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Exclusive breastfeeding practice and associated factors among mothers in northern Nigeria: Probit regression model approach

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Abstract
Objective: Exclusive Breastfeeding (EBF) is a situation whereby children are given only breast milk in the first 6 months of their life without adding any other foods. This practice drastically reduces the child's exposure to different illnesses and diseases. However, many studies have used the logistic model and the Chi-square test to identify associated factors of EBF without considering other similar models. Therefore, this study used the Probit model to identify associated factors of EBF in Northern Nigeria.
Methods: Secondary data from the 2018 Nigeria Demographic and Health Survey (2018 NDHS) were analysed, where 8276 women of reproductive age who lived in Northern Nigeria were included in the study. The main outcome variable was whether the mothers practised EBF or not. The probit model was used to identify the factors associated with EBF, and $p< 0.05$ was considered statistically significant.
Results: In the North-central, no formal education, primary and secondary education had 0.358, 0.485 and 0.387 decreases in z-score of practising EBF, respectively, compared to those with higher education ($p< 0.05$). All the variables were significantly associated with EBF in the North-east zone ($p>0.05$). However, the husband's or partner's education had a significant association with EBF in the North-west zone($p<0.05$).
Conclusion: The probit model identified the educational status of respondents and their husbands to be significantly associated with EBF. Therefore, the education of mothers and their husbands should be given unrelenting attention to increase EBF practices.

Keywords: Exclusive breastfeeding, Northern Nigeria, Nigeria Demographic and Health Survey, Probit

Plain English Summary

Exclusive breastfeeding (EBF) – giving babies only breast milk for the first six months, protects them from illness and supports healthy growth. However, many mothers in Northern Nigeria do not practise it. This study used national survey data to find out why. It showed that a mother's education strongly affects whether she practises EBF, especially in the North-Central region. In the North-West, the husband's education was also important. Mothers and fathers with little or no formal education were less likely to practise EBF. The

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study concludes that improving education and awareness for both mothers and fathers could help increase exclusive breastfeeding rates and improve child health in Northern Nigeria.

Background

Breastfeeding practice has tremendous benefits for both the mother and baby. Breast milk's nutritional content offers ideal infant nutrition and is always available (1). The World Health Organisation (WHO) and the American Academy of Paediatrics recommend exclusive breastfeeding for infants aged 0-6 months, and continue until two years with other foods. This is necessary because of the immense benefits of exclusive breastfeeding. Exclusive Breastfeeding (EBF) is when children are given only breast milk in the first 6 months of their life without adding any other things (2). Reports from the Nigeria Demographic and Health Survey (NDHS), 2018, have shown that the majority (97%) of the mothers included in the survey claimed to breastfeed their children, but only 29% of the children were exclusively breastfed, compared to the NDHS 2013 report, which was 17% exclusive breastfeeding (3, 4). This practice drastically reduces the child's exposure to different illnesses and diseases. It is also beneficial to the mother in that breastfeeding aids the uterus to contract and return to its former size after birth (5). The United Nations Children's Fund (UNICEF) and WHO in 2022 reported that over 70% of infants were not breastfed in Nigeria, therefore preventing them from enjoying the benefits found in exclusive breastfeeding (6, 7). The proportion of exclusive breastfeeding in Nigeria reduces as the age of the child increases. At ages 0-1, 2-3 and 4-5 months, the proportions of children who were breastfed were approximately 39, 29 and 18% respectively (4).

It was reported that in an attempt to improve National Workplace Policies for Exclusive Breastfeeding, clinicians and healthcare institutions have a part to play in supporting women in breastfeeding for the first 12 months of the child's life. (5). This will be necessary because the general well-being of mother and child is being jeopardised since the nursing mothers are expected to return to work after the maternity leave. Studies have shown that some nursing mothers have a variety of meanings to their understanding of EBF; hence, they require more awareness and education regarding the importance of EBF (2).

