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Original Research Article

Influence of maternal age and mode of conception on infant feeding attitudes of the mothers and its impact on breastfeeding practices: a hospital based cross sectional study

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ABSTRACT

Background: Despite multiple proven benefits of exclusive breastfeeding, its practice remains elusive.
The aim of this study was to detect the influence of maternal age and mode of conception on breastfeeding practices. Questionnaire based observational study performed in the out-patient department of the Calcutta medical research institute, India.
Methods: Cross sectional survey of maternal knowledge and attitude about breastfeeding, using the translated version of the Iowa infant feeding attitude scale and to analyze their breastfeeding practice.
Results: A total 100 naturally conceived non-elderly (<35 years) mothers had significantly more ($p<0.0001$) mean IIFAS score in comparison to both groups of elderly (>35 years) counterparts [46 naturally conceived (NC) and 56 artificially conceived (ART)]. This difference is statistically insignificant when comparing the two groups of elderly mothers (NC and ART). While the approaches of majority of mothers were neutral towards breastfeeding, only a handful of them were exclusively breastfeeding at 6 months.
Conclusions: Elderly mothers have significantly less positive approach towards breastfeeding that do not depend on mode of conception.

Keywords: Maternal age, Infant feeding attitude, Mode of conception

INTRODUCTION

Breast milk is recognized worldwide as the optimal food for newborns as it confers substantial health advantages to both the child and the mother. Exclusive breastfeeding for the first 6 months of life is recommended, with the gradual introduction of complementary foods and continuation of breastfeeding up to 2 years of age or beyond. The benefits of breastfeeding for both mother and baby have long been recognized.[1] Despite a plethora of evidence supporting exclusive breastfeeding for the first 6 months of life, worldwide its overall prevalence remained low.[2-4] Psychosocial factors, such as maternal attitudes about infant feeding, have been found to be better predictors of feeding methods compared to socio demographic factors.[5] Chen and Chi have shown that the maternal positive attitudes towards breastfeeding are associated with continued breastfeeding at the initial postpartum months.[6] There are very limited and conflicting data assessing the influence of advancing maternal age on their attitude towards infant feeding. The Iowa Infant Feeding Attitude scale (IIFAS), developed by De la Mora and Russell has been found to be a reliable and valid instrument to assess women's attitudes regarding infant feeding and to predict the choice of feeding methods and duration of breastfeeding in diverse populations in a number of countries.[7-9] This scale was also used to analyze the feeding attitude of mothers in India by previous researchers.[10] The aim of this questionnaire- based cross sectional study was to analyze

the influence of maternal age on their attitude towards infant feeding and to assess its impact on their breastfeeding practices.

The objective of the study was to assess whether increased maternal age has any significant influence on the knowledge, attitude and perception of breastfeeding and to analyze the effects of socioeconomic class and the mode of conception on maternal breastfeeding practices.

METHODS

This is a cross sectional descriptive study performed in the out-patient department of Calcutta medical research institute between April 2018 and November 2019. The study was approved by the ethical committee of the institute. The tool used for the study was a locally translated version of the Iowa infant feeding attitude scale, after it was approved by the institutional ethics committee. The scale included 17 attitude items to determine level of agreement to each question. A 5-points Likert scale of responses from strongly disagree to strongly agree were applied to all questions. Approximately half of the questions were negatively worded (i.e., 1, 2, 4, 6, 8, 10, 11, 14, and 17). Total IIFAS score ranged from 17 to 85 with scores between 70-85 reflecting positive attitude, 49-69 neutral attitude and 17-48 negative attitude about breastfeeding.

The 100 primipara post-natal mothers (age >35 years) were randomly recruited for this study after obtaining valid consent. Only those mothers whose babies were 'roomed in' and those who had agreed for a 6 months follow-up were included. Multipara mothers and those with complicated perinatal history, multiple pregnancy, whose babies required NICU/SNCU care following birth, babies with congenital malformations and those who had declined to participate in the study were excluded. Out of 100 mothers enrolled, 54 were artificially conceived while the rest (46) were from natural conception (NC). Similarly, a matched cohort 100 post-natal primi mothers (age range between 22-34) were selected as a control subset, to compare their attitude towards breastfeeding with that of their older counterparts.

The demographic characteristics of all the mothers including mean age, social class (using the nationally accepted modified Kuppuswami scale), mode of delivery, initiation of breastfeeding and willingness to administer expressed breast milk to their babies were documented. Subsequently all the mothers were given the appropriately translated version of the IIFAS and their responses were assessed. A recall method was used to interview the same group of mothers at 1, 3 and 6 months, to assess their knowledge, attitude and breastfeeding practices. For the sake of comparison, the mothers were divided into 3 sub-groups. Group I had elderly naturally conceived (NC) mothers, group II elderly artificially conceived (ART) while group III had non-elderly (<35 years) naturally conceived mothers. After documenting the socio-demographic data mentioned previously, the mean IIFAS score in the 3 groups of mothers were tabulated for relative comparison. Finally recall interviews were done at follow up (up to 6 months) to know their breastfeeding practices. All the data were collected through direct interview by the same investigator. Categorical variables are expressed as number of respondents and percentage of respondents. The statistical software SPSS version 20 has been used for the analysis. The significance level (two tailed p value) was calculated using the t test ($p<0.05$ is significant). The p values of proportions were calculated using the Chi squared test. The Spearman's rank correlation coefficient was used to find out the correlation between the IIFAS and duration of breastfeeding.

