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Knowledge, Attitude And Practice Of Infant Feeding Practices Among Medical Students

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ABSTRACT

Introduction and background: World Health Organization (WHO) recommends exclusive breast feeding for at least 6 months and thereafter until the child is 2 years of age. The success of introduction and sustenance of any health initiative depends upon the knowledge and attitudes towards those health practices. This study was undertaken to assess the baseline knowledge, attitudes and anticipated practices of MBBS students and help in framing policies towards inclusion of breast-feeding training in regular curriculum.
Methodology: A cross sectional survey was carried on at a private medical college on 137 medicos comprising of Final year MBBS and Interns. Using Google Forms, a survey questionnaire was prepared, comprising of 37 items assessing the knowledge, attitude and anticipatory practices towards breastfeeding and infant nutrition.
Results: The mean overall score of Final MBBS participants was 64.5% and that of Interns were 71.2% (P value = 0.002). In all 3 domains the Interns scored higher than Final MBBS participants and the differences were statistically significant. There were positive correlations between knowledge and attitude (r= 0.36, P value < 0.001), knowledge and practices (r= 0.53, P value < 0.001) and attitude and practices (r = 0.44, P value < 0.001).
Conclusion: This study highlights the knowledge, attitude and practice level of students among Final MBBS and Interns at our institute. The overall knowledge level was average. As tomorrows practitioners and policy makers it is mandatory to shape this group of young doctors in order to ensure that future of our nation that is current generation of childrenare in safe hands.
Keywords:
Knowledge, attitude and Practices, breastfeeding, infant feeding

1. INTRODUCTION

World Health Organization (WHO) recommends exclusive breast feeding for at least 6 months and thereafter until the child is 2 years of age. (1) This has largely been achieved by

Baby Friendly Hospital Initiative put forth by WHO(2). Breastfeeding is beneficial to the health of the maternal–infant dyad. It improves psychosocial interactions, reduces economic burdens, and is valuable to society.

The National Family Health Survey-4reported that the percentage of feeding through bottle or using nipple was 12% at 6 months and increased to 22.8% at 2 years of age (3).
According to the Comprehensive National Nutritional Survey for the year 2016-2018, only 57% of children born in the two years prior to the survey initiated breastfeeding within one hour of birth and only 58% of infants under the age of six months were exclusively breastfed. The proportion of children who were continued to be breastfed till 1 year of age was 83% (4). Overall, only 21% of breastfeeding and non-breastfeeding children are fed in accordance with the infant and young child feeding (IYCF) recommendations (5)

The success of introduction and sustenance of health initiative depends upon the knowledge and attitudes towards those health practices. Doctors being the primary players in planning and implementation, needs to have sufficient knowledge on health practices to implement it. Medical students who will be the future of health sector are yet to get exposed to the aggressive commercial marketing strategies of infant milk substitute companies. The ability to impart knowledge and shaping it for positive outcome is possible with young minds. Hence, this study was undertaken to assess the baseline knowledge, attitudes and anticipated practices of MBBS students. As future medical practitioners, they will be sought for any health advice including breastfeeding and complementary feeding irrespective of the field they will branch out into. This study will reflect their current understanding on the most essential nutritional intervention and help in framing policies towards inclusion of breast-feeding training in regular curriculum.

2. METHODOLOGY

A cross sectional survey was carried on between August 2020 and September 2020 at a private medical college. The participants were medicos comprising of Final year MBBS and Interns. Institutional Review Board approval was obtained prior to the distribution of questionnaire.

Sample size was calculated using Epi Info software with 95% confidence level, 7.5% margin of error and an expected frequency of 75% based on a similar study assessing knowledge, attitude and practice levels among medical students by Mofied et al (6). A sample size of 128 was obtained. The questionnaire was distributed to the entire batch of students of which 137 consented to participate in the survey.