Presently, there is an increase in the number of people supporting breastfeeding outside Nigeria, especially in Canada. Breastfeeding provides infants with protein, carbohydrates, fat, vitamins and minerals. In addition, there is a strong bond and closeness between mother and child who is breastfed, among other benefits (8). Worldwide, about 44% of children aged 0-6 months received exclusive breastfeeding between the years 2015 to 2020 (2). Studies from Kenya, Southern Ethiopia, and Nigeria have recorded about 46%, 65% and 53% EBF, respectively, between 2018 and 2023 (9, 10, 11). The lives of more than 820000 under-five children could likely be saved each year if optimal breastfeeding were practised. Although breastfeeding correlated with higher income in adult life, more importantly, it improves IQ. EBF reduces mortality due to diarrhoea and other infections in infants. Breastfeeding also resolves problems of low-birth-weight or premature infants and mortality due to diarrhoea, pneumonia and malnutrition among mothers living with HIV (2).

Although EBF has proved to be of great importance to a child's immunity, the significance of the initiation and continuation period for both the mother and the child cannot be overemphasised. The initiation period is expected to be within the first hour of birth, and according to the WHO's recommendation, breastfeeding is expected to continue for the next 2 years (4). According to a community-based study on factors associated with EBF and its practice among mothers in Ethiopia, all the respondents in the survey had practised breastfeeding at one time or another. However, about 70% were exclusively breastfed, while breastfeeding initiation was about 62% (11). Antenatal care attendance information, follow-up during postnatal care, single birth and breastfeeding initiation within one hour were significantly associated with EBF (11). Also, studies on factors affecting the practice of EBF have used the Chi-square test and logistic regression model to identify breastfeeding babies for six months. The factors associated with EBF reported by these studies are childbirth attended by a health care provider, postnatal care utilisation, and mothers who did not report any breast-related problems for the first six months after birth (9, 11).

Previous studies show that exclusive breastfeeding is still low in Nigeria, especially in Northern Nigeria (3, 12). In the literature, logistic regression analysis is commonly used to identify factors associated with EBF. Probit regression analysis is another model similar to logistic regression in identifying factors associated with binary response variables found in EBF (Yes, No), which is uncommon in the literature. Therefore, this study aimed to identify factors associated with exclusive breastfeeding in Northern Nigeria using the probit regression model.

This study also adds to previous knowledge on another binary model to identify factors associated with exclusive breastfeeding or other studies involving binary response variables. In addition, this will make alternative models to logistic regression available to researchers working on binary response variables, as found in our study.

Methods

Settings and Subjects

The secondary data from the 2018 Nigeria Demographic and Health Survey (2018 NDHS) were analysed in this study. This is a retrospective study, and the National Population Commission (NPC) was involved in the implementation. The Census held in 2006 by the NPC was the sampling frame used for the 2018 NDHS, and a two-stage cluster sampling method was used for sample selection. The method of sampling and design for the survey is fully explained in the 2018 NDHS report (3).

Study variables

The outcome variable for this study was Exclusive breastfeeding (EBF); whether the women exclusively breastfed (1) or not (0). The explanatory variables are: Age of the mother (X_1), Highest level of education (X_2), Religion (X_3), Marital status (X_4), Age of partner/husband (X_5), Husband's educational level (X_6), Size of child at birth (X_7), Place of delivery (X_8), Mode of delivery (X_9) and Zone (X_{10}).

X's are independent variables and $\beta_1, \beta_2, \beta_3 \ldots, \beta_k$. These are the regression coefficients for the model. Probit regression analysis estimates the probability of a binary response variable equal to 1 (as opposed to 0), which is dependent on some covariates or independent variables. It assumes that the probability of the dependent variable is a Cumulative distribution function of a normal distribution used to model the probability of the response or dependent variable (14).

Data Analysis

Data analysis for this study was carried out using Statistical Package for Social Sciences (SPSS) version 23 and the R programming package. The chi-square test was employed to test for association between the response or outcome variable (EBF) and the explanatory variables. Variables found to be significant with EBF were further entered into a regression model. The probit regression model was used to identify the factors associated with EBF. This is used for binary outcomes as found in the logistic regression model.

Model for the study

The model for this study is the Probit regression model. The outcomes are z-score units rather than the log odds in Logistic regression models.

