



Original

Stress Coping Strategies and Predictors of Breastfeeding Practices among Working-class Nursing Mothers visiting University Teaching Hospital, Ibadan, Nigeria

^{1,2}Olaitan OO, ³Alao, MA

¹Department of Food and Nutrition Consumer Science, Durban University of Technology, South Africa

²Department of Human Nutrition and Dietetics, University of Medical Sciences, Ondo, Ondo State, Nigeria.

³Department of Pediatrics, College of Medicine, University College Hospital, Ibadan, Oyo State, Nigeria.

Corresponding author: Olaitan, Oluwasiji O. Department of Food and Nutrition Consumer Science, Durban University of Technology, South Africa/ Department of Human Nutrition and Dietetics, University of Medical Sciences, Ondo, Ondo State, Nigeria; sijola2k3@gmail.com; +2347068518707; DOI: 0000-0002-3433-619X

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Abstract

Background: Stress limits maternal breastfeeding ability and the efficacy of its coping strategies is reflected in optimal child nutrition. This study evaluated stress, its coping strategies and its relationship with breastfeeding practices.

Method: A cross-sectional study among 200 randomly selected working-class nursing mothers visiting University College Hospital in Ibadan. An international stress management questionnaire with a Zimet 12-item perceived social support scale was employed to measure stress and its coping strategies (categorized into problem-focused, emotion-focused and social support strategies). Mothers' socio-demographic factors and breastfeeding practices were determined by a structured questionnaire. Breastfeeding practices were categorized into optimal and suboptimal practices based on a mean score of $3.1.1 \pm 1.1$. Data analysis was performed using SPSS 23.0 at $\alpha_{0.05}$.

Result: Respondents' age was 30.5 ± 1.2 years, 93.5% earned twice \$47.43 monthly, 46.5% nursed a second child, 60.5% had babies below six months of age, 26.5% had maternity leave for 3-4 months, 53.0% children started daycare 6-7 months of age, 21.0% infants were exclusively breastfed and 97.5% mothers experienced stress. Two-thirds of mothers had suboptimal breastfeeding practices. Predictors of breastfeeding practices were young age ($p < 0.001$), being married ($p = 0.001$), having multiple occupations ($p = 0.002$) and stress ($p = 0.036$). The odds of using emotion-focused strategies (OR=0.6, CI [0.1, 3.7]) to cope with stress were higher than problem-focused (OR=0.4, CI [0.1, 2.3]) and social support strategies (OR=0.3, CI [0.1, 1.8]) employed among working-class nursing mothers.

Conclusion: Stress and limited social support contributed to suboptimal breastfeeding practice. Emotion- and problem-focused strategies were more employed to mitigate stress and optimize breastfeeding practices by working-class nursing mothers.

Keywords: Stress, Coping Strategies, Breastfeeding practices, Working-class Nursing Mothers, Nigeria.



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Introduction

Nursing a child brings a form of stress which can be aggravated by demand of job. Stress can have significant impact on women's physical and mental health, and strategies employed will determine adaptation and degree of stress effects.¹ Though, stressors vary in nature for different vocations, frequency and stages of occurrence in women's lives. Body's response to stress manifests through several patterns of neuroendocrine reactivity. It also changes according to an individual's psychological maturity.^{2, 3, 4}

However, women's participation in labour force is increasing globally as need to support household income continues to rise.^{5, 6} However, this places higher demand on nursing mothers and predisposes them to stress especially in low and middle-income nations like Nigeria where infrastructures are not highly conducive to provide adequate care for infants during work hours. Maternal psychological distress is also related to non-optimal breastfeeding outcomes.^{4, 7, 8}

A child needs adequate breastfeeding which can provide optimal nutrition for the newborn to thrive and develop optimally. Other benefits of breastfeeding include mother-to-child bond, low risk of infections such as respiratory diseases and diarrhea and prevention of future risk of chronic non-communicable diseases like diabetes mellitus.⁹ However, successful practice of breastfeeding is highly reliant on stable psychological state of mother, passionate social support, good maternal health and suitable environment. The recent drop in breastfeeding uptake among working mothers in Nigeria is a call for concern. National Demographic and Health Survey reported that proportion of women practicing exclusive breastfeeding in Nigeria dropped to 29 percent.^{10, 11, 12}

Several variables have been proposed as explanations for this troubling tendency, particularly among working-class women. Reasons provided include workplace nursing policy, an increasing percentage of single parenting, mothers' great desire to keep their breast shape, and a changing family landscape that has put extended family set up to background.¹³ Low values placed on breastfeeding by female role models in society has also been blamed for decline in breastfeeding uptake. These factors together with domestic responsibilities add up pressures on contemporary mothers and potentially affecting their decision to start or continue breastfeeding.¹⁴

There is dearth of information on coping strategies of stress and their relationship with breastfeeding practices among working-class mothers in Southwest Nigeria. This is needed to develop evidence-based interventions which will be useful to promote breastfeeding practice working-class women. Therefore, this study was carried out to evaluate stress, its coping stress and relationship with breastfeeding practice among working mothers in Ibadan, Oyo State, Nigeria.

Method

Study Design

This cross-sectional study was carried out between October 2021 and December 2021.

