

Complementary Feeding Practices and Psychosocial Care Level of Nursing Mothers of Under-five Children in Ogun State.

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Abstract

Introduction: Psychosocial care is the process by which caregivers (mothers, siblings, fathers and childcare providers) meet the needs of infants in terms of adequate nutrition, emotional, social, mental and healthcare for promoting healthy growth and development. This study therefore aimed to assess the influence of psychosocial care during complementary feeding among mothers

Methodology: It was a cross-sectional design, and the sample size was statistically calculated to arrive at 385 mothers. A structured and self-administered questionnaire was used to collect information on socio-economic status; psychosocial care during complementary feeding practices and WHO feeding indicators were used to assess the feeding practices of the mothers. Data were analysed using both descriptive statistics and inferential statistics.

Results: The study showed that 52.1% of respondents were between ages 20 to 29 years, 88.1% were married, and others were either single or divorced mothers. The feeding indicator showed that 21.5% of respondents met the Minimum Adequate Diet. Half of the respondents (50%) monitored the amount of food consumed by the children, while 12.4% encouraged the children to finish the served food. There was an insignificant relationship between maternal psychosocial care and complementary feeding practices (χ^2 ; $p>0.05$); whereas, there was a significant association between maternal psychosocial care and maternal age (χ^2 ; $p=0.043$) as well as religion (χ^2 ; $p=0.031$).

Conclusion: The study concluded that mothers who had advanced in age had better maternal psychosocial care during complementary feeding than the younger mothers. Therefore, maternal nutrition education on complementary feeding and care during infants' feeding should be encouraged during antenatal and post-natal clinics.

Keywords: Infant, Complementary feeding, Maternal, Psychosocial care, Nutrition Education

Introduction

Good complementary feeding knowledge and practices among mothers of under-five children would prevent the consequences of under-nutrition, hence, enabling normal growth and cognitive development in children. Lack of adequate nutrition and poor psychosocial care among mothers has been identified as the main factors responsible for Severe-Acute-Malnutrition (SAM) in children (Mahmoodianfard & Haghghat, 2021). The normal growth and development of infants and young children require care that adequately meets their basic physical needs such as nutrition, health, and clothing well as their socio-emotional or psychological needs (Engle & Ricciuti, 1995). The psychosocial care that meets these needs includes the caregiver's responsiveness and sensitivity, affection and warmth, psychological involvement with the child, and encouragement of learning and development.

Psychosocial care is defined as a process by which caregivers (mothers, siblings, fathers and childcare providers) meet the needs of infants in terms of adequate nutrition, emotional, social, mental and healthcare for promoting healthy growth and development (Ogunba, 2010). Appropriate psychosocial care exhibited by nursing mothers during complementary feeding periods usually goes a long way to improve the nutritional and health well-being of the weaning-aged children.

To improve complementary feeding among infants, psychosocial care during the period of complementary feeding must be carefully handled and taken into account (Barrett *et al.*, 2016). Hence, maternal psychosocial factors have an impact on feeding during the complementary feeding period; this period necessitates intensive psychological care (UNICEF, 2022a). Maternal psychosocial care integrates the availability of food and medical resources into the well-being of a child (WHO, 2020). It is not only about the procedures; it is also about how psychosocial treatment is delivered. To promote the growth and development of children, this should be done with love and consideration for the children (Huynh *et al.*, 2019). Adequate nutrition and wellness of infants may be influenced by the mother's psychosocial care according to the report of Nagelet *al.* (2022).

Mother's feeding techniques that incorporate the principles of psychosocial care come in third among the eight principles governing complementary feeding of children (WHO, 2021). Caregiving behaviours have been found to promote development and growth (LaVelaet *al.*, 2021). Various psychological elements affect how well infants consume food and thrive during the period of complementary feeding, and these include feeding the young child actively or interactively as opposed to passively presenting food to the children (Shoup, 2018); choosing foods that are appropriate for their developing motor skills and taste preferences (DeJesus, 2022); feeding in response to their hunger cues (USDA, 2021); and feeding in a distract-free, safe environment (Delacey *et al.*, 2022). The children's development is facilitated by feeding in a calm, secure setting and by conversing and playing with the infant while eating (Hu *et al.*, 2021).

