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Knowledge and practice of exclusive breastfeeding among women in academia in Rivers State Nigeria

Benjamin O. Osaro[1*]; Nnenna Nnadi[2]; Yoko Ikakita[3]; Nnenna Ali Emordi[4]

1. Department of Community Medicine, Faculty of Clinical Sciences, College of Medical Sciences, Rivers State University Port Harcourt, Nigeria. benjamin.osaro@ust.edu.ng
2. Department of Family Medicine, Faculty of Clinical Sciences, College of Medical Sciences, Rivers State University Port Harcourt, Nigeria. nnadi.nnena@ust.edu.ng
3. Department of Family Medicine, Faculty of Clinical Sciences, College of Medical Sciences, Rivers State University Port Harcourt, Nigeria. ikakitayoko@yahoo.com
4. Department of Nursing Science, Faculty of Basic Medical Sciences, College of Medical Sciences, Rivers State University Port Harcourt, Nigeria. adanwoali@gmail.com

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Corresponding Author
Benjamin O. Osaro
E-mail: *benjamin.osaro@ust.edu.ng*

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ABSTRACT

Background: The practice of exclusive breast feeding among mothers vary with different populations, religion and locality but low below the 90% the global target recommended by UNICEF/WHO. Return to work has been documented as reason for discontinuation of exclusive breastfeeding among the working-class mothers. This study looked at the knowledge and practice of exclusive breastfeeding and time of initiation of breastfeeding among mothers in academia in Rivers State, Nigeria.
Methods: A total of 360 female lecturers in the six tertiary institutions in Rivers State were enrolled to participate through multistage sampling method. A pretested questionnaire was used to collect information on their socio-demography, knowledge of exclusive breastfeeding, obstetric and breastfeeding history, and the reasons for not practicing exclusive breastfeeding. Data was analyzed using IBM SPSS version 22 software. Categorical variables were presented as percentages on frequency table and continuous variables as means and standard deviation.
Results: About four-fifth (89.7%) of the participants were junior cadre academics below the rank of Senior Lecturer. More than four-fifth have knowledge of exclusive breastfeeding. Almost all the women (97.5%) breastfed their babies for a mean duration of 10.5±6.1 months, 61.5% practiced exclusive breastfeeding, 41% initiated breastfeeding within one hour of birth of their babies and return to work (17.8%) was the most common reason for discontinuation of exclusive breastfeeding.
Conclusion: The knowledge of exclusive breastfeeding among mothers in academia is high as well as the practice of breastfeeding. However, the practice of exclusive breastfeeding is moderate but still below the UNICEF/WHO global target.

INTRODUCTION

Breast milk is the ideal food for children 0 -24 months.[1] It provides all the nutrition required for the healthy growth and development of the child. It is also a cost-effective strategy for the prevention and control of diarrheal diseases in childhood. When adopted it can reduce infant mortality and burden of disease attributable to childhood infection and malnutrition.[2] The concept of exclusive breastfeeding followed the 'Baby Friendly Hospital Initiative introduced at the WHO/UNICEF Conference on breastfeeding 1991.[3] By this concept, children are with the exception of vitamins, medicines and mineral supplements, to be fed exclusively on breast milk during the first six months of their life ie without water, tea or herbal preparation, and then subsequently for two years along with complementary foods required to meet their nutritional needs.[4,5] Researches have shown that breast feeding has benefits to the nursing mother in terms of contraception, social bonding and financial gain, and to the child in terms of healthy physical, social and emotional development as well as improving survival in infancy and early months of life.[5-7] The practice of exclusive breast feeding varies with different populations, religion and locality. Although the UNICEF global target is for every newborn infant to have exclusive breastfeeding, a 90% coverage is commonly accepted worldwide.[1,5,8-10] The prevalence of exclusive breastfeeding among children less than 6 month is still low and not widespread in developing countries even though there is a gradually improvement.[8] A trend analysis showed an increase in the prevalence of exclusive breastfeeding globally from 33% to 39% over a 15-year period from 1995 -2010.[8] Other studies have also reported low prevalence of exclusive breastfeeding among women in informal employment in Uganda (42.8%), Burao District of Somali (20.5%), and Mauritius (17.9%).[5,9,11] In the 2018 NDHS, 29% of children had exclusive breastfeeding in the first 6 months of life.[12] Similar studies in Nigeria reported prevalence of exclusive breastfeeding of 28.5% among bankers in Mainland Local Government of Lagos State and 17.1% among rural women in Sokoto State.[1,10] The low level of exclusive breastfeeding in developing countries like Nigeria has been attributed to barriers and challenges associated with breastfeeding. These includes caesarian delivery, inflammatory conditions of the breast, lactation failures, meeting career goals, lack of family and social support, poor knowledge of good breast-feeding practices, etc.[1,2,5] A study reported that 32.5% of nursing mothers in Mauritius gave return to work as reason for discontinuing exclusive breastfeeding.[5] Efforts to reduce these barriers have been introduced to improve breastfeeding practices among women and to encourage them to exclusively breast feed their newborns during the first six months of life before commencing complementary feeding. For instance, the advocacy for increasing maternity leave for nursing mother from three months to six months, the introduction of paternity leave and the establishment of creches at workplaces, the global Baby Friendly Hospital Initiative, and the International Code for Marketing of Breastmilk Substitute.[8,13,14]