Φ is the standard cumulative normal probability distribution.

$$\Phi(z) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{z} e^{-\frac{1}{2}z^2} dZ$$

$$\pi = \Phi(\alpha + \beta X_i) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^{\alpha+\beta X_i} e^{-\frac{1}{2}z^2} dZ \quad (13, 14)$$

The Probit model now becomes:

$$\pi = \Phi(\psi_i) = \Phi(\alpha + \beta_1 X_{i\ 1} + \beta_2 X_{i\ 2} + \ldots + \beta_k X_{i\ k})$$

Table 1 shows the distribution of selected variables of women aged 15-49 by the three northern regions (North Central (NC), Northeast (NE) and Northwest (NW) in Nigeria. The results show that there was statistically significant association between the region and age of the mother (χ^2= 40.51), the highest level of education of the mother (χ^2 = 936.49), religion (χ^2= 1742.70), current marital status (χ^2 = 69.96), age of husband (χ^2 = 92.00), husband/partners educational level (χ^2 = 622.88), size of child at birth (χ^2 = 171.74), place of delivery (χ^2 = 1183.87) and delivery by caesarean section (χ^2 = 51.22); for all p<0.001.

Results

Table 1: Distribution of selected variables of women aged 15-49 by the Northern Regions in Nigeria

Characteristics	Zone Frequency (%)			χ^2-value	p-value
	North Central	Northeast	Northwest		
Age of the mother (yrs)					
15 – 19	141(6.6)	249(9.7)	326(9.1)	40.51	p< 0.001
20 – 24	507(23.7)	661(25.7)	877(24.6)		
25 – 29	661(30.9)	711(27.6)	944(26.5)		
30 – 34	425(19.9)	461(17.9)	676(19.0)		
35 – 39	281(13.1)	303(11.8)	459(12.9)		

40 – 44	97(4.5)	149(5.8)	223(6.3)		
45 – 49	25(1.2)	38(1.5)	62(1.7)		
Highest educational level					
No education	754(35.3)	1689(65.7)	2631(73.8)	936.49	p<0.001
Primary	394(18.4)	355(13.8)	375(10.5)		
Secondary	772(36.1)	443(17.2)	464(13.0)		
Higher	217(10.2)	85(3.3)	97(2.7)		
Religion					
Christian	1018(47.6)	419(16.3)	122(3.4)	1742.70	p<0.001
Islam	1115(52.2)	2153(83.7)	3420(95.9)		
Others	4(0.2)	0(0.0)	25(0.7)		
Current marital status					
Married	2046(95.7)	2429(94.4)	3499(96.4)	69.96	p<0.001
Living with a partner	16(0.7)	36(1.4)	4(0.1)		
Others	75(3.5)	107(4.2)	64(1.8)		
Age of husband (yrs)					
≤ 34	871(40.8)	997(38.8)	1056(29.6)	92.00	p<0.001
>34	1266(59.2)	1575(61.2)	2511(70.4)		
Husband/partner's educational level					
No education	633(29.6)	1412(54.9)	2133(59.8)	622.88	p<0.001
Primary	251(11.7)	287(11.2)	415(11.6)		
Secondary	883(41.3)	576(22.4)	606(17.0)		
Higher	370(17.3)	297(11.5)	413(11.6)		
Size of child at birth					
Very large	200(9.4)	298(11.6)	224(6.3)	171.74	p<0.001
Larger than average	382(17.9)	601(23.4)	1115(31.3)		
Average	1555(72.8)	1673(65.0)	2228(62.5)		
Place of delivery					
Home	1012(47.4)	1854(72.1)	3024(84.8)	1183.87	p<0.001
Govt. facility	780(36.5)	671(26.1)	486(13.6)		
Others	345(16.1)	47(1.8)	57(1.6)		
Delivery by caesarean section					
No	2074(97.1)	2534(98.5)	3546(99.4)	51.22	p<0.001
Yes	63(2.9)	38(1.5)	21(0.6)		

Table 2 shows the distribution of exclusive breastfeeding practice by women aged 15-49 and some selected variables. There was a statistically significant association (χ^2 = 21.68, p<0.001) between region and exclusive breastfeeding (EBF) in northern Nigeria. The age of the respondents had no statistically significant association with EBF (χ^2 = 10.21, p>0.05). The highest level of education (χ^2 = 37.77, p<0.001) and religion (χ^2= 31.65, p<0.001) of the mother were statistically significantly associated with EBF. In addition, both current marital status (χ^2= 0.26, p>0.05) and the age of the husband (χ^2= 3.30, p>0.05) were not statistically significantly associated with EBF. Furthermore, the husband/partner's educational level was statistically significantly associated with EBF (χ^2 = 23.68, p<0.001), but the size of the child at birth was not statistically significantly associated with EBF (χ^2= 4.89, p>0.05). Finally, place of delivery (χ^2 = 18.20, p<0.001), as well as delivery by caesarean section (χ^2 = 6.48, p<0.05), were statistically significantly associated with EBF.

