Socio-economic and Demographic Determinants of Initiationof Breastfeeding in Bhagalpur, Bihar

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ABSTRACT
Infant and young children are important areas for increasing infant survival and encouraging safe growth and development. The benefits of breastfeeding for the child and the nursing mother is well known. The World Health Organization (WHO) advocates initiation of breastfeeding within one hour, exclusive breastfeeding for up to 6 months, and sustained breastfeeding for up to 2 years. India marks as 42% in breastfeeding within one hourof childbirth Bihar stands 7% less than the national breastfeeding within one hourof birth.The data from National Family Health Survey-4 is used in this study to examine the comparative scenario of breastfeeding between Bihar and India.Further, primary evidence of breastfeeding from Bhagalpur district representing the eastern Bihar. The Bivariate and binary logistic regression model were used to accomplish the study objectives.The adjusted odds of breastfeeding practice were 122 more likely among the rich women compared to poor women. Similar positive changing patterns are also observed with an increasing level of income.Breastmilkhelps build and support your baby's immune system.Breast milk produces antibodies that can fight infections. These antibodies are found in large concentrations in the colostrum, the first milk that comes out of the breasts after birth. There are, however, antibodies in breastmilk all the way that a mother wants to feed. Breast milk will literally give babies a head starts in the prevention and control of infections. They identified women who initiate breastfeeding late should be focussed from the program perspective. The primary health centers should be encouraged to campaign the initiation of breastfeeding immediately after delivery.
KEYWORDS: *National Family Health Survey; NFHS; Child health; Newborn; Nutrition*

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I. INTRODUCTION

Breastfeeding is one of the most important ways to ensure children's health and survival. However, the National Family Health Survey shows that almost 2 out of 3 children are not only breastfed for the average 6 months, a rate that has not changed for 2 decades in India.The World Health Organisation advocates that breast milk is the best nutrition for babies. It is healthy, clean, and contains antibodies that help protect against many popular childhood illnesses. Breast milk contains all the calories and nutrients that the baby requires in the first months of infancy, and tends to offer up to half or more of the child's nutritional needs in the second half of the first year and up to one third in the second year of life.Breast-fed infants do better intelligence assessments, are less likely to be overweight or fat, and are less likely to develop diabetes later in life. Mothers also have a lower risk of ovarian and breast cancer.Breast milk is the best nutrition for children. It has an excellent combination of vitamins, protein, and fat everything that your baby requires to develop. It's all offered in a more quickly digested shape than baby formula. Breastfeeding provides antibodies that help your baby protect against viruses and bacteria. Breastfeeding reduces the child's risk of asthma or allergies. Plus, kids who breastfeed solely for the first 6 months, without any food, have fewer ear infections, respiratory problems, and episodes of diarrhea. There are also fewer hospitalizations and visits to the clinic.

The World Health Organisation also advocated that breastfeeding for 6 months has many advantages for both babies and mothers. The most important of them is a defence against gastrointestinal infections seen not only in developed countries but also in advanced countries. Early breastfeeding, within 1 hour of birth, prevents the infant from infection, and decreases the mortality of the baby. The risk of death from diarrhea and other infections may increase in infants who are either partially breastfed or not breastfed at all.Breast milk is also a significant source of nutrition and energy for children aged 6–23 months. It can provide half or more of the energy needs of a child between the ages of 6 to 12 months, and one-third of the energy needs between 12 to 24 months. Breast milk is also a good source of nutrition and nutrients during sickness and decreases mortality in undernourished infants.

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The National Family Health Survey shows that India marks as 42% in breastfeeding within one hourof childbirth Mizoram leads the chart with a value of 73% and is followed by 3% by Sikkim and 4% by Odisha. Manipur stands 4th with66% followed by Assam and Puducherry which are at 65%. They are followed by Kerala. Bihar stands 7% less than the national breastfeeding within one hourof birth, Bihar shares the value with Chandigarh and Madhya Pradesh with a 35 unit. Uttar Pradesh lies last in the chart with a minimum of 25%.