Working class nursing mothers practice exclusive breastfeeding during their allowed three months maternity leave but resort to formula feeding in their absence on their return to work. In Nigeria as well as in other developing countries, nursing mothers in academia like in other professions such as banking, are also faced with heavy academic workload and demanding schedules which may disrupt the practice of exclusive breastfeeding.[10] Data on the practice of exclusive breastfeeding among women in academia in Rivers State is scarce, therefore this study sought to assess exclusive breastfeeding practices of women employed in tertiary institutions in Rivers State, Nigeria.

MATERIAL AND METHOD

Study area

This study was carried out in Rivers State, one of the oil-mineral producing States in South-South Nigeria. It has Port Harcourt as its capital and a projected population of 6.2 million people.[15] There are six tertiary institutions in the State comprising of three degree awarding Universities, two Polytechnics and one College of Education awarding National Diploma certificates. Rivers State also has two public tertiary care health facilities, 18 secondary level health facilities, 384 public and 211 private primary level health facilities that provide healthcare services including prenatal, natal, and postnatal services to women of reproductive age.[16] Majority of these health facilities are baby friendly health facilities that encourage exclusive breastfeeding to nursing mothers.

Study design and sampling

This is a descriptive cross-sectional study carried out among women of reproductive age employed in the tertiary institutions in Rivers State as an academic staff who have or has had at least one living child. Excluded in this study were women of reproductive age managed for HIV/AIDS, women whose last babies were adopted or are nulliparous. Sample size determination was done using the Cochrane formula for single population: $n = Z^2pq/d^2$, where n is minimum sample size required,; Z is the standard normal deviate corresponding to 95% confidence level (1.96), p is an assumed prevalence of exclusive breastfeeding (28.5%) [10] (0.285); $q = 1-p = 0.715$; d is the degree of precision (5%) = 0.05. this was adjusted to accommodate a non-response rate of 10%. The minimum sample size of 344 was determined. This was however increased to 360.

Data collection and analysis

Ten Departments in each institution were selected by simple random sampling using a list of Departments as sampling frame and a proportionate sample taken from each selected Department. A total of sixty participants were recruited from each of the six tertiary institutions in Rivers State giving a total participant of 360. An interviewer administered pretested survey questionnaire was used to collect information on respondent's socio-demography, obstetrics history, knowledge of exclusive breastfeeding, breastfeeding practices, and reasons for not practicing exclusive breastfeeding.

Data was cleaned and entered into IBM SPSS Statistics version 22 and analyzed. Results were presented in frequency tables. Summary statistics was done using percentages for categorical variables and means for continuous variables.

Primary outcome variables

1. Knowledge of exclusive breastfeeding: this was determined a priori using the proportion of respondents who knew that exclusive breastfeeding means 'giving only breastmilk to a newborn in the first six months of life.'

2. Practice of exclusive breast feeding: was determined as the proportion of respondents who fed their last babies with only breast milk in the first six months of life.

Ethical approval

Ethical approval was obtained from the Ethics and review committee of the Rivers State University Teaching Hospital Port Harcourt, Nigeria. Participants were assured of their safety in the study and the confidentiality of their information and subsequently written informed consent were obtained from them before data collection.

