

Original Research

A survey of knowledge and concepts of Public Health Midwives on exclusive breast feeding, in three districts of Sri Lanka

Guruge MR¹, Suthesan S²

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Abstract

Baby Friendly Hospital Initiative which was introduced by WHO introduced to Sri Lanka in 1992. Main mission of this program was to promote exclusive breast feeding (XBF) under which all health care staff had multiple training sessions. Public Health Midwives (PHM) are pivotal in this mission both in fields as well as in hospitals. And their knowledge on breast feeding is crucial since they are directly involved in health education and management of lactating mothers. Despite measures undertaken to disseminate and update knowledge on XBF, mis-concepts and ill practices still prevail and is a major hindrance to achieve above goal. This descriptive cross-sectional study was planned to assess knowledge and concepts of XBF among a cohort of PHMs in the government sector.

234 midwives attending CME sessions in 3 districts were assessed based on a questionnaire regarding exclusive breast feeding (XBF). Despite the satisfactory overall performance, results revealed gaps in basic knowledge and concepts of breast-feeding practices among midwives. PHMs showed satisfactory knowledge on important properties of colostrum and breast milk, management of common breast conditions during lactation and

indications for EBM. However, participants knowledge on practical aspects of XBF such as frequency of breast feeding was unsatisfactory and the 45.7% did not appreciate the concept of demand feeding.

This study revealed that important aspects of mis-concepts still prevail among PHMs which needs to be addressed in order to promote XBF among mothers.

Introduction

Benefits of exclusive breast feeding (XBF) for both mother and baby has been proven beyond doubt for decades ^(1,2). It has been shown to have multiple beneficial effects beyond nutrition such as a protective effect against infections such as respiratory infections diarrhea and otitis media, reduced incidence of atopy and improved IQ in children. XBF reduces mortality and morbidity significantly of infants specially in low socioeconomic settings globally.

The Baby friendly hospital initiative program (BHFI), introduced by WHO to promote and sustain XBF globally, was introduced to Sri Lanka in 1992. Under this programme all health care staff including public health midwives (PHM) are trained in a structured manner to

promote XBF. The PHM plays a pivotal role in educating, promoting and sustaining XBF among pregnant and lactating mothers in Sri Lanka. There is anecdotal evidence (from queries from BF mothers), that in spite of their BFHI training, some outdated advice and misconceptions regarding XBF are still being disseminated by PHM. This misinformation is extremely detrimental to the promotion of XBF, and undermines the entire programme of the BFHI.

Therefore, we undertook this study to assess the current knowledge and perceptions of PHM on XBF.

Objectives –

To assess the knowledge and perceptions of Public Health Midwives on XBF in 3 districts of Sri Lanka.

Method –

This was a descriptive cross sectional study

Over a 6 month period, PHM's attending 3 CME seminars on maternal and early newborn care, (planned by the Family Health Bureau) in three districts – Colombo, Hambantota and Ampara, were enrolled into the study. The total number of participants were taken as the whole population for study purposes. None of the participants were working directly under the resource persons, who were senior neonatologists, Paediatricians and Obstetricians from Colombo Teaching hospitals.

Sample size and selection:

Convenience sampling was used, and all participants attending the seminars were considered as the total population.

Study period: June 2019- December 2019

Inclusion and exclusion criteria: all PHMs currently employed by the Ministry of Health and working as community or labor ward midwives who attended above mention seminars and consented to the questionnaire were included in the study.

Study tool: A pre tested self-administered questionnaire was administered to consenting PHM's before the commencement of the seminar. The questionnaire was constructed in English, translated to Sinhala and Tamil languages and back translated to ensure the accuracy. Participants' knowledge and concepts were tested on the following areas; composition and advantages of breast milk and colostrum, BF techniques, contraindications for BF, management of common BF problems and indications and storage of expressed breast milk (EBM). The document in all three languages were available to the participants.

Ethical Approval was obtained from Ethical Review Committee of Colombo South Teaching Hospital.

Results

This study assessed the knowledge and perceptions on breast feeding among public health midwives in 3 districts, using a self-administered questionnaire. 234 consenting PHMs in Colombo, Ampara and Hambantota districts were enrolled into the study. 6 non consenting midwives were excluded.

Univariate analysis was performed to analyze the data using SPSS 19 package.