II. REVIEW OF LITERATURE

Globally, India has the highest under-five mortality (0·9 million deaths in 2016)[1]between 2005 and 2016, past national studies from India reported an improvement in breastfeeding prevalence by 9.0% (from 46.0 to 55.0%)[2]. Exclusive breastfeeding to 6 months of age is one of the primary aims of nutrition and public health programs across the world[3]. A recent systematic review and meta-analysis revealed that breastfeeding initiation after the first hour of birth doubles the risk of neonatal mortality[4.] Breastfeeding research predominantly focuses on exclusive breastfeeding to the age of 6 months and other infant and young child feeding (IYCF) indicators. It is important to understand the factors associated with delayed breastfeeding initiation and the existing barriers and facilitators to early initiation in order to design and deliver effective strategies to improve the practice and accelerate progress in new-born survival.[5,6,7].

Breastfeeding enhances the relationship between a mother and her infant by improving bonding. For example,skin-to-skin contact during breastfeeding has been shown to improve the infants' vital signs, especially immediately after birth[8]. Indeed, it is theorized that many of the identified health benefits of breastfeeding may be related to not only the composition of human milk but also to the close contact between the mother and her infant during feeding[9]. Breastfed infants also have more control over how much food they eat and when they eat, which may be part of the association between reduced rate[10]. Breastfeeding has also been related to the possible enhancementof cognitive development[11]. There are advantages for the mother as well-breastfeeding reduces the incidence of postpartum bleeding, leads to faster uterine involution[12], reduces the risk of breast cancer' and ovarian cancer,[13,14]. delays resumption of ovulation and increases child spacing improves bone re-mineralisation after childbirth in women resulting in a reduction in hip fractures in the post-menopausal period.

Finally, likely, all the benefits of human milk are presently not known[15,16,17,18]. Breastfeeding is significantly related to the income and economic status of the family and these data are well-acknowledged in low income and middle-income countries, in these countries 37% of children under the age of 6 months are breastfed[19]. Similarly, in India, one can see a trend in breastfeeding which varies with the diversity in religion, culture, and geography. The prevalence of EBF is maximum in the southern part of the country whereas it is least in the northeastern states.Apart from education higher birth order also results in non EBF[20]. In the Indian context apart from the above-mentioned factors, there are several social factors often referred to as structural level which include social trends, advertising media, product availability at stores, legislation, media, and social mobilization.[21]

III. DATA AND METHODS

Data and sample selection

The comparative review of Bihar's estimated data from the National Family Health Survey-4 (NFHS-4) from the report was used. The evidence from the Bhagalpur district has been presented based on the sample collected during April-May 2019. A sample of 512 under-five children has been collected from 512 households of four sample blocks of Bhagalpur district. As the entire district is very large and has a varied geographical standing, it is necessary to select some sample area for analysing the infant and child mortality includes socio-economic determinants for the future. The purpose of the sample study is to represent the condition of breastfeeding of selected blocks with selected settlements. Out of 16 blocks, I chose 4 blocks, in which 9 sample study area with 1–4 villages in each block and surveyed them with a questionnaire. Household surveys are the best way to obtain factual information in different areas of the area so that data is obtained from the ground level of the study area. A sample analysis of some villagers from different parts of the district is therefore required. These blocks are situated in the southern part of the district of Bhagalpur. Households with at least one child born within the last five years were chosen randomly for the primary sample within these blocks.

Variable description

The outcome variable for this study is breastfeeding, the nourishment provided by the lactating female to her offspring is called breastfeeding It's also called nursing. The American Academy of Pediatrics (AAP) suggests breastfeeding as the primary source of nutrients for a baby for around 6 months which can be extended for as long as both mothers and babies like it. The following suggestion help illustrate how breastfeeding not only delivers excellent care but also sets the infant up for safe growth and development. In this study, the initiation within one hour is used as the outcome variable. If the child was fed breastmilk within one hour, the child is categorized as 1, 0 otherwise.

