Research Article

EFFECT OF SOCIO – CULTURAL FACTORS ON URBAN INFANT MORTALITY IN CHHATTISGARH

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A B S T R A C T

The work is based on primary data which have been collected within time limit in the year 2012. The class I cities namely Raipur, Bhilai, Durg, Bilaspur, Korba, Raigarh, Rajnandgaon, Ambikapur, Jagdalpur and Dhamtari have been selected as reprensentative cities. The 2715 women from various wards of these cities and 1835 women from urban fringes were selected. Various socio – cultural factors affecting pattern of infant mortality and morbidity have been analyzed.

INTRODUCTION

Age structure of infant and old persons is an important consideration in determining mortality in any region. Old age mortality is a natural process while infant mortality is an unusual phenomenon, which is detrimental in socio – economic development of society, infant mortality usually happens to be more than the mortality of 65 + persons which reduces life expectancy. Therefore, infant mortality is considered as sensitive indicator of socio – economic development of any region (Bouge, 1969). Low infant mortality indicates better life expectancy and better health as well (Thampson and Levis, 1969). Therefore, infant mortality is a good indicator of living status.

The aim of this paper is to present a comparative picture of infant mortality pattern and impact of socio – economic factors on it in sample cities and their fringes.

METHODOLOGY

This work is based on primary information. Time limit is crucial in analysis of infant mortality. Therefore, data have been collected within the year 2012. The geographical environment influences the administrative, educational, trade, mining and transport based development in Chhattisgarh. Based on 2011 census the ten class I cities namely Raipur, Bhilai, Durg, Bilaspur, Korba, Raigarh, Rajnandgaon,

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Ambikapur, Jagdalpur and Dhamtari have been sampled as representative cities. Four wards from each of these sample cities and four villages of their fringes have been selected on random purposive sampling basis. In all 40 sample wards and villages within fringes were selected. Information regarding child birth/still birth/child birth and death occurred during the one year period have been collected with the help of schedules from 2715 and 1835 mothers from cities and fringes respectively in the year 2012. Data have been analyzed by using statistical methods such as Product Moment Correlation Co – efficient, Regression, 't' test, etc.

Pattern of Infant Mortality

Infant death in first year of life is important in determining the pattern of mortality all over the world, because infant population is a major part of total population. In developing countries infant mortality is responsible factor for high birth rate in rural areas (Freedman and Coombs, 1964). Standard of living remains high in countries having low infant mortality rate and low fertility as well, because of high survival rate. Similarly, infant mortality remains high in rural areas than metro areas (Mysore Population Report, 1961; NSS, 1970; Garden, 1971). In developing countries both infant mortality and fertility remain high. To bring down fertility rate requires to bring down the infant morality (Notestin, 1945 and Davis 1957).

Though there is a quite variation in socio – economic development between cities and there fringes in Chhattisgarh. The villages in fringes also avail urban facilities and medical

helps from well connected nearby cities. In spite of this the infant mortality varies in cities and fringes.

Infant Mortality Rate (IMR) is a ratio between the number of deaths of infants below the age of one year in a particular year and the number of live births per thousand in that year. There is minor variation in IMR in rural (52‰) and urban (44‰) Chhattisgarh in comparison to rural (51‰) and urban (31‰) India in the year 2010 (SRS, 2011). In sample cities the IMR is 43.41‰ in comparison to 73.22‰ in fringes i.e. a variation of 29.81‰ the highest difference in IMR has been obtained for Dhamtari (57.14‰) and lowest for Korba (28.66‰). Among fringe villages highest IMR has been reported from Ambikapur (109.09‰) against lowest from Bilaspur (56.94‰)**.** The cities having higher IMR than average are Bhilai, Dhamtari, Jagdalpur, Raipur, and Rajnandgaon and the fringes are Ambikapur, Durg, Jagdalpur, and Raipur. The IMR remain high in Raipur and Jagdalpur as well as in their fringes. Raipur is the capital head -quarters and developed city of the State while Jagdalpur in the developed city of Bastar Plateau.

The IMR in cities and their fringes and in between variations is high in Chhattisgarh this is a major challenge in development of cities. Infant mortality is a result of many complex inter related factors. The factors of infant mortality are reliable indicators of health conditions of any community.