Several studies on infant and child feeding have discovered that maternal psychological traits may affect the results of feeding styles. Despite the importance of psychosocial care during infant feeding, little is known about this among nursing mothers of under-five children in Ogun State; hence, the purpose of this study was to determine complementary feeding practices and psychosocial care levels of nursing mothers of under-five children in Ogun State.

Materials and methods

Study location

The study location was the Basic Health Centres (BHCs) in Ifo Local Government Area in Ogun State, Nigeria. Ifo Local Government Area has its headquarters in Ifo town with an area of 521 km² (201 sq.m) and a population of 698,837 at the 2006 census (National Bureau of Statistics (NBS, 2006).

Study design, sample size determination

The study was a cross-sectional design, and data were collected using multistage sampling techniques. A purposive sampling method was initiated since the study was on nursing mothers specifically. Eleven Basic Health Centers (BHCs) were also purposively selected for the study. Thereafter, a simple random sampling method was used to select the nursing mothers from each of the BHCs. This study was carried out within four months between the months of March and June 2022. A pilot study according to Wilkerson (2021) was done in the month of March among 39 mothers to improve the study protocol. The sample size was statistically calculated and comprised 385 nursing mothers and infants.

Ethical approval

Written informed consent was obtained from the respondents to ensure privacy. The questionnaires were self-administered and data were collected anonymously. The author

institution's Health Research Ethics Committee approved the study protocol, with the following assigned number: IPH/OAU/12/1793.

Selection of Participants

A structured and self-administered questionnaire was used to collect information on socioeconomic status and psychosocial care during complementary feeding practices of the nursing mothers. Healthy mothers with healthy children ages six (6) to (23) months were selected using a simple random technique. The mothers were selected during the postnatal visitation to Basic Health Centres for routine immunization of their children at Ifo Local Government Area in Ogun State, South West Nigeria.

The self-administered questionnaire, comprising three sections was used to collect information on complementary feeding practices and psychosocial care of the nursing mothers. These sections include Section A: Socio-demographic and economic characteristics such as occupation, income and educational level (Gokhale et al., 2022). Section B: Psychosocial care practices of nursing mothers during complementary feeding such as interacting with the child during feeding, encouraging the child to eat and serving colorful foods on colorful plates (WHO, 2021; Brown, 2021).

In determining the psychosocial care practices of the mothers, a 4- 4-point Likert Scale, according to the definition of McLeod (2019) was used. For the positive statement, Never was scored 1, Seldom 2, Often 3 and Always 4. For the negative statement, Never was scored 4, Seldom 3, Often 2 and Always 1. In all, 16 questions were asked which was upgraded to 100%. This means each score was allotted 6.25 marks. The psychosocial care practice was therefore graded as follows: Bad (<50% of the total score); Average: (50-75% of the total score); Good (>75% of the total score) using Rappaport (2011) grading system. Session C of the questionnaire was to explicit the complementary feeding of the children. Measurement of variables (Minimum dietary diversity (MDD), Minimum meal frequency (MMF) and Minimum acceptable diet (MAD) were carried out according to UNICEF (2022) infant feeding indicators.

Data analysis

Data was analyzed by using SPSS Statistics for Windows, Version 23.0 (IBM SPSS Statistics for Windows, Version 23.0. Armonk, NY: IBM Corp). The socio-demographic indices of the respondents were expressed in frequencies and percentages. The descriptive values were expressed in mean (\pm SD) and percentages of the study population. The regression model was used to establish the relationship between complementary feeding and psychosocial care of the nursing mothers.

Results

The socio-demographic characteristics of the respondents as indicated in Table 1 showed that the highest proportion (50.9%) of the respondents were within the age range of 20 to 29 years. The marital status of respondents showed that a large proportion of the nursing mothers were living together with their husbands, while the remaining were either separated or single parents. The educational background of the nursing mothers indicated that three-quarters of the nursing mothers had elementary and secondary school education, while 22.1% and 7.8% attained tertiary and no formal education, respectively.