RESULTS

A total of 360 women of reproductive age participated in the study. Less than one fifth (n = 62; 17.2%) of the participants were of the rank of lecturer 1 and above with mean age of 41.83±8.4 years. Almost all the participants (n = 324; 90%) were married, majority (n = 118; 32.7%) have three living children and attend Pentecostal churches (n = 211; 58.6%). Two third (n = 238; 65.6%) have Masters' degree and above. (Table 1)

Majority of the respondents (n = 151; 42.0%) had their last children within 5 years of the study. Nearly all of them (n = 354; 98.3%) attended antenatal care services with 306 (85.0%) attending four or more times and 339 (95.8%) counselled on breastfeeding and child nutrition. Nearly all the respondents (n = 328; 91.1%) delivered in health facility which is baby friendly (n = 325; 90.3%). Most of them had spontaneous vaginal delivery (n = 205; 56.9%) of their baby with mean weight of 3.43±0.59 kg (Table 2).

Table 3 shows that respondents who knew that exclusive breastfeeding means 'giving breast milk alone to newborns in the first six months of life were 332 (92.2%) and that 'medicine can be given to babies before six months' were 250 (69.4%) while 294 (81.7%) knew that 'Breast milk has all the baby require for adequate nourishment in the first six months of life'.

Almost all (n = 351; 97.5%) of the respondents breastfed their last babies for a mean duration of 10.5±6.1 months. Among children breastfed, 145 (41.3%) commenced breastfeeding within 1 hours of birth, 243 (69.2%) received colostrum, 217 (61.8%) were fed four or more times daily and slightly more than half (n = 180; 51.3%) were fed over 10 - 20 mins at each feed. There were creche facilities at work for two third (n = 247; 68.6%) of the respondents and 151 (43.0%) expressed breastmilk for their babies while at work. Only 101 (28.8%) of the respondents had problems with breastfeeding, commonly delayed milk flow (n = 39; 38.6%), cracked nipple and insufficiency of milk (n = 28; 27.7%) while 65 (64.3%) knew how to manage their breastfeeding problem (Table 4).

Among respondents who breastfed 216 (61.5%) did exclusive breastfeeding, 16 (7.4%) breastfed beyond 12 months. Social support for exclusive breastfeeding were received by 117 (54.2%) commonly from mother/siblings (n = 79; 67.5%), husbands (n = 52; 44.4%) and house helps (n = 40; 34.2%). Among those who did not exclusively breastfeed their babies, the most common reason was 'return to work' (n = 24; 17.8%) however, lack of social support was not a reason for not practicing exclusive breastfeeding (Table 5).

Table 1: Sociodemographic characteristics of the respondents

Variables (n = 360)	Frequency	Percent
Designation		
Graduate assistant	71	19.7
Assistant Lecturer	110	30.6
Lecturer 2	117	32.5
Lecturer 1	25	6.9
Senior Lecturer	23	6.4
Associate Professor	5	1.4
Professor	9	2.5
Mean age (SD) in years	41.83 (8.4)	
Marital status		
Married	324	90.0
Single/separated	19	5.3
Widow	13	3.7
Number of children		
1	45	12.5
2	72	20.0
3	118	32.7
4	69	19.2
5 or more	56	15.5
Mean no of children (SD)	3.03 (1.25)	
Mean no of male (SD)	1.53 (1.05)	
Mean no of female (SD)	1.54 (1.02)	
Religious denomination		
Catholic	55	15.3
Protestant	48	13.3
Pentecostal	211	58.6
Others (Islam, traditional)	46	12.8
Highest educational qualification of respondent		
Diploma	28	7.8
Bachelor and MBBS	94	26.1
Masters	117	32.5
PhD, Fellowship and Postdoctoral	121	33.6
Husband's highest level of education		
Primary	1	0.3
Secondary	10	2.8
Tertiary	209	58.1
Postdoctoral	100	27.8
None	40	11.0

