

Children Are the Future of the Nation (With Reference to National Family Health Survey [NFHS] Round 3 and 4 I.E. 2005-06 and 2015-16)

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Abstract

The interstate variation in IMR and CMR is the focus of the study and researchers plan to investigate reasons behind the same in India.

The selection of three Indian states for the study is based on the planning commission data showing regional disparities in IMR and CMR. The NFHS round 3 and 4 supported in understand various linkages and relationships between various variables.

Extensive breast feeding is not directly linked with the rise or fall in Infant Mortality Rate (IMR) and Child Mortality Rate (CMR). Other important factors like women literacy and development of the state play an important role.

During the process of finding correlation between IMR, CMR and various factors affecting them, showed rising tendencies of IMR, CMR in those are areas which are economically backward, having illiteracy among women, lack of adequate diet for mother and child etc.

The limitation of the study is the source of data as the NFHS round 4 phase 2 is yet to be published while there hasn't been any research in the same field.

The findings of the study are important for various stakeholders of the society so as to contribute towards the human capital development of the nation.

Keywords: Breast feeding, women's education, infant mortality rate, child mortality rate

Introduction

Human capital is an important consideration for a stronger nation as the productivity of the nation is determined by the same. Thus to focus on

the human capital development, maternal and child health is important and the crucial step in the same direction which forms the crux of the paper.

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Infant mortality rate (IMR) is probability of dying between birth and exactly one year of age expressed per 1,000 live births. IMR and Child Mortality Rate (CMR) are interlinked and cannot be overlooked upon. The Child mortality is the probability of dying between birth and exactly five years of age expressed per 1,000 live births. These two rates define the overall child deaths and it's important to focus on these indicators. Both the indicators reveal the health status, socio-economic development and quality of life in a state/ country.

Background

The National Family Health Survey (NFHS) is a large-scale, multi-round survey conducted in a representative sample of households throughout India. Three rounds of the survey have been conducted since the first survey in 1992-93. The survey provides state and national information for India on fertility, infant and child mortality, the practice of family planning, maternal and child health, reproductive health, nutrition, anemia, utilization and quality of health and family planning services. Each successive round of the NFHS has had two specific goals: a) to provide essential data on health and family welfare needed by the Ministry of Health and Family Welfare and other agencies for policy and programme purposes, and b) to provide information on important emerging health and family welfare issues. The Ministry of Health and Family Welfare (MOHFW), Government of India, designated the International Institute for Population Sciences (IIPS), a nodal agency. The researchers have considered the data from the two recent NFHS rounds on basis their work.

The focuses on various studies have been specifically on the benefits arising from breast feeding which reveal the following details.

Review of Literature

Many studies of breast feeding and its effects on child health and child survival provide convincing evidence of the health benefits of breast feeding (Victora et al. 1987; World Health Organization 1989; Coppa et al. 1990, Lucas et al. 1990, 1992; Cunningham et al. 1991). Apart from being highly nutritious, breast milk also contains high levels of antibody-rich proteins, especially secretory immunoglobulin A, and lactoferrin, which offer anti- infective protection to the newborn (Prentice 1987; Hanson et al. 1988; Bernshaw 1991). The maternal antibodies found in human breast milk

protect the baby against respiratory infections (Feachem and Koblinski 1984; Jason et al. 1984; Victora et al. 1987)

Longer duration of lactation was found to be associated with a statistically significant trend towards reduced risk of breast cancer (Davis et al. 1988; Yoo et al. 1992; Newcomb et al. 1994; Freudenheim et al. 1994). Davis et al. (1988) demonstrated that children who were artificially fed or breast- fed less than six months were at increased risk of developing cancer before the age of 15

Lucas et al. (1992) found that preterm babies who had consumed breast milk had a substantial advantage in subsequent intelligence quotient (IQ) at 7.5-8 years over those who did not receive breast milk. Breast feeding also plays a preventive role against paralytic poliomyelitis during the first six months of life (Pisacane et al. 1992). Coppa et al. (1990) suggested that breast feeding has a preventive effect on urinary tract infection in both the mother and the infant. According to Grant (1984), Habicht et al. (1986), and Cunningham (1988), breast feeding provides protection against morbidity and mortality, especially during the first two years of life; even partial breast feeding has been found to be beneficial (Habicht et al. 1988). A high proportion and prolonged duration of breast feeding helps to reduce the detrimental effects of a poor hygienic environment in economically less developed countries and contributes to improved health even in the most highly industrialized countries relative to formula-fed infants (Victora et al. 1987; Lucas et al. 1990).