Table 2: Distribution of exclusive breastfeeding practice by women aged 15-49 in Northern Nigeria

Characteristics	EBF Frequency (%)		χ^2-value	p-value
Zone	No	Yes		
North Central	1950(25.4)	187(31.4)	21.68	p< 0.001*
Northeast	2367(30.8)	205(34.4)		
Northwest	3363(43.8)	204(34.2)		
Age of the mother (yrs)				

15 – 19	651(8.5)	65(10.9)	10.21	p>0.05
20 – 24	1895(24.7)	150(25.2)		
25 – 29	2142(27.9)	174(29.2)		
30 – 34	1462(19.0)	100(16.8)		
35 – 39	971(12.6)	72(12.1)		
40 – 44	437(5.7)	32(5.4)		
45 – 49	122(1.6)	3(0.5)		
Highest educational level				
No education	4759(62.0)	315(52.9)	37.77	P<0.001*
Primary	1053(13.7)	71(11.9)		
Secondary	1517(19.8)	162(27.2)		
Higher	351(4.6)	48(8.1)		
Religion				
Christian	1395(18.2)	164(27.5)	31.65	P<0.001*
Islam	6258(81.5)	430(72.1)		
Others	27(0.4)	2(0.3)		
Current marital status				
Married	7401(96.4)	573(96.1)	0.26	p>0.05
Living with a partner	51(0.7)	5(0.8)		
Others	228(3.0)	18(3.0)		
Age of husband (yrs)				
≤ 34	2693(35.1)	231(38.8)	3.30	p>0.05
>34	4987(64.9)	365(61.2)		
Husband/partner's educational level				
No education	3923(51.5)	255(42.8)	23.68	p<0.001*
Primary	888(11.6)	65(10.9)		
Secondary	1898(24.7)	167(28.0)		
Higher	971(12.6)	109(18.3)		
Size of child at birth				
Very large	669(8.7)	53(8.9)	4.89	p>0.05
Larger than average	1925(25.1)	173(29.0)		
Average	5086(66.2)	370(62.1)		
Place of delivery				
Home	5507(71.7)	383(64.3)	18.20	p<0.001*
Govt. facility	1773(23.1)	164(27.5)		
Others	400(5.2)	49(8.2)		
Delivery by caesarean section				
No	7574(98.6)	580(97.3)	6.48	p<0.05*
Yes	106(1.4)	16(2.7)		

Significant at p< 0.05. EBF: Exclusive Breastfeeding

The Probit Regression model of factors associated with Exclusive Breastfeeding practice by women aged 15-49 in Northern Nigeria is shown in Table 3. In the North-central, the highest level of education of the mother was significantly (p< 0.05) associated with EBF, but religion, husband/partner educational level, place of delivery, and delivery by caesarean section were not significantly (p> 0.05) associated with EBF. All five factors in the model were not significantly (p> 0.05) associated with EBF in the North-east. In the North-west, the highest level of education of the husband/partner was significantly (p< 0.05) associated with EBF, but the highest educational level of the woman, religion, place of delivery, and delivery by caesarean section were not significantly (p> 0.05) associated with EBF. Respondents with no formal education had a 0.358 decrease (p< 0.05) in the z-score of practising EBF compared to those with higher education. Likewise, respondents with primary and secondary education reduced the z-score of practising.

Table 3: Probit Regression model of factors associated with Exclusive Breastfeeding practice by women aged 15-49 in Northern Nigeria

