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RESEARCH ARTICLE

INSTITUTIONAL CHILD DELIVERY AND ITS IMPLICATIONS IN INDIA WITH A FOCUS ON WEST BENGAL

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ABSTRACT

The situation of maternal and child health has been improving in India over time. One of the vital parameters of assessing maternal and child health that have been exhibiting an increasing trend is the institutionalization of child delivery. The overall scenario in carrying out child birth process in healthcare institutions, both public and private, has been improving though inter-state as well as intra-state disparities are conspicuous. This has invariably improved the child survival rate in the country and has effectively reduced the maternal mortality rate as well. The southern States like Kerala, Andhra Pradesh, Tamil Nadu and Karnataka have showcased a better progress in this respect while the backward States like Bihar, Jharkhand, Uttar Pradesh, Madhya Pradesh, Chhattisgarh and Rajasthan are lagging far behind. In fact, the State of West Bengal matches no way with the rapidly progressing States of the south. This paper is an attempt to highlight the condition of child delivery processes in the country with an intra-state as well as inter-state approach.

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INTRODUCTION

India is the second most populous country (1,210 million in 2011) in the world next to China. The age structure of the country has revealed that more than 60 per cent of the population is lying below the age limit of 25 years of age while 65 per cent of the population belongs to the age group of 0-35 years. The country ranks 139 in life expectancy at birth, 145 in infant mortality rate, 145 in child mortality rate and 122 in maternal mortality (WHO and MoHFW, 2013). Among some of the key health indicators, India's performance has been worst in comparison to most of the countries with exception of a few African countries like Nigeria and South Asian countries like Pakistan (Basu *et al.,* 2014). The country has represented a somewhat gloomy picture with a high infant and under-five child mortality as well as maternal mortality coupled with low institutionalization of child delivery in the rural areas of the backward States showing a clear distinction with the situation prevalent in urban areas of the same States. The maternal and child health conditions vary widely among the major Indian States justifying the existence of North-South Divide between the southern States inclusive of Kerala, Karnataka, Andhra Pradesh and Tamil Nadu on one side and the northern States in the rest of the country.

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The performance of the southern States has improved over time while the pace of progress in some of the northern, north-western and eastern States is rather slower.

Objectives of the Study

The study has been conducted to fulfil the following objectives:

- To show the variable status of maternal health condition in the country as a whole and the State under study in particular
- To mark the line of distinction between the rural and urban areas in the execution of maternal welfare practises
- To assess the inter-state as well as intra-state disparities in India so far as implementation of maternal and child welfare practises are concerned
- To identify the consequences of arising out of improvement in carrying out child delivery process in healthcare institutions.

Area under study

India is a federal union comprising of 29 States and seven Union Territories. The States and Union Territories are further subdivided into districts and smaller administrative divisions. As per the Registrar General of India on the basis of population, the country has 18 major States.

West Bengal is one of the major Indian States with an area of 88, 752 km^2 and population of 91,276,115 in 2011 (Government of India, 2011). The State has 19 districts though one more district Alipurduar has been added in June 2014 through bifurcation of Jalpaiguri district. These 20 districts at present are divided under three administrative divisions namely Jalpaiguri, Barddhaman and Presidency. The capital as well as the administrative and commercial hub of the State is the city of Kolkata under the administrative jurisdiction of Kolkata Municipal Corporation. The city is divided into 15 Boroughs consisting of 141 municipal wards though the number of wards has now increased to 144.

MATERIALS AND METHODS

The work is mainly based on analysis of secondary data though primary data base is not negligible. The secondary data has been collected from various sources which include National Rural Health Mission, National Urban Health Mission, Ministry of Health and Family Welfare, Government of India while the non-government sources of data includes World Health Organization (WHO) and United Nations International Children's Emergency Fund (UNICEF). A number of reports like India Infrastructure Report, Family Welfare Statistics in India and Rural Health Statistics in India have also been consulted for the purpose. The secondary data for the districts of West Bengal have been collected from State Bureau of Health Intelligence, State Family Welfare Bureau and District Family Welfare Bureau, Government of West Bengal. The primary data base for the work has been formed through extensive field investigation conducted in the city of Kolkata lying under the jurisdiction of Kolkata Municipal Corporation. The field study has been conducted in 15 Boroughs of the city. The final shape of the work has been given based on tabulation, computation and cartographic representation of the data collected followed by their interpretation.

