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Original Article

Complete coverage and covering completely: Breast feeding and complementary feeding: Knowledge, attitude, and practices of mothers

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ABSTRACT

Background: Knowing current trends for timely comprehensive action for health promotion practices is an important prerequisite for medical practitioners and policy makers.

Methods: A survey of mothers at a Tertiary Care Hospital in central India.

Results: On the knowledge front >83.75% of the mothers studied showed good knowledge about breastfeeding and complementary feeding. Similar, but not as encouraging, were the results about attitude, with 76.25% of mothers having a positive attitude. The results of the practices part were varied. The WHO indicators assessed were 'early initiation of breastfeeding' (68.75%), 'exclusive breastfeeding under 6 months' (85%) (however exclusive breast feeding for first 6 months was carried out by only 36.25%), 'introduction of solid, semi-solid or soft foods' (48.75%), 'continued breastfeeding at 1 year' (63.75%) and 'continued breastfeeding at 2 years' (6.25%).

Conclusions: There is a discrepancy between knowledge and practices. The exclusive breast feeding rates are far from the ideal and there is a decline of continued breast feeding beyond 15 months. This calls for sustained efforts with the aim – 'cover all and cover completely'. The ideal WHO indicator for exclusive breast feeding should be 'exclusive breastfeeding for first 6 months' which will provide information about the completeness of this ideal practice.

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Introduction

“Big gains have been made in child survival, but more must be done” says 'The Millennium Development Goals (MDGs) Report 2013' of the United Nations.¹ For more action we have

modified aims – The new Sustainable Development Goals (2030), which build upon the MDGs. The achievement of all of these can be facilitated by improvements in breastfeeding. Breast feeding has beneficial consequences for our children on their immediate health and also subsequent adult health.

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Despite consolidation of evidence for breastfeeding's benefits in recent years, global action has stalled.²

There is a need for effective strategies. The benefits of breastfeeding are still under-recognized in many countries.³ Globally, less than half of newborns were breastfed within the first hour of birth and only 39% of children were breastfed exclusively for the first six months.¹ Breastfeeding lays the foundation for good health, however global breastfeeding rates have remained stagnant for the past two decades. Women face many barriers to breastfeeding.⁴ We carried out a knowledge attitude and practices (KAP) study of mothers regarding breast feeding and complementary feeding to find out where we stand and avenues for improvement.

Materials and methods

A cross section questionnaire based study of mothers was planned. Until now the indicators that can be used in population-based surveys to measure infant and young child feeding (IYCF) practices have focused mostly on breastfeeding practices.⁵ We designed a questionnaire which included questions for assessing KAP of mothers for breast and complementary feeding. All the questions were open ended. The language of all the questions was pitched to the level of the respondents.

For the knowledge component we designed questions the knowledge of which could lead to optimal feeding practices and which can result in perfect World Health Organization (WHO) Indicators for assessing IYCF feeding practices. However it is also equally important that the source of this knowledge be ascertained for health education policy planning. Hence we included the question for the source of knowledge.

For finding out the attitude we formulated two questions – firstly why it is good to breast feed your baby and what advantages the mother has from breast feeding.

For practices component we formulated questions for most pertinent optimal breast and complementary feeding practices along with assessment of the following WHO IYCF indicators (i) *early initiation of breastfeeding*, (ii) *exclusive breast feeding under 6 months*, (iii) *introduction of solid, semi-solid or soft*

foods, (iv) *continued breastfeeding at 1 year and continued breastfeeding at 2 years* and (v) *Bottle feeding*.⁶

The methodology followed was similar of the validated methods of WHO for 'Indicators for assessing infant and young child feeding practices'. The investigators themselves administered the questionnaire, as physicians are paramount practitioners of questionnaires and interviews in everyday practice. A pilot study was carried out to see (i) if useful information can be gathered (ii) to ensure that the original meaning of each question is maintained (iii) to see whether research participants were able to give meaningful answers, with help from the professional interviewer when necessary (iv) if WHO indicators could be calculated for practices component. The results were encouraging. No question required rephrasing, as these were simple and to the point.⁶⁻⁸

Various questions of the study for the three components of the study – KAP are given in [Tables 1-3](#). A total of 80 mothers with babies 24 months old attending the OPD services were interviewed. Inclusion criteria was willingness of these mothers to be interviewed.

