sudfeld, 2015). Others have also shown that adequate knowledge alone is not always translated into appropriate actions (Grimshaw et al., 2015). Comprehending the factors that control the translation of adequate child health and nutritional knowledge into appropriate action in a disadvantaged environment might help design more effective interventions against malnutrition. It remains unclear whether maternal adequate knowledge impacts proper childcare practices. This study, therefore, investigated the relationship between maternal nutrition knowledge and childcare practices in Rivers state. This will provide data on the current trend

of events in the field of childcare practices in Rivers state and also enrich the already existing literature. The findings of this study will also help health practitioners and other policymakers to enable a multi-sectoral response to malnutrition among children under age 5.

Objective of the study

The objective of this study was to determine the association between maternal knowledge of child's nutrition and childcare practices of mothers with under-5 children in Rivers state.

Maternal nutrition knowledge

The phrase "knowledge is power," often credited to Sir Francis Bacon, has been used extensively to convey the fundamental role of knowledge to human and artificial intelligence (Feigenbaum, 1989). Nutrition knowledge refers to the literacy of concepts and processes related to nutrition and health consisting of knowledge of diet and health, diet and disease, foods representing major sources of nutrients, and dietary guidelines and recommendations (Lisa et al., 2015). Maternal nutrition knowledge can then be defined as the nutrition literacy of a woman with a child. The knowledge of the proper nutritional requirements of a child by its mother refers to 'maternal knowledge of child nutrition. Nutrition knowledge extends beyond just the knowledge of food, it is also a combination of other critical factors that assist individuals to sustain a healthy body (Ketelo, 2020; Appoh & Krekling (2005). These factors include the choice and consumption of nutritious food; obtaining knowledge and skills in the expanses of meal planning and preparation; as well as using food labels correctly. Health and nutrition messages are usually targeted to mothers, most of whom have not received a formal education since caregiving attitudes are mediated by knowledge as well as resource availability. Effective application of knowledge and skills gained from health and nutrition education is, therefore, anticipated to enhance the health and nutritional status of children through improved knowledge and care practices. However, there are limited data on the impact of nutrition education, especially on women who have not received formal education.

Child Care Practices

Judith (1988) opined that childcare practices are traditions deployed by members of a society in raising and taking care of their children. Chinyoka (2013) stated that child care practices are embedded in a culture and regulate to a greater extent, the behaviours and expectations surrounding the child's birth, infancy, childhood, adolescence and the way these children will parent as adults. Studies have shown that better child care practices positively influence a child's healthy survival. According to Chinyoka (2013), child care practices include activities concerned with providing emotional security and reducing child stress by making certain facilities available. Facilities such as feeding and supervision of the children's toilet, preventing and attending to illnesses, nurturing and showing affection, interacting and stimulating playing, socializing and providing a relatively safe environment for exploration. According to Meyer et al., (2006), child care practices also involve using resources outside the family including health clinics, and the use of traditional healers or members of extended family. Chibuye et al., (2006) pointed out that lack of care and support has a perennial effect on later development in physical well-being as well as social and cognitive development of the child. According to a joint FAO/WHO report (2015), intervention geared towards promoting and supporting survival, adequate care and feeding practices should be included in nutrition policies that foster nutrition adequacy in both children and adults.

Adeyemi and Oyewole (2012) added that suboptimal care is a central risk factor for undernutrition and diseases in children. According to UN, (1992) and Galgamuwa et al., (2017) there is an extensive difference in nutritional outcomes of children among households with similar levels of accessible disposable income and resources. This suggests that factors other than resources are responsible for the nutritional status of children (Saaka, 2014). Adequate childcare is an underlying factor for optimal growth. The International Conference on nutrition as well as empirical studies have recommended policy considerations on caregiving behaviours that provide a conducive environment within which children are raised because they are central to the nutritional outcomes of children (Adeyemi and Oyewole (2012); Saaka, 2014) and Fadare, et al., 2019).