Study Site

The study was conducted in Ajimobi Immunization Centre and Institute of Mother and Child Health Centre at the University College Hospital (UCH), Ibadan. The University College Hospital, Ibadan is a federal teaching hospital in Ibadan attached to the University of Ibadan Nigeria. It is located at Ibadan North Local Government Area of Oyo state, Nigeria. The hospital was established on 20th November, 1957 as the first teaching hospital and tertiary healthcare centre in Nigeria. Its current capacity includes 1445 bed spaces and 163 examination couches with occupancy rates which range from 55 to 60%. Ibadan has majority of its residents being predominantly Yoruba. However, the location of UCH is closed to Hausa community area called Sabo.¹⁵

Study Population

Respondents for this study were working-class mothers who nurse children who were less than 2 years of age. They worked in different private and public institutions. They attended post-natal clinics to receive immunization and postnatal care for their children at Ajimobi Immunization Centre (AIC) and Institute of Mother and Child Health Centre (IMCHC) of the University College Hospital.

Sample Size Determination

The sample size for the study is calculated from the following formulae

$$n = \frac{Z^2pq}{d^2} \text{ }^{16}$$

n = minimum sample size

Z = standard normal deviate usually set at 1.96, which correspond to the 95% confidence level

p = proportion in the target population estimated to have a particular characteristic proportion of working-class females in labor force in Nigeria is 44.82%.⁵

d = degree of accuracy desired, set at the 0.05 level
(Standard error of 5%)

$q = 1.0 - p$

$n = 1.96 \times 1.96 \times (0.44821 - 0.4482) / 0.05^2 = 380$

Non-response rate = 10% of minimum sample size =
 $380 \times 10\% = 38$

Total sample size calculated = $380 + 38 = 418$

A pool of 410 nursing mothers were eligible for the study based on the record of the clinics. The sample size, however, was adjusted to 206 due to sample selection procedure, the population of mothers who were currently employed and those who gave informed consents to participate in the study. Furthermore, to have representatives of the study participants from each facility centre (AIC and IMCHC), a continuous number was given to all respondents starting from AIC to IMCHC. At the end of selection, study participants from each centre were 87 and 113 for AIC and IMCHC, respectively.

Sampling Technique

Study participants were included in the study by using systematic random sampling. Respondents were selected at interval of two from one another. The process began by randomly selecting the third name on the list, and subsequent names were chosen at intervals of two until the available respondents were exhausted among mothers with children who were less two years of age. Although, 206 were selected but only 200 working-class nursing mothers gave a complete data.

Procedure for Data Collection

A pretested interviewer-administered questionnaire was used to obtain information from the nursing mothers who fulfill the inclusion criteria (working class women with children who were less two years of age). Sections of the questionnaire were grouped into socio-demographic data of mothers, breastfeeding practice, level of stress and coping strategies of stress. International stress management questionnaire was adopted to determine level of stress.

The international stress management questionnaire consists of 26 items, each with a binary response. 'Yes' was scored 1, while 'No' response was scored 0. Aggregate of the scores were categorized into three: low likelihood of experiencing stress-related health issues (4 points or lower). Scores ranging from 5 to 13 suggest a higher likelihood of experiencing stress-related health problems, whether mental, physical, or both.

A score of 14 points or higher indicates a susceptibility to severe forms of stress. However, for this study, we redefined scores of 0 to 4 points as having no stress, 5 to 13 points as moderate stress, while a score of 14 or higher indicates severe stress. The stress score was later dichotomized into stressed (5 points and above) and not stressed (0 to 4 points) to determine factors which contributed to stress by using regression model.¹⁷

Zimet et al. 12-item multidimensional perceived social support scale (MPSSS) was used to evaluate mothers' social support. The MPSSS is a self-report questionnaire designed to assess an individual's perception of social support across multiple dimensions. It includes three subscales: family support (relating to family members), friend support (involving peers), and significant other support (pertaining to a significant person in the respondent's life), with each subscale consisting of four items.¹⁸

Respondents rated the extent to which they agreed or disagreed with statements related to social support on a Likert scale. An example includes "My family really tries to help me," with participants indicating their level of agreement. The scores are computed for each subscale, and the responses to the individual items within that subscale are summed. Higher scores indicate a stronger perception of social support within each specific area. This scale has a test and retest score of 0.85.¹⁸

Furthermore, three coping strategies i.e. problem-focused, emotion-focused and social support coping strategies were generated based on the MPSSS. The continuous variables of each coping strategy were further dichotomized based on the median of the respondents' scores for each strategy. Problem-focused strategy was categorized into adequate (≥ 21 points) and inadequate (< 21 points). Emotion-focused strategy was classified as adequate (≥ 10 points) and inadequate (< 10 points). Social support strategy was either available (≥ 6 points) or unavailable (< 6 points).