The explanatory variables at the child, mother, and household levels. select the confounder after an extensive review of existing literature. area of residence (Urban and Rural), religion (Hindu, Muslim), caste(General, Other backward class, and scheduled caste/ Schedule tribe), income (thousand per year), wealth status (Poor, Middle, Richer), housing condition (kuccha, semi pukka, pukka), sibling composition (only male, only female, both) children ever born (1-2,3-4,5+),and were selected at the household level.
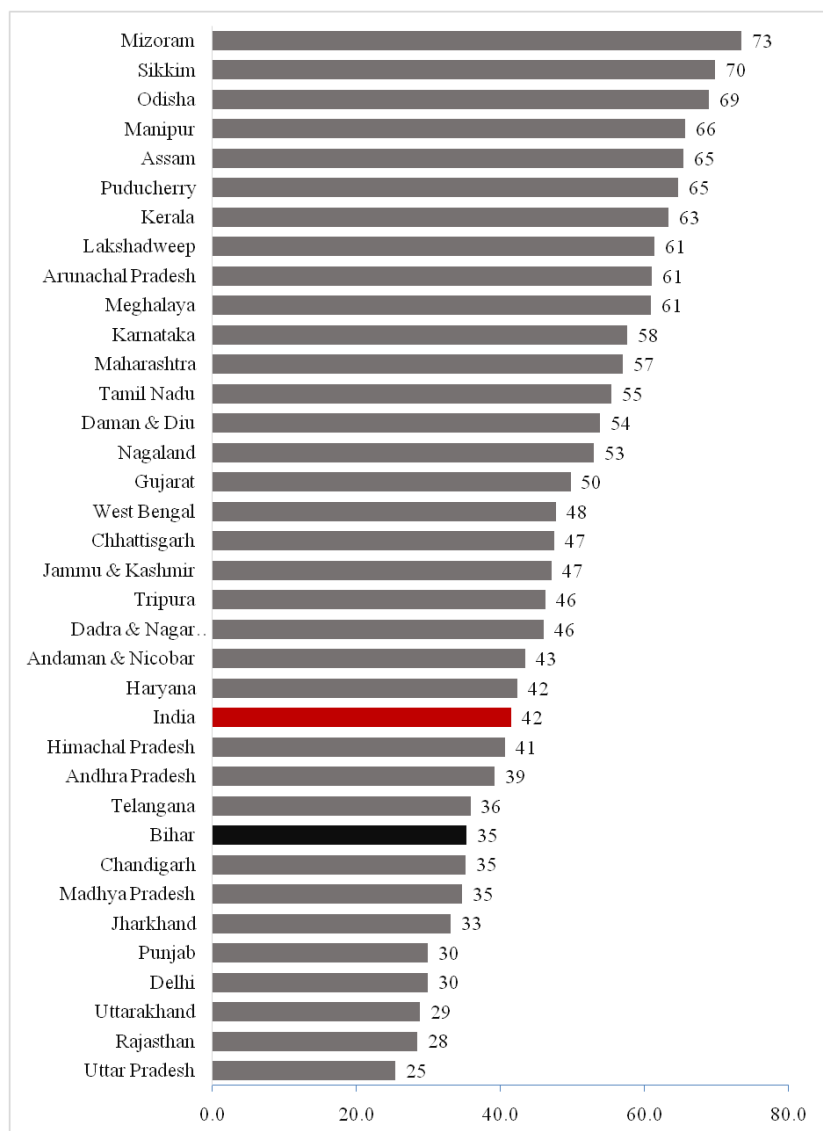
Statistical analyses
For this analysis, univariate, bivariate, and multivariate statistical analyses were performed. Univariate descriptive statistics have been measured to explain the features of the sample. The percentage of breast-feeding has been calculated to show the prevalence of breast-feeding through various socio-economic, demographic, and regional factors. The binary logistic regression model was used to analyze the determinants of breastfeeding prevalence in Bhagalpur.

