

Perception of Donor Breast Milk and Determinants of Its Acceptability amongst Pregnant Women Attending Antenatal Clinic in a Secondary Facility in South-South Nigeria



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ABSTRACT

Introduction: In Nigeria particularly, the percentage of infants exclusively breastfed is quiet low. Similarly, there is no human breast milk bank in the whole of West African Sub-region.

Methodology: This was a cross sectional descriptive study conducted amongst 200 pregnant women attending antenatal clinic in Central Hospital Benin. Perception (knowledge and acceptance) of donor breast milk amongst these women were assessed using pre-tested questionnaires.

Results: Nearly half (45.5 %,) of the mothers were between the ages of 30-39 years. Two-thirds of the mothers (67%) also were not aware of donor breast milk. More than half of the mothers (56%) were willing to donate breast milk. Majority (74.4%) of the mothers were unwilling to accept donor breast milk.

Conclusion: This study revealed poor knowledge of donor breast milk as well as poor acceptance of donor breast milk.

INTRODUCTION

Human milk is considered the best source of nutrients for all newborn babies.¹ Specifically, it should be considered the first choice of nutrient for premature infants, low birth weight neonates as well as vulnerable neonates receiving care in the neonatal intensive care unit.^{2,3} This is because it is rich in bioactive substances that are essential in the development of the immune system.⁴ Other benefits of breast milk include better neuro-cognitive/ long-term mental development, reduced incidence of necrotizing enterocolitis as well as retinopathy of prematurity, childhood diabetes and obesity.⁵ It also shortens the length of stay of the baby in the neonatal intensive care unit, thereby providing direct cost saving benefits for the families of infants.⁶

Based on these advantage of breast milk and its superiority over formula feeds, WHO recommends that all mothers should feed their infants solely on breast milk for the first six months of life (irrespective of their HIV status). However for infants who cannot receive breastmilk directly from their own mother, WHO recommends that donated human milk and not formula feed is the next preferred option⁷. Donated human milk has been defined by the National Institute of Health and Clinical Science (NICE) as breastmilk expressed by a mother that is processed and stored in a donor milk bank for use by a recipient that is not the mothers baby.⁸

Breastfeeding promotion is largely connected to the collection of donor breastmilk, as owning a human milk bank in a health facility increases awareness about breastfeeding amongst members of the community.⁹

In addition the availability of donor breast milk is very significant for infants whose mothers cannot breastfeed because of medical problems like pulmonary tuberculosis, cancer/chemotherapy etc.¹⁰⁻¹¹

In Nigeria, the percentage of infant exclusively breastfed is quite low.¹² This has impacted negatively on the neonatal mortality statistics in the country.¹² Also of grave concern is the fact that there is no human breast milk bank in the whole of West-Africa sub-region.¹³ Due to the strong religious and cultural perceptions of mothers, establishing a breastmilk bank for the use in special cases will require in-depth consideration of its acceptability amongst mothers.¹³ The existing medical literature of this in the facility where this study was conducted is highly deficient.

This study therefore assess the perception of pregnant women (receiving antenatal care in a secondary health facility) on the acceptance of donor breastmilk.

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METHODOLOGY

This was a cross-sectional study conducted between December 2021 and June 2022 amongst pregnant women attending antenatal clinic in Central Hospital Benin City.

The Hospital is located around Sapele road area of Benin City and primarily offers secondary care to residents of Oredo Local Government area in Benin City, Nigeria.

A structured research administered questionnaire was used to obtain information from the pregnant women. Information obtained included biodata as well as other relevant information to assess their perception (knowledge and acceptance) of breastmilk bank.

Data collected were entered into a table and analyzed using the statistical package for the social sciences (SPSS version 20). Socio-economic status of the participants was determined using oyedeji's classification.¹⁴ For all statistical tests, p-values<0.05 were considered significant.