Breastfeeding practice data were gathered using 12 items culled from the literature, with response options ranging from yes or no and a time frame for breastfeeding practices. We defined the response for each variable as one for optimal breastfeeding practice and zero for suboptimal breastfeeding practice. Suboptimal practices included maternity leave less than 3-4 months, daycare enrollment before 6 months, breastfeeding duration less than 6 months, introduction of complementary feeds before 4 months, breastfeeding fewer than 8 times per day, early wake-up (earlier than 5:00am) and late bedtime

(after 10:00pm), absence of workplace daycare, formula introduction before 6 months, no daytime breastfeeding, and a preference for breast milk expression over direct breastfeeding at work. The mean score of these eleven parameters was calculated as 3.1 ± 1.1 . Participants with scores below this mean were categorised as having suboptimal breastfeeding practices. We evaluated stress coping mechanisms across three domains, namely problem-focused coping, emotion-focused coping, and social support, drawing from existing literature.^{19, 20}

Data Management and Analysis

Data was entered into a Microsoft Access file and analyzed using Statistical Product and Service Solution (S.P.S.S) version 23. Variables were reported as proportions, frequencies table, normally distributed independent variables of age, breastfeeding practice score were reported as means and standard deviation. Non-parametric variables such as incomes were summarized as median and their corresponding inter-quartile range. Proportions were further analyzed by using chi-square test or Fischer's exact test for significant association. Relationship among variables was assessed using logistic regression coefficients and their 95% confidence intervals (CI) reported. The level of significance was set at $p < 0.05$.

Results

Socio-demographic Information of Mothers and their Children

Two hundred mothers took part in this study. Majority of them were within age of 20-30 years (60.5%), Yoruba (60.0%), and Christian (66.0%). Half (50%) had tertiary education and 46.0% were civil servants. High proportion (88.6%) were married in a monogamous family setting. Almost all 187 (93.5%) of respondents earned more than the country's minimum wage (\$47.43: at least twice the national minimum wage) for government workers. Some (73.5%) of them had a single job. Half of respondents' husbands (51.5%) worked in private sector as businessmen. Ninety-three (46.5%) were nursing their second child. Two-third of the babies were below 6 months of age (Table 1).

Table 1: Maternal Socio-demographic

Variables	Freq [200]	Percent [100%]
Age		
20-30	121	60.5
31-40	79	39.5
Religion		
Christianity	132	66.0

Variables	Freq [200]	Percent [100%]
Muslim	68	34.0
Tribe		
Yoruba	120	60.0
Igbo	80	40.0
Level of Education		
No Formal	6	3.0
Primary	36	18.0
Secondary	58	29.0
Tertiary	100	50.0
Occupation		
Business	63	31.5
Artisan	45	22.5
Civil Servant	92	46.0
Nature of work		
Public	92	46.0
Private	108	54.0
Marital Status		
Married	176	88.0
Single	24	12.0
Type of Marriage (n=176)		
Monogamy	156	88.6
Polygamy	20	11.4
Average Monthly Income (N)		
20,000 - 40,000	13	6.5
More than 40,000	187	93.5
Additional occupation to main work		
Yes	53	26.5
No	147	73.5
Child's Position		
1 st	35	17.5
2 nd	93	46.5
3 rd	72	36.0
Age of the child		
Under 6 months	121	60.5
6 months and above	79	39.5
Nature of Husband's work		
Public	97	48.5
Private	103	51.5

Breastfeeding Practices among Working Mothers

Mean breastfeeding practice score was 3.1 ± 1.1 which shows that some of the respondents (69.0%) had suboptimal breastfeeding practice (Figure 1). There was no uniform duration for maternity leave in the study population. Only 26.5% spent 3-4 months at home for maternity leave. Two third (64%) did not have

designated breastfeeding areas at their workplace. More than half (53.0%) started daycare for their children in 6-7 months of child's age. As at the time of conducting this study, only 21.0% infants were exclusively breastfed for 6 months. More than half (60.5%) had introduced commercial infant formula before 6 months. More than

half (57.5%) had started giving their children family meals before 6 months. Some of them (78.9%) breastfed their children more than 8 times a day. More than half of them (68.0%) woke before at 5am and 42.0% usually slept after 10pm daily (Table 2).

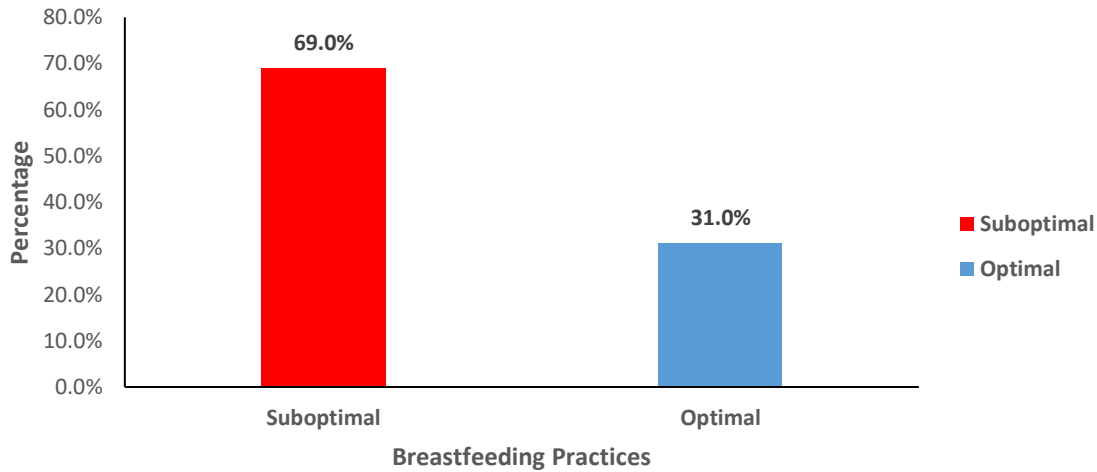


Figure 1: Breastfeeding Practices among Working Mothers

Table 2: Breastfeeding Practices among Working Mothers

Variables	Frequency	Percentage
Maternity leave period		
2-3 weeks	31	15.5
1 month	78	39.0
2 months	38	19.0
3-4 months	53	26.5
Age Child started daycare		
2-3 months	29	14.5
4-5 months	59	29.5
6-7 months	106	53.0
Others	6	3.0
Duration of Breastfeeding		
2-3 months	66	33.0
4-5 months	92	46.0
6 months	42	21.0
Complementary feeds		
< 4 months	115	57.5
4-6 months	85	42.5
Number of Breastfeeding per day (n=142)		
6-7 times	30	21.1
8 and more	112	78.9
Daily Wake Up Time		
5am	136	68.0
7am	64	32.0