Table 1: Demographic data

Socio demographic variable	No. (n=234)	Percentage (%)
Age		
• <30 years	28	11.9
• 30-40 years	42	17.8
• > 40 years	51	21.8
• Not responded	113	48.5
District		
• Colombo	95	40.6
• Ampara	62	26.5
• Hambantota	77	32.9

Table 2 tested the knowledge of breast milk and its comparison with colostrum.

Table 2: Knowledge on composition of breast milk*

Composition of breast milk	n (%)	n (%)	n (%)
	Correct	Incorrect	Don't know (DK)
1. Regarding breast milk			
1A. Breast milk composition varies from mother to mother T	53 (22.6)	171(73.2)	10(4.2)
1B. Foremilk has higher calorie content than hind milk F	170(72.6)	58(24.9)	6(2.5)
1C. Is easy to digest than formula milk T	222(94.9)	2 (0.8)	10 (4.3)
1D. Protects baby from infection T	234 (100)	0 (0.0)	0(0.0)
2. Regarding colostrum			
2A. Should be discarded F	230(98.3)	4 (1.7)	0 (0.0)
2B. Has a different composition to breast milk T	168(71.8)	58 (24.8)	8 (3.4)
2C. It is low in nutrition compared to breast milk F	220(94.0)	11 (4.8)	3(1.2)
2D. It is not suitable as EBM for sick babies F	221(94.4)	9(3.9)	4(1.7)

Table 3 tested participants knowledge on initiation of XBF and breast feeding technique.

Table 3: Knowledge on initiation of breast feeding and technique

Initiation of breast feeding and technique	n (%)	n (%)	n (%)
	Correct	Incorrect	DK
3. Initiation of breast feeding			
3A. Should be done within one hour of birth T	228(97.4)	6 (2.6)	0(0.0)
3B. Need to be delayed in LBW babies F	217(92.7)	17(7.3)	0(0.0)
3C. should be delayed in well preterm babies of 28-30 weeks gestation F	171(73.1)	51(21.8)	12(5.1)
3D. Should be started as EBM if mother and baby are separated T	227(97.0)	7(3.0)	0(0.0)
4. Regarding correct positioning when breast feeding			
4A. Sitting position is better than lying down position F	75 (32.1)	134(57.3)	25(10.6)
4B. Baby's whole body should rest on mother's forearm T	196(83.8)	31(13.3)	7(2.9)
4C. There is risk of nasal obstruction when putting to breast F	180(76.9)	43(18.4)	11(4.7)
4D. Nasal obstruction should be prevented by pushing breast back F	162(69.2)	57(24.4)	15(6.4)
5. In a correct attachment to the breast			
5A. baby's chin should touch the breast T	217(92.7)	14(6.1)	3(1.2)
5B. mouth should be wide open T	227(97.0)	7(3.0)	0(0.0)
5C. more areola should be visible below lower lip F	198(84.6)	28(12.0)	8(3.4)
5D. lip should be turned inside F	200(85.5)	24(10.3)	10(4.2)

Table 4 checked the knowledge of frequency, adequacy and long term duration of BF;

Table 4: Regarding Frequency and adequacy of breast feeding

Breast feeding frequency, adequacy and duration	n (%)	n (%)	n (%)
	Correct	Incorrect	DK
6. Breast feeding should be			
6A. done every 2-3 hourly F	66(28.2)	123(52.6)	45(19.2)
6B. done for 20 minutes on each side F	60(25.6)	135(57.8)	39(16.6)
6C. avoided immediately after the mother has had a head bath F	208(88.9)	26(11.1)	0(0.0)
6D. started with offering the comfortable side first F	114(48.7)	101(43.2)	19(8.1)
6E. offered whenever baby sucks the fingers or near by objects T	127(54.2)	97(41.5)	10(4.2)

7. Breast feeding/breast milk is adequate if

7A. baby will sleep comfortably for about 2 -3 hours after a feed T	218(93.2)	16(6.8)	0 (0.0)
7B. frequency of urine output is more than 5 times in 24 hours after 1 st 3 days T	181(77.4)	47(20.1)	6(2.5)
7C. there is a 12% weight loss within 1 st 10 days F	105(44.9)	114(48.7)	15(6.4)
7D. milk flows freely when nipple is squeezed F	71(30.3)	141(60.3)	22(9.4)