The answers to various questions were categorized according to the responses and so as to aid future pertinent action. The answers of the attitude component were categorized as (i) positive if mothers replied as benefit on health and well-being in any aspect – physical, mental, social, including bonding; (ii) negative if mothers replied harm on health and well-being in any aspect – physical, mental, social, including bonding; (iii) no knowledge.

Results

The results of our study are given in [Tables 1-3](#).

On the knowledge front the mothers studied showed good knowledge about breastfeeding. More than 92.5% of mothers were found to have the right knowledge for initiation and duration of exclusive breast feeding. However only 83.75% of mothers were found to be knowledgeable about the right age when solid, semi-solid or soft foods should be introduced. 8.75% mothers indicated that this should be done before 6 months of age and 7.5% indicated that this should be done

Table 1 – Knowledge of mothers.

Question	Response	Number (%)
After delivery when do you think is the best time to start breast feeds?	<1 h	76 (95%)
	>1 h	4 (5%)
Until what age do you think it is best to give only breast milk?	For first 6 months	74 (92.5%)
	7-8 months	2 (2.5%)
	>8 months	4 (5%)
At what age should solid, semi-solid or soft foods be introduced	<6 months	7 (8.75%)
	After first 6 months	67 (83.75%)
	After first 7 months	6 (7.5%)
What was the most important source of your information regarding feeding of your baby – breast feeds and complementary feeds?	Relatives	34 (42.5%)
	Health workers	22 (27.5%)
	Books	11 (13.75%)
	Media – TV	5 (6.25%)
	Not learnt/informed	8 (10%)

Table 2 – Attitude of mothers.

Question	Response	Number (%)
Why is it good to breast feed your baby?	Positive	62 (77.5)
	No knowledge	18 (22.5)
	Negative	0 (0)
What benefits does the mother have from breast feeding her child?	Positive	61 (76.25)
	No knowledge	19 (23.75)
	Negative	0 (0)

after 7 months of age. The most important sources of information regarding feeding of the baby (breast feeds and complementary feeds) for mothers were – relatives (42.5%), health workers (27.5%), books (13.75%), TV (6.25%), not learnt/informed (10%).

Similar, but not as encouraging, were the results about attitude of mothers. 77.5% of mothers gave positive answers for the question “Why is it good to breast feed your baby?” Also, 76.25% of mothers replied positively for the question “What benefits does the mother have from breast feeding her child?”

The results of the practices part were varied. Early initiation of breastfeeding, within 1 h of delivery was 68.75%. The WHO core indicator 'Early initiation of breastfeeding' works out as 68.75%.

Exclusive breastfeeding for first 6 months was carried out by 36.25% mothers. The WHO core indicator 'exclusive breastfeeding under 6 months' inferred is 85%. The WHO indicator 'exclusive breastfeeding (infants 4–5 months)' is 37.5%. However, more importantly the ideal indicator 'exclusive breastfeeding for first 6 months' is only 36.25% in our study.

Introduction of solid, semi-solid or soft foods was carried out by 48.75% of mothers at 6–8 months age, while 51.25% did

so at <6 months. The WHO core indicator 'Introduction of solid, semi-solid or soft foods' (proportion of infants 6–8 months of age who receive solid, semi-solid or soft foods) is 48.75%. The WHO core indicator 'continued breastfeeding at 1 year' is 63.75% and 'continued breastfeeding at 2 years' is 6.25%. The bottle feeding rate in our study is 20%.

Discussion

The success of breast-feeding initiation and continuation depends on multiple factors, such as education about breast-feeding, hospital breastfeeding practices and policies, routine and timely follow-up care, and family and societal support.⁹

On the knowledge front more than 92.5% mothers studied showed good knowledge about breastfeeding, however only 77% had positive attitude. Imparting knowledge without change in attitude is a failure, which agencies involved in health education should seriously consider. Thus there is a strong need that when knowledge is imparted it should be done in a way so that the attitude also changes for the good. A study done in the past among mothers-to-be had shown positive attitude toward breast feeding but inadequate knowledge.¹⁰ Thus down the years we may have imparted the right knowledge but our study points that efforts for change in attitude are needed.