The impact of childcare practices on the health and well-being of children and the importance of encouraging exclusive breastfeeding have increasingly gained recognition during recent years (Amosu et al., 2011). The level of care received therefore determines to a great extent the quality of life the child lives even through adulthood and old age. Only when every child is adequately cared for can there be a sane environment for all.

Smith (2016) and the Infant and Young Child Feeding in Nigeria Guidelines (2005) identified the following childcare practices:

1. Adequate feeding practices:
 - a. Early and exclusive breastfeeding (0 – 6 months)
 - b. Appropriate complementary feeding (6 – 12 months)
 - c. Adequate energy, protein and micronutrient intake from diet and supplementation (6 – 59 months)

- d. Appropriate feeding frequency
- e. Appropriate feed density
- 2. Quality of time mother spends with child.
 - a. Supervision of child's feeding
 - b. Supervision of child's toilet
 - c. Supervision of child's play
 - d. Assisting child to go to sleep
- 3. Healthcare utilization.
 - a. Immunization (0- 12 months).
 - b. Place of treatment of childhood diseases
 - c. Use of ORS
- 4. Safe and healthy environments.
 - a. Use of Insecticide Treated Nets (UITN)
 - b. Home management of infection
 - c. Place of disposal of youngest child excreta
 - d. Use of clean utensils and cutleries
 - e. Child avoid eating floor objects

Empirical review of literature

The prevalence of chronic malnutrition among under-five children remains insistently high in Ghana (Saaka, 2014). According to Armar-Klemesu et al., (2000) poor maternal education (formal and informal) has been identified as a major drawback to good childcare practices in Ghana. A well-resourced, targeted and coordinated nutrition education can improve maternal nutritional knowledge, healthcare-seeking behaviours, and practices significantly (Saaka, 2014). Jemide et al., (2016) conducted a relationship studies on maternal nutrition knowledge and child feeding practices with nutritional status of children in Calabar South Local Government Area, Cross River State, Nigeria using a descriptive cross-sectional survey with the help of an interviewer-administered questionnaire as a tool to collect data from mothers with children less than 2 years of age. It was observed from the study that poor maternal nutritional knowledge and feeding practices predisposed children to malnutrition in their first two years of life.

Gichana (2013) investigated the nutritional knowledge of mothers and nutritional status of their children 6-59 months under Malezi bora programme in Kawangware sub location, Dagoretti, Nairobi county using a cross-sectional survey. 300 mothers were recruited as respondents and a structured questionnaire was used to collect information on their nutritional knowledge. The study found that maternal nutrition knowledge was low and stunting was 25.4%.

It is important for nutrition education to be effectively delivered to the recipients in order to achieve efficient translational practice. According to Nankumbi et al., (2018), maternal nutrition during pregnancy affects the health of the mother and baby and efficient nutrition education offered to the pregnant women attending the antenatal clinics could prove helpful. The study was qualitative in nature to assess the quality of maternal nutrition education provided by midwives in an antenatal clinic in Uganda. The study advised that it was important to formulate guidelines but these guidelines must be shared with the practitioners, in-service education be provided, and additional assistance be given in the implementation specifically including adequate educational resources. Therefore, the effects of maternal nutrition knowledge and childcare practice need to be sufficiently studied to effectively plan and execute a cross-cutting intervention programs.

II. METHODOLOGY

A community based descriptive cross-sectional survey was adopted. A multistage stratified random sampling technique was employed in this study. This study was carried out in 6 selected Local Government areas in Rivers State, Nigeria. The study included riverine and upland as well as rural and urban communities in Rivers State. The participants were sought in their homes. The study population consisted of mothers with under-5 children who were above six months of age and reside in Rivers State. The FAO, Conducting Small-Scale Nutrition Surveys: A Field Manual (Rome: 1990) formula was used:

$$n = \frac{D \times t^2 \times p(1-p)}{m^2}$$

According to National Population Commission (2019), 8.1% of children in Rivers State were underweight. This reference figure was used to calculate the sample size according to the formula above. A sample size of was 229 which was increased to 330 mother/child pair was obtained and used. The increase in sample size was done to account for attrition and proper distribution of the copies of the questionnaire across the selected wards in the LGAs. Frequencies and percentages were used to describe the data. Responses were collected from

the mothers and scored for each measure of the dependent variable. The childcare practices were scored and the multivariate general linear modelling was used as the inferential statistic using the R statistical package.