The factors of mortality change with local variations and time. However, availability of health facilities and socio–economic development partially reduce infant mortality. The poor people in fringes are not getting the due facilities. Consequently, a high rate of infant mortality is observed in these areas. Cultural environment in fringe villages plays main role in determining mortality and requires special analysis.

Social Factors and Infant Mortality

People living in urban fringes are more conservative and reluctant to adopt urban culture than the city dwellers. In spite education and health care facilities are partially successful in bringing awareness among the people of fringe areas. Type and size of family, community and education indirectly affect infant mortality.

Type of Family

Type of family means the nature of family as joint or nuclear. Type and size of family have important place in determining responsibilities. Crow in living rooms is more in joint families which effect the health of infant. People in fringe areas do not properly take care of their infants due to lack of education, awareness and inexperience. While in city areas parents are busy with their occupations and have time constraints which resulted as high infant mortality in nuclear families.

In Chhattisgarh the number of nuclear families is high is city areas (52-67%) and joint families in fringe areas (55.64%). The member of nuclear families are comparatively high in urban areas of Bhilai, Dhamtari, Durg, Raipur, and Rajnandgaon. Large number of joint families in cities is reported from Bilaspur (65.04%) and nuclear families in Korba (76.75%). While high occurrence of joint families in fringe areas is reported from Raipur (76.96%) and nuclear families in Jagdalpur (60%). Low infant mortality is reported in urban areas than the fringe i.e. 31.59% in joint and 52.67% in nuclear families. High difference of IMR in joint and nuclear families in fringe areas is observed. The difference is very high in

Dhamtari i.e. 46.73‰ in joint and 73.53‰ in nuclear families. In fringe areas high difference is reported from Ambikapur which is 73.17‰ in joint and 180‰ in nuclear families **(Fig. - 1)**. Highest difference is reported from Ambikapur and in fringe areas of Rajnandgaon.

Size of Family

Size of family represents the number of family members. Usually infant mortality is higher in larger families because of less care of infants. (Deporte, 1982). Major constrains of larger families is their economic condition hence less attention for infant. Good health and hygiene as well and security feeling is higher in small families.

Percentage of 4 member families in urban Chhattisgarh is 44.47, 5-6 member is 34.66, 7-8 members is 14.37, and above a members is 6.49; which is 28.43, 38.50, 19.57, and 13.20 respectively in fringe villages. The family size is in reverse order in fringes than urban areas. There is a positive relationship between the size of family and IMR. The IMR increases with increase in family size. Lowest IMR in urban areas is reported in families having 4 members (18.05‰) and highest IMR of 123.63‰ is reported in families having more than 9 members. Lowest morality in small families is in Bilaspur city (12.05‰) and in fringe areas (19.23‰). Highest IMR of 181.81‰ is reported from Korba city and 190.45‰ in fringe of Ambikapur.

Community Structure

People particularity in rural areas are more conservative in regards to community structure. Residents in these areas belong to Scheduled Tribe and Caste community, who keep themselves away from modern culture with a result the IMR happens to be higher in these communities.
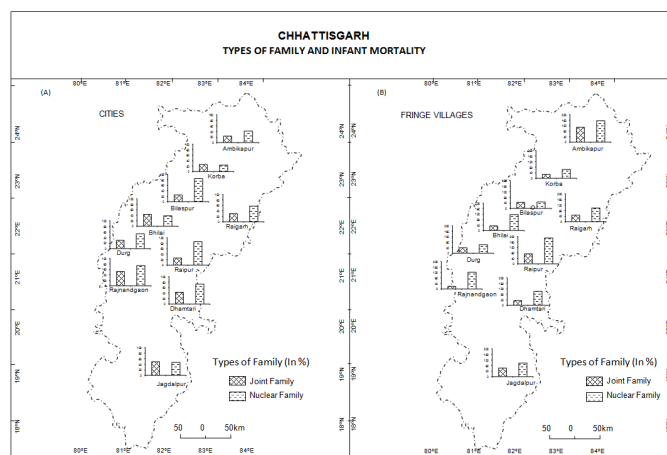

Fig 1

Proportion of Scheduled Caste, Tribe, and Other Backward Class population in sample families in urban areas is 16.01, 15.91 and 43.35 percent respectively. While the corresponding percentages in fringe areas is 15.01, 18.23 and 49.76.