Apart from its nutritional and immunological effects, breast feeding also plays an important role in controlling fertility (Vitzthum 1994). Smith (1985) found that each additional month of breast feeding increases the average birth interval by 0.25-0.50 month, thereby leading to reduced fertility. Demographic analyses have demonstrated that in populations without access to modern forms of contraception birth intervals are determined principally by the duration of breast feeding (Bongaarts and Potter 1983; Smith 1985; Nath et al. 1993b, 1994).

Anthropologists have consistently maintained that traditional societies have always had a mechanism to control their own population growth (Reining 1981; Oppong 1985). According to Oppong (1985), fertility constraint revolves around the biological and social mechanisms and the degree to which individuals or subgroups of people make conscious attempts to control their fertility. Fertility regulation methods include delayed marriage, residential separation of spouses, postpartum sexual abstinence, and breast feeding.

Based on the available literature, Khan (1990) revealed that the practice of breast feeding is almost universal in India. However, in some segments of the population, such as among the well-educated and urban

elites, the duration of breast feeding appears to be declining. Breast-feeding patterns and practices vary remarkably across populations and individuals because several factors may contribute to differences in breast-feeding behavior.

The researchers tried to find out the relationship between exclusive breast feeding and IMR and CMR, but it is revealed that there is no relationship between the two variables. Thus, the other factors play an important role in contributing towards a lower IMR and CMR.

Research Methodology

Using NHFS survey data (2015-16) & (2005-06), we have attempted to investigate the current breast-feeding patterns. There is a considerable variation among the states of India. The selection of 3 Indian states is based on the planning commission data showing regional disparities in IMR and CMR.

In this complete process of understanding the child and infant mortality rates, breast feeding plays an important role. The other important variables considered are as follows.

- a) IMR (infant deaths per 1000 live births)
- b) CMR (child deaths per 1000 live births)
- c) Children under age 6 months exclusively breastfed (per cent)
- d) Children age 6- 8 months receiving solid or semi-solid foods and breast milk (per cent)
- e) Total children receiving adequate diet between 6 to 23 months (per cent)
- f) Non-breastfeeding children age 6-23 months receiving an adequate diet (per cent)
- g) Children under age 3 years breastfed within one hour of birth (per cent)
- h) Stunted children under the age of 5 (per cent)
- i) Underweight children under the age of 5 (per cent)
- j) Sex ratio at birth for children born in the last five years (females per 1,000 males)
- k) Sex ratio of the total population (females per 1,000 males)
- l) Mothers who consumed iron folic acid for 100 days or more when they were pregnant (per cent)
- m) Households with an improved drinking-water source
- n) Households using improved sanitation facility
- o) Women who are literate (per cent)
- p) Women with 10 or more years of schooling (per cent)

We are taking selective variables for individual study, whereas for the comparative analysis we are considering all the variables which have been mentioned earlier in the paper.

State-wise details

a) **Madhya Pradesh:** At the time of NHFS 3, breastfeeding was nearly universal in Madhya Pradesh, only 22 percent of children less than six months are exclusively breastfed, as the World Health Organization (WHO) recommends. In addition, only 53 percent were put to the breast within the first day of life, including 16 percent within one hour of birth, which means that many infants were deprived of the highly nutritious first milk (colostrum) and the antibodies it contains. Mothers in Madhya Pradesh breastfeed their children for an average of 23 months, which was slightly less than the minimum of 24 months recommended by WHO for most children. It is recommended that nothing be given to children other than breast milk in the first three days when the milk has not begun to flow regularly. However, most children (58 per cent) are given something other than breast milk during that period.

Table 1.1. The state of Madhya Pradesh in basic indicators

Madhya Pradesh	NFHS4			NHFS3
	Urban	Rural	Total	
Infant Mortality Rate (IMR)	44	54	51	69
Child Mortality Rate (CMR)	52	59	65	93
Children under age 6 months exclusively breastfed (per cent)	54.2	59.6	58.2	21.6
Non-breastfeeding children age 6-23 months receiving an adequate diet, (per cent)	4.4	5.1	4.8	na
Children under age 3 years breastfed within one hour of birth (per cent)	31.6	35.5	34.5	14.9
Sex ratio at birth for children born in the last five years (females per 1,000 males)	899	937	927	961
Sex ratio of the total population (females per 1,000 males)	933	955	948	961
Women who are literate (per cent)	77.5	51.4	59.4	44.4
Men who are literate (per cent)	88.7	78.5	81.8	73.5
Women with 10 or more years of schooling (per cent)	43.6	14.1	23.2	14.0

Source: The state wise fact sheet from NFHS 4

In Madhya Pradesh literacy rate of women increased substantially from 44 percent to 59 percent. On other hand women with 10 or more years of schooling percentage is not increased in rural area even if overall

percentage has increased from 14 percent to 23 percent. Infant mortality rate has decreased remarkably from 69 to 51. The number of children under age 3 years breastfed within one hour of birth NHFS 3 was 14.9 percent which increased by two folds and reached to 34.5 percent in NHFS4. Children under age 6 months exclusively breastfed percentage increased by 37 percent in this period.