III. RESULTS

The frequency distribution of maternal nutritional knowledge in Rivers state is displayed in table 1. It shows that maternal nutritional knowledge was fair (63.6%) and good nutritional knowledge was low (32.0%).

Table 1: Frequency distribution of maternal nutrition knowledge in Rivers state

| Maternal Nutrition Knowledge | N(%) |
|------------------------------|-----------|
| Poor Nutrition Knowledge | 14(4.4) |
| Fair Nutrition Knowledge | 201(63.6) |
| Good Nutrition Knowledge | 101(32.0) |
| Total | 316(100) |

Table 2: Frequency distribution of maternal childcare practices

| Variables | Feeding practice | Quality time spent | Healthcare utilization | Safe/healthy environment |
|-----------|------------------|--------------------|------------------------|--------------------------|
| Poor | 0(0) | 0(0) | 0(0) | 1(.32) |
| Fair | 165(52.2) | 23(7.3) | 163(51.6) | 88(27.85) |
| Good | 151(47.8) | 293(92.7) | 153(48.4) | 227(71.84) |
| Total | 316(100) | 316(100) | 316(100) | 316(100) |

The effect of maternal knowledge on child nutrition on childcare practices in Rivers state is presented in table 3. It shows that good maternal knowledge on child nutrition significantly influenced feeding practice ($p = 0.0003$), quality time mothers spent with their children ($p = 0.000$) better than fair knowledge on child nutrition by 0.044, 0.08 and 0.040 respectively. Maternal knowledge on child nutrition also significantly associated with the practice of safe and healthy environment ($p = 0.006$).

Table 3: Effect of maternal nutritional knowledge on childcare practices in Rivers state

| Variables | Feeding practice | Quality time spent | Healthcare utilization | Safe/healthy environment |
|-------------------------------------|------------------|--------------------|------------------------|--------------------------|
| Maternal Nutrition Knowledge | | | | |
| Good | 0.0003 | 0.000 | 0.054 | 0.006 |
| Estimate | 0.044 | 0.083 | 0.059 | 0.040 |
| Poor | 0.801 | 0.087 | 0.401 | 0.944 |
| Estimate | -0.007 | 0.084 | -0.057 | -0.002 |
| Fair | Ref | Ref | Ref | Ref |

Table 4 shows the generalized effect of maternal nutritional knowledge on child care practice. It was observed that maternal nutrition knowledge influenced childcare practices significantly.

Table 4: The generalized effect of maternal nutritional knowledge on child care practice

| Variable | Df | approx F | Pr(>F) | * |
|--------------------------------|----|----------|----------|---|
| Maternal Nutritional Knowledge | 2 | 3.0875 | 0.000294 | * |

IV. DISCUSSION

This study was set out to investigate the association between maternal knowledge of child nutrition and childcare practice. It was observed that good maternal knowledge on child nutrition was significantly associated with better feeding practice, quality time mothers spent with their children and the practice of safe and healthy environment than poor maternal knowledge on child nutrition. However, healthcare utilization was observed to be better among mothers that had good nutritional knowledge but not significantly. It was also observed that poor maternal knowledge on child nutrition was associated with lower healthcare utilization.