A high IMR of 62.51‰ in urban Scheduled Tribes and 96.08‰ in Scheduled Castes in fringes has been observed in comparison to 16.24‰ in general category. Among ST community highest IMR has been obtained in fringe of Ambikapur (130.43‰) and urban Raigarh (83.33‰). Highest IMR among ST is reported from Bhilai (96.77‰) and in fringe of Raipur (214.29‰). Highest IMR among urban OBS is reported from Jagdalpur (58.82‰) and in fringe of Raipur

(102.4‰). Among general category population low IMR has been reported from Raipur city (10.75‰), Bilaspur fringe and Rajnandgaon (20.40‰ each).

Education

Education affect over all conditions of family particularly in keeping health and nutrition of the family. Education of mother is not only responsible in caring the child but she also uses most of health facilities (Hobcraft, 1993). Life expectancy of the infant is influenced by education in traditional families (Trussell and Hammers lough, 1983; Bhosle and Chain 1984; Tulsidhar 1993; Hobcraft, 1995; and Ramarao, 1997). Many studies of national level have shown a negative relationship between education of mother and infant mortality Actually, education is related with many basic components of standard of living which directly effect infant mortality (Gandotra and Das, 1988). Family income is affected by the education of parents particularly of father. Many studies established relationship between the mortality of infant in the first week after birth and education of parents. Education of parents helps in enhancing the knowledge about health facilities (Lahiri Acharya, 1999). Sex discrimination and social conditions in urban fringe are great obstruction in the education of females. In spite of this the educational facilities available in nearby urban areas ha brought awareness in people. Even then not a remarkable success in improving the level of education of females is achieved. Actually, the higher secondary level of education of female is necessary to understand and adopt the health and nutritional information. Income level of family is an indicator of level of education (Sapru, 1989). Effect of education of mother and father on infant mortality is studied separately.

Parents Level of Education

Child, mother, and family welfare programmes are accepted early among educated families. Contrary to this couples having low level of education keep themselves indifferent with the knowledge of health programmes, education enhances income and knowledge of health and health facilities. Educated parents not only provide clean and healthy environment to their family, they also take proper care of infants. The level of education of parents is usually low in fringe areas causes significant difference in IMR. Mother's education is more effective than the father.

Mother's Level of Education

Education is a deciding factor of social status in modern society. Husband's level of education is not an indicator of wife's level of education but its vice versa matters (Khan, 1988). Highly educated mothers are less influenced by traditional festivals regarding health. Educated mothers are more careful in matters of cleanliness, nutrition, and preventive health facilities (Caldwell, 1979). Awareness about education is a first step towards development in fringe areas rather than urban areas. Even then the effect of mother's education on infant mortality is less in developing countries (Mosley and Chen, 1984, UN, 1985, 1991, 1998, Govindswamy and Ramesh, 1997). In rural areas effect on infant mortality, in cases of low level of education and illiteracy among mothers, is high as well as it affect the crude death rate (Sharma, 2004). Higher level of education of mother than of father is more effecting in bringing down the infant mortality. Infant mortality is nearly double in fringe areas

(10.48‰) than the urban centers (5.73‰). Largest number of illiterate mother is in Bilaspur city (9.29%) and in rural fringe of Raigarh (19.19%). While, the Largest number of literate mother is in Raipur city (97.33%) and in Dhamtari rural fringe (95.89%). A high difference in infant mortality has been obtained in fringe areas than the urban centres in case of literate mothers. This difference has been high in Korba city and in rural fringe of Dhamtari. Korba is a developed city having better educational facilities in the State which helps in bringing down infant mortality. A high IMR has been reported from Dhamtari city (166.67‰) as well as in its rural fringe (222.22‰) among illiterate mothers. While low IMR has been occurred in Korba city (20.76‰) and in its fringe villages (40.98‰) among literate mothers.