IV. RESULTS
Breastfeed within one hour across the states of India
Figure 1shows thepercentage of children born in the last two years preceding the survey who breastfeed within one hour across the states of India, 2015-16**.** The figure demarcates the pattern of children born in the last two hours preceding the survey who breastfed one hour across the states of India. About 42%of children were breastfedwithin one hour of childbirth Mizoram leads the chart with 73% and is followed by 3%in Sikkim and 4%in Odisha. Manipur stands 4th with66% followed by Assam and Puducherry which are at 65%. Bihar stands 7% less than the national breastfeeding within one year of birth, Bihar shares the value with Chandigarh and Madhya Pradesh with 35%. Uttar Pradesh lies last in the chart with a minimum of 25%.

Figure 1: Percentage of children born in the last two years preceding the survey who breastfeed within one hour across the states of India, 2015-16

Data source: National Family Health Survey (2015-16)

Sample characteristics from Bhagalpur district

Table 1 describes the study sample area Bhagalpur district of Bihar. It shows that the percentage of children with the initiation of breastfeeding within one hour by socio-economic characteristics in 2019. The table reports that out of The respondent sample space 35% of the women correspond to the urban whereas the rest 65% is the resident of the rural household. Out of these 52.4% follow Hinduism as their religion of practice and 47.6% are the followers of Islam.Most of the respondent included in the study belongs to OBC category which comprises of 65.3 % followed by 21% general and the least number is from SC and ST communities. These respondents vary in their total family yearly income, 39.8% of them are from families whose per annum income lies between 60 to 79 thousand, and 31.2 have a total yearly family income of 1 lakh and above, and the rest 29% belong to the group of 80-90 thousand per year. According to the data, the housing condition of most 45.5% is the pukka house,29.9% in kutcha, and 24.6 % in semi kutcha houses.The children ever born to these respondent females vary in number as most of them 41.9% have just 1-2 children followed by 3-4 children (40.4%) and 17.4 % of these respondents had 5 or more than 5 children. Amongst these 61.5 of them have a mix of both male and female child and the females with either only male children or only female children follow an equal trend of 19.2%.

Table 1: Univariate descriptive statistics of the sample studied for the maternity care analysis in sample area, 2019

Variables	Percent [95% CI]
Place of residence	
Urban	35 [31.1, 39.2]
Rural	65 [60.8, 68.9]
Religion	

Hindu	52.4 [48.1, 56.6]
Muslim	47.6 [43.4, 51.9]
Caste	
Gen	21.1 [17.9, 24.9]
OBC	65.3 [61.1, 69.3]
SC/ST	13.5 [10.8, 16.7]
Income (thousands per year)	
60-79	39.8 [35.7, 44.1]
80-99	29 [25.2, 33]
100 and above	31.2 [27.4, 35.3]
Wealth status	
Poor	32.6 [28.7, 36.7]
Middle	33.3 [29.4, 37.5]
Rich	34.1 [30.2, 38.3]
Housing condition	
Kuccha	29.9 [26.1, 34]
Semi pukka	24.6 [21.1, 28.4]
Pukka	45.5 [41.3, 49.8]
Sibling composition	
Only female	19.2 [16.1, 22.8]
Only male	19.2 [16.1, 22.8]
Both	61.5 [57.3, 65.6]
Children ever born	
1-2	41.9 [37.7, 46.2]
3-4	40.4 [36.3, 44.7]
5+	17.7 [14.7, 21.2]

Source: Primary data collected during April-May 2019
Note: CI denotes confidence interval

