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Socio – Economic Analysis of Complementary Diets Fed To Infants in Ido Local Government Area of Oyo State, Nigeria.

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Abstract: *Socio – economic characteristics of mothers has been observed to have effect on the knowledge and kinds of complementary foods given to infants. This research examined the socio – economic analysis of complementary diets fed to infant in Ido Local Government Area of Oyo State, Nigeria. Interviewers administered questionnaires were used to obtain data for the study. 270 respondents (mothers) who presented their children for immunization were selected from five different Primary Health care centers in the Local Government Area. The result revealed that mothers preferred traditional home made (63.3%) to commercial complementary foods (33.7%)54.8% of the mothers were between the age of 28 -37 years. 56.7% had secondary school education while 40% had a certificate from tertiary institution. 33% of the mothers engage in trading while 19.3% were employed by the state of federal government as civil servant. 44.4% of the mothers earn between ₦10,000 – ₦25,000 on monthly basis while just 1.1% earn above ₦70,000. 49.3% of the mothers reported that they start feeding their children complementary food from about 6 – 10 months. Cereals such as maize and sorghum form the majority of staple used in the formulation of complementary food in the study area, other food commodities are infrequently used.*

Keywords:*fermented, complementary, infant, vulnerable*

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I. Introduction

Complementary foods are transitional foods that are designed to meet both nutritional and physiological needs (especially for tissue growth and development of infants) or general family foods, and are expected to address the gaps between the daily energy and nutrient requirement of infants and young children and the amount obtained from breastfeeding [1,2]. In developing countries like Nigeria, complementary foods are mainly based on starch tubers like cocoyam, sweet potato or on cereals like maize, millet and sorghum that are either fermented or milled as dry meal for infants. These food are given as gruel that are mixed with boiled water [3]. Several authors have reported the formulation of complementary foods based on locally available staples. Food items such as crayfish, carrot, plantain, and groundnut are often included in the formulation of complementary foods [4].Complementary foods has been reported to be made from Popcorn, African locust bean and Bambara groundnut [5].

Family foods are also among the complementary foods given to infants. These are often mashed and made in a manner that will allow the child to easily swallow the meal. Adequate complementary feeding after six months is one of the essential factors that help to protect infant and children from being in poor health. The transition from exclusive breastfeeding to family foods represents a phase in life when infants are particularly vulnerable nutritionally [6]. Nutrition is the most prominent factor which can either directly or indirectly influences children's future development.Africa infant foods could contribute to nutritional deficiencies. It has been reported by several authors that traditional porridge or gruels prepared from complementary foods are often watery, low in energy and nutrient densities. They are equally prepared, served and stored in environmental conditions that predispose them to contamination. Hence, the children consuming these foods are prone to constant infections and malnutrition [7, 8, 9, 10]. In the bid to formulate homemade complementary foods, the nutrient composition of the gruel is often compromised in terms of quality and quantity. Family economic status especially income and mothers education are also among the determining factors that influence knowledge of appropriate foodstuff for the formulation of complementary foods. One may not be able to insist that mothers should use a certain foodstuff for the production of the complementary food to feed their children, however, useful suggestion on the type of complementary foods can be made.

II. Methodology

2.1 Study population

The study population consists of mothers with children from 6 months to 2 years, who are receiving or have been given complementary foods.

2.3 Sampling procedure and data collection

Ido Local Government Area was purposively chosen. There are 22 primary health care centres in Ido Local Government Area of Oyo state, out of which five Primary Health Care centres (Apete, Omi Adio, Ido, Lade and Akufo) in the Local Government Area were randomly selected for the purpose of this research. Structured questionnaire were administered by the interviewer to the mothers (n = 270) who presented their children for immunization from six months to two years. Mothers at the primary health care centres were asked questions on their socio economic and demographic status, the age of their child, complementary feeding practices, the use of proprietary complementary foods and home – made complementary foods.

2.4 Statistical analysis

The questionnaires were coded and the results subjected to inferential statistics using statistical package for social science (SPSS) version 25. Simple inferential statistics: frequency and percentages were utilized in the interpretation of the result.