RESULTS

Table 1. Sociodemographic Characteristics of Respondents

Variable	Frequency (n = 200)	Percent
Age group (years)		
< 30	63	31.5
30 – 39	91	45.5
40 – 49	36	18.0
50 and above	10	5.0
Mean ± SD	34.0 ± 7.8 years	
Level of education		
Primary	16	8.0
Secondary	72	36.0
Tertiary	112	56.0
Occupational Skill Level		
Skill Level 0	21	10.5
Skill Level 1	15	7.5
Skill Level 2	116	58.0
Skill Level 3	37	18.5
Skill Level 4	4	11.5
Number of children		
< 3	106	53.0
3 – 5	86	43.0
> 5	8	4.0

Respondents within age group 30 – 39 years accounted for nearly half (91; 41.5%) of the participants. The mean age was 34.0 ± 7.8 years. More than half (112; 56.0%) and 116 (58.0%) of the respondents had tertiary level of education and occupation within skill level 2 respectively. Likewise, 106 (53.0%) of respondents had less than 3 children, while 86 (43.0%) had between 3 – 5 children.

Table 2. Awareness of Donor Breast Milk and Source of Information

Variable	Frequency (n = 200)	Percent
Awareness		
Yes	66	33.0
No	134	67.0
Source of information (n = 66)		
Friends	27	40.9

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Health workers	19	28.7
Internet	11	16.7
Mass media	5	7.6
Relatives	4	6.1

About one-third (66; 33.0%) of the respondent were aware of donor breast milk while slightly more than two-third (134; 67.0%) were not aware. Friends, health workers and internet were the sources of information in majority of respondents.

Table 3. Attitude of Respondents towards Donor Breast Milk

Variable	Frequency (n = 66)	Percent
Willingness to donate breast milk		
Yes	37	56.1
No	29	43.9
Reasons for refusal to donate breast milk (n = 29)		
Breast milk not sufficient for baby and recipient	9	31.0
Cultural belief	7	24.2
Religious belief	5	17.2
Inconvenience	4	13.8
Personal	2	6.9
Others	2	6.9
Willingness to accept donor breast milk		
Yes	17	25.6
No	49	74.4
Reason for refusal to accept donor breast milk (n = 49)		
Fear of infection	27	55.2
Cultural belief	10	20.4
Bad idea	6	12.2
Religious belief	6	12.2
Overall attitude		
Good attitude	16	24.2
Poor attitude	50	75.8

More than half (37 ;56.1%) of the respondents who were aware of donor breast milk were also willing to donate while only one-fourth (17 ; 25.6%) were willing to accept donor breast milk. Religious and cultural beliefs were the reason for the unwillingness to donate breast milk in more than one-third (12 ; 41.4%) of the respondents, while about one-third (9 ;31.0%) believed that that breast milk was not sufficient for their babies and recipients. Fear of infection and cultural belief were the reasons for the refusal to accept breast milk in 27 (55.2%) and 10 (20.4%) of respondents respectively.

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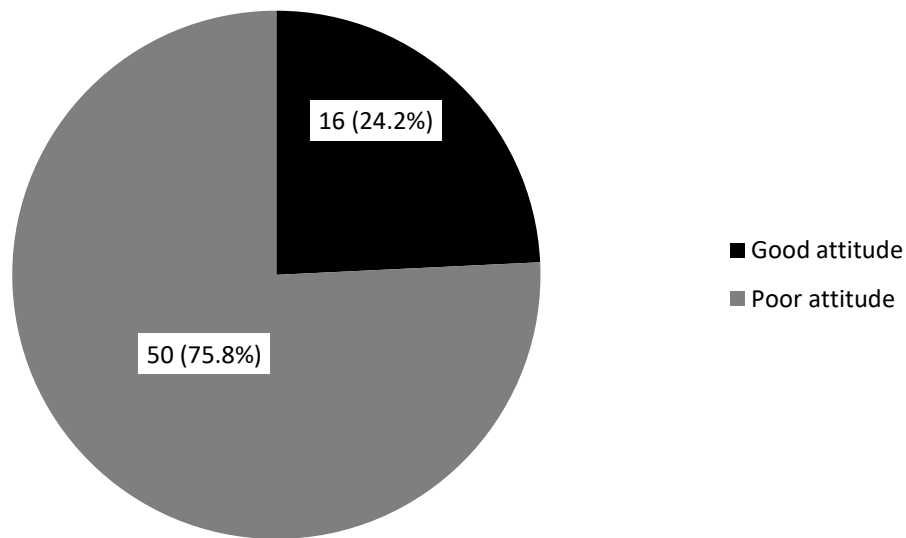


Figure 1. Respondents Attitude towards Donor Breast Milk

Negative attitude towards donor breast milk was observed in majority 50 (75.8%) of respondents.