RESULTS AND DISCUSSION

An Inter-state and Intra-state analysis on the Institutionalization of Child Delivery and its Implications in India

The country had a miserable condition of maternal and child health when it gained independence way back in 1947. Since inception of the First five year plan (1951-56) in post-independent India, population especially health had been an integral part with primary focus given on reduction of crude birth and death rate as well as maternal and childhood mortality at various stages of life of a child after birth. The various international organizations like UNICEF and WHO have been working hand in hand with the Government of India for a long time in establishing a sound maternal and child health condition in the country. As a result, the nation has improved appreciably in the field of human development especially in the field of education and health with the execution of a number of welfare programmes both at Central and State level. The Coverage Evaluation Survey (CES) conducted by UNICEF in 2009 has revealed that 73.20 per cent pregnant women in the country have been covered under safe delivery measures. It includes coverage of the pregnant women under three antenatal check-up and carrying out delivery in healthcare institutions. The antenatal care services are the first step towards ensuring the health of the mothers and the newborn. Over the past 60 years the maternal health situation in the country has been staggering despite several changes in a rapidly evolving socio-economic environment (Roy *et al.,* 2013). The Accredited Social Health Activists (ASHAs) were introduced at the rural level for motivating the beneficiaries to utilize the antenatal care services provided by the Government both at Central and State level.