III. Results and Discussion

3.1 Socio – economic characteristics of respondents

Table 1 below shows the socio-economic characteristics of respondents. It revealed that mothers aged 28 – 37 years had the highest value (54.8%) than the other age group. In terms of ethnicity, majority of the respondents (81.3%) were *Yoruba*, while *Ibo* mothers accounted for 13.3%, *Hausa* accounted for 1.9% and other ethnic groups were 3.0%. More than half 56.7% of the respondents had secondary education, while 40.0% and 3.3% had tertiary and primary education respectively. 33.0% of the respondents engage in trading, while 31.5% were artisans, 19.3% were civil servants working with the state and federal government. Some respondents (8.1%) engage in various business activities. However, 8.1% of the respondents were not employed. Estimated monthly income of the mothers showed that 44.4% of the earned between ₦10,000 - ₦25,000. Also, 21.9% of the mothers earn between ₦26,000 – ₦40,000, while 21.5% earned below ₦10,000 on monthly basis. Infant between the ages of 6 – 10 months had a percentage of 49.3%, those between the ages of 11 – 15 months were 23.7%, 15.2% were between the ages of 21 – 25months.

Table 1 Socio - economic characteristics of respondents

Variables	Frequency	Percentage (%)
Mother's age (Years)		
18 – 27 years	110	40.7
28 – 37 years	148	54.8
38 – 47 years	12	4.4
Ethnicity		
Yoruba	221	81.3
Igbo	36	13.3
Hausa	5	1.9
Others	8	3.0
Mother's education		
Primary	9	3.3
Secondary	153	56.7
Tertiary	108	40.0
Mother's Occupation		
Business	22	8.1
Trading	89	33.0
Artisan	85	31.5
Civil Servant	52	19. 3
Not employed	22	8.1
Total	270	100

Table 2shows the complementary feeding practices engaged in by mothers. It was observed that at 6 months and above, 87.4% of children were introduced to complementary foods. 12.6% of the infant got complementary food earlier than 6 months, that is at 3 – 5 months. More than half (63.3%) of the respondents indicated that they use traditional home – made complementary food for their children. 36.7% however, stated that they feed their child commercial or properitary foods. In terms of feeding frequency, 63.0% of mothers indicated that their children is given complmentary foods between 1 – 3 times in a day. It was also observed that 37.0% of their children eat between 4 – 7 times in a day. During the course of the research, it was observed that 60.3% of the children presented at the primary health care for immunization who qualified to be included in the research were still being breast fed. On the other hand, 39.3% have stopped being breastfed.

Table 2 Complmentary food feeding practices

Variables	Frequency	Percentage (%)
Age of introduction (months)		
3 – 5 months	34	12.6
6 – and above	236	87.4
Type of complementary food received		
Commercial complmentary food	99	36.7
Traditional Home made complementary food	171	63.3
Feeding frequency (per day)		
1 – 3 times	170	63.0
4 – 7 times	100	37.0
Breastfed child		
Yes	164	60.7
No	106	39.3
Total	270	100

Table 3 shows the various traditional homemade complementary foods given to infant in Ido Local Government Area of Oyo State. It was observed that 17.5% of the respondents offer there children Pap made from sorghum (Ogi baba), while 14.0% prefer to give their children pap made from maize. 11. 1% of the respondents indicated that they give their children Tom brown , which is a mixture of roasted maize, roasted soybean, and roasted groudnut dry milled into a flour. Family meals such as *Amala,Ewedu, Beans, Semovita, Pasta,Rice* accounted for 35.7% of the food given to infant in the study area. It was also observedthat 5.3% of the respondents give their children pap made with a wet milled mixture of maize, soybean and crayfish. Soybean and sorghum pap accounted for 4.1% while pap made from a mixture of maize, soybean, crayfish and ginger accounted for 1.8%. A similar proportion was also recorded for pap made from a mixture of maize and ginger, pap made from a mixture of sorghum and crayfish as well as pap made from a mixture of maize, groundnut and crayfish. Pap made from wet milled sorghum and maize only accounted for 1.2% of the complementary food given to infants in the study area. Pap made from maize and sorghum with addition of palm oil accouted for 0.6%. The same percentage (0.6%) also provide their children with pap made from wet milled maize, crayfish and ginger.