Characteristics/ Parameter	North Central β	North Central Std. Error	North Central Z	Northeast β	Northeast Std. Error	Northeast Z	Northwest β	Northwest Std. Error	Northwest Z
Intercept	-5.981	13769.294	0.00	-1.013	0.362	7.84	-1.751	0.664	6.95
Highest educational level									
No education	-0.358	0.169	4.52*	-0.121	0.228	0.28	0.332	0.264	1.58
Primary	-0.485	0.168	8.32*	-0.167	0.237	0.50	0.227	0.277	0.67
Secondary	-0.387	0.144	7.24*	0.099	0.218	0.21	0.479	0.265	3.51
Higher	Ref	-	-	-	-	-	-	-	-
Religion									
Christian	5.217	13769.294	0.00	0.054	0.105	0.27	-0.309	0.421	0.54
Islam	4.976	13769.294	0.00	ref	-	-	-0.206	0.368	0.31
Others	Ref	-	-	nil	-	-	-	-	-
Husband/partner's educational level									
No education	-0.066	0.159	0.17	-0.091	0.133	0.47	-0.291	0.122	5.70*
Primary	0.198	0.167	1.41	-0.049	0.161	0.10	-0.386	0.154	6.32*
Secondary	0.198	0.129	2.35	-0.176	0.136	1.69	-0.341	0.128	7.10*
Higher	Ref	-	-	-	-	-	-	-	-
Place of delivery									
Home	-0.141	0.114	1.53	0.082	0.275	0.09	0.282	0.348	0.66
Govt. facility	-0.169	0.109	2.41	0.076	0.275	0.08	0.314	0.348	0.81
Others	Ref	-	-	-	-	-	-	-	-
Delivery by caesarean section	-0.108	-0.211	0.26	-0.316	0.269	1.38	0.028	0.502	0.003
No									
Yes	Ref	-	-	-	-	-	-	-	-

Significant at p< 0.05.

EBF by 0.485 and 0.387 (p<0.05), respectively, compared with those with higher education. Moreover, the education of the respondent's husband or partner was significantly associated with EBF in the northwest. The husband or partner with no formal education but primary and secondary education decreased the z-score of practising EBF by 0.291, 0.386 and 0.341 (p<0.05), respectively, compared to those with higher education.

Discussion

This study has shown that the selected variables (age of the mother, education of the mother, religion, current marital status, age of husband, husband/partner educational level, size of child at birth, place of delivery, and delivery by caesarean section) were significantly related to Zone. This revealed that the women possessed different characteristics across the region. It implies that there were variations in the pattern and distribution of the selected variables in the three zones. More respondents were found between the ages of 25-29 across the three regions. More respondents in the youngest age group (15-19 years) occurred in the NE, followed by the NW. Most women did not have formal education, with the highest number in the NW zone. This is a result of the fact that female children in northern Nigeria are involved in early marriage, which eventually affects their educational level.

Most women's practice of the Islamic religion is not a surprise since the study was focused on the women in Northern Nigeria, of which less than 1% practised another religion. This is similar to a previous study that the practice of the Islamic faith is common in northern Nigeria (3, 4). Considering the marital status of the women, more than 90% of them were married, with the highest proportion in the NW zone. The practice of early marriage was the root cause of this result. More than half of the respondents' husbands were above 34 years old. This shows that most of the men involved in this study were older than the women.

The highest number of husbands or partners with no formal education occurred in the NW (59.8%) followed by NE (54.9%). The highest level of educational attainment by the respondents' husbands was secondary education. The less privileged partners are more in the NW and NE

zones. More than 60% of the respondents had average-sized children at birth, with the highest proportion from NC. This could be due to their nutritional intake. A balanced diet, including good food, would positively impact their health, weight, and the health of the baby in the womb, ultimately affecting their size. The majority (84.8%) of the respondents in the NW delivered their babies at home, followed by NE (72.1%) and NC (47.4%). Very few of the respondents delivered their babies by caesarean section.

The study disclosed that EBF was significantly associated with Zone. The proportion of EBF in the North was 7.2%, but there were variations among the zones, as NC (8.8%) had the highest proportion compared to NE (8.0%) and NW (5.7%). This is similar to a previous study in Nigeria from the NDHS, 2018 data (3). However, the respondents' practice of EBF was not affected by age, as also reported by studies in Nigeria (15, 16, 17). This means there was no difference in the proportion of respondents who practised EBF with age. However, a study from Ethiopia reported a significant association (18). The difference may reflect the socio-cultural dynamics in various countries.