We prepared a questionnaire following discussions with experts in lactation management and infant nutrition at our hospital. The questions were finalized after a departmental peer review process. The questionnaire consisted of 37 items assessing the knowledge, attitude and anticipatory practices towards breastfeeding and infant nutrition. The survey was initially conducted on a separate group of 15 students to assess comprehension and internal consistency using Cronbach's alpha. Knowledge level was tested with 15 items comprising of open-ended questions. Attitude level was tested using 12 items using a 5-point Likert scale (strongly disagree to strongly agree). Reverse scoring was done for disagreement answers to indicate positive response. For the purpose of statistical analysis, strongly agree and agree, strongly disagree and disagree were grouped as single categories after the initial scoring. Anticipated practices were tested using 10 items that were open ended questions. The

Cronbach's alpha for knowledge, attitude and practice items were 0.74, 0.79 and 0.79 respectively indicating good consistency.

Using Google Forms, the survey questionnaire was prepared, and the link was sent via internet messaging services. The data entry and analysis were done using Microsoft Excel Office 365 with Data Analysis Tool Kit. Qualitative data were presented as frequencies and percentages. Mean, standard deviations were used to present Quantitative data. T test was used to measure differences between continuous variables and Chi square test for categorical variables. Pearson Correlation was used to assess correlation between knowledge, attitude and practice variables. P value < 0.05 was considered as significant.

3. RESULTS

A total of 137 participants took part in this survey. 63% of them were Final year MBBS students and 37% were Interns who have completed Neonatology rotation. All the final year students have completed neonatology theory and clinical sessions. The average age of participants were 22 years. Table 1 shows demographic characteristics of participants.

The mean overall score of Final MBBS participants was 64.5% and that of Interns were 71.2% the difference was statistically significant (*P* value = 0.002). Table 2 shows knowledge, attitude and practice scores of the two group of participants. In all 3 domains the Interns scored higher than Final MBBS participants and the differences were statistically significant.

Knowledge

Nearly all participants were aware about duration of exclusive breast feeding and early initiation of breast feeding. 77% of the Final MBBS participants and 94% of the Interns were aware about early initiation of skin to skin care within one hour of birth (*P* value = 0.009). Both the groups had low awareness that breast feeding should be continued till 2 years of age. Half of the Final MBBS participants (50%) and nearly 2/3rd of interns (71%) were aware that HIV status is not a contraindication for a breast feeding (*P* value = 0.02). The knowledge levels on all the 15 items are shown in Table 3.

Attitude

Both the groups were in agreement against pre lacteal feeds (92% of Final MBBS and 94% of Interns). More than two thirds of participants (79% of Final MBBS and 78% of Interns) were of the opinion that breast feeding should be encouraged in public. 37% of Final MBBS participants and 57% Interns favored breast feeds over formula as an ideal choice for working mothers (*P* value = 0.03). On whether formula feeds can be an alternative to breast feeding, more than half of Final MBBS students (57%) and two thirds of Interns (75%) disagreed with the statement (*P* value = 0.04). Only 21% of Final MBBS students and 41% of Interns were able to correctly recognize that formula feeding is not an ideal choice for premature babies in NICU. Breast milk's protection against childhood allergy and atopy was agreed by 80% of Final MBBS students and 92% Interns. Both the groups (88% of Final MBBS students and 92% of Interns) were in agreement on the economic benefits of breastfeeding. Only 44% of Final MBBS and 63% of Interns were against the usage of feeding bottle in infancy. The attitude levels on 12 items are shown in Table 4.

Practices
More than 80% of participants form both the groups were able to identify correctly the surrogate markers of feeding adequacy. 60% of Final MBBS and 84% of Interns answered that maternal fever is not a contraindication for breast feeding (*P* value = 0.003). Only 24% of final MBBS participants and less than half of Interns (45%) named Hoffman/ inverted syringe technique as the method of choice to correct inverted/ flat nipple. On the optimal choice of type of milk for NICU babies, 73% of Final MBBS students and 84% of Interns named Mother's own milk as the correct response. The Practice scores on 12 items are shown in Table 5.

Correlation:
There were positive correlations between knowledge and attitude (r= 0.36, P value < 0.001), knowledge and practices (r= 0.53, P value < 0.001) and attitude and practices (r = 0.44, P value < 0.001).