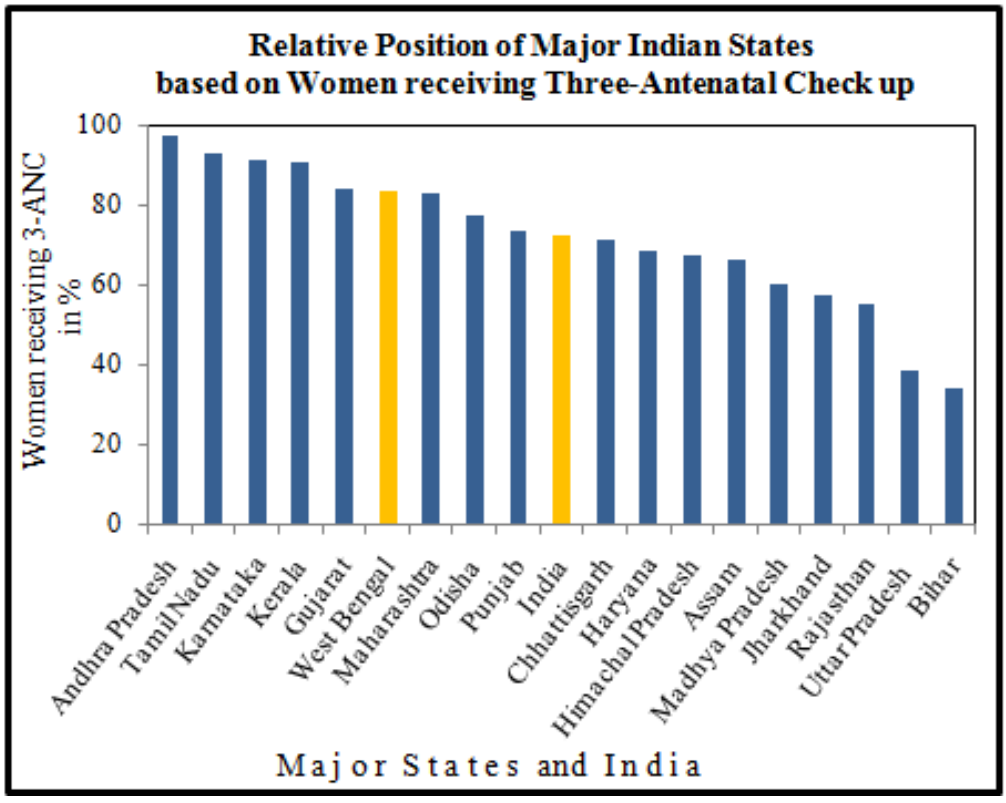

Fig. 1. Data source: UNICEF, 2009

Their main aim was to provide equitable, affordable and quality maternal healthcare as well as to bring about an improvement of health status of the pregnant mothers especially belonging to the underprivileged sections of the society. The District level Household and Facility Survey-III (DLHFS), 2007-2008 has revealed the scenario of antenatal care in major States of India where the dominant position of the southern States have been conspicuous. Tamil Nadu has occupied the leading position among other major States with a percentage of 95.6 per cent of the pregnant women covered under at least three antenatal check-up followed by Kerala (95.2%), Andhra Pradesh (89.4%) and Karnataka (81.2) respectively. The major northern States like Uttar Pradesh (21.8%) and Rajasthan (27.6%) have miserably failed to provide the pregnant women with medical care during pre-partum period. In case of the eastern States, the situation of West Bengal (66.9%) has been relatively better than that of Odisha (54.5%), Jharkhand (30.5%) and Bihar (26.3%). According to the Coverage Evaluation Survey (CES) conducted by UNICEF in 2009, Tamil Nadu has successfully covered 98.5 per cent of the pregnant women under at least one antenatal check up and 92.6 per cent of the pregnant women were provided with three antenatal check-up. The State was followed by Karnataka, Kerala and Andhra Pradesh which has ventilated the situation of sound maternity benefits provided to pregnant women in the southern States. Among the eastern States, the performance of West Bengal has been comparatively better with 99 per cent of the pregnant women been covered under one antenatal check up and 83.2 per cent of the pregnant women covered under three antenatal check-up. However, the Governmental initiatives by both Central as well as State Governments have failed to improve the coverage of would-be-mothers under antenatal care in backward States like Bihar, Jharkhand, Rajasthan and Madhya Pradesh (Fig.1). The healthcare delivery system has been largely insensitive in providing reproductive healthcare needs to women on one hand and lack of access to these healthcare facilities have been a constraint on the other. There has been poor outreach of maternal health services and not more than 40-50 per cent of all pregnant women in India are estimated to receive any antenatal care (Singh *et al.,* 1988).

In the country, 34.5 per cent of deliveries were conducted in healthcare institutions under both Government and private medical centres in 2005 while 39.2 per cent of the domiciliary deliveries were performed by untrained personnel in the same year. The percentage of institutional deliveries, however, rose to 57.7 per cent in 2009 while the percentage figure for domiciliary deliveries by untrained birth personnel dropped to 25.1 per cent in the same year reflecting the significant achievement of the nation in controlling unscientific conduct of the delivery process and maternal deaths during and after child birth. In the rural areas the rate of institutionalization was as low as 49 per cent while it was as high as 87 per cent in the urban areas in 2009 depicting poor performance of the maternal welfare programmes in the villages and their shortcomings in creating awareness among rural mothers. During the period from 2006-2007 to 2011-2012, highest institutionalization of deliveries could be achieved in Kerala with an outstanding percentage figure of 99.60 per cent followed by Tamil Nadu (98.70%) and Delhi National Capital Region (90.93%).

The performance of north-western States like Gujarat (88.10%) and western States like Maharashtra (80.94%) have been relatively better than the northern, eastern and central States (Fig.2). The spatial variation in safe delivery have revealed that the southern States of India like Kerala, Tamil Nadu, Andhra Pradesh and Karnataka have ensured a situation of safe delivery for the pregnant women in the respective states. In fact, Kerala had ensured safe delivery for 99.9 per cent of the pregnant women in the State followed by Tamil Nadu (98.6%) and Andhra Pradesh (95.6%). The condition of the northern States like Uttar Pradesh (64.2%), Punjab (66.7%) and Haryana (69.3%) in terms of safe delivery have exhibited high maternal deaths coupled with low institutionalization of child birth and antenatal care during pre-partum period. The relative position of West Bengal among other eastern States has been better with 72.6 per cent of the pregnant women ensured with provisions for safe delivery.