Further changes in attitudes can be accomplished by informing the protective effects of breastfeeding – “starting within the first hour of birth, longer-duration breastfeeding is associated with protection against childhood infections, increases in intelligence and reductions in the prevalence of overweight and diabetes. For nursing women, breastfeeding protects against breast cancer and improves birth spacing”.¹¹

The most important sources of information regarding feeding of the baby (breast feeds and complementary feeds) for mothers were – relatives and health workers. Thus it is important that the right messages be popularized among all

Table 3 – The practices of mothers.

Question (WHO Indicator)	Response	Number (%)
When did you put the child to breast? (early initiation of breastfeeding)	<1 h	55 (68.75%)
	>1 h	25 (31.25%)
Duration of exclusive breastfeeding (exclusive BF)	First month	01 (1.25%)
	First 2 months	02 (2.5%)
	First 3 months	06 (7.5%)
	First 4 months	10 (12.5%)
	First 5 months	20 (25%)
	First 6 months	29 (36.25%)
	First 7 months	12 (15%)
At what age solid, semi-solid or soft foods were introduced? (introduction of solid, semi-solid or soft foods)	<6 months	41 (51.25%)
	6–8 months	39 (48.75%)
	6–11 months	7 (8.75%)
Till what age did you continue breastfeeding (continued breastfeeding at 1 year and continued breastfeeding at 2 years)	12–15 months	51 (63.75%)
	16–19 months	17 (21.25%)
	20–23 months	5 (6.25%)
	Yes	16 (20%)
Does your child drink anything from the bottle?	No	64 (80%)

the public at large. Health workers have the right knowledge and should continue to play an important role. 10% of the mothers had not learnt/were not informed about feeding of the baby (breast feeds and complementary feeds). This again points out to the need of health education programs with wide coverage and increasing penetration.

The MDGs Report 2013 points that <50% of newborns were breastfed within the first hour of birth, and in our study this is 68.75%. The Demographic and Health Survey (DHS) 2005–2006 had shown this to be 22% in India.¹² Progress since then has been slow. The District level Household Survey-4 and AHS-3 (2012–2013) have shown that in 25 out of the 30 states and union territories studied it is still less than 70%, and the highest being 81.6% in Mizoram.¹³ More needs to be done for implementation of early initiation of breastfeeding, within one hour of birth, as 95% of mothers had shown correct knowledge regarding this but only 68.75% doing it in practice.

The MDGs Report 2013 points that only 39% of children were breastfed exclusively for the first six months.¹ The DHS 2005–2006 has pointed that in India the WHO Indicators 'exclusive breastfeeding under 6 months' value is 46%, and 'exclusive breastfeeding at 4–5 months' is 28%.¹² In our study these are 85% and 37.5% respectively. These indicators do not reveal much useful information. The more important indicator, i.e. 'exclusive breastfeeding for first 6 months' in our study is 36.25%.

We propose some modifications in the WHO core indicators of exclusive breast feeding with justifications as follows:

- (i) Indicators should be labeled as for the first so many months. This is because with this additional notes like "6 months means 6 completed months" can be avoided. Also more confusion arises when it is said 5th month running.
- (ii) The ideal indicator will be 'exclusive breastfeeding for first 6 months'. This indicator should be the most important and should be at the forefront because "infants should be exclusively breastfed – i.e. receive only breast milk – for the first six months of life to achieve optimal growth, development and health".¹⁴ With this approach we should be able to reduce an important part of IMR and also the morbidity. With these well-known advantages and with this indicator we can aim for – 'cover all and cover completely'. This can be computed by finding the percentage of infants who are exclusively breast fed for first 6 months (for first 183 days) of life to the total number of infants of same age.
- (iii) The WHO recommends that the core indicator 'exclusive breastfeeding under 6 months' be further disaggregated and reported for the following age groups: 0–1 months, 2–3 months, 4–5 months and 0–3 months.⁵ The aim of data collection should be to pin-point where action is required. The data collected should point the need for action at clearly defined various levels. A much better option in this regard will be—first month, first 2 months, first 3 months, first 4 months, first 5 months, and first 6 months. This will also lead to segregation of the indicator 'exclusive breastfeeding at 4–5 months' into 'exclusive breastfeeding for first 5 months' and 'exclusive breastfeeding for first 6

months', as done in our study, and with the later indicator giving the best indication of the proportion of infants who are exclusively breastfed for the full 6 months.