4. DISCUSSION:

This study aimed to assess the knowledge, attitude level and anticipated practices of Final year MBBS students and Interns. The overall score was low. The Final MBBS participants scored 64.5% and Interns scored 71.2%. The knowledge score was 63.3% for Final MBBS and 70.4% for Interns. Though the Final MBBS participants had completed theory and clinical sessions in Pediatrics and Neonatology, the knowledge gained was still insufficient. The Interns however, had the advantage of practical clinical knowledge gained out of communicating with mothers firsthand and attending ward rounds. This was similar to Anjum et al(7) study on 344 undergraduate medical students. In her study the preclinical group had a knowledge score of 61% compared to 76% scored by clinical group.

More than 95% in both groups were aware that breastfeeding should be initiated within 1 hour of birth and continued exclusively for 6 months. This awareness was probably due to the regular involvement of undergraduate students during the World Breastfeeding Week celebrations every year in our institute. This was high when compared to Vidya et al(8) in a study assessing breast feeding knowledge levels on 110 3rd year MBBS in Mysore. The knowledge on duration of exclusive breast feeding was 84.5%. Sallam et al(9) in a study on 120 women that included 30 health care workers concluded that, knowledge on early initiation of breastfeeding was very much low among health care professionals.

The knowledge regarding the continuation of breastfeeding for 2 years was less than 20% among our participants in both the groups. This could be because of personal experiences where they would have witnessed decrease in breastfeeding rate when complimentary are started or when mothers return to work. Also, from the medical practitioner's side, the emphasis on breast feeding beyond 6 months is never as strong as done for the first 6 months. Devi et al (10) in a study on 468 MBBS undergraduates in Manipur, 60% of the participants were aware on continuation of breastfeeding for 2 years.

The knowledge on nutrient content varying throughout the period of lactation was recognized by 65% of Final MBBS participants and 82% of Interns. The average frequency of breast feeding in a day was known to 59% of Final MBBS participants and 78% of Interns. Mofied et al(6) in a similar study on nursing and medical students showed 79.7% was aware on varying nutrient content throughout the period of lactation and 72.4% were aware on the frequency of breast feeding in a day being at least 8 times. This awareness will enable to

understand and counsel lactating mothers during the early post-natal period when they usually complain of apparent lack of milk secretion.

On maternal HIV status not being a contraindication for breastfeeding 50% of Final MBBS participants and 71% of Interns answered positively. This was higher when compared to results from Anjum el al (7), where 31% of clinical and 44% pre-clinical having right awareness and 38.2% of participants in Mofied et al(6) recognizing that HIV is not a contraindication for breastfeeding. National AIDS Control Organisation (NACO) guidelines state that exclusive breast feeding for 6 months in a HIV positive mother is the best choice for the infant. The guidelines also state that complimentary feeds are to be started at 6 months with continuation of breastfeeding up to 12 months (11).

More than 90% of participants from both the groups showed positive attitude on refraining from prelacteal feeds for a newborn baby. Giving prelacteals has been shown to delay the initiation of breastfeeding and interfere with exclusive breastfeeding during the first six months of life. The relationship between prelacteal feeding and breastfeeding is often described as a 'vicious cycle' (12). In our study, more than 90% in both the groups agreed that breastfeeding improved infant mother bonding. More than two thirds (79% of Final MBBS and 78% of Interns) in our study expressed positive attitudes towards encouraging breastfeeding in public places. Payghan et al (13) on evaluating knowledge and attitude of college students on breastfeeding, 82% agreed on breastfeeding strengthening maternal infant bonding. However, only 19% expressed positive attitude on feeding in public places deeming it to be embarrassing.

Majority of the participants in our study recognised the protective effect of breast feeding against childhood allergy and atopy and agreed that breastfeeding is an economically viable option. Breast feeding is beneficial in preventing gastroenteric illness such as vomiting and diarrheal episodes compared to bottle feeding and also decrease in the incidence of chronic respiratory illness such as pneumonia, sinusitis, nocturnal cough and otitis media(14). The participants displayed a positive attitude towards bottle feeding and formula feeding which was worrying. This unhealthy attitude among participating students was also seen in the study by Mofied et al (6) where 79.2% of participants felt bottle feeding is a convenient option. Since most of the current generation was fed formula feeds through bottle by their mothers, bottle feeding has come to become an easy to go solution in an event of breast-feeding difficulty.