Table 2: Obstetrics history of the respondents

Variables (n = 360)	Frequency	Percent
History of medical illnesses		
Hypertension	70	19.4
Diabetes	31	8.6
Arthritis	18	5.0
Depression	2	0.6
None	239	66.4
Duration of last delivery in years:		
1-5	151	42.0
6-10	79	21.9
11-15	58	16.1
>15	72	20.0
Attendance of ANC in the last pregnancy		
Yes	354	98.3
No	6	1.7
Frequency of ANC visits (n = 354)		
< 4 times	48	13.6
4 or more times	306	86.4
Counseling on breast feeding and child nutrition during ANC (n = 354)		
Yes	339	95.8
No	15	4.2
Last delivery was at a health facility		
Yes	328	91.1
No	32	8.9
Health facility is baby friendly		
Yes	325	90.3
No	35	9.7
Type of delivery		
Spontaneous vaginal delivery	205	56.9
Assisted vaginal delivery	49	13.6
Caesarian section	106	29.5
Mean birth weight in kg ± SD	3.43 ± 0.59	

Table 3: Knowledge of exclusive breastfeeding by respondents

Exclusive breastfeeding means (n = 360)	Frequency	Percent
Giving breast milk alone to newborns in the first six months of life		
Yes	332	92.2
No	28	7.8
Formula milk and cereal can be given to newborns in the first 4-months of life		
Yes	130	36.1
No	230	63.9
Occasionally giving water to the baby at any time during the first six months of life		
Yes	153	42.5
No	207	57.5
Local food preparations and infant formula can be given to the baby before six months		
Yes	129	35.8
No	231	64.2
Medicines can be given to babies before six months of life		
Yes	250	69.4
No	110	30.6
Colostrum should be given to newborns		
Yes	221	61.4
No	139	38.6
Breast milk is best food for a newborn		
Yes	296	82.2
No	64	17.8
Breast milk has all the baby require for adequate nourishment in the first six months of life		
Yes	294	81.7
No	66	18.3

Table 4: History of breastfeeding by the respondents

Variables	Frequency	Percent
Breastfed baby in the last delivery (n = 360)		
Yes	351	97.5
No	9	2.5
Mean duration of breastfeeding (SD) in months	10.5 (6.1)	
First food given to last child after delivery (n = 351)		
Breast milk	316	90.0
Formula milk	25	7.2
Gripe water	10	2.8
Child received colostrum at birth (n = 351)		
Yes	243	69.2
No	108	30.8
Commencement of breast feeding in the last delivery (n = 351)		
< 1 hr after delivery	145	41.3
within 1 - 24 hrs of delivery	156	44.5
more than 24 hrs after delivery	24	6.8
Not sure	26	7.4
Frequency of breastfeeding (n = 351)		
On demand	120	34.2
three times daily	8	2.3
four times daily	6	1.7
more than four times daily	217	61.8
Duration of each feed on the breast (n = 351)		
< 10 mins	24	6.8
10 - 20 mins	180	51.3
> 20 mins	147	41.9
Availability of creche facility in the institution (n = 360)		
Yes	247	68.6
No	113	31.4
Breastfeeding during working period (n = 351)		
I visit the creche to breast feed my baby	68	19.4
I express milk for my baby at home	151	43.0
I provide formula milk to feed my baby	69	19.7
Others	63	17.9
Experience of breastfeeding problem (n = 351)		
Yes	101	28.8
No	229	65.2
Not sure	21	6.0
Nature of problem experienced* (n = 101)		
delayed milk flow	39	38.6
cracked nipple	28	27.7
Insufficiency of milk	28	27.7
Breast pain	25	24.8
Engorgement of the breast	11	10.9
Retraction of nipples	2	2.0
Knowledge of management of breastfeeding problems (n = 101)		
Yes	65	64.3
No	14	13.9
Not sure	22	21.8
Mean age at introduction of food other than breast milk in months (SD)	5.57 (2.39)	

*Multiple options

Table 5: History of exclusive breastfeeding by the respondents

Variables	Frequency	Percent
Exclusively breastfed last child (n = 351) *		
Yes	216	61.5
No	135	38.5
Duration of exclusive breast feeding (months) (n = 216)		
< 6 months	75	34.7
6 months	111	51.4
7 – 12months	14	6.5
>12 months	16	7.4
Mean duration of exclusive breast feeding (SD)	5.98 (3.45)	
Had social support for breastfeeding last child (n = 216)		
Yes	117	54.2
No	99	45.8
Source of social support (n = 117)**		
Mother/Siblings	79	67.5
Husband	52	44.4
House-help	40	34.2
In-laws	17	14.5
Neighbors	3	2.6
Reason for not exclusively breastfeeding (n = 135)**		
Return to work	24	17.8
Poor knowledge	13	9.6
Perceived that breast milk is inadequate	12	8.9
Breast problem	10	7.4
Illness	8	5.9
Insufficiency of milk	6	4.4
Pregnancy	4	3.0
Caesarian delivery	4	3.0
Baby refused to suck	2	1.5
Social support	0	0