RESULTS

Out of a total of 200 mothers included in our study (Table 1), 46 were naturally conceived primi post-natal mothers with maternal age >35 years, 54 were primi mothers >35 years old but conceived by artificial reproduction and 100 were naturally conceived primi mothers with maternal age <35 years. The demographic profile (Table 1) of the mothers recruited for our study revealed that the mean age of the younger mothers (29.6 years) was significantly lower ($p<0.0001$) than both groups of older mothers (NC mothers 40.4 years and ART mothers 41.6 years). A significant majority (56%) of the respondents were from the urban middle class as per the modified Kuppuswami scale.

Almost 3 out of 4 babies were born by cesarean section under spinal/ epidural anesthesia. This perhaps did explain the finding that only 1 in 4 of the mothers had initiated breastfeeding in 1 hour following childbirth.

The mean IIFAS score (Table 2) in the naturally conceived older mothers were 51.02 (SD 5.92) which was significantly low ($p<0.0001$, 95% CI -7.48 to -3.84)) compared to the naturally conceived younger mothers (Mean-56.68, SD-4.78). Similarly, the mean IIFAS Score of the olde artificially conceived mothers (49.02, SD-6.55) was significantly low ($p<0.0001$, 95% CI -9.48 to -5.84). However, the difference between the Mean IIFAS scores of the older (>35 years) naturally conceived and artificially conceived mothers were not statistically significant ($p=0.1150$, 95% CI -4.496 to -0.496). The mean IIFAS score of the total number of mothers (200) who were recruited in our study was 52.24 proving that overall, their attitude towards breastfeeding was neutral. The proportion of younger (<35 years) mothers who were exclusively breast feeding at 6 months following the birth of their babies was (36/100, 36%). This was significantly ($p=0.01$, 95% CI 5.14- 33.19) more than the naturally conceived older mothers (7/46, 15.2%). Only 9/54 (16.7%) of the artificially conceived older mothers were breastfeeding at 6 months, which was again significantly low ($p=0.0123$, 95% CI 4.4-31.7) in comparison to their younger counterparts. However, the difference in

proportion between the older naturally conceived and artificially conceived mothers were statistically insignificant (p=0.8393, 95% CI-13.59 to 15.79). The total number of postnatal mothers who were exclusively breastfeeding their babies were 52/200 (26%). Finally, the significantly more IIFAS score in younger mothers were positively correlated (Spearman's rho 0.620) with duration of exclusive breastfeeding at 6 months.

Table 1: Demographic and social profile of the mothers recruited.

Parameters	NC younger (22-35 years), n=100	Older (>35 years,) n=100, NC: 46, ART=54	P<0.05, significant (95% CI range)
Age (years), mean (SD)	29.6 (2.14)	NC: 40.4 (3.12) ART: 41.6 (3.72)	<0.0001 (9.92 to 11.68) <0.0001 (11.04 to 12.96)
Mode of delivery	Cesarean section 72%	Cesarean section 76%	0.52 (-8.13 to 15.98)
Social class	Middle class 59%	Middle class 54%	0.048 (-8.61 to 18.35)

Table 2: Practice and perception of breastfeeding in the mothers.

Parameters	NC younger (22-35 years), n=100	Older (>35 years), n=100, NC: 46, ART=54	P value<0.05, significant (95% CI range)
Initiation of breast feeding in <1 hours	26%	24%	0.745 (-9.96 to 13.88)
Willingness to give expressed breast milk	78%	62%	0.0138 (3.29-28.03)
Mean (SD) IIFAS score	56.68 (4.78)	NC: 51.02 (5.92) ART: 49.02 (6.55)	<0.0001 (-7.48 to-3.84) <0.0001 (-9.48 to-5.84)
Exclusive breast feeding at 6 months	36 (36%)	NC: 7 (15.2%) ART: 9 (16.7%)	0.01 (5.14 to 33.19) 0.0123 (4.4- 31.7)

DISCUSSION

In our study we have assessed the influence of maternal age on the knowledge attitude and feeding practices of post-natal mothers using an internationally accepted tool (IIFAS). As per our study the mean age of the older mothers was significantly more in comparison to their younger counterparts. A significant majority of the respondents were from urban middle-class background and were delivered by instrumental delivery. The overall mean IIFAS score of the entire group of mothers were in early fifties reflecting a neutral attitude towards breastfeeding. Unfortunately, three out of four mothers were not exclusively breastfeeding their babies at six months post-natal age. Both these later findings tally with another Indian study using almost identical methodology.[8] However in our study we have found that the mean IIFAS score of the younger mothers were significantly more compared to both the NC and ART group of older mothers. This could explain the significantly a greater number of the younger mothers exclusively breast feeding their babies at six months, compared to their older peers. This was further supported by the fact that a significantly large number of the former were willing to offer expressed breast milk to their babies. In this context we should highlight that we did not find any statistically significant difference in these two aspects amongst the two groups of older mothers, who had conceived either by natural or artificial reproductive technique. We have also found a significant positive correlation between more positive attitude in younger mothers (reflected by higher IIFAS score) with that of exclusive breast feeding at 6 months. This supports previous studies which had found a direct correlation between positive attitude to breastfeeding and optimal exclusive breastfeeding practice.[11,12]

Using the translated version of an internationally accepted tool like IIFAS to analyze maternal knowledge and perception towards breastfeeding of both sets of mothers (>/< 35 years) is the main strength of this study. However, a modest sample size is the main limitation of this study. Therefore, even though we have tried to make a cautious interpretation of our study findings, we need to keep in mind that studies with a larger sample size may not necessarily concur with our conclusion.

CONCLUSION

In conclusion we can infer that overall, the attitude of majority of mothers are neutral towards breastfeeding irrespective of their age and mode of conception. However, it appears that with advancing maternal age, mothers become less motivated to breastfeed their newborn babies which can affect their future breastfeeding practices. The health care providers should try to counsel older mothers more in order to promote exclusive breastfeeding.

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