Table 4. Association between Attitude towards Donor Breast Milk and Socio-Demographic Characteristics of Respondents

Variable	Overall Attitude		Test statistics	p-value
	Positive attitude (n = 16) Frequency (%)	Negative attitude (n = 50) Frequency (%)		
Age group (years)				
< 30	5 (31.1)	14 (28.0)		
30 – 39	5 (31.1)	25 (50.0)		
40 – 49	3 (18.8)	8 (16.0)		
50 and above	3 (18.8)	3 (6.0)	Fischer’s Exact = 3.330	0.349
Level of education				
Primary	0 (0.0)	2 (4.0)		
Secondary	3 (18.8)	12 (24.0)		
Tertiary	13 (81.2)	36 (72.0)	Fischer’s Exact = 0.547	0.853
Occupational Skill Level				
Skill Level 0	3 (18.8)	3 (6.0)		
Skill Level 1	0 (0.0)	3 (6.0)		
Skill Level 2	7 (43.8)	33 (66.0)		
Skill Level 3	4 (25.0)	5 (10.0)		
Skill Level 4	2 (12.4)	6 (12.0)	Fischer’s Exact = 6.120	0.178
Number of children				
< 3	8 (50.0)	30 (60.0)		
3 – 5	7 (43.8)	17 (34.0)		
> 5	1 (6.3)	3 (6.0)	0.774	0.803

Age of respondents did not show significant statistical association with attitude towards donor breast milk as nearly two-third ie 10 (62.2%) and majority ie 39 (78.0%) of respondents with positive and negative attitude respectively were less than 40 years (p

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= 0.349). The proportion of respondents with positive and negative attitude increased with increasing level of education with those with tertiary level of education accounting for the highest proportions (13; 81.2% and 36; 72.1%) of respondents with positive and negative attitude respectively. This association was however not statistically significant ($p = 0.853$) Respondents with occupation within skill level 2 had the highest proportions ie 7 (43.8%) and 33 (66.0%) of positive and negative attitude respectively ($p = 0.718$). The proportion of respondents with positive and negative attitude was noticed to decrease with increasing number of children with those who had less than 3 children accounting for half ie 8 (50.0%) and nearly two-thirds ie 30 (60.0%) of respondents with positive and negative attitude respectively. This association was also not statistically significant ($p = 0.803$)

Table 5. Logistic Regression Model for the Determinants of Attitude towards Donor Breast Milk

Predictors	B (regression co-efficient)	Odds ratio	95% CI for OR		p-value
			Lower	Upper	
Age	0.040	1.041	0.950	1.141	0.388
Level of education					
Tertiary	19.460	0001	0001	0001	0.999
Secondary	19.905	0001	0001	0001	0.999
Primary*	1				
Occupational skill level	-0.149	0.653	0.449	1.650	0.653
Number of children	0.018	1.018	0.612	1.694	0.945
Practice of EBF					
Yes	1.143	3.135	0.652	15.065	0.154
No	1				

*Reference category, $R^2 = 7.0\% - 10.5\%$, CI= Confidence Interval

The variable in the model accounted for between 7.0% – 10.5% of the variation observed in the outcome variable (Positive attitude). With a year increase in age, the likelihood of having a positive attitude increased by 0.040. This was more likely by an odds ratio of 0.959 and it was not statistically significant ($p = 0.388$). Level of education was not significantly associated with attitude towards donor breast milk. Respondents with higher occupational skill levels were 0.653 times less likely to have positive attitude, and this was also not statistically significant ($p = 0.653$).