These findings support the position of Fadare, et al., (2019), which, suggested that the accessibility of resources such as food and health facilities, are not sufficient to produce desired outcome because the nutrition knowledge of the caregiver is also important. Jemide et al., (2016) found that poor maternal nutritional knowledge could result in poor feeding practices which may eventually incline the child to poor nutrition outcomes. According to Quaidoo, et al., (2018) access to credible nutrition information may serve as the basis for appropriate practices in terms of food choices and preparation. Proper knowledge of nutrition according to (WHO 2022) is a prerequisite to healthy living. Over the years it has been observed that good feeding practice, adequate healthcare utilization and the practice of safe and healthy environment are attributes of healthy living. According to Thomas and Uwandu (2019) nutrition education is paramount to attaining the social and behavioural change required for

any improvement in nutritional practices including the use of healthcare services. Previous studies have reported an association between nutritional knowledge and healthier dietary decisions (Arfaoui et al., 2021; Fitzgerald et al., 2008 and William 2005). Sultana and Hasan, 2020 also added that a child's nutrition and health greatly depends on the mother's knowledge and mindfulness. Blaylock, et al. (1999) revealed significant evidence that the more a mother knows about nutrition the better the overall quality of her children's diet. This shows that every mother needs to have sufficient knowledge of nutrition to be able to optimally provide a quality diet for her children as well as properly monitor the child's feeding and growth. It is not enough to prepare an adequate diet; the child also has to consume the meal appropriately under the supervision of a knowledgeable adult. Since the proper supervision of a child's feeding is part of spending quality time with that child, we can say that nutritional knowledge also influences the quality time mothers spends with their children.

Glewwe (1999) added that the literacy and numeracy skills women obtain in formal education enhance their ability to recognize illness and seek treatment early for their children. Furthermore, they can better read medical instructions for treatment of childhood illness and apply the treatment. Third, increased number of years in school makes women more receptive to modern medicine. A study by Mugo (2012) in Kenya showed that higher maternal education among other factors associated strongly with child's immunization. The findings of this study support these positions because good nutritional knowledge of mothers was found to have a positive influence on healthcare utilization in Rivers state.

According to UNICEF, (2021), the physical environment plays an important role in a child's overall well-being. The practice of safe and healthy environment becomes crucial to child's survival and health. A huge proportion of death and disease in children under the age of 5 could still be linked to living in households without due access to essential services such as safe water and sanitation, and households that have high air pollution from the use of solid fuel for cooking with insufficient ventilation (UNICEF, 2021). Glewwe (1999) clearly demonstrated that, formal education of women directly transfers health knowledge to future mothers, makes them more likely to get married to men with higher education and higher income; and to live in better neighbourhoods, which have graded influence on child health and survival (Frost et al., (2005); Desai and Alva (1998); Cleland and Van Ginneken, (1988).

A deficiency in nutritional knowledge among healthcare workers according to Mowe et al., (2008) was the most common cause of substandard nutritional practice in some parts of Europe. This implies that without adequate nutritional knowledge, health workers would be unable to identify patients in need of nutrition therapy and consequently predispose their patients to adverse health conditions. Subsequently, members of the society including mothers of under-5 children may lack the ability to adopt optimum childcare practices at the community level. The study further reiterated that a good nutritional knowledge resulted in better nutritional practice. Therefore, good nutritional knowledge cannot be overemphasized.

The generalised effect of maternal nutrition knowledge on childcare practices showed a significant association between the two variables. This implies that in Rivers state, the nutrition knowledge at the mothers' disposal significantly influences the childcare practices she adopts. This finding aligns with the assertion made by König (2013) that knowledge informs practice; and (Quaidoo et al., 2018) opined that acquiring accurate and adequate nutrition information is important because of its ability to inform nutritional choices positively. Therefore, it is pertinent to improve maternal knowledge on child nutrition to enhance childcare practices in Rivers state. This in turn may improve the nutritional outcomes in under-five children in Rivers state.

V. Conclusion

Maternal nutrition knowledge was fair in Rivers state. Better feeding practice stood a higher chance of being practiced by mothers with good maternal knowledge on child nutrition. Also, better quality time mothers spent with their children, the practice of better safe and healthy environment could be enhanced with good maternal knowledge of child nutrition. Generally, maternal nutrition knowledge influenced childcare practices significantly in Rivers state.

VI. Recommendations:

1. Given the findings of this study, it is therefore recommended that intensive nutrition education be conducted for mothers in Rivers state to improve their nutrition knowledge.
2. Follow-up studies need to be conducted to track the level of improvement.

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