Table 1: Socio-Demographic and Economic Characteristics of the Respondents

Variables	Frequency (385)	Percentage (%)
Age (years)		
<20	6	1.6
20-29	196	50.9
30-39	154	40.0
40-49	29	7.5
Marital Status		
Single	40	10.4
Married	322	83.6
Divorced	21	5.5
Religion		
Christianity	224	58.2
Islam	141	36.6
Traditional	12	3.1
Others	8	2.1
Ethnicity		
Hausa	40	10.4
Ibo	70	18.2
Yoruba	265	68.8
Others	10	2.6
Level of Education		
Primary	117	30.4
Secondary	153	39.7
Tertiary	85	22.1
None	30	7.8
Occupation		
Full Housewife	77	20.0
Business	199	51.7
Civil Servant	49	12.7
Artisans	57	14.8
None	3	0.8

The psychosocial care practice of nursing mothers during complementary feeding of infants is presented in Table 2 and Figure 1. Table 2 shows how mothers were concerned about the amount of food their children ate from the meals served. According to this study, mothers experimented with a variety of foods, when their children refused to eat. This was done in order to determine which of the foods would be the most acceptable by the children and encourage the children to eat more. The present study established that the majority of the nursing mothers did not make their children's meals more colorful or serve them on colorful plates that were attractive to children, and besides, quite a number of them force-feed their children instead of encouraging them to complete their meals. The study also established that a large proportion of the study population (68%) had average, while 30.9% had good knowledge and practised psychosocial care, while the remaining 1.1% exhibited bad psychosocial care during child feeding practices (Figure 1).

Table 2: Psychosocial Care Practices of Respondents in Complementary Feeding

Variables	Never(%)	Seldom (%)	Often (%)	Always (%)
Interacting with the child during meal	114(29.6)	71 (18.4)	90 (23.4)	110 (28.6)
Sitting with my child while eating	69 (17.9)	85 (22.1)	58 (15.1)	173(44.9)
Not looking at child's face during meal	52 (13.5)	66 (17.1)	106 (27.5)	161 (41.8)
Eulogize the child while eating	106 (27.5)	56 (14.5)	62(16.1)	161 (41.8)
Encouraging the child to feed him/herself	144(37.4)	85 (22.1)	87 (22.6)	69 (17.9)
Feeding the child only when he/she is hungry	93 (24.2)	116 (30.1)	81 (21.0)	95 (24.7)
Giving the child time to finish the food	66 (17.1)	68 (17.7)	94 (24.4)	157 (40.8)
Scolding the child if s/he refuses to eat	42 (10.9)	52 (13.5)	132 (34.3)	159(41.3)
Monitoring how much the child eat	43 (11.2)	57 (14.8)	103 (26.8)	182 (47.3)
Not paying attention child's hunger cue	152 (39.5)	36 (9.4)	43 (11.2)	154(40.0)
Making sure the child is satisfied with food	42 (10.9)	49 (12.7)	98 (25.5)	196(50.9)
Force-feeding the child	93 (24.2)	79 (20.5)	58 (15.1)	155 (40.3)
Experimenting with different food and methods of encouragement	82 (21.3)	114 (29.6)	71 (18.4)	118 (30.6)
Not presenting the food in attractive plates	142 (36.9)	68 (17.7)	63 (16.4)	112(29.1)
Putting off the TV when the child is eating	130 (33.8)	104 (27.0)	83 (21.6)	68 (17.7)
Not making the food appealing and colorful	158 (41.0)	58 (15.1)	56 (14.5)	113 (29.4)

Relationship between Practices of Psychosocial care and Complementary Feeding

The relationship between maternal psychosocial care and complementary feeding practices is shown in Table 3. The result establishes that there was no significant ($p>0.05$) relationship between MAD and psychosocial care in this study. For the Minimum Dietary Diversity (MDD), fewer children received the Minimum Dietary Diversity (≥ 4 food groups) which accounts for the lower percentage of MAD attainment in this study. In addition, it was observed in this present study that during infants' complementary feeding, there was no significant relationship between psychological care and MDD. This study established that nursing Mothers introduced complementary food earlier, that is, between the age of 6 and 8 months to their infants. However, there was no significant ($p>0.05$) relationship between the psychosocial care and the period of initiating the complementary feeding. Besides, there was no significant relationship between the mothers' psychosocial care and the MMF. The relationship between socio-demographic characteristics and maternal psychosocial care practices (Table 4) indicates that mothers' age and type of religion had an impact on the psychosocial care provided to the children during complementary feeding.