The education of the respondents influenced their practice of EBF. Those with no formal education practised EBF more than other levels of education, followed by those with a secondary educational level. This result could have been that those who did not have formal education would have more time to breastfeed than higher education. Those with higher education might not have time to breastfeed their children because of their workplace. The result conforms with studies from South East Nigeria, the Federal Capital Territory, Abuja, and Ghana (19, 20, 21). However, this contrasts with the study from Nigeria, where EBF was not associated with education (16, 17). The reason for the differences may be connected to the fact that mothers in those studies who reported insignificant education associations received supervised training and monitoring of the practice of EBF. There were variations in the practice of EBF within the husband's education level. Women of partners with no formal education and those with secondary education practised EBF more than others. This is similar to previous studies (15, 22) But contrary to some other studies (9, 11, 16, 23). Most of our study participants' partners are non-government workers and not working class; this may account for the differences with other studies, which are mainly working class and may not have time to support their partners for EBF, irrespective of their educational level.

The religion of the respondents was another factor associated with EBF, which was contrary to studies from Ethiopia and Ghana (18, 20). The marital status and age of the husband did not influence the practice of EBF. It means that whether a woman was married or not, the practice of EBF was not affected; likewise, how old the husband was had no effect. This conforms with studies from SW Ethiopia and Ghana (20, 22). The reverse was the case with another survey from Ethiopia that showed that EBF was significantly associated with marital status (18). Again, the social dynamics are at play here, and this accounts for the similarities or differences.

The child's size did not determine whether the child would be exclusively fed. Place of delivery played a vital role in EBF, as shown in this study. This conforms with other studies that reported the same (15, 16). However, contrary results were reported by some other researchers (9, 24). Most of the respondents delivered at home and did not practice EBF. Finally, a higher proportion (2.7%) of respondents who delivered by caesarean section practised EBF, while 1.4% did not. This was not in conformity with the result reported by Hunegnaw and others in their study (22).

The Probit regression model used in this study identified some factors significantly associated with exclusive breastfeeding practice, similar to reports from other studies. The lack of studies using probit regression makes comparison with other studies limited. Respondent's education was significantly associated with EBF in the North Central, comparable to findings from Nigeria, Ghana and Ethiopia (19, 20, 21, 23) studies, which used logistic regression models. However, few studies which used logistic regression reported that education was not significantly associated with EBF (15, 16). Probit has a normality assumption and is measured in Z-score, while logistic has a logistic assumption and is measured in Log odds. Thus, they are expected to perform similarly. Respondents' education was not significantly associated in the Northeast and the Northwest. In addition, the husband/partner's educational level was not significantly associated with EBF in the North Central and North East, which is in support of previous studies (22). Nevertheless, the husband/partner's educational level was significantly associated with EBF in the North West (19).

Place of delivery had no significant association with EBF in all three zones (8, 15, 24), but findings from some other reports negate these results (15, 18, 22, 23). Finally, the mode of delivery had no significant association with EBF in all the zones

(22). Religion was not significantly associated with EBF in the three zones, similar to previous studies (8, 18). Variations in social dynamics may explain these observations.

Conclusion

Respondents' and husbands' educational status, religion, Zone, place, and mode of delivery were statistically significantly associated with EBF. The Probit model identified respondents' and husbands' educational status as significant determinants of EBF in the North Central and Northwest zones, respectively. Education played a vital role in the practice of EBF of the respondents, so formal education for all the citizens of Nigeria should be given priority and encouraged.

List of Abbreviations

EBF: Exclusive Breastfeeding
NC: North Central
NDHS: Nigeria Demographic and Health Survey
NE: Northeast
NPC: National Population Commission
NW: Northwest
UNICEF: United Nations Children Fund
WHO: World Health Organisation

Declarations

Ethics approval and consent to participate

Ethical approval for data collection for the NDHS was documented in the 2018 NDHS reports (4). The secondary data from the Nigeria Demographic and Health Survey 2018 (NDHS, 2018) was used for this study. National Population Commission (NPC), Nigeria, and ICF obtained ethical approval for the National Survey. The authors of this study obtained permission from the relevant authorities to use the dataset.

Consent for publication

Not applicable

Availability of data and materials

The data set used and analysed during the current study is available from the corresponding author on request.

Competing interests

None

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Authors' contributions

KSO participated in conception, design, data analysis, and drafting of the manuscript. OOO and GJM participated in the interpretation of data and reviewed the manuscript for important intellectual content. AAE and AAG reviewed the manuscript for important intellectual content. All authors approved the final version and are accountable for its content.

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