Table3Traditional home – made complementary food varieties

Food item	Frequency	Percentage (%)
Pap (Maize only)	24	14.0
Pap (Sorghum only)	30	17.5
Pap (Maize & Sorghum)	2	1.2
Pap (Maize, soybean, crayfish, ginger)	3	1.8
Tom brown (Maize, soybean, groundnut)	19	11.1
Pap (Maize, soybean, crayfish)	9	5.3
Pap (Maize, ginger)	3	1.8
Pap (Sorghum, soybean)	7	4.1
Pap (Maize, palm oil)	1	0.6
Pap (Maize, crayfish)	2	1.2
Pap (Sorghum, crayfish)	3	1.8
Pap (Millet, sorghum, maize)	2	1.2
Pap (Maize, groundnut, crayfish)	3	1.8
Pap (Maize, crayfish, ginger)	1	0.6
Pap (Sorghum, palm oil)	1	0.6
Family foods: (Cowpea, Rice, Semovita, Noodles, *amala,* egg)	61	35.7
Total	171	100

Table 4 shows the various types of commercial complementary foods that mothers in Ido Local Government Area of Oyo state give to their children. It was observed that 52.52% of the mothers give their children infant formula such as (Frisogold, Nan, Myboy etc.) together with breast milk. It was also detected that 33.33% of the mothers give their infant Golden morn breakfast cereal. Nutribom accounted for 7.1% of the complementary foods given to children, while Nutrend accounted for 3.0% of the complementary foods often offered to infants in the study area. 2.0% of the respondents indicated that they offer their infant Custard as complementary food. Cerelac and Quaker oat (a breakfast cereal) accounted for 1.0% of the commercial complementary foods.

Table4 Commercial complementary foods

Food Item	Frequency	Percentage (%)
Golden Morn	33	33.33
Milk (Myboy, Frisogold, Peak 123, Complan, Nan, Lactogen)	52	52.52
Nutribom	7	7.1
Nutrend	3	3.0
Cerelac	1	1.0
Custard	2	2.0
Quaker oat	1	1.0
Total	99	100

Socio economic characteristics can influence a household's access to diverse foods that can help ensure food and nutrition security [11]. 44.4% of the mothers reported that their income on monthly basis is between the ranges of ₦10,000 – ₦25, 000. This could be a determining factor that may negatively affect the family's economic access to food. More than 50% of the mothers reported that they only had secondary education which could limit the type of job they can access and their earning capacity. Cross sectional studies have established a relationship between poverty and food insecurity [12, 13].

Table 2 shows the complementary feeding practices engaged in by mothers. It was observed that 87. 4% of children aged 6 months and above were introduced to complementary foods at the age recommended by the World Health Organization. This is supported by the observation of [14], that at this age, infants are ready in terms of developmental capability to take other foods other than breastmilk.

Table 4 shows the complementary feeding pattern of mothers in the study location. 63.3% of the respondents use traditional homemade complementary foods which are made basically from cereals and sometimes combined with legumes especially soybean and oil seeds (groundnut) and other locally available family foods. This is similar to the research findings of [15] which states that the search for local foodstuffs in the formulation of appropriate nutritional composition has been in existence for a long time. On the other hand, 36.4% of the respondents reported that they feed their babies commercial complementary foods. It is worth to note that 33.33% of these mothers give their babies Golden Morn – a breakfast cereal. [12], also reported that 19.6% (28) of the 337 mothers interviewed in urban communities of Osun state give their children Golden Morn as complementary food.

This study provides useful information on the varieties of complementary foods often given to infants in the selected Local Government Area. Although, variation do exist in the type of complementary foods given to infant. It was observed that *Pap* i.e a thin porridge or gruel made from cereals (maize, sorghum and millet) are the most common complementary food first introduced to infants. This is similar to the research done by [12] who observed that 56.7% of mothers in urban communities and 61.9% of mothers in rural communities of Osun state give their infant pap. This may be related to the fact that cereals used in the production of pap are staple foods in the communities where the study was conducted.

Table 3 shows the varieties of complementary foods given to children in the selected Local Government Area. 17.5% of the respondents interviewed reported that they offer their children pap made from sorghum only (Ogi baba). Most mothers believe that this pap is more nutritious than one made from maize only which is observed in the result obtained. 14.0% of the mothers stated that pap made from maize only is what they give their infant to complement breast milk. 11.1% of the respondents stated that complementary food made with the combination of dry milled cereals and legumes were used in feeding their babies. These were categorized as Tom brown. Other respondents reported the use of maize, soybean and crayfish (5.3%) as ingredient in the preparation of pap given to their children. Similar infant complementary food have been formulated by [16]. 4.1% of the respondents disclosed that soybean and sorghum were combined as ingredient for the preparation of pap.

IV. Conclusion

Variation do exists in the materials used in the formulation of infant complementary foods. However, the most important constituents of complementary foods given to infants in Ido Local Government Area of Oyo state are cereals such as maize and sorghum, other food commodities are seldomly used as ingredients utilized in the formulation of complementary food which suggest that they may not be available in the research area as such. Legumes are equally utilized in the formulation of infant food for children, the most common being soybean.

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