*Respondents who were breastfeeding; **multiple option

DISCUSSION

The practice of breastfeeding is a cultural issue and occurs worldwide.[17,18] The practice of feeding newborns in their first six months of life with only breastmilk with exception of medicine have however, been studied in different populations worldwide and reported to be low.[4,10] This study was done among highly educated women working as academics in tertiary institutions in Rivers State Nigeria. About four-fifth (89.7%) of these women were junior cadre academics below the rank of Senior Lecturer. The study looked at their knowledge and practice of exclusive breastfeeding. It found that the knowledge of exclusive breastfeeding among female lecturers was very high. For instance, more than four-fifth of the participants knew that exclusive breastfeeding means 'Giving breast milk alone to newborns in the first six months of life' and that 'Breast milk has all the baby requires for adequate nourishment in the first six months of life'.

The very high knowledge of exclusive breast feeding in this study may be because of the high level of education of the women or their multiparity. Less than 10% of these women possess educational qualifications below Bachelors' degree and approximately one-third (33%) have three children with majority of them (42%) having their last delivery in the last 5 years which may suggest their previous

experiences with breastfeeding. Ihudiebube-Splendor et al (2019) reported poor knowledge of exclusive breast feeding among primiparous women in Enugu, Eastern Nigeria.[4] Furthermore, majority of these women delivered in hospital with nearly all of them attending antenatal care services more than four times in a baby friendly hospital and received counseling on exclusive breast feeding and child nutrition during these visits. Although this study did not explore sources of knowledge of breastfeeding, their knowledge may have been acquired from basic health education and promotion messages following contact with healthcare providers. Therefore, this brings to fore the need for healthcare providers to maximize opportunities for delivery of health messages that can address myths and misconceptions that discourage unhealthy breastfeeding behaviours.[11] The knowledge of exclusive breastfeeding has also been reported in other studies to be high. For instance, Osibogun et al (2018) reported that 77.5% of bankers in Lagos mainland knew that breast milk should be given alone in the first six months and Amosu et al (2011) found that 96.5% of women in formal employment in Southwest Nigeria, had knowledge of the benefits of breastfeeding.[10,19]

Almost all the women (97.5%) breastfed their babies for a mean duration of 10. 5±6.1 months with only one in ten of them giving pre-lacteal feed (gripe water or formula milk) as first food. Akadiri and Adetola (2020) also reported that 93.4% of women in Southwest Nigeria breastfed their babies.[17] Approximately two fifth (41%) of the mothers in this study commenced breastfeeding within the first one hour of birth as recommended by WHO, about two-third (59%) gave their children colostrum. Similar findings on time of initiation of breastfeeding have also been documented in studies elsewhere. For instance, Afam-Anene et al (2020) documented that one third (33%) of mothers working in a tertiary institution in Imo State commenced breastfeeding within one hour of delivery, 38.8% among women in Southwest Nigeria and 54.2% of the nursing mothers in Sudan.[2,6,17] The initiation of breastfeeding within one hour after birth was reportedly higher (70%) among physician-mothers in Ife Osun State.[20] This finding may be because these women as physicians are role models who knew the benefits of early initiation of breastfeeding. The early initiation of breastfeeding has been reported to enhance bonding between the newborn and mother, and that it reduces breastfeeding failures.[1,6]

This study found that most of the mothers (61.8%) breastfed their babies more than four times daily with each breastfeeding lasting 10 -20 minutes in about half (51.3%) of them. Among rural women in Sokoto State, Nigeria, 86.0% of the mothers breastfed their children on demand and 3.7% feeding up to 8 times daily.[1]