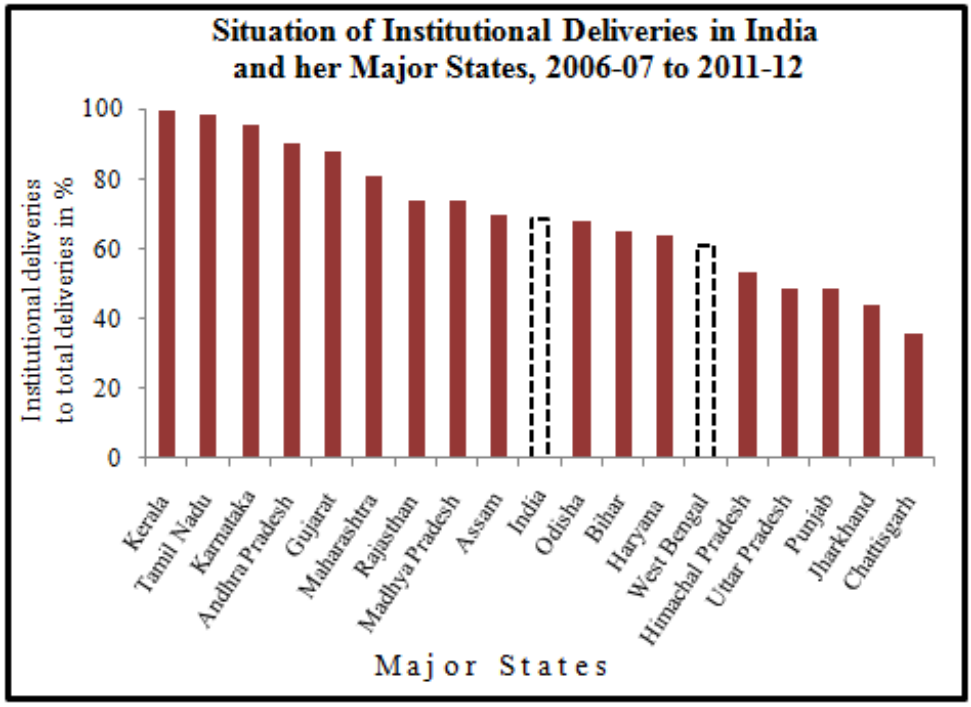

Fig. 2. Data source: Government of India

The condition of the same has been miserable in Bihar (53.2%) and Jharkhand (47.3%). A close competition in improvement of maternal health could be seen among the north-western States where in Gujarat 85.2 per cent of the pregnant women are receiving maternity benefits while in the western State of Maharashtra the situation is even better with 85.5 per cent of the pregnant women covered under different maternal welfare programmes. The increasing percentage of deliveries conducted in healthcare institutions have ensured situation of safe delivery for pregnant women and have somewhat controlled the maternal mortality ratio and have improved the chance of perinatal survival. The figure no.3 illustrates the State-wise maternal mortality ratio expressed in per lakh live births in India.

A District-wise Analysis of Institutional Child Delivery and its Implications in West Bengal

The 19 districts of the State can be placed under three administrative divisions of Jalpaiguri, Barddhaman and Presidency. The condition of maternal and child health in the State is undoubtedly linked with the level of human as well as economic development in the districts. The backward districts like Uttar Dinajpur, Maldah, Murshidabad and South 24 Parganas are socially as well as economically backward among all districts. In fact, in rural areas of West Bengal the percentage of institutional deliveries has improved considerably. In the villages of the State in case of domiciliary deliveries, still the untrained maids locally known as *dai* and family members play a significant role in conducting the delivery process.