Initiation of breastfeeding by background characteristics

Table 2presents the percentage of children who were breastfed within one hour of their delivery in the last five years in Bhagalpur district.Breastfeeding practice within one hour was a little better in rural (74%) compared to an urban area (71%). Among the religious groups, 76% of Hindu women practiced breastfeeding within one hour, and Muslim women (71%). This practice was notably lower among general caste (64%) than OBC (76%) and Scheduled caste/tribe (77%). This practice was found to be decreased with an increasing level of income. The breastfeeding practice was found comparatively low among the women who had semi-pucca (70%) house than kaccha (78%) and pucca house (72%). The mother who had only female siblings were practiced breastfeeding only 63%, which was lower than the mother who had only male siblings (74%) and both male and female siblings (77%). The lower number of children ever born (1-2) women was practiced breastfeeding lower than the women with 3-4 ever born children and more than five ever born children.

Table2: Percentage of women who had breastfeeding practices within one hour in the last five years in Bhagalpur district, 2019

Variables	Breastfeeding within one hour
Place of residence	
Urban	70.7[63.6, 76.8]
Rural	75.4[70.5, 79.7]
Religion	
Hindu	75.6 [70.2, 80.4]
Muslim	71.6 [65.7, 76.9]
Caste	
Gen	64.0 [54.6, 72.4]
OBC	75.8 [71.0, 80.1]
SC/ST	78.9 [67.7, 86.9]
Income (thousands per year)	
60-79	74.2 [67.8, 79.7]
80-99	76.3 [68.9, 82.4]
100 and above	70.7 [63.3, 77.2]
Wealth status	
Poor	74.9 [67.8, 80.8]
Middle	73.1 [66.1, 79.2]
Rich	73.2 [66.2, 79.2]
Housing condition	
Kuchha	78.3 [71.2, 84.1]
Semi pukka	70.5 [62.1, 77.8]
Pukka	72.4 [66.3, 77.7]
Sibling composition	

Only female	63.4 [53.5, 72.2]
Only male	74.3 [64.8, 81.9]
Both	76.8 [71.8, 81.1]
Children ever born	
1-2	67.7 [61.2, 73.6]
3-4	78.8 [72.7, 83.8]
5+	76.3 [66.6, 83.9]

Source: Primary data collected during April-May 2019; CI denotes confidence interval

Determinants of breastfeeding in Bhagalpur

The socioeconomic correlates of breastfeeding within one hour have been shown in Table 3. The prevalence of breastfeeding within one-hour (BFW1H) was unexpectedly lower among the Muslim (Adjusted Odds Ratio (AOR hereafter) =0.87) women compared to Hindu women. Among the caste, the odds of breastfeeding practice within one hour were 199 among the ST/SC group, followed by OBC (AOR=1.61) than the general caste. The adjusted odds of breastfeeding practice were 1.22 more likely among the rich women compared to poor women. The similar positive changing patterns are also observed with an increasing level of income. The housing structure of respondents also significantly influenced the prevalence of breastfeeding, the women who had a pukka house was 72.8 more likely than kutcha house. The prevalence of breastfeeding practice among the women who were born more than five children was 2.5 times higher odds than the women who bore two or less than two children.

Table 3: Results from a binary logistic regression model: Adjusted odds ratios of breastfeeding practices in Bhagalpur district, 2019.

Variables	Breastfeeding within one hour
Place of residence	
Urban (Ref.)	1.00
Rural	1.35[0.84, 2.16]
Religion	
Hindu (Ref.)	1.00
Muslim	0.87 [0.55, 1.36]
Caste	
General (Ref.)	1.00
OBC	1.61 [0.98, 2.64]
SC/ST	1.99 [0.95, 4.18]
Income	
60-79 (Ref.)	1.00
80-99	1.12 [0.66, 1.89]
100 and above	0.93 [0.54, 1.59]
Wealth Status	
Poor (Ref.)	1.00
Middle	1.13 [0.68, 1.90]
Rich	1.22 [0.66, 2.26]
House	
Kuccha (Ref.)	1.00
Semi-Pukka	0.56 [0.32, 0.99]
Pukka	0.73 [0.42, 1.25]
Sex composition	
Female (Ref.)	1.00
Male	1.75 [1.02, 2.50]
Both	1.50 [0.85, 2.68]
Children	
1-2 (Ref.)	1.00
3-4	1.56 [1.01, 2.13]
5+	1.46 [0.75, 2.86]
Constant	1.11 [0.47, 2.61]