8. True regarding long-term duration of Breast feeding

8A. Should be continued exclusively up to 6 months T	222(94.9)	12(5.1)	0(0.0)
8B. Breast feeding on demand should be continued up to one year F	176(75.2)	58(24.8)	0(0.0)
8C. weaning can't be started before 6 months F	51(21.9)	103(44.1)	18(7.6)
8D. should be encouraged up to 2 years T	221(94.4)	11(4.8)	2(0.8)

Table 5 checked the participants knowledge of managing common breast problems in lactation;

Table 5: Management of breast conditions during lactation

Management of common breast conditions	n (%)	n (%)	n (%)
	Correct	Incorrect	DK
9. Management of sore nipples			
9A. Avoid breast feeding from that side F	203(86.8)	27(11.5)	4 (1.7)
9B. Continue EBM from that side F	74(30.4)	149(63.7)	11(5.9)
9C. should give formula feeds until nipples heal F	229(97.9)	5(2.1)	0 (0.0)
9D. breast feeding should continue with correction of attachment and positioning T	226(96.6)	8(3.4)	0 (0.0)
10. Management of engorged breasts			
10A. is due to incomplete emptying of milk T	222(94.9)	12(5.1)	0(0.0)
10B. frequent feeding is encouraged F	21(9.0)	213(91.0)	0 (0.0)

Table 6 checked knowledge of indications for use and storage of EBM;

Table 6: Knowledge on expressed breast milk

Expressed breast milk and cup feeding	n(%)	n (%)	n (%)
	correct	Incorrect	DK
11. Milk expression and cup feeding should be trained for			
11A. mothers with a sick baby T	212(90.6)	22(9.4)	0(0.0)
11B. working mothers T	227(97)	7(3.0)	0(0.0)
11C. babies not gaining enough weight T	208(88.9)	26(11.1)	0(0.0)
11D. mothers with twin babies T	186(79.5)	45(19.3)	3(1.2)
12. Expressed breast milk can be stored			
12A. at room temperature for 4 hours T	112(47.9)	102(43.6)	20(8.5)
12B. in a refrigerator for 72 hours T	132(56.4)	88(37.7)	14(5.9)
12C. in the freezer compartment for 6 months T	123(52.6)	87(37.2)	24(10.2)
12D. and reheated in a microwave before a feed F	91(81.6)	38(16.3)	5(2.1)

*(The expected correct responses are given as T/F after the stems)

On knowledge on digestibility and infection protection and properties of breast milk; 222 and 234 midwives (94.9 and 100%) respectively had correct knowledge. However, regarding the composition of breast milk, 171(73.2%) did not appreciate the variation in composition among individual mothers, while another 10(4.2%) did not know the answer. In addition, 170(72.6%) of participants were not aware about the difference of calorie content between fore milk and hind milk (tables 1 & 2).

Regarding colostrum, more than 90% acknowledged that it should be given to babies as a direct feed or EBM and it was more nutritious than BM. However, 58 (24.8%) thought that colostrum is not different to breast milk in composition (table 2).

228 (97.4%) of participants correctly responded on initiation of breast feeding within the first hour of birth and 227(97.0%) knew to use EBM to start feeding if mother and baby were separated.

However, on breast feeding preterm babies, 51(21.8%) incorrectly thought that breast milk should be delayed in well pre term babies (28 to 30 weeks gestation), while another 12(5.1%) did not know the answer (table 3).

196(83.8%) of participants had correct knowledge on proper positioning of the baby during breast feeding. However, on the position of the mother during a feed, 134 (57.3%) of PHMs thought lying down position was inferior to the seated position. 43(18.4%) incorrectly thought that there is a risk of nasal obstruction of the baby during positioning onto the breast while 57(24.4%) thought this could be prevented by pushing the breast backwards (rather than altering baby's position), during the feed. Over 85% knew the correct method of attachment to the breast (table 3).

Surprisingly, on frequency of breast feeding, 123(52.6%) of the participants thought the correct way to breast feed was on a fixed schedule of every 2-3 hours,

while 45(19.5%) “did not know”. In addition, the majority of 135(57.8%) also thought that the baby should be fed on a fixed schedule of 20 minutes on each breast(table 4).

On checking for adequacy of breast feeding, 141(60.3%) erroneously thought squeezing the nipple and checking the flow of breast milk gave a proper indication of mothers’ milk production. Only 114(48.7%) of the responders knew that a 12% weight loss in first 10 days of life was not acceptable while 105(44.9%) mistakenly thought it was within normal limits. On commencement of weaning, most knew that XBF should continue for 6 months and BF should be encouraged for 2 years. However, 44.1% thought that weaning should not be commenced for any baby before 6 months of age. Further 24.5% thought that demand feeding should be continued for one year(table 4).