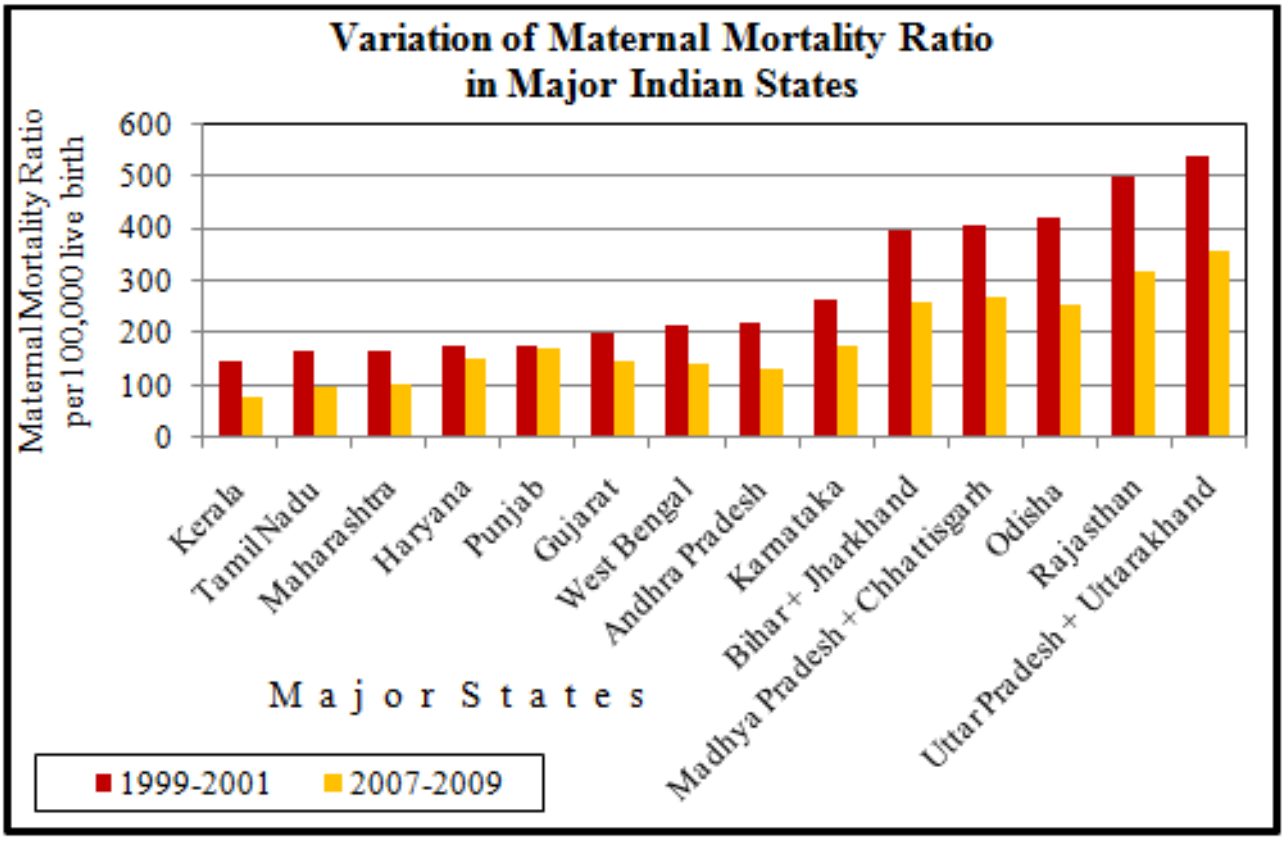

Fig. 3. Data source: Government of India

The situation of maternal deaths was quite high in Bihar and Jharkhand in eastern India, Madhya Pradesh and Chhattisgarh in central India as well as Uttar Pradesh and Uttarakhand in northern India. It has been comparatively low in major States like Kerala, Tamil Nadu, Maharashtra, Haryana and Punjab. In West Bengal the ratio during 1999-2001 was 218 which have declined to 145 in 2007-2009. The decline has however been remarkable in case of Karnataka with maternal mortality ratio of 178 in 2007-2009 which was earlier as high as 266 in 1999-2001. The perinatal mortality, neonatal mortality, post neonatal mortality and overall infant mortality rates have declined in the country with increasing trend of conducting child delivery in healthcare institutions. The States with high perinatal and neonatal mortality are the ones with low institutionalization of delivery system.

