Original Article

Patterns and Socio-demographic Determinants of Exclusive Breastfeeding in India

Running title: Determinants of exclusive breastfeeding

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Abstract

Introduction: Breastfeeding is an important practice that is becoming essential due to increased malnutrition and illnesses among children these days. Exclusive breastfeeding for the first six months of life is a vital practice that has proven benefits in later life. Our study is about the factors affecting exclusive breastfeeding and is amongst one of the very few such studies using the latest available data. *Objective:* To study the pattern and socio-demographic determinants of exclusive breastfeeding in India. *Methods:* For this study, the National Family Health Survey 2018-19 (NFHS-5) data was used. In the current study, all the women who were breastfeeding at the time of data collection were included in this study. Data was cleaned, coded, and analyzed using SPSS 16. The prevalence of exclusive breastfeeding among different regions, maternal age groups, socioeconomic statuses (SES), etc., was calculated. *Results:* All the factors under study showed significant associations with exclusive breastfeeding. Exclusive breastfeeding was more or less the same among all maternal age groups but slightly lower in women above 35 years of age. Exclusive breastfeeding was highest in the western region of India (88.5%) and among the women who had incomplete primary education (86.7%). Also, exclusive breastfeeding was highest in the poorest group and was more among women who underwent normal delivery in comparison to that of caesarian delivery. Counselling regarding breastfeeding by healthcare workers also showed significant improvement in exclusive breastfeeding practices. *Conclusion:* This study signified that exclusive breastfeeding is affected by many factors, such as maternal education, region, SES, type of delivery, place of delivery, and patient counselling. *Recommendation*: Out of all the factors, counselling by a healthcare worker on exclusive breastfeeding is easily modifiable and should be strengthened to improve exclusive breastfeeding.

Keywords: Breastfeeding, Counselling, India, Infants, Maternal.

Introduction

As defined by World Health Organization-Exclusive breastfeeding (EBF) is only breastfeeding an infant with no other food or drink, not even water. Prescribed medicines, oral rehydration solutions, vitamins, and minerals are not considered fluids or foods. However, herbal fluids and similar traditional medicines are counted as fluids, and infants who consume these are not exclusively breastfed. According to World Health Organization's global strategy for Infant and Young Child Feeding practices, infants should be exclusively breastfed up to six months of age. Exclusive breastfeeding until six months from birth protects children against diarrhea, lower respiratory infections, acute otitis media, and childhood overweight and obesity [1]. Breastfeeding protects children from many aforementioned childhood illnesses, just like a vaccine. Around the world, exclusive breastfeeding for the first six months of life was observed only among 44% of infants, while World Health Assembly's target for the same is 50% by 2025 [2]. According to the WHO factsheet, necessary breastfeeding among 0-23 months children not only can avert 820000 child deaths per year but also improves IQ, decreases expenditure on health care in the future life, and increases achievements in life [3]. In other words, investment in breastfeeding generates returns in terms of economic gains in later years of life as well [4].

Nowadays, where malnutrition and illness among children are very common, breastfeeding is a strong weapon to combat the problems. Participation and support from all the stakeholders, such as health care workers, family, friends, etc., are needed to improve infant and young child feeding practices. Awareness regarding the same should be generated among various stakeholders [5].

In contrast to exclusive breastfeeding, bottle-feeding and/or supplemental feeding during the first six months of life are proven to be harmful to a child's healthy growth and development [6]. Exclusive breastfeeding rates among children under six months have also improved from 65 percent in 2015-16 (NFHS 4) to 76 percent in 2019-21 (NFHS 5), but still, there is a large scope for improvement. Many factors have an influence on exclusive breastfeeding [7]. It is vital to study and understand the prevalence and all the factors affecting exclusive breastfeeding to get a worm-eye view for the top-level decision-makers so that policies can be modified and resources can be directed to design targeted interventions to improve EBF in India. This study aimed to examine the prevalence and determinants of EBF in India. There are some regional studies on factors affecting exclusive breastfeeding [5], but there are limited published data at the national level regarding EBF determinants in India. To the best of our knowledge, this is the only study using the latest data of NFHS-5 that identifies the factors associated with EBF practices in India.

Objective

To study the pattern and socio-demographic determinants of exclusive breastfeeding in India.