Considering the management of common breast problems, for cracked nipples 203(86.8%) of PHMs knew breast feeding should be continued (with correct attachment) on the affected side(table 5).

On storage and supplemental feeding of EBM over 80% of PHM knew the correct indications for expressing breast milk but on preservation of EBM only 112(47.9%) and 132(56.4%) knew about the correct duration that EBM could be preserved at room temperature and refrigerator respectively.

Discussion

Our survey showed that although almost all PHMs in the survey had satisfactory knowledge on BF composition, some basic feeding advises(eg. attachment) and management of common BF problems, there were misconceptions prevailing in other basic areas in a significant proportion. These included the position of mother during a feed, assessing adequacy

of a breast feed and frequency and long term duration of breast feeding.

Most participating PHMs had satisfactory knowledge on important aspects of breast-feeding promotion such as properties and advantages of breast milk and colostrum, and correct initiation and techniques of breast feeding. However, there were misconceptions in a significant number regarding basic advice on XBF; Surprisingly, nearly 2/3 of PHM thought that lying down position was inferior to the sitting position to breast feed the baby. Only half of participants promoted the concept of demand feeding, while nearly 2/3 recommended ‘clock’ feeding every 2-3 hours with a fixed timing of 20 minutes on each breast. It is disappointing to note that over half of participating PHM still thought that BF should be conducted on a fixed schedule(2-3 hourly with 20 minutes on each breast), with the mother in a fixed seated position. Although a minority, it is also of concern that nearly 20% of participants had the idea that nasal obstruction of the baby could occur during attachment and that pushing the breast back was the correct remedial action These are fundamental concepts of XBF and misinformation in these areas is undoubtedly detrimental to its promotion. They are also directly in opposition to the current guidelines of the BFHI training and therefore is counter productive. It also causes confusion in mothers who receive conflicting advice from different strata of health care personnel.

On managing common BF problems participants had acceptable knowledge of management of cracked nipples and engorged breasts, but some still recommended EBM to be obtained and given for cracked nipples. This is contrary to the teaching received during their training. On EBM, although most knew about the indications to give EBM, only about half the participants were

knowledgeable about methods of preservation of EBM.

We could not find any published data with regards to the knowledge of PHMs on breast feeding practices either in Sri Lanka or in the region. Therefore a comparison of the same was not possible. However, a recent study done in 6 MOH areas of the Kandy district revealed that the prevalence of XBF up to 6 months is just 50.8%⁽⁵⁾. Although this study is not comparable to our survey, it is nevertheless of much concern, since the contributory factors may be similar to above issues, although others (such as the unavailability of adequate maternity leave for working mothers who are breast feeding their infants) may also play an important role.

PHMs are primary care health workers who are in constant contact with pregnant and lactating mothers specially in suburban and rural settings, who play a major role in promoting XBF in Sri Lanka. Thus wrong advice from them will be far reaching and become deep rooted in mothers.

Conclusion and recommendation

This survey shows that while PHMs were knowledgeable on many aspects of breast feeding, but 21 year after the initiation of the BFHI, they still have several

significant gaps in their basic knowledge and perceptions, with outdated and wrong information still being disseminated.

The community PHM is held in very high esteem by our mothers who follow their advice diligently. While they form the first contact for mothers with BF problems, regular home visits further strengthen the messages conveyed by them to the community. Therefore, wrong information disseminated by them will make a significant impact and will undermine the promotion and sustainability of XBF in Sri Lankan mothers. Thus, it is vital that we identify the origin of these misinformation and correct them without delay.

In summary we recommend that;

- Steps be taken to identify the gaps in knowledge and sources of the misinformation and how and why it is perpetuated.
- To conduct regular CME programmes as well as initiate monitoring/evaluation mechanisms to ensure that the knowledge and concepts of midwives on XBF remain updated.

These are mandatory steps for stake holders to note, if we are to promote and sustain XBF in Sri Lankan mothers.

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¹ Senior Registrar, University Paediatric Unit, Colombo South Teaching Hospital

²Registrar in Paediatrics, Lady Ridgway Hospital, Colombo

Corresponding author – Guruge MR
email – malsajee@yahoo.com