As regard to the anticipated practices, a majority of participants (79% of Final MBBS and 84% of Interns) recognised that sore nipple is associated with incorrect positioning and attachment. However, only half of participants felt that breast feeding should be continued despite the awareness on the cause of the condition. Similar results were shown in study by Mofied et al (6). The importance of providing Mother's own milk for babies in Neonatal Intensive Care Units was recognised by the more than two thirds of the participants in our study. It is well known that composition of preterm milk differs from that of a breastmilk from a mother in term gestation. Pasteurisation of donor human milk results in loss of certain nutrients in the breast milk. Hence provision of Mothers own milk for babies especially preterm babies, ensures that the required nutrition for that age group is made available (15).

There was a moderate positive correlation between knowledge and practices. Improvement in knowledge level will eventually lead to good practices. This analogy was shared by Hillenbrand et al (16) stating that improvement in knowledge translated to improved

confidence in handling breast feeding problems. Besides, educational intervention in the form of structured educational programs regarding breastfeeding will help in improving attitudes and in turn increase the confidence level as shown by Brodibb et al (17). Exposure to breastfeeding, either through a specialised educational course, or personally, was associated with more positive attitudes towards breastfeeding amongst health professional students. The second step of the Ten Steps to Successful Breastfeeding states that all healthcare staff should be trained in skills necessary to implement this policy. Hence, it is only pertinent that breastfeeding education should be included as a part of curriculum either through workshops, seminars or through an online module. Healthcare professionals who are experienced with breastfeeding management must play a crucial role in this endeavour (18).

Our study had limitation that the number of participants were less. Besides, the fact that only 137 participants reverted despite sending the questionnaire to 300 students, shows that only participants who had some knowledge decided to answer and submit the response while the rest who felt that their knowledge was insufficient decide to stay away. Using this baseline score level of students, structured educational programs needs to be put into practice in our institute to improve the knowledge level of the current generation of medicos.

5. CONCLUSION

This study highlights the knowledge, attitude and practice level of students in Final MBBS and Internship at our institute. The overall knowledge level was average. As tomorrows practitioners and policy makers it is mandatory to shape this group of young doctors in order to ensure that future of our nation that is the current generation of children are in safe hands.

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Table1: Participant characteristics

Participant characteristics	n = 137
Age in years, mean (SD)	22 (1.2)
Female, n (%)	85 (62%)
Final MBBS, n (%)	86 (63%)
Interns, n (%)	51 (37%)

Table 2: Average scores of participants

Scores	Final MBBS (n = 86)	Interns (n =51)	*P* value*
Overall score (%), mean (SD)	64.5	71.2	**0.002**
Knowledge level (%),mean (SD)	63.3	70.4	**0.007**
Attitude level (%),mean (SD)	75.4	79.7	**0.01**
Practices level (%),mean (SD)	54.5	63.2	**0.002**

*T test. *P* value significant at < 0.05

Table 3:
Response to knowledge items. Correct responses are given in parenthesis

Knowledge items (15 items)	Correct responses, n (%)		*P* value*
	Final MBBS (n = 86	Interns (n = 51)	
For how many months is exclusive breast feeding recommended? (6 months)	83 (97)	51 (100)	0.18
Within how many hours after birth should breast feeding be initiated? (1 hour)	82 (95)	50 (98)	0.42
All neonates who are normal at birth (cry at birth) should be given immediate skin to skin care with the mother. (True)	66 (77)	48 (94)	**0.009**
Name the hormone(s) that is/are responsible for lactation (Prolactin and Oxytocin)	60 (70)	43 (84)	0.06
In the first few weeks after birth, a normal breastfed infant will usually feed _____ times in 24 hours. (8 – 10 times)	51 (59)	40 (78)	**0.02**
Hind milk is rich in which macronutrient? (Fat)	38 (44)	26 (51)	0.44
Which sugar is predominant in breast milk? (Lactose)	68 (79)	45 (88)	0.17