Methods

1. **Design of study and data sources:** It is a cross-sectional study based on secondary data**.** For this study, the National Family Health Survey 2018-19 (NFHS-5) data was used. The 2019-20, National Family Health Survey (NFHS-5) was designed to provide information on population, family planning, maternal and child health, child survival, HIV/AIDS, and sexually transmitted infections (STIs), reproductive health, and nutrition in India. NFHS-5 involved interviewing randomly selected women aged 15-49

years and a sub-sample of men aged 15-54 years. All 29 states and seven union territories (UTs) were included in NFHS-5. NFHS-5 provided estimates of most indicators at the district level for all 707 districts in India. Women and men within these households were interviewed using their respective individual questionnaires.

2. **Data extraction and Data Cleaning-** The DHS Program is authorized to distribute, at no cost, unrestricted survey data files for legitimate academic research. Registration is required for access to data [8]. Request mail was sent to DHS (archive@dhsprogram.com) for access to data. For the current study, a specific population, i.e., women who were breastfeeding at the time of the study, was required. After getting permission to access the data, the data pertaining to the relevant study population was extracted, which was approximately 1.06 lakh individual (women) level data Data cleaning was done using IBM SPSS 22.
3. **Outcome Variable-** For the current study outcome variable is exclusive breastfeeding during the first six months of life of an infant.
4. **Study variables-** Based on the literature review, some socioeconomic, demographic and health service variables were selected under this study. Exclusive breastfeeding was taken as the dependent variable. Under socioeconomic factors, the educational status of the mother and wealth indicators were included in the current study. The educational status of the mother was further divided into five categories- No education, incomplete primary, incomplete secondary, complete secondary education, and higher education. Likewise, the wealth indicators were divided into the poorest, poorer, middle, rich, and richest categories. Mother's age, which was divided into three categories- 15-25 years, 26-35years and above 36 years of age. Health service factors under consideration were counselling by the healthcare provider and type of delivery. Counselling by healthcare providers during 1st two days was taken into consideration. Also, whether the delivery was caesarian or normal was studied under health service factors. The prevalence of exclusive breastfeeding was also studied region-wise. For the purpose of the study, the states of India were divided into the following five regions: Northern region, Eastern region, Northeastern region, Western region, and Southern region.
5. **Statistical analysis-** Data was analyzed using IBM SPSS 22. Coded data was used for analysis. The percentages of exclusive breastfeeding were calculated in association with all factors under study (Table 1). Cross tabulations and chi-square tests were applied to the selected variables.

Results

Among the three selected age groups, the percentage of non-exclusive breastfeeding was more or less the same, with slightly higher (16.7%) in the 35 and above maternal age group. Exclusive breastfeeding was reported to be highest in the western region (88.5%), followed by the Eastern region (87.8%), and lowest in the Northern region (80.5%).

While comparing exclusive breastfeeding with the education level of the mother, it came out that the percentage of exclusive breastfeeding was highest i.e., 86.8% in women who had incomplete primary education, followed by the women who received no education (86.7%). It is lowest (80.3%) in the women who have attained higher education.

Among the wealth index, the poorest group showed the highest percentage of exclusive breastfeeding, i.e., 88.6%, while the percentage of exclusive breastfeeding in the richest group was 78.9%. In

comparison to those women who underwent cesarean delivery (80%), those who underwent normal delivery had a higher percentage of exclusive breastfeeding, i.e., 86.8%. While comparing the number of births in the past year and breastfeeding, exclusive breastfeeding was highest, i.e., 85.2% among those who have not given any birth in the past year.

The percentage of exclusive breastfeeding was higher, up to 86.5% among those who received advice on breastfeeding at least once compared to those who did not receive any advice on the same, which is 80.5%. 85.9% of women who were counselled on breastfeeding during 1st two days of delivery exclusively breastfed their child compared to those who were not counselled.

Results of the chi-square test reflected that all the factors used in this study, namely maternal age, maternal education level, the effect of regions of the country, type of delivery, number of births in the previous year, counselling by health care worker on breastfeeding ever as well as within two days after delivery were significantly associated with exclusive breastfeeding in infants (Table 1).