IMR gradually decreases with increasing level of education except in case of mothers having high school level of education. Thereafter high decrease in IMR has been obtained is cases of mothers having higher secondary level of education and in graduate or post – graduate mothers, but, this situation is the same in case of mothers having professional qualifications. In Chhattisgarh the percentage of sample mothers having education up to high school, higher secondary and graduation or higher qualifications is 43.15, 30.50, and 26.35 respectively, contrary to this 58.93, 30.21, and 10.86 respectively in fringe villages. Among primary educated mother there exists high difference between fringe (102.12‰) and urban centres (76.92‰) and Low variation between urban centre (10.05‰) and fringe villages (24.24‰) among graduate mothers. Comparatively, high mortality among primary educated mother is obtained in Jagdalpur city (150‰) and in fringe villages of Ambikapur (181.82‰). Both these cities are dominated by tribal population. Contrary to this no mortality has been reported in both urban centres as well as in fringes of Dhamtari, Durg, Jagdalpur, Korba, and Raipur, and fringe villages of Bhilai, Raipur, and Rajnandgaon in cases of graduate mothers. A high variation of infant mortality in all levels of education has been obtained in Jagdalpur (Fig. -2).
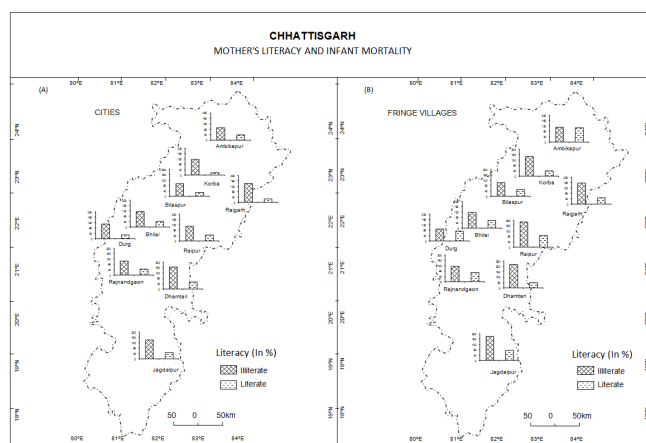

Fig 2

Cultural Factors

Activities of people are influenced by their culture. In rural areas all rituals from birth to death rites are performed according to regional culture. Contrary to this cultural changes occur in urban areas. With the result modern health care services and educational facilities available in urban areas help in reducing IMR. While, people of rural areas are less benefited. Place of birth, delivery assistant and cutting of naval string are important cultural factors.

Place of Delivery

Delivery is performed at home in rural fringe because of low education and poverty in comparison to urban areas, medical help is availed in case of complication, high correlation between the place of delivery and IMR is observed (Jogi, 1986). Probability of survival of baby is highly associated with place of delivery (Ren, 1996). Room not properly ventilated and filled with fumes, and rejected room is selected as labour room (Verma, 1956). Babies born in hospitals are more safe than the babies born naturally (Khan, 1986). Availability of health care facilities in urban areas have remarkably down the IMR in rural fringe. In urban areas 35.21% delivery cases have been performed at Government health care centres, 41.26% at private nursing homes and 28.53‰ at home contrary to this 21.29% at private clinics and 40.20% at home.

High IMR in urban areas has been observed in cases of delivery at home (97.67‰) against 15.03‰ of private nursing homes. The difference is 6.5 times. Contrary to this a high IMR of 117.62‰ has been obtained in cases of delivery at home and 24.39‰ in cases of delivery at nursing homes i.e. a difference of 4.8 times in rural areas of urban fringe. Comparatively Raipur recorded the highest IMR of 152.54‰ and 170.21‰ in cases of delivery at home in rural and urban areas respectively. Lowest IMR of 58.82‰ at Korba urban fringe and 92.31‰ at rural fringe of Dhamtari have been observed. Lowest IMR of 8.93‰ and 14.49‰ has been obtained at Korba urban fringe and Bilaspur rural fringe respectively (Fig. -3).