This often results in increase of the maternal and perinatal death. The overall percentage of deliveries conducted by untrained personnel in West Bengal during 2005-2006 to 2011-2012 was 12.70 per cent. In 2005-06, South 24 Parganas under Presidency Division recorded highest percentage of 26.43 of deliveries conducted by untrained personnel followed by Jalpaiguri District inclusive of present Alipurduar District under Jalpaiguri Division with a percentage of 21.08. In 2008-2009, South 24 Parganas was again the leading district with 27.90 per cent of deliveries conducted by unskilled birth attendant followed by Jalpaiguri (17.70%). This is due to dominance of rural population in the district of South 24 Parganas.

During 2011-2012, highest percentage of deliveries conducted by unskilled birth attendant was observed in Uttar Dinajpur district under Jalpaiguri division followed by South 24 Parganas (54.40 %) and Maldah (41.50%).

Approximately 30.16 per cent of the neonates were found to be underweight during birth in 2005-2006 in Kolkata Municipal Corporation.

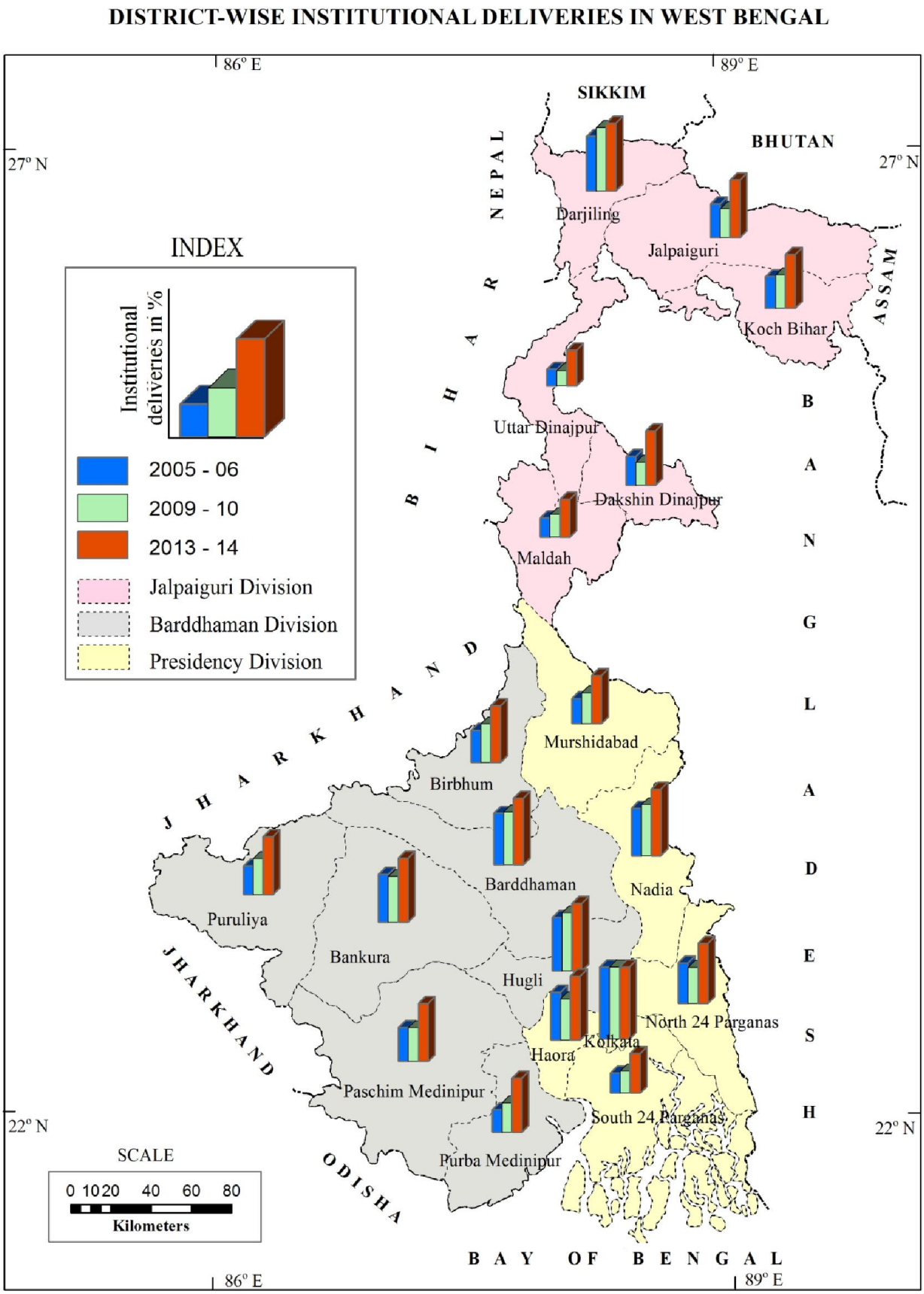

Fig. 4. Source- Computed from the data provided by Govt. of West Bengal

Area which was the highest during that financial year because of the referral cases which flock in the city hospitals for better medical treatment. In 2011-2012, the percentage was 24.35 in Kolkata Municipal Corporation Area which was again the highest percentage for that financial year. It is noteworthy to mention here that Kolkata Municipal Corporation Area under Presidency Division recorded lowest percentage of domiciliary deliveries to total deliveries with only 0.0002 percent of deliveries conducted by untrained personnel during 2005-2006 to 2011-2012. The reason has been mainly due to the city's urban economic structure, comparatively high level of literacy and sound availability of health infrastructure which has attributed to least percentage of domiciliary deliveries to total deliveries in this megacity of India. In case of domiciliary deliveries