With an increase in the number of children, the likelihood of having positive attitude increased by 0.018 ($p = 0.945$). Similarly, respondents who practiced exclusive breastfeeding were 3.135 times more likely to have positive attitude compared to those who did not practice exclusive breastfeeding. This was also not statistically significant ($p = 0.154$).

DISCUSSION

This study assessed the perception of mothers in a secondary health facility towards donor breast milk. Despite the importance of exclusive breastfeeding in reducing childhood morbidity and mortality, the exclusive breastfeeding rate in Nigeria is quiet low.¹² similarly, there is no breast milk bank in the whole of West African Sub-region and by extension Nigeria.¹³

Nearly half of the respondents in the study were between the ages of 30-39years. A similar proportion of mothers in this age bracket was studied by Iloh et al in South-East Nigeria.¹³ About one third of the respondents had heard of the concept of breast milk donation. This is much lower than what has been reported in studies amongst mothers in Turkey, China but similar to what has been reported in some parts of Nigeria.^{13, 15-17}. The difference in awareness level between mothers in our environment and those cited maybe partly due to less availability and accessibility of electronic media for dissemination of relevant health investigation compared to these countries.^{18, 19}

Slightly more than half of those who have heard of breast milk bank were unwilling to donate breast milk. Similar finding was reported in Jos, Nigeria.²⁰

Majority of those who were unwilling to donate like their counterparts in Jos were of the opinion that breast milk donation would reduce the quantity of milk available for their own babies.

The others identified religious and cultural beliefs as reasons why they were unwilling to donate. Although these concerns are cogent, they are however highly unsubstantiated and thus need to be addressed by adequate health education to breastfeeding mothers.

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Only a quarter of mothers who knew about breast milk banks were willing to accept donor breast milk from other sources. This is of ample concern as breast milk banking has been shown to contribute to fall in infant mortality as well as provide great relief for mothers who for some inevitable reasons cannot breastfeed their newborns.^{21,22}

Majority of those who were unwilling to accept donor breast milk expressed the fear of transmission of infections to their babies. Similar reason has been given by mothers in some others studies.^{23, 24, 25, 26.}

Thus, it is essential that donor breast milk must be properly preserve to prevent contamination.²²

Also, women from whom such milk are obtained must be adequately screened to be sure that they are fit to donate breast milk.²² If these measures have been put in place, there will also be need to adequately reassure mothers about these safety of donor breast milk.

Maternal age, level of education and occupational skills level were not found to significantly affect attitude toward donor breast milk. The cross-sectional nature of the current study as well as the not too large number of participants studied might be possible reason for these findings.

Finally, although not statistically significant, the likelihood of having positive attitude increased with an increased number of children as well as with the practice of exclusive breastfeeding.

Possible explanation for this might be due to the fact that with subsequent pregnancies, the strain on the mothers in terms of requirement needed to cater for other siblings increases, hence the need to source for alternate source of milk for her newborn. Similarly, mothers who practice exclusive breastfeeding are more likely to prefer human milk as source of nutrition for their neonates.

CONCLUSION

Our study found the knowledge of donor breast milk amongst mothers in our environment to be quite low. Much needs to be done to educate mothers on the need to accept donor breast milk as alternate source of feed for their newborns.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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REFERENCES

- 1) Gelono,TF,Bacha,YD;Assefa; NO et al. Acceptability of donor breastmilk banking, it's use for feeding infants, and associated factors among mothers in Eastern Ethiopia . *Int Breastfeed J* 2018; 13(23): s13006-018-0163.
- 2) Haiden N, Ziegler EE. Human Milk Banking *Ann NutrMetab.* 2016; 69(2):8-15.
- 3) Henderson G, Anthony MY, McGuire W. Formula milk versus preterm human milk for feeding preterm in low birth weight infants. *Cochrane Database Syst Rev.* 2001;3:CD002971.
- 4) Quigley M, Mc GuireW. Formula versus donor brestmilk for breastfeeding preterm or low birth weight infants. *Cochrane Data base syst Rev.* 2014; 4: CD002971.
- 5) Hortar BL, Victoria CG. Long term effects of breastfeeding: a systemic review. Geneva: Wadd Health Organization. 2013.
- 6) Commonwealth of Australia.Donor human milk banking in Australia. Issues and background paper. Australia Government Department of Health; 2014.
- 7) World Health Organisation and UNICEF. Global Strategy for infant and young child feeding Geneva, Switzerland: WHO; 2003.
- 8) NICE clinical guidelines. Donor Breastmilk Banks. The Operation of Donor Milk Bank Services. Centre for Clinical Practice at NICE London, 2006. Available online at <http://www.ncbi.nlm.nih.gov/book/NBK66147/>