Sex ratio for children and female show declining trends when compared NFHS 3 and 4, is a cause of concern. Women with 10 or more years of education percentage is only 23 per cent. The trend shows that women education over the decade has been neglected. Thus, IMR and CMR over the decade has declined from 69 to 51 and 93 to 65 respectively But still the figures are higher than the national average.

b) **Haryana:** During NHFS 3 in Haryana, it was found that only 17 percent of children under 6 months were exclusively breastfed, as the World Health Organization (WHO) recommends. In addition, only 63 percent were put to the breast within the first day of life, including 22 percent who started breastfeeding in the first hour of life, which means that many infants are deprived of the highly nutritious first milk (colostrums) and the antibodies it contains. However, mothers in Haryana breastfeed for an average of 26 months, which is slightly longer than the minimum of 24 months recommended by WHO for most children. In first three days more than half of children (54 per cent) are given something other than breast milk during that period.

Table 1.2. The state of Haryana in basic indicators

Haryana	NFHS4			NHFS3
	Urban	Rural	Total	
Infant mortality rate (IMR)	31	33	33	41
Under-five mortality rate (U5MR)	36	44	41	52
Children under age 6 months exclusively breastfed (per cent)	46.6	52.4	50.3	16.9
Non-breastfeeding children age 6-23 months receiving an adequate diet (per cent)	10.7	9.5	10	na
Children under age 3 years breastfed within one hour of birth (per cent)	38.3	44.6	42.4	22.3
Sex ratio at birth for children born in the last five years (females per 1,000 males)	785	867	836	762
Sex ratio of the total population (females per 1,000 males)	846	895	876	897
Women who are literate (per cent)	80.3	72.1	75.4	60.4
Men who are literate (per cent)	93	88.9	90.6	83.4
Women with 10 or more years of schooling (per cent)	55.1	39.7	45.8	29.6

Source: The state wise fact sheet from NFHS 4

c) **Tamil Nadu:** As per NHFS 3 data only 34 percent of children under 6 months were exclusively breastfed, as the World Health Organization (WHO) recommends. Almost 1 in 10 children are not put to the breast within the first day of life, which means they were deprived of the highly nutritious first milk (colostrum) and the antibodies it contains. Mothers in Tamil Nadu breastfeed for an average of 16 months, which was the shortest duration of any state and was considerably shorter than the minimum duration of 24 months recommended by WHO for most children. In the first three days, more than one-fifth of children (21 per cent) in Tamil Nadu were given something other than breast milk during that period.

Table 1.3 the state of Tamil Nadu in basic indicators

Tamil Nadu	NFHS4			NHFS3
	Urban	Rural	Total	
Infant mortality rate (IMR)	18	23	21	30
Under-five mortality rate (U5MR)	24	21	27	35
Children under age 6 months exclusively breastfed (per cent)	47.8	48.7	48.3	34.1
Non-breastfeeding children age 6-23 months receiving an adequate diet,(per cent)	42.6	51.5	47.1	na
Children under age 3 years breastfed within one hour of birth (per cent)	55.4	54.2	54.7	55.2
Sex ratio at birth for children born in the last five years (females per 1,000 males)	972	939	954	896
Sex ratio of the total population (females per 1,000 males)	1020	1047	1033	1078
Women who are literate (per cent)	85.6	72.9	79.4	69.4
Men who are literate (per cent)	91.7	86.2	89.1	84.1
Women with 10 or more years of schooling (per cent)	58.6	42.9	50.9	31.8

Source: The state wise fact sheet from NFHS 4

NHFS 4 survey shows that the literacy rate in rural part of Tamil Nadu is still lower than average. Women schooling 10 or more year's percentage increased from 32 percent to 51 percent. During this period infant mortality rate decreased marginally which is 21 as per NHFS 4 survey. Children under age 3 years breastfed within one hour of birth percentage is reduced surprisingly in Tamil Nadu, which comes down to 54.7 percent from 55.2 percent. Whereas Children under age 6 months exclusively breastfed percentage increased from 34 percent to 48 percent.

It is clear that in urban areas breastfeeding percentage is lower than rural part even though the overall percentage is increasing. With growing awareness overall percentage of breastfeeding is increasing. We need to be very cautious as non-breastfeeding children age 6-23 months receiving an adequate diet percentage in developed state like Tamil Nadu is very high. And this percentage can be linked to urbanization. All efforts to preserve, promote and encourage breast-feeding should be taken and every measure

necessary to reduce the regrettable trend towards bottle-feeding in our country should be seriously considered.