conducted by skilled birth attendants (SBA) which include doctors, trained *dais*, female health workers and lady health visitors, auxiliary nurse cum midwives the percentage is highest for Bankura district (96.93%) and lowest for Jalpaiguri district (57.30%) inclusive of Alipurduar in 2006-2007. The number of domiciliary deliveries declined considerably in all the districts of the State during 2012-2013 with highest percentage decline recorded in Hugli district (34.90%) of Barddhaman Division. In Kolkata Municipal Corporation Area 94.44 per cent of the domiciliary deliveries were conducted by SBA.

The economic condition of the slum dwellers and below poverty line group of population can be held responsible for high proportion of domiciliary deliveries by untrained personnel. Apart from domiciliary deliveries, for institutional deliveries sometimes the pregnant women are taken to Government hospitals and local maternity and health clinics. The child mortality rate is a vital indicator for analyzing the health condition of children under five years of age. The district-wise analysis shows a declining trend in child mortality rate during the period 2005-2006 to 2012-2013 especially in districts like Koch Bihar, Jalpaiguri, Maldah, Uttar Dinajpur and Dakshin Dinajpur under Jalpaiguri Division. Under Barddhaman Division all the districts have exhibited a declining picture of child mortality rate. Among the districts under Presidency Division, four districts namely Nadia, North 24 Parganas, South 24 Parganas and Haora have showed decreasing child mortality rate with Murshidabad and Kolkata being the exceptional cases with an increasing trend of child mortality rate. In 2006-2007, highest maternal mortality rate was observed in Darjiling (3.15) under Jalpaiguri Division followed by Jalpaiguri district inclusive of Alipurduar (2.97) under the same division. In case of Kolkata the Maternal Mortality Rate (MMR) in the same year was 2.06, while lowest maternal mortality rate was recorded in Purba Medinipur district (0.49). In 2010-2011,