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- 9) Arslanogu S, Moro GE, Bellu R, Turoli D, De Nisi G, Tonetto P, et al. Presence of Human milk bank is associated with elevated rate of exclusive breastfeeding in VLBW infants. *J perinat Med.*2013; 41(2); 129-3.
- 10) Arnold LDW. Global health policies that supports the use of banked donor milk: a human rights issue. *Int Breastfeed J.*2006; 1:26.
- 11) American Academy of Pediatrics. Breastfeeding and the use of human milk. *Pediatrics.* 2012; 129(3):ef27-41.
- 12) UNICEF Nigeria. More than %million Nigerian newborn miss out on the head start of life. Media centre 2016. Source <http://www.unicef.org/Nigeria/media.10520>.
- 13) Iloh IK, Osuorah CDI, Ndu IK, Asinobi IN, ObunemeAyum IN, Ezedu CE. Perception of donor breastmilk and determinants of its acceptability amongst mothers in a developing community: a cross-sectionalmulticentre study in South-East Nigeria *Int Breastfeed J.*2018; 13:47-58.
- 14) Oyedeji GA. Socioeconomic and cultural background of hospitalized children in Ilesha.1985; 12(4).111-17.
- 15) Huang C, Han Wei, Fan Y. Knowledge and attitude on donation of breast milk in hospitalized mothers. *Gac Sanot.* 2021; 35(3): 213-215.
- 16) Ergin A, Uzon SU. Turkish Women’s Knowledge, Attitudes and Behaviour on Wet Nursing, Milk Sharing and Human Milk Banking, *Matern child Health J.* 2018; 22(4): 454-460.
- 17) Abhulimn-Iyoha BI, Okonkwo IR, Ideh RC, Okolo AA. Mothers perception of the use of banked human milk for feeding of the infants. *Nigerian Journal of Paediatrics.* 2015, 42(3): 223-37.
- 18) Women’s Learning Patnership (WLP). Statistics on Turkey. Available online at <http://www.learningpatnership.org/turkey>.
- 19) Women’s Learning Patnership (WLP). Statistics on Nigeria. Available online at <http://www.learningpatnership.org/nigeria>.
- 20) Ighogboja IS; Olarenwaju RS, Odumodu CU, Okuonghae HO. Mothers’ attitudes towards donated breastmilk in Jos, Nigeria. *J Hum Lact.*1995; 11(2): 93-6.
- 21) About Mother’s Milk Bank. Available online at <https://mothersmilk.org>
- 22) A snapshot of Milk Banking in other Countries. *LEAVEN* 2000; 36: 22-23.
- 23) Egri-Okwaji MTC, Bamijaiye A, Ahmed I. Setting up a breast-milk Bank: Some Socio-psychological and Organisational Consideration. *Nigeria J Paediatr* 1984; 11:23-27.
- 24) Eksioglu A, Ysil Y, Turfan C. Mothers’ views of milk banking: sample of Izmir. *Turk Paediatrics Ars.* 2015; 50(2): 83-5.
- 25) Mackenzie C, Javanparast S, Newman L. Mothers’ knowledge and attitudes towards human milk banking in Soutg Australia: a qualitative Study. *J. Hum. Lact* 2013; 29: 229-25.
- 26) Coutsooudis I, Petrites A, Coutsooudis A. Acceptability of donated breast milk in a resource limited South African Setting. *Int Breastfeeding J.* 2011; 6: 1-10.



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