The early and exclusive components are important and need to be interpreted for action. There is a significant discrepancy between the knowledge (more than 92.5% mothers having correct knowledge for these indicators) and practice (68.75% and 36.25%) in our study. Similarly, Ali et al. have noted that 'women were aware of the advantages and disadvantages of breast and bottle feeding but a disparity was observed between their perception and practices'.¹⁵ Hence the need for more efforts and sustained efforts. We suggest all levels of health workers ensure these at well baby visits for immunization and also during home visits by community health workers. Pediatricians can play a significant role in this regard.

In our study 51.25% of mothers introduced solid, semi-solid or soft foods at <6 months and 48.75% introduced at 6–8 months. The WHO core indicator 'introduction of solid, semi-solid or soft foods' in our study is 48.75%, while that of India is 55% (DHS 2005–2006). Our results are far from satisfactory. For improvements we suggest the following health education – (i) Exclusive breastfeeding for 6 months confers many benefits to the infant and the mother. (ii) If complementary foods are not introduced when a child has completed 6 months of age, or if they are given inappropriately, an infant's growth may falter. (iii) Breast milk reduces the incidence and the risk of a number of acute and chronic diseases in early childhood.

The WHO core indicator 'continued breastfeeding at 1 year' in the present study is 63.75%, while of India is 89% (DHS 2005–2006). The WHO optional indicator 'continued breastfeeding at 2 years' inferred in the present study is 6.25%, while of India is 73% (DHS 2005–2006).¹² Our results point toward a dramatic decline in breastfeeding beyond 1 year of age. Tarrant et al. have also pointed "breastfeeding promotion programs have been successful in achieving high rates of breastfeeding initiation but the focus must now shift to helping new mothers exclusively breastfeed and sustain breastfeeding for longer".¹⁶ Breast feeding is ideal when it is exclusive for the first 6 months of life and continued for 2 years and beyond. Health for all is a right thinking and sustaining healthy practices for their full time is also required. For breast feeding, with proven benefits, 'cover all and cover completely' is the most right thing we should aim for. Possible corrective measures can be educating mothers about benefits of breast feeding till 2 years and beyond and also ensuring the same with continuing efforts with enthusiasm. Pediatricians can again play a significant role in this regard, with their reputation of being knowledgeable about what is best for infants and young children.

The bottle feeding rate in our study are 20%, while of India is 14% (DHS 2005–2006).¹² Information on bottle feeding is useful because of the potential interference of bottle feeding with optimal breastfeeding practices. Suitable corrective steps should be taken toward this. Ensuring healthy development of all our children requires correct breast and complementary feeding. Our findings, which pin-point where we are lacking, call for action with strong and sustained enthusiasm. With all our efforts when the next MDGs/SDGs report is written, we

should aim for stating “big gains have been made and we need to sustain these”.

What this study adds

- There is discrepancy between knowledge and practices. We may have been successful in imparting knowledge but this is not the end and new ways and means need to be devised to convert it into practice.
- The exclusive breast feeding rates are far from the ideal and there is a decline of continued breast feeding beyond 15 months. This calls for sustained efforts, for which Pediatricians can play a significant role with the aim - 'cover all and cover completely'.
- The ideal WHO indicator for exclusive breast feeding should be 'exclusive breastfeeding for first 6 months'.

Key message

“Be early to start, Be exclusive for first half of first year,

Be comprehensive with complementary feeding while also carrying on breast feeding”

This is for all, for full duration, for full development, leading to fulfillment of aims.

Conflicts of interest

The authors have none to declare.

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