Table1: Factors affecting exclusive Breastfeeding

Factors under study	Subcategories	Percentage of Exclusive breastfeeding (%)	Value of Chi square test
Age of Respondent in years	15-25	85.8	30.619*
	26-35	85.3	
	Above 36	83.3	
Region	Northern	80.5	1.015*
	Eastern	87.8	
	North-eastern	86.9	
	Western	88.5	
	Southern	87.3	
Education level of mother	No education	86.7	3.678*
	Incomplete Primary	86.8	
	Incomplete secondary	85.9	
	Complete Secondary	84.9	
	Higher	80.3	
Wealth Index	Poorest	88.5	7.581*
	Poorer	86.5	
	Middle	85.3	

	Richer	83.3	
	Richest	78.9	
Type of delivery	Normal	86.8	6.412*
	Caesarian	80.0	
Births in past year	No Birth	85.2	39.472*
	1	85.7	
	2	75.3	
	3	60.0	
Counseling on breastfeeding (Ever)	Yes	86.5	1.361*
	No	81.5	
Counseling on breastfeeding within 2 days after delivery	Yes	85.9	1.22*
	No	82.9	

* Chi-square test result significant (p-value=0.000)

Discussion

Breastfeeding, as common and natural as it may sound, is a practice that needs to be promoted due to its enormous proven benefits both to the mother as well as the baby. It not only strengthens the mother-child bond but also decreases mortality and morbidity both in the mother as well as the child. There are many benefits of breastfeeding to mothers, including aversion to diabetes, cardiovascular problems, postpartum depression, and breast and ovarian cancer. According to World Health Organization, 20,000 maternal, death per year due to breast cancer can be averted by breastfeeding alone. The results of the current paper show that the demographic, social, and economic factors under study, are significantly related to exclusive breastfeeding. These factors can explain the lower Levels of EBF in the country. Also, by working on these factors and by devising strategies to overcome the limitations to enhance the EBP, ultimately, the child health indicators can be improved.

This study showed that the percentage of exclusive breastfeeding is as high as 85.,4%, and it is more or less the same in all the regions but highest in the western region and lowest in the northern region of India. Exclusive breastfeeding was lowest among the women having higher education than secondary education. As higher education might be associated with higher level of employment. Similar results were reflected in a study from Cameroon, which considered higher maternal education as a risk factor leading to non-exclusive breastfeeding [10]. When we talk about the wealth group, it was the poorest group that showed the highest percentage of exclusive breastfeeding. The women who underwent normal delivery showed a higher percentage of breastfeeding. According to a prospective Iranian study on factors affecting exclusive breastfeeding, delivery by cesarean section and multiple pregnancies also have a significant effect on exclusive breastfeeding [11]. According to our study, women who were counselled regarding breastfeeding exclusively breastfed their

babies more than those who were not counselled. Similar results were shown in a study on determinants of exclusive breastfeeding in Southwest Ethiopia, which recommended that health workers should counsel the mothers regarding exclusive breastfeeding during their postpartum visits [12]. A recent study from Uganda also mentioned that lack of information from health care workers, poor support system, and poverty are a few important factors affecting breastfeeding in their infants [13]. According to WHO, there have been no changes in exclusive breastfeeding under six-month indicators from the year 2008 to the year 2021[1]. New strategies are needed to address all the factors affecting exclusive breastfeeding. [14]

Limitations

It is a cross-sectional study, and a temporal association cannot be established. Also, there are chances of recall bias due to which the authenticity of the data obtained is questionable. Study factors chosen for the study were selected based on literature review only; no statistics were applied for the same. There is a possibility for applying advanced-level statistical analysis (regression), which can be taken as a future scope of the study.

Strength

DHS data is used in the study, which is collected by a highly skilled workforce. Our study suggests the significant sociodemographic determinants which can be targeted to improve breastfeeding practices which in turn can improve the overall health of children.

Conclusion

As the theme of this year's (2022) breastfeeding week says- 'Step Up for Breastfeeding: Educate and Support.' The idea behind writing this paper is to attract attention to the importance of breastfeeding in general and exclusive breastfeeding in particular. Exclusive breastfeeding is affected by many factors, such as maternal education, region, SES, type of delivery, place of delivery, and patient counselling. Although exclusive breastfeeding has increased from NFHS-4 to NFHS-5 still, there is a long journey ahead. Political commitment and resources are required to improve exclusive breastfeeding in India. Out of all the factors, counselling by a healthcare worker on exclusive breastfeeding is easily modifiable and should be strengthened to improve exclusive breastfeeding.

Ethical approval

No ethical approval was needed for this study.

Conflict of Interest

None

Author's Contribution

JY- Data analysis and paper writing. DS- Data extraction, data cleaning, referencing, and editing. AP- reviewing and editing the paper.

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