Source: Primary data collected during April-May 2019

Note: CI denotes confidence interval; Ref. stands for reference category of the variable; Pukka house includes floor with cemented/carpet, polished stone/marble/granite, wall with cemented/concrete, stone with lime/cement, burnt bricks, cement block, roof with cement, metal, tiles, slate, burnt brick. Improved water includes piped into dwelling, pipe to yard/plot, public tap/standpipe, tube well or borehole, protected spring, protected well, tanker truck, cart with small tank. Improved sanitation includes flush to piped system,flush to septic tank, flush to pit latrine, flush to somewhere else, all types of flush toilet, ventilated improved pit (VIP)/bio latrine etc.

V. DISCUSSION

This study attempts to investigate the socioeconomic demographic characteristics of Bhagalpur district of Bihar, India since it is a major new-born health issue in Bihar. The latest estimate from NFHS-4 suggests that

the figure demarcates the pattern of children born in the last two years preceding the survey who breastfed one hour across the Nation(IIPS and ICF 2017).The findings from this study indicate that the economic factors such as income, wealth status, housing condition, social factors like place of residence, and religion, *i.e.* breastfeeding in Bihar and Bhagalpur.If breastfeeding is seen within an hour, then the percentage of India comes to 42%, the highest percentage (72%) is seen in Mizoram when the birth rate is very low there, in the same way, the birth rate in Uttar Pradesh is higher than the breastfeedingless(25%) than an hour is found.Similarly,we found that in Bihar, 35% breastfeeding withinan hour.

Breastfeeding practices within one hour in the last five years in Bhagalpur districtbetter in rural (74%) compared to an urban area (71%). Among the religious groups, 76% of Hindu women practiced breastfeeding within one hour, and Muslim women (71%). This practice was notably lower among general caste (64%) than OBC (76%) and Scheduled caste/tribe (77%). This practice was found to be decreased with an increasing level of income. The socioeconomic correlates of breastfeeding within one hour unexpectedly higher among Muslim women compared to Hindu women. Among the caste, the odds of breastfeeding practice within one hour was higher among the ST/SC group, followed by OBC than the general caste. The adjusted odds of breastfeeding practice were 1.22 more likely among the rich women compared to poor women. The similar positive changing patterns are also observed with an increasing level of income.

In conclusion, it can be said that socioeconomic backwardness particularly in education, social groups, economic condition palyan important role in the initiation of breastfeeding practices in the Bhagalpur district of Bihar. From the policy perspective and program intervention, the identified groups should be targeted. The sustainable development goals aim to eradicate any form of malnutrition by 2030. The initiation of breastfeeding along with the exclusive breastfeeding practice would play a major role in reducing malnutrition among the children in Bhagalpur specifically and Bihar in General. Thus, it is recommended that the promotion of initiation of breastfeeding within one hour after delivery should be encouraged.