Variables	Frequency	Percentage
Daily Sleep Time		
8pm	81	40.5
9pm	35	17.5
10pm	84	42.0
Mothers having daycare at workplace		
Yes	72	36.0
No	128	64.0
Child has started taking formula before 6months		
Yes	121	60.5
No	79	39.5
Breastfeed during The Day		
Yes	142	71.0
No	58	29.0
Preferred Breast milk Expression to Direct breastfeeding at Work		
Yes	42	21.0
No	158	79.0
Meal Given before 6 months (n=115: 57.5%)		
Pap	87	75.7
Baba	28	24.3

Level of Stress among Respondents

Three out of four mothers had moderate stress and 2.5% experienced severe stress (Figure 2). Among the mothers, 80% of them denied or ignored problems in the hope that they would go away. Those who did the jobs themselves to ensure they were done properly rather than delegating was 83.0%. Mothers who felt irritated or angry when the car or traffic in front of them seemed to be going too slowly were 80.5%. More than two-third of mothers had self-confidence and self-esteem lower than what they would like it to be (75.0%), and experienced muscular aches and pains especially in the neck, head, lower back, shoulders (69.0%). More than half of the mothers underestimated how long it takes to do things (61.0%), found themselves thinking about problems even when they were supposed to be relaxing (63.0%) and 60.0% of mothers experienced mood swings, difficulty in making decisions, concentration and had memory impaired.

About one-third of the mothers (43.5 %) felt that they had too many deadlines that were difficult for them to meet at work. One in four (13.5%) of the mothers frequently felt guilty for taking work breaks and relaxing. Moreover, 57.5% reported feeling fatigued or tired even after a "good night's sleep". About half (49.5%) agreed that they frequently nodded or finished other people's

sentences when they speak slowly. Two-thirds of mothers (31.0%) tended to eat, speak, walk, and drive quickly, whereas eighty-five (42.5%) reported that their appetite has changed and that they have lost appetite, have a desire to binge, and may skip meals. Twenty-nine percent bottled up their feelings if something or someone really irritated them. One in five breastfeeding mothers (21.5%), were unable to perform tasks as well as they once could; their judgment was clouded. One-third of mothers (32.5%) had greater dependence on alcohol, caffeine, nicotine and drugs (Table 3).

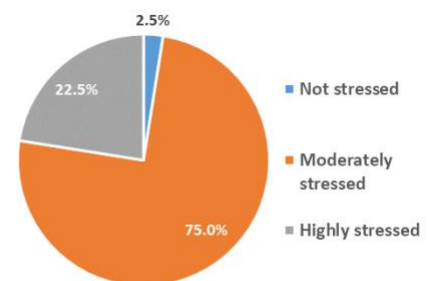


Figure 2: Level of Stress among Breastfeeding Working Mothers

Table 3: Stressful Activities among Breastfeeding Working Mothers

Variable	Frequency	Percentage
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I frequently brought work home at night	58	29.0
Not enough hours in the day to do all the things that I ought to do	41	20.5
I denied or ignored problems in the hope that they would go away	160	80.0
I did the jobs myself to ensure they were done properly	166	83.0
I underestimated how long it takes to do things	122	61.0
I felt that there were too many deadlines in my work that were difficult for me to meet	87	43.5
My self-confidence and self-esteem were lower than I would like it to be	150	75.0
I frequently had guilty feelings if I relaxed and did nothing	27	13.5
I found myself thinking about problems even when I was supposed to be relaxing	126	63.0
I felt fatigued or tired even when I woke after an adequate sleep	115	57.5
I often nodded or finished other people's sentences for them when they speak slowly	99	49.5
I had a tendency to eat, talk, walk and drive quickly	62	31.0
My appetite had changed. I had lost appetite and had a desire to binge and may skip meals	85	42.5
I felt irritated or angry if the car or traffic in front seems to be going too slowly	161	80.5
If something or someone really annoyed me, I would bottle up my feelings	58	29.0
I experienced mood swings, difficulty in making decisions, concentration and memory is impaired	120	60.0
I was unable to perform tasks as well as I used to, my judgment was clouded or not as good as it was	43	21.5
I found that I had a greater dependency on alcohol, caffeine, nicotine or drugs	65	32.5
I found that I did not have time for many interests and hobbies outside of work		
I had increased muscular aches and pains especially in the neck, head, lower back, shoulders	138	69.0

Factors Predicting Breastfeeding Practices among Respondents

Multivariable logistic regression findings revealed several significant factors affecting breastfeeding practices. Married women were 264.31 times more likely to have optimal breastfeeding practices compared to single mothers (aOR=264.31, 95% CI: 11.21 - 6231.43). Additionally, women with moderate stress levels (aOR=4.44, 95% CI: 1.10 - 17.91) and those with

secondary education (aOR=58.7, 95% CI: 6.80 - 505.78) were more likely to exhibit optimal breastfeeding practices. Conversely, women aged 20-30 years (aOR=0.14, 95% CI: 0.07 - 0.289), those engaged in additional work (aOR=0.05, 95% CI: 0.01 - 0.33), and those whose husbands were businessmen (aOR=0.02, 95% CI: 0.00 - 0.23) were less likely to have optimal breastfeeding practices (Table 4).