Although WHO recommend that 90% of children be fed breast milk exclusively in the first six months and continued for two years in addition of complementary feeding after six months, only 61.5% of mothers in this study who breastfed their babies practiced exclusive breastfeeding. Among these 51.4% fed for only six months while 7.4% for 12 months and above. The prevalence of exclusive breastfeeding in our study is comparable to those reported among women in Southwest Nigeria (58.8%) and among caregiver attending paediatric and immunization clinics in Kano State Nigeria (68.5%).[17,21] Similar study among working women in tertiary institutions in Imo State Nigeria reported a lower prevalence of exclusive breastfeeding of 33.4% which may be due the inclusion in their study of non-academic staff whose work schedules are not as flexible to allow for exclusive breastfeeding compared to those in academia.[2] It has been reported that breast feeding could create conflicts at work when the work environment is inconvenient and there are no workplace facilities for breastfeeding.[2] Furthermore, a lower prevalence of exclusive breastfeeding was also reported in related studies in Nigeria among rural women in Sokoto (17.1%), bankers in Lagos mainland (28.7%), physician-mothers in Ife Osun State (28%) [1,10,20] and elsewhere among Sudanese women (29.4%), women in Northwestern Romania (46.7%) and among women in informal sector in Kampala (42.8%).[6,11,22] Cultural differences in these populations may account for this variation in the reported prevalence rate of exclusive breastfeeding.

Only 7.4% of women in this study continued exclusive breastfeeding beyond 12 months. This is very low compared to 70% reported among women in Southwest Nigeria.[17] The low continuation rate in this study may be due to the differences in the work schedules of mothers in this study who are academics with inflexible work schedules compared to the larger population. The common breastfeeding problem experienced by women in this study were delayed milk flow (38.6%), cracked nipples (27.7%), perceived insufficiency of milk (27.7%), breast pain (24.8%) and breast engorgement (10.9%) which have also been reported in other studies.[5,17,18] These problems are likely to discourage the practice of exclusive breastfeeding or disrupt its continuation beyond six months.[6]

More than half of our population (64.3%) knew how to manage the problems associated with breastfeeding. About half of the mothers had social support for exclusively breastfeed mainly from their mothers and siblings (36.6%), husbands (24.1%) and house help (18.5%). These may also be the reason for the moderate exclusive breastfeeding behaviour of women in this study. Social support particularly from the husbands play key roles for successful exclusive breastfeeding. Western values and behaviour especially among the educated women have projected the breast more as a sex object because of its attractiveness than as an appendage required to provide nourishment for infants.[19] In their study Amosu et al (2011) found 66.0% of husbands supporting exclusive breastfeeding for 4-6 months and only 19.0% for 2 years whereas among

bankers in Lagos mainland, 44% of husbands supported exclusive breastfeeding.[10,19]

Among those who did not practice exclusive breastfeeding, return to work was the most common reason (17.8%) followed by poor knowledge (9.6%) on how to practice exclusive breastfeeding at work and the perception that breast milk is inadequate to meet the nutritional requirements of the babies (8.9%). Other studies have similarly reported return to work, pregnancy for the next child, short duration of maternity leave, inconvenient work environments, fear of excessive weight gain, perception of breast milk as nutritionally inadequate, etc.[1,2,5,6,10] These reasons can be obviated by increasing the education of pregnant women on breastfeeding skills and techniques during ANC visits and medical consultations so that they can ensure their babies have unrestrained access to breast milk which is safe and of high nutritive value.[23] Furthermore, this study found that two-third of the women had creche facility at work, 19.4% use them while 43.0% express milk for their babies at home when at work. The implication of this is that institutions employing women of reproductive age should provide facilities and environments that can enable nursing mothers breastfeed their babies.

In this study data collection relied on memory recall, which is subject to bias however, information obtained were limited to the last birth experience of the respondents. Again, the study population are only women in academia in Rivers State therefore generalization on the entire population of women outside this population may be misleading.

The predictors of exclusive breastfeeding among this population were beyond this study, therefore further research to explore the predictors of practice of exclusive breast feeding among these population is recommended.

CONCLUSION

The knowledge of exclusive breastfeeding is high among mothers in academics in Rivers State Nigeria. There is a gap between the practice of breastfeeding and exclusive breastfeeding among mothers in academia. Although almost all the mothers breastfed their babies for variable length of time, the practice of exclusive breastfeeding and early initiation of breastfeeding within one hour of birth is moderately low and below the recommendation of WHO.

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Authors' contribution

BOO: conceptualization, design of the study, data analysis, final draft

NN: data collection, interpretation of data, initial draft, review of final draft

YI: Data collection, review of initial and final draft, literature search

NE: Data collection, literature search, review of final draft.

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