REFERENCES

[1]. Haidong W, Amanuel AA, Kalkidan HA, Cristiana A, Kaja MA, Foad A-A, et al. Global, regional, and national under-5 mortality, adult mortality, age-specific mortality, and life expectancy, 1970–2016: a systematic analysis for the Global Burden of Disease Study 2016. The Lancet. 2017;390:1084–150.
[2]. (Ministry of Health and Family Welfare, International Institute for Population Sciences (IIPS) and ICF. National Family Health Survey (NFHS-4), 2015–16. Mumbai, India: Ministry of Health and Family Welfare, 2018.
[3]. World Health Organization. Global strategies for infant and young child feeding. Available at: www.whoint/child-adolescenthealth/nutrition/global-strategy.htm; 2007 [accessed 17.12.07].
[4]. Khan J, Vesel L, Bahl R, Martines JC. Timing of breastfeeding initiation and exclusivity of breastfeeding during the first month of life: Effects on neonatal mortality and morbidity—a systematic review and meta-analysis. Matern Child Nutr. 2015;19:3.
[5]. Tawiah-Agyemang C, Kirkwood BR, Edmond K, Bazzano A, Hill Z. Early initiation of breast-feeding in Ghana: barriers and facilitators. J Perinatol. 2008;28:S46–52.
[6]. Oddy WH. Breastfeeding in the first hour of life protects against neonatal mortality. J Pediatr. 2013;89(2):109–11.
[7]. Jana AK. Interventions for promoting the initiation of breastfeeding The WHO reproductive health library. Geneva: World Health Organization; 2009.
[8]. Moore, E. R., and Anderson, G. C. (2007): Randomized controlled trial of very early mother-infant skin-to-skin contact and breastfeeding status. Journal of Midwifery and Women's Health, 52(2), 116–125.2006.12.002.
[9]. Moore, E.R., Anderson, G.C., Bergman, N., and Dowswell, T. (2012): Early skin-to-skin contact for mothers and their healthy newborn infants. Cochrane Database of Systematic Reviews 2012, 5, CD003519.
[10]. Hung, K. J., and Berg, O. (2011): Early skin-to-skin after cesarean to improve breastfeeding. American Journal of Maternal/Child Nursing, 36(5), 318–324. doi:10.1097/NMC.0b013e3182266314.
[11]. Morrow- TlucakM, Haude RH. Emhart CB. Breastfeeding and cognitive development in the first 2 years of life. Soc Sci Med 1988;26:635-9.
[12]. Chua S. Arulkumaran S. Lim I. Selamat N. Ratnam SS. Influence of breast feeding and nipple stimulation on postpartum uterine activity. Br J Obstet Gynaecol1994; 101:804-5.
[13]. Newcomb PA. Storer BE. Longnecker MP. Mittendorf R. Greenberg ER. Clapp RW. et al. Lactation and a reduced risk of premenopausal breast cancer. N Engl J Med 1994;330:81-7.
[14]. Rosenblatt KA. Thomas DB. Lactation and the risk of epithelial ovarian cancer. The WHO Collaborative Study of Neoplasia and Steroid Contraceptives. IntJEpidemiol 1993 ;22: 192-7.
[15]. Kennedy KI. Visness CM. Contraceptive efficacy of lactational amenorrhoea. Lancet 1992;339:227-30.
[16]. Melton UIII. Bryant SC. Wahner HW. O' Fallon WM. Malkasian GO. Judd HL. et al. Influence of breastfeeding and other reproductive factors on bone mass later in life. Osteoporosis Int 1993; 3:76-83.
[17]. Cumming RG. Klineberg RJ. Breastfeeding and other reproductive factors and the risk of hip fractures in elderly women. lilt J EpidemioI1993; 22:684-91.
[18]. Almroth S. Greiner T. The economic value of breastfeeding. Food and Nutrition Paper No. 11. FAO. Rome. 1979.
[19]. G Victora, Rajiv Bahl, Aluísio J D Barros, Giovanny V AFrança, Susan Horton, Julia Krasevec, Nigel C Rollins. Breastfeeding 1, Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effect Cesar, The Lancet Breastfeeding Series Group; Vol 387 January 30, 2016
[20]. Mansi Vijaybhai Dhami1, Akorede O. AwosemoRegional prevalence and determinants of exclusive breastfeeding in India; Ogbo et al. International Breastfeeding Journal (2019)
[21]. Nigel C Rollins, Nita Bhandari, NematHajeebhoy, Breastfeeding 2Why invest, and what it will take to improve breastfeeding practices? on behalf of The Lancet Breastfeeding Series Group; Vol 387 January 30, 2016.