Table 3: Relationship between Practices of Psychosocial care and Complementary Feeding

Parameters	Psycho-Social Care Practices Classifications						P values
	Bad		Average		Good		
	'n'	%	'n'	%	'n'	%	
Commencement of Complementary Feeding							
<6 months	12	3.12	12	3.12	0	0	
6-11 months	66	17.14	219	56.88	16	4.16	0.214

12-17 months	12	3.12	17	4.42	11	2.86	
18-23 months	0	0	9	2.34	11	2.86	
Minimum Dietary Diversity (MDD)							
Not met	57	14.81	203	52.72	13	3.38	0.487
Met	21	5.45	78	20.26	13	3.38	
Minimum Feeding Frequency(MFF)							
Not met	14	3.64	66	17.14	23	5.97	0.332
Met	54	14.02	216	56.10	12	3.12	
Minimum Acceptable Diet (MAD)							
Not met	58	15.06	214	55.58	22	5.71	0.525
Met	19	4.93	58	3.89	14	3.63	
Timely Introduction of Complementary Feeding							
Timely introduced	51	13.25	205	53.24	24	6.23	0.553
Not timely introduced	26	6.75	67	17.40	12	3.12	
Appropriate Complementary Feeding Practices							
Inappropriate	52	13.50	215	55.84	15	3.89	0.913
Appropriate	23	5.97	69	17.92	11	2.86	

Table 4: Relationship between Socio-Demographic Characteristics of Respondents and Maternal Psychosocial Care Practices

Parameters	Psychosocial Care Practices						p-value
	Bad		Average		Good		
	N	%	N	%	N	%	
Age group							
<20	0	0	4	1.04	2	0.52	0.043**
20-29	52	13.51	142	36.88	2	0.52	
30-39	6	1.56	72	18.70	76	19.74	
40-49	1	0.26	8	2.08	20	5.19	
Marital Status							
Single	13	3.38	27	7.01	0	0	0.960
Married	54	14.02	224	58.18	44	11.43	
Divorced	7	1.81	2	0.52	4	1.04	
Separated	7	1.81	3	0.78	0	0	
Widow	0	0	0	0	0	0	
Educational Level							
Primary	30	7.79	85	22.08	2	0.52	0.163
Secondary	19	4.94	121	31.43	13	3.38	
Tertiary	8	2.08	72	18.7	5	1.3	

None	6	1.56	21	5.45	3	0.78	
Religion							
Christianity	12	3.12	179	46.5	33	8.57	
Islam	18	4.68	111	28.83	12	3.12	0.031**
Traditional	1	0.26	11	2.86	0	0	
Others	5	1.3	3	0.78	0	0	
Ethnicity							
Hausa	10	2.6	29	7.53	1	0.26	
Ibo	16	4.16	49	12.72	5	1.3	0.187
Yoruba	50	13.0	199	51.69	16	4.16	
Others	2	0.52	7	1.82	1	0.26	

* means significance at $p < 0.05$

Discussion

The socio-demographic characteristics of the respondents as indicated in this present study showed that highest proportion (50.9%) of the respondents was within the age ranged of 20 to 29 years, and this observation agrees with the report of Ogunba (2010). This finding implies that the reproductive age of Nigerian women is between the aged 20 to 29 years. The marital status of respondents shows that large proportion of the nursing mothers were living together with their husband, while the remaining were either separated or single parents. The educational background of the nursing mothers indicates that three-quarter of the nursing mothers had elementary and secondary school education, while the remaining attained tertiary (22.1%) and no formal education (7.8%).

The psychosocial care practice of nursing mothers during complementary feeding of infants showed that mothers were concerned about the amount of food their children ate from the meal served (Table 2). According to this study, mothers experimented with variety of foods, when their children refused to eat. This was done to determine which of the foods would be the most acceptable by the children and encourage the children to eat more. The present study established that majority of the nursing mothers did not make their children's meal more colorful or serve it on colorful plates that were attractive to children. Meanwhile, feeding the children colored foods had the dual objectives of providing nutrition and promoting good taste (Brown, 2021).

The majority of mothers in the study area choose to force-feed their children instead of encouraging them to complete their meals. This was in line with Akinrinmade *et al* (2019), who reported that majority of mothers in Ondo State, South-West Nigeria force-feed their children during complementary feeding. There have been reports of mothers scolding and force feeding their children while they are resisting eating, and this is not a proper method of feeding (Prabha, 2021). The amount of food consumed and the nutritional health of children were influenced by psychosocial care for children during complementary feeding (WHO, 2020).

The present study indicated that 26.5% of mothers between the ages of 20-29 years to had bad psychosocial practices during complementary feeding. This same age group had 72.4% of average practices of complementary feeding. Meanwhile, mothers between ages of 30-39 years had just 3.9% of bad complementary feeding practices and mothers of ages between 40-49 years had only 1% bad practices according to Table 4. This shows that maternal age has to do with psychosocial care practices during complementary feeding. Shagaro *et al.*, (2021) reported that maternal experience on previous children influence complementary feeding practices in Ethiopia. Psychosocial care during complementary feeding could enhance the food intake by infants during complementary feeding. It is well established that psychosocial care exhibited by nursing mothers

or caregivers encourages adequate child's food and nutrient-dense intakes; hence, facilitate growth and development in children (Ogunba, 2010).

The mothers' psychosocial care practices is important for establishing a Minimum Adequate Diet during complementary feeding (Bimpong *et al.*, 2020). A study (UNICEF, 2022a) reported that children's nutritional status is influenced by the quantity and quality food intake, and psychosocial care rendered by the parents or caregivers. Masuke *et al.* (2021), who examined the impact of improper complementary feeding practices in Tanzania showed poor compliance of the mothers to guidelines of complementary feeding.

The relationship between maternal psychosocial care and complementary feeding practices is shown in Table 3. The result establishes that there was no significant ($p>0.05$) relationship between MAD and psychosocial care in this study. The complementary feeding practices and psychological care during complementary feeding among the mothers in the study population might lead to lower percentage of MAD achieved. However, fewer children received the Minimum Dietary Diversity (≥ 4 food groups) which accounts for the lower percentage of MAD attainment in this study. A study (Samuel&Ibidapo, 2020) had previously noted this among mothers in South-West Nigeria. The main issue with mothers' complementary feeding practices in developing countries is the low rate of MAD achieved (Kang *et al.*, 2022; Kebede *et al.*, 2022). Similarly, Jacquier *et al.*, (2020) reported on the lack of variation in the complementary feeding practices of Filipino children, particularly those from low-income families.

In addition, it was observed in this present study that during infants' complementary feeding, there was no significant relationship between psychological care and MDD. This finding is similar to the report of Samuel & Ibidapo (2020) in Southwestern Nigeria, Asmare *et al.*, (2020) in the Northeast Ethiopia, and Benet *et al.* (2021) in Russia. It is worth to note that if mothers could provide their infants at least four different food groups each day, MDD might be achieved (WHO, 2020). The nursing Mothers in this present study were observed to introduce complementary food early between the age of 6 and 8 months to their infants. However, there was no significant ($p>0.05$) relationship between the psychosocial care and the start of complementary feeding. Besides, there was no significant relationship observed between the mothers' psychosocial care and the MMF. The relationship between socio-demographic characteristics and maternal psychosocial care practices (Table 4) indicates that mothers' age and type of religion had impact on the psychosocial care provided to the children during complementary feeding, and this finding agrees with the report of Bushaw *et al.*, (2020).

The study recommends that further research should be conducted on the influence of nutrition education of psychosocial care during complementary feeding. This may improve psychosocial care awareness and practices among nursing mothers and caregivers.

Conclusion: The study established that the psychosocial care of the mothers has no significant relationship with complementary feeding practices. However, age and religion were observed to influence psychosocial care of nursing mothers or caregivers. Further study is required to substantiate the findings in this present study.

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Authors' contributions

Ogunba BO, the principal investigator, conceptualized and designed the study; Akinrinmade Remilekun prepared the draft of the manuscript and reviewed the manuscript; Dahunro OR and Amanam EM jointly conducted the study, data analysis and interpretation

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