The nutritional content of breast milk remains the same throughout the period of lactation. (False)	56 (65)	42 (82)	**0.03**
Refrigerated human milk at 4°C has a shelf life of _____ hours. (24 hours)	44 (51)	26 (51)	0.98
The signs of good attachment are the following except: mouth wide open, lower lip everted, lower part of areola visible, chin touching the breast. (lower part of areola visible)	54 (63)	39 (76)	0.10
Which ingredient in breast milk is necessary for brain development and high IQ? (Docosahexaenoeic acid-DHA)	12 (14)	6 (12)	0.71
Frozen human milk can be heated in a microwave for defrosting. (False)	64 (74)	41 (80)	0.42
100 ml of human milk contains _____ calories. (67 Kcal)	50 (58)	31 (61)	0.76
Breastfeeding should be continued for a minimum of _____ years. (2 years)	22 (26)	10 (20)	0.42
Mothers with HIV and on Anti-retroviral therapy should not feed their infants. (False)	43 (50)	36 (71)	**0.02**

*Chi Square test. *P* value significant at < 0.05

Table 4:
Response to attitude items. Correct response given in parenthesis

Attitude items (12 items)	Correct responses, n (%)		*P* value*
	Final MBBS (n = 86	Interns (n = 51)	
A new born baby can be given pre-lacteal feeds (sugar water, honey) soon after birth (Disagree)	79 (92)	48 (94)	0.62
Breast feeding improves infant- mother bonding (Agree)	81 (94)	49 (96)	0.63
Nursing in Public should be encouraged for mothers (Agree)	68 (79)	40 (78)	0.93
Formula feeding is an optimal choice for working mothers (Disagree)	32 (37)	29 (57)	**0.03**
Formula feeds is an ideal alternative to breast feeds (Disagree)	49 (57)	38 (75)	**0.04**

Infant formula is an ideal choice for premature babies in NICU. (Disagree)	18 (21)	21 (41)	**0.01**
Breastfed babies have low incidence of childhood allergy and atopy compared to formula fed babies (Agree)	69 (80)	47 (92)	0.06
Breastfeeding is less costly and economically viable option compared to formula feeds (Agree)	76 (88)	47 (92)	0.48
Nutritious snacks given during complimentary feeding include chips, biscuits and processed foods (Disagree)	74 (86)	46 (90)	0.48
Feeding bottle can be used to provide water and other liquids (Disagree)	38 (44)	32 (63)	**0.04**
Optimal complimentary feeding should be introduced at 6 months in the form of energy dense home based food (Agree)	67 (78)	47 (92)	**0.03**
Sugar can added to complimentary foods as babies like only sweetened foods (Disagree)	39 (45)	26 (51)	0.52

*Chi Square test. *P* value significant at < 0.05

Table 5:
Response to practice items. Correct response given in parenthesis

Practice items (10 items)	Correct responses, n (%)		*P* value*
	Final MBBS (n = 86)	Interns (n = 51)	
In a mother complaining of 'not enough milk' the following can be used as surrogate markers for feeding adequacy (weight gain, adequate urine output, sleep after a feed, golden coloured stools)	70 (81)	44 (86)	0.46
Sore nipple in a breastfeeding mother can be rectified by correcting infant positioning and attachment (True)	68 (79)	43 (84)	0.44
A mother with fever should never feed her baby (False)	52 (60)	43 (84)	**0.003**
Name the technique that is used to correct an inverted/flat nipple in a mother (Hoffman/Inverted Syringe technique)	21 (24)	23 (45)	**0.01**
Name a drug that is used to increase breastmilk secretion (Metoclopramide/ Domperidone)	31 (36)	19 (37)	0.89
For an infant who is in NICU, whose mother is in post-operative ward and unable to walk to NICU, which is the most appropriate milk will you recommend? (Mothers Own Milk)	63 (73)	43 (84)	0.13

Increasing fluid intake and improving hydration status in a mother may increase her breastmilk secretions (True)	72 (84)	46 (90)	0.29
A Term Well Baby routinely needs multivitamin supplementation in the first 6 months of life (False)	65 (76)	38 (75)	0.88
Name a drug that is used to treat Oral Thrush/Oral Candidiasis. (Clotrimazole mouth paint/ Gentian violet)	0 (0)	6 (12)	**0.001**
A mother with sore nipple should only express milk instead of directly breast feed her baby to reduce pain (False)	41 (48)	28 (55)	0.41

*Chi Square test. *P* value significant at < 0.05