Highest influence of place of delivery in urban areas has been occurred at Jagdalpur and lowest at Durg. While, in rural fringe areas highest influence of place of delivery has been reported from Raipur and lowest at Raigarh. Jagdalpur is a representative city in tribal area where people are more conservative by nature. Main causes of high IMR are family and internal polluted environs. IMR can be controlled with the help of doctor/nurse/trained delivery assistants at health centres, Because, complication during delivery is an important factor of IMR (Lahiri Acharya, 1997).
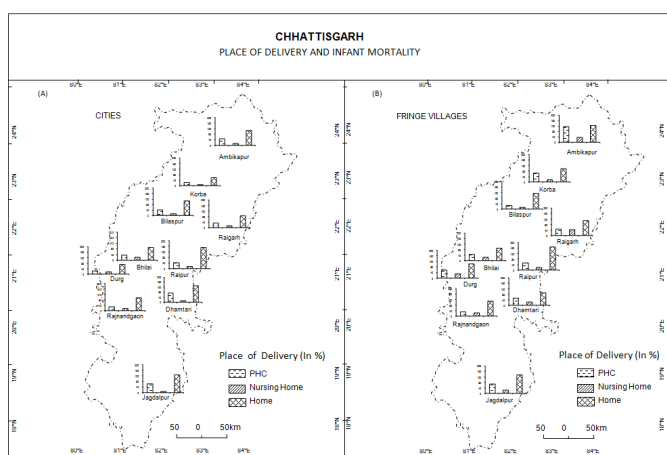

CHHATTISGARH
PLACE OF DELIVERY AND INFANT MORTALITY

Fig 3

Delivery Assistant

Success of delivery depends on the efficiency of delivery assistant. The IMR happens to be less in case of trained midwife (Khan, 1988). Delivery time and delivery assistant are related to rural family environs in rural fringes. Relatives and traditional delivery assistants who are illiterate and unknown to safe delivery equipments effect IMR (Simmons, et at 1978;.

Chandrashekhar, 1959) considers untrained midwife as blot on Indian society, the 22.80% delivery cases are performed by untrained midwives and neighbours or relatives or elderly ladies in the region, while it is 39.18% in rural fringe. Contrary to this 62.42% delivery cases in urban areas are performed by doctors or nurses and 14.78% by trained midwives, while it is 45.75 and 15.07 percent in rural areas of urban fringe respectively. High IMR (106.48‰) in urban areas has been observed in cases of delivery performed by untrained midwives and lowest of 22.79‰ in cases of doctors and nurses. While the respective IMR have been 135.80‰ and 37.38‰ in rural areas of fringe. This difference is less in rural areas of fringe in comparison to towns. Highest IMR of 181.51‰ in cases of untrained midwives is obtained in Raipur and 196.46‰ in rural areas of fringe contrary to this lowest IMR of 12.74‰ has been observed in Korba town in cases of delivery performed by doctors or midwives and in rural areas of Rajnandgaon fringe the IMR has been 17.86‰. while high IMR has been observed in Dhamtari urban area (55.57‰) and Ambikapur rural area (83.33). Highest variation of IMR in cases of these delivery performers has been obtained in Raipur rural and urban areas as well.

Process of delivery finishes after cutting the string (umbilical cord) after which the infant become an independent organism. Usually scissor or new blade is used for cutting the cord in hospitals and nursing homes, while blade, thread or bamboo is used is cases of delivery at home. In rural areas of selected urban fringes most of the delivery cases have been performed by untrained midwives at home where blade is used for cutting the cord. In rural areas of fringes bladed has been used in 57.56% cases as against 70.96% cases in urban areas. Higher IMR (108.04‰) has been observed where blade is used and only 16.96‰ IMR when scissor is used. The respective rates were 106.77‰ and 27.70‰ in urban areas. Urban areas of Dhamtari and Raipur marked higher rate of IMR of 179.48‰ and 173.07‰ respectively where blade has been used. Higher variation of IMR by using these cutters is observed in Jagdalpur city and lowest in Korba. Obviously the urban areas have advantage of having better socio-economic conditions than the rural fringes.

Multivariate Analysis

Different results have been obtained for socio-economic factors affecting IMR in urban and rural fringe areas. In this regard Regression Model of Multivariate Model has been used by Jatrana (2001) and Cox (1972).

In urban areas of Chhattisgarh community as social factor is effecting in lowering IMR with a medium significance and high significant in rural fringes. While, literacy of mother has highly been significant in both areas. Similarly, joint family factor is of medium significance in lowering IMR in both areas. Contrary to this place of delivery in nuclear families, untrained midwife, use of blade in cutting the string and Scheduled Tribe and Scheduled Caste community factors are responsible for increasing IMR with a low significance.

Health of mother and child is a matter of prime concern. Healthy mothers deliver healthy babies and able to breast fed for a longer time. Literate mothers take care of health of herself as well as her babies. Therefore, literacy is a prime factor for economic well being of the family.

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