Table 4: Factors predicting optimal breastfeeding practices among Mothers

Variable	Sub-categories	uOR	95% CI	aOR	95% CI	P value
Age	20-30	0.22	0.11- 0.41	0.14	0.07- 0.28	<0.001**
	31- 40(ref)	-	-	-	-	-
Educational Qualification	No Formal	0.06	1.06 - 5.49	0.09	1.16 - 10.19	0.999
	Primary	0.91	0.36 - 2.25	1.19	0.14 - 14.35	0.887
	Secondary	3.39	1.70 - 6.76	58.65	6.80 - 505.78	<0.001**
Occupation	Tertiary (ref)					
	Business	2.11	1.09 - 4.08	2.42	0.37- 15.72	0.356
	Artisan	0.10	0.02 - 0.45	0.10	0.09 - 0.19	<0.001**
Addition to main work	Civil Servant (ref)	-	-	-	-	-
	Yes	0.43	0.19- 0.92	0.05	0.01 - 0.33	0.002**
	No (ref)	-	-	-	-	-
	Business	0.78	0.40- 1.53	0.02	0.00 - 0.23	0.002**



Husband occupation	Artisan	0.19	0.07- 0.54	0.01	0.00 - 0.08	<0.001**
	Civil Servant (ref)	-	-	-	-	-
Marital status	Married	1.82	0.65 - 5.12	264.31	11.21-6231.43	0.001**
	Single (ref)	-	-	-	-	-
Stressed level	Not Stressed	0.00	0.16- 0.79	<0.001	0.06- 0.31	0.999
	Moderately Stressed	1.19	0.58 - 2.48	4.443	1.10- 17.91	0.036**
	Highly Stressed (ref)	-	-	-	-	-

uOR- unadjusted odd ratio; aOR- adjusted odd ratio; ** Statistically significant; Ref – Reference group

Factors contributing to stress among Respondents

Table 5 presents the factors that contributed to stress among respondents. Findings showed that among respondents who were stressed, 59.0% were young adults (20-30 years) and 38.5% were middle-aged, 47.2% civil servants and 30.8% did business. Those who had additional works to their main occupations were 24.6%. Large proportion (91.0%) of respondents who earned above 40,000 naira were stressed. Stress was also observed among respondents' whose husbands worked in private institutions (51.5%) than public institutions (48.5%). Majority (84.6%) of the respondents who were stressed had more than one child and some of them (62.0%) were nursing children who were less than 6

months old. Stress was significantly associated with respondents' occupation, having additional work, husband occupation, position of index child in the family and age of the child.

Women within the age of 30-40 years had two folds chance of developing stress more than younger women (aOR=1.88, CI: 0.0). Likewise, nursing mothers who earned more than 40,000 naira monthly income had 1.18 odds of being stressed more than those who earned lesser (aOR=1.18, CI: 0.0). The odds of stress were more than five times higher among nursing mothers who care for children who were beyond six months of age (aOR=5.21, CI: 0.0).

Table 5: Factors contributing to Stress among Respondents

Variables	Level of Stress		Total 200(100.0%)
	Not Stressed 5(2.5%)	Stressed 195(97.5%)	
Age (years)			
20-30	3(1.5)	118(59.0)	121(60.5)
31-40	2(1.0)	77(38.5)	79(39.6)
Respondents' Occupation			
Business	3(0.6)	60(30.8)	63(31.4)
Artisan	2(0.4)	43(22.1)	45(22.5)
Civil servant	0(0.0)	92(47.2)	92(47.2)
Additional work			
Yes	5(1.0)	48(24.6)	53(25.6)
No	0(0.0)	147(75.4)	147(75.4)
Respondents' Monthly Income (N)			
20-40,000	0(0.0)	13(6.5)	13(6.5)
Above 40,000	5(2.5)	182(91.0)	187(93.5)
Husband's occupation			
Public	2(1.0)	95(47.5)	97(48.5)
Private	3(1.5)	100(50.0)	103(51.5)
Position of Index Child's			
1 st	5(1.0)	30(15.4)	35(16.4)



Variables	Level of Stress		Total 200(100.0%)
	Not Stressed 5(2.5%)	Stressed 195(97.5%)	
2 nd	0(0.0)	93(47.7)	93(47.7)
≥3 rd	0(0.0)	72(36.9)	72(36.9)
Index Child's age			
<6 months	0(0.0)	121(62.0)	121(62.0)
≥6 months	5(1.0)	74(37.0)	79(38.0)