Findings

As per the selection criteria considering the Planning Commission data, the indicators and result should have shown a proportional and cohesive result. But the results are not proportional and cohesive.

Women's education is crucial in deciding the infant and child survival. More crucial is healthier children and educated women. The researchers attempted to understand the inverse relationship between women literacy and women with 10 or more years of schooling and IMR and CMR. The data from NFHS 4 and the comparison between 3 above mentioned states shows that progressive states having more literate women have inverse relationship with IMR and CMR. With educated women it is clear that children (6-8 months) receive solid or semi-solids foods and breast milk. In Tamil Nadu, the percentage of children receiving solid or semi-solid foods and breast milk is almost 70 percent. But in the remaining states, it's less than 40 percent.

Table 1.4 The comparative analysis of the 3 states

Parameters/ States	Tamil Nadu	Haryana	Madhya Pradesh
IMR (deaths per 1000 live births)	21	33	51
Child mortality (deaths per 1000 live births)	27	41	65
Children under age 6 months exclusively breastfed (per cent)	48.3	50.3	58.2
per cent of children age 6- 8 months receiving solid or semi-solid foods and breast milk	67.5	35.9	38.1
per cent of total children receiving adequate diet between 6 to 23 months	30.7	7.5	6.9
Non-breastfeeding children age 6-23 months receiving an adequate diet,(per cent)	47.1	10	4.8
Children under age 3 years breastfed within one hour of birth (per cent)	54.7	42.4	34.5
per cent of Stunted children under the age of 5	27.1	34	42
per cent of underweight children under the age of 5	23.8	29.4	42.8
Sex ratio at birth for children born in the last five years (females per 1,000 males)	954	836	927
Sex ratio of the total population (females per 1,000 males)	1033	876	948
Mothers who consumed iron folic acid for 100 days or more when they were pregnant (per cent)	64	32.5	23.6
Households with an improved drinking-water source	90.6	91.7	84.7
Households using improved sanitation facility	52.2	79.2	33.7
Women who are literate (per cent)	79.4	75.4	59.4
Women with 10 or more years of schooling (per cent)	50.9	45.8	23.2

Source: The state wise fact sheet from NFHS 4

With education, the percentage of underweight children reduces as adequate diet percentage rises. Those mothers who are educated are aware of their dietary supplements

Other variables like drinking water, sanitation are generally in improved state in comparatively developed states. Same is the trend seen in sex ratio i.e. female per 1000 males and sex ratio at birth for children born in the last five years.

The children who are either stunted or underweight are directly linked to the development of the particular state. As it's evidently clear in our analysis, the rising trend in developed to underdeveloped state is directly linked to the stunted and underweight children.

Exclusive Breast feeding given to the infant for the first six months are important as it allows the mothers and child to physically and mentally strengthen themselves and also them to develop a physical bond. Though it has various advantages as mentioned above, the exclusive breast feeding and the fall of IMR and CMR are contradictory in nature on Madhya Pradesh. The researchers with their limited resources have failed to acknowledge and legitimize the cause and effect relationship.

Conclusion

The researchers have not come across NFHS comparisons in terms of IMR and CMR and the factors affecting them. As NFHS 4 data for only 1 phase is available, the available data 3 and 4 round make up for the comparison on the grounds, where IMR and CMR are highest to lowest.

The holistic view considering other complementary variables is essential for healthy children. Bold and holistic steps to develop and maintain child health will ensure a healthier population. Thus, the investment in human capital lies in maternal and early life health of children, nutrition and women's education. Even if it might look quiet multi-variant, such issues require multipronged approach to tackle them successfully.

Recommendations

- a) Women literacy should be promoted to reduce IMR and CMR with general awareness among the masses.
- b) Government surveys and policies should be more comprehensive.
- c) The development indicators are linked to social indicators thus all these shouldn't be overlooked.
- d) Emphasis on breast feeding in every policy is a welcome move but it needs to reconsider with other factors affecting this issue.
- e) Development of human capital is possible with the state machinery finding better avenues and means for investing it in and for the betterment of population at large.

Practical proposition

The findings are important for all stakeholders like the families, governments, Ministry of Health and Family Welfare and other agencies for policy and programme purposes etc. who are involved in taking proper initiatives and actions in terms of child health and reduction in IMR and CMR. Women education and healthier children are important in achieving the sustainable development of our country. For the reduction of IMR and CMR, the stake holders should invest in child health's with the aim of maximizing long run economic growth.

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