Table 6: Factors contributing to Stress among Respondents

Variable	Sub-categories	uOR	95% CI	aOR	95% CI	P value
Age (years)	20-30 (ref)	-	-	-	-	0.982
	31-40	1.02	0.17-6.26	1.88	0.00	
Occupation	Business	-	-	-	-	
	Artisan	0.00	0.00	0.00	0.00	0.087
Addition to main work	Civil Servant (ref)	0.00	0.00	0.00	0.00	
	Yes	-	-	-	-	0.995
Monthly Income (N)	No (ref)	0.00	0.00	0.00	0.00	
	20,000 - 40,000	-	-	-	-	0.999
Husband's occupation	>40,000	44381177.6	0.00	1.18	0.00	
	Public	-	-	-	-	0.702
Position of Index Child in family	Private	1.43	0.23-8.72	0.79	0.00	
	1 st	-	-	-	-	
Index Child's age	2 nd	0.00	0.00	0.00	0.00	0.994
	≥3 rd	1.00	0.00	0.00	0.00	
Index Child's age	<6 months	-	-	-	-	0.996
	≥6 months	109153707.1	0.00	5.21	0.00	

uOR- unadjusted odd ratio; aOR- adjusted odd ratio; Ref – Reference group

Stress Coping Strategies and Breastfeeding Practices among Working-class Mothers

All participants (100.0%) used problem-focused strategies as coping mechanisms. The majority (96.0%) found adequate daily sleep to be a stress reliever. Only two mothers (1.0%) did not use relationship techniques to reduce stress. However, 57.0% faced challenges in time management, affecting their ability to handle work-related stress. Regarding emotion-focused coping strategy, many (86.5%) included exercise in their daily routine to address maternal stress. While 65.0% balanced work and family responsibilities, none took breaks or vacations, which could have helped alleviate stress during breastfeeding. In terms of social support, 62.5% of mothers did not seek family support to manage their stress. Instead, they preferred nearby daycare or

designated breastfeeding areas to care for their children (Table 7).

Furthermore, 79.0% of respondents were found to receive adequate problem focused strategies while 74.5% received emotion focused strategies (Figure 3). Social support towards coping with stress was available for 69.5% of the respondents (Figure 4). Both adjusted and unadjusted regression models established that emotion focused strategies (OR=0.58, CI [0.09, 3.67]) had highest odds of promoting optimal breastfeeding practice compared to problem-focused (OR=0.37, CI [0.06, 2.31]) and social support (OR=0.29, CI [0.05, 1.84]) strategies among working-class mothers in the study location (table 7).

Table 7: Stress coping strategies among working class breastfeeding mothers

Strategies	Yes	No
Problem Focused		
Avoid what can give stress in daily activities	200 (100.0)	0 (0.0)
Adequate sleep every day	192 (96.0)	8 (4.0)

Adopt relaxation techniques	198 (99.0)	2 (1.0)
Have a good plan for the day	200 (100.0)	0 (0.0)
Time management	86 (43.0)	114 (57.0)
Emotion Focused		
Incorporate some form of exercise	173 (86.5)	27 (13.5)
Taking breaks and long vacations	200 (100.0)	0 (0.0)
Social Support		
Seek help from family	75 (37.5)	125 (62.5)

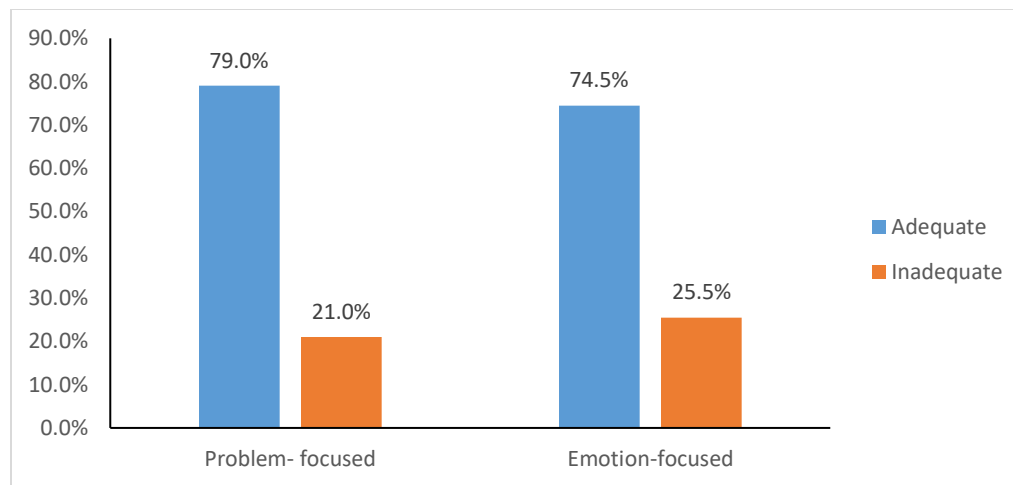


Figure 3: Problem- and Emotion focused Strategies toward coping with Stress

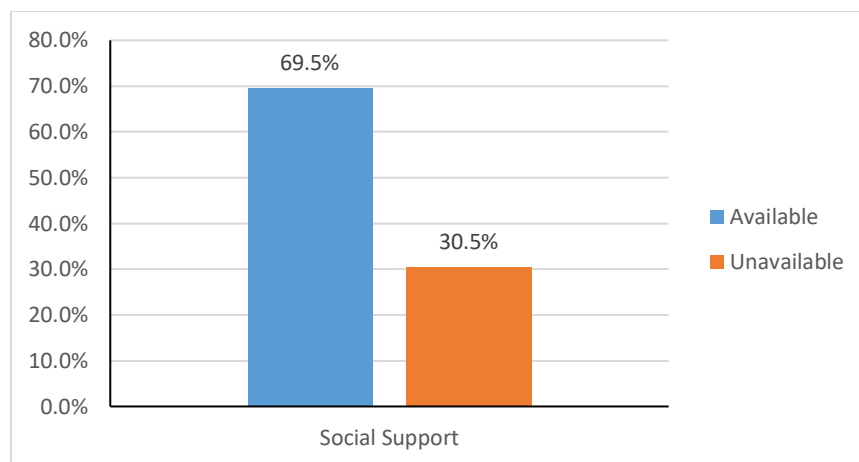


Figure 4: Social Support Strategies towards coping with Stress

Table 8: Relationship between Coping Strategies and Breastfeeding Practices

Variables	uOR	95% CI	aOR	95% CI	P
Problem Focused	0.39	0.06-2.39	0.37	0.06-2.31	0.28
Emotion Focused	0.50	0.08-3.10	0.58	0.09-3.67	0.56



Social Support	0.28	0.05-1.73	0.29	0.05-1.84	0.19
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uOR- unadjusted odd ratio; aOR- adjusted odd ratio; CI- Confidence interval; p- level of significance at 5%

Discussion

Stress was found to be prevalent among working-class nursing mothers in the study location and breastfeeding practice was suboptimal. Factors observed to be associated with optimal breastfeeding practice include having a secondary level of education, being married, and experiencing moderate levels of stress. On the other hand, ages between 20 and 30, both parents being artisans, and the father's occupation as a businessman were linked to suboptimal breastfeeding practices. Factors associated with stress included participants' occupation, involvement in additional locum work, the partner's occupation, the child's position in the family, and having a baby younger than 6 months.

The maternal age of 20-30years is in tandem with published literature in the developed country. The Nigerian Bureau of Statistics reported that this age group contributes highest working population in Nigeria²⁰. Previous studies had identified socioeconomic factors such as financial constraints, duration of maternity leave, lack of adequate support of husband, availability of crèche near the place of work and breastfeeding break at work as factors limiting adequate breastfeeding practices among working mothers.^{22, 23, 24} However, majority of mothers in this study had good financial status. Most of them earned above \$47.43 per month. This could be related to the fact that some of them were salary earners, had additional jobs to their primary occupation and obtained tertiary education which afforded the opportunity of getting well-paid jobs.

This study recorded 21% nursing mothers who breastfed or had intention of giving only breast milk (exclusive breastfeeding) up to six (6) months to their children. The rate of exclusive breastfeeding in this study is less than 48% current global rate of exclusive breastfeeding reported by the United Nations International Children's Emergency Fund (UNICEF) [24]. It is more than 17.9% found among working women in Mauritius, East Africa and 10.3% in Ghana.^{26, 27} However, it is lower than 54.8% reported by Chinyere, Agnes and Okechukwu in Imo State, Nigeria and 66.8% reported by [Kayode, Oyedeji](#), and [Alabi](#) in Osun States, Nigeria.^{24, 28}

There was high level of non-optimal breastfeeding practice among nursing mothers in this study. Large proportions of them have started giving infant formula and other complementary foods to their children before recommended sixth month. This happened despite that more than half of the nursing mothers in this study were enlightened. Some of them also denied their babies breast milk during the daytime because of work activities and did not prefer expressing breast milk as alternative to direct breastfeeding during work hours. The reason for this could be attributed to the fact that many of the study participants' workplaces neither had daycare for staff children nor gave enough maternity leave for their staff to take care of their infants as need arose.

However, Iekes et al. reported in their study conducted in Kenya that nursing mothers and their families were given expansion of work schedule flexibility, provision of on-site daycare and workplace lactation rooms, milk expression education and increased maternity leave length.²⁹ These helped to improve exclusive breastfeeding practices in the country. It had also been iterated that short duration of maternity leave and inconvenient working environment were major factors that undermine exclusive breastfeeding practice among working-class mothers in Nigeria.²⁸ Nursing mothers who had suboptimal breastfeeding practice in this study were mostly young adults. They had low or no formal education. They had multiple works. Their husbands were businessmen. They were stressed. Having suboptimal breastfeeding practices among younger mothers compared to older ones in this study is contrary to what was reported among mothers in Calabar, Nigeria where quality breastfeeding practices declined with increase in maternal age.³⁰

Furthermore, economy situation of the country has forced many women to be doing multiple works in order to meet domestic economic demands and to complement their husbands' income. However, this exposed nursing women to stress and non-optimal breastfeeding practices. Dozier, Elson and Brownell observed similar experience among low-income mothers in New York where life stress reduced the duration of exclusive breastfeeding.²² Single mothers were also found to have lower

exclusive breastfeeding practice compared to married women who might have had supports of their husbands.³¹ Lack of support for women who return to work while breastfeeding had been found as one of the factors resulting to breastfeeding cessation and early introduction of infant formula to babies earlier than recommended among working-class nursing mothers.^{23, 29} This study also found similar experience among nursing women who participated in this research. Therefore, holistic approach is required to address these identified factors which mitigate adequate breastfeeding practices in Nigeria.

Stress assessment shows that many nursing mothers in this study were stressed. Stress has been defined as physical, mental or emotional strain which a person experiences when demands exceed adaptive capacities.^{32, 33} Stress experienced by mothers in this study was significantly associated to their occupation. Those who were civil servants, did business and had additional works to their main occupation significantly experienced stress. Stress was also more significantly experienced by those whose husbands were businessmen and mothers of more than one child and those who were nursing baby that were less than 6 months old as at the time of data collection. Though, Walker and Murry reported in their study conducted in Texas that stress was higher among working mothers who nursed children that were older than 6 months, those that were in full-time employment and women who had more than one child.³²

Having stress prevalent among women whose children were not up to 6 months of age in this study could be attributed to demand of works and care for children especially when there were minimal supports from relatives and spouses, and it could also be due to effects of having additional works to main occupations. Stress affects productivity, relationship, health and well-being of a person.^{2, 4, 7}

Its effects were reflected in self-efficacy, attitudinal disposition and health status among nursing mothers in this study. Three quarter of them had low self-esteem, they thought more about problems while they ought to be relaxing. They ignored problems, got irritated and angry easily, had mood swings, found it difficult to make decisions, had impaired concentration and memory, and experienced increased muscular aches and pains. Their relationship was affected as some of them did

the jobs they ought to delegate. This elucidates effects of stress and its impacts on body functions which are described by Yaribeygi et al.²

Therefore, stress contributed to suboptimal breastfeeding practices found among majority of nursing mothers in this study. Motherhood is stressful and combining house chores, work and additional responsibilities usually predispose women to stress. This necessitates supports from family members during lactation in order to reduce the potential stress which nursing mothers could experience during early stage of childbearing.¹³ After accepting that they had stress, nursing mothers in this study employed coping strategies to mitigate effects of stress. The strategies employed are categorized into three (3) namely, problem-focused, emotion-focused and social support mechanisms. Almost all the mothers in this study avoided what could give them stress. They also planned for the day and tried to sleep every day.

However, majority of mothers in this study were unable to properly manage their time because of stress they experienced. Stress has been identified as one of the major factors which affect proper time management, hinder people to organize their day-to-day activities and leads to poor performance and productivity.^{4, 32}

However, some of the nursing mothers in this study used emotion-focused strategies to deal with stress by creating time for exercise and going for vacation. Only few of them sought for supports from their relatives. Having problem solving and emotion strategies being more adopted could be related to the fact that these strategies can easily be put under control of the person (mothers) initiating them compared to social support which is dependent on other people's interest to render the support. Several studies have shown that emotion-focused strategies are more adopted in managing stress by nursing mothers. Problem-solving methods requires high skill to use in managing stress.^{34, 35, 36} Acquisition of high educational skill by majorities of working-class mothers in the study location reflects demonstration of such stress coping mechanism. Similar strategy is adopted by working breastfeeding mothers in Iran.³⁷ However, our findings on emotion-focused coping strategy to mitigate stress is contrary to what Roberts, Sarfo and Kwakye reported in Accra metropolis, Ghana where working-class women did not employ physical activity to mitigate occupational stress.³⁸ Howbeit,

lack or inadequate social support has been identified as part of factors contributing to postpartum stress among nursing mothers.³⁹

Additionally, this study found emotion focused strategy with highest odds of promoting breastfeeding practices compared to problem-focused and social support strategies. This is contrary to the finding of Nurfitriah who found problem focused strategy used by mothers among vulnerable groups in Indonesia to address stress.⁴⁰ However, previous studies such as the ones conducted by in Nigeria and Ghana observed social support as mechanisms adopted by the working mothers to manage stress while breastfeeding.⁴¹⁻⁴³

Implications of the findings of this study

This study provides information on the factors responsible for breastfeeding practices and stress among working-class nursing mothers in Nigeria and the coping strategies employed by these mothers to mitigate the impacts of stress on them.

Limitations of the Study

The sample size used for this study was below what was calculated, and this might limit the generalizability of the results obtained. The study design was cross-sectional, and this did not give opportunity to determine cause and effect relationship of variables.

Conclusion

The present study establishes that many working-class nursing mothers experience stress. This is associated to maternal age, low formal education, insufficient maternity leave, single motherhood, keeping multiple jobs, lack of social supports. Stress contributes to suboptimal breastfeeding practices. The coping strategies employed by the mothers to mitigate effects of stress were emotion-, problem-focused and social support strategies. Out of the three strategies, emotion-focused strategy had highest odds of being used to potentially mitigate stress and promote optimal breastfeeding practices by working-class nursing mothers.

Recommendation

Intervention towards addressing stress and in promoting optimal breastfeeding practices among working class nursing mothers should consider promoting most practicable stress coping strategies. This includes developing policies which ensure sufficient maternity leave and promote baby

friendly workplaces. Husbands also need to be considered for paternity leave to provide supports for their wives during nursing period especially in the first six month of child's life. They also should be encouraged to visit antenatal and postnatal clinics with their wives where they would receive education on how to give support to their wives in caring for their children.

Declarations

Ethical Consideration: Ethical approval for the study was obtained from Department of Planning, Research and Statistics Division, Ministry of Health, Oyo State, Nigeria. Its reference number is AD 13/479/44181^B. Informed consent of the respondents was also sought before collecting data. Study participants were identified by serial numbers to keep privacy of the respondents and all information provided including history, examination and results were treated with confidentiality.

Authors' Contribution: OOO designed the research, made instruments for data collection available and wrote the manuscript.

AMA contributed to the study design, assisted in obtaining ethical approval for the study, data analysis and assisted in proofreading the manuscript.

Conflict of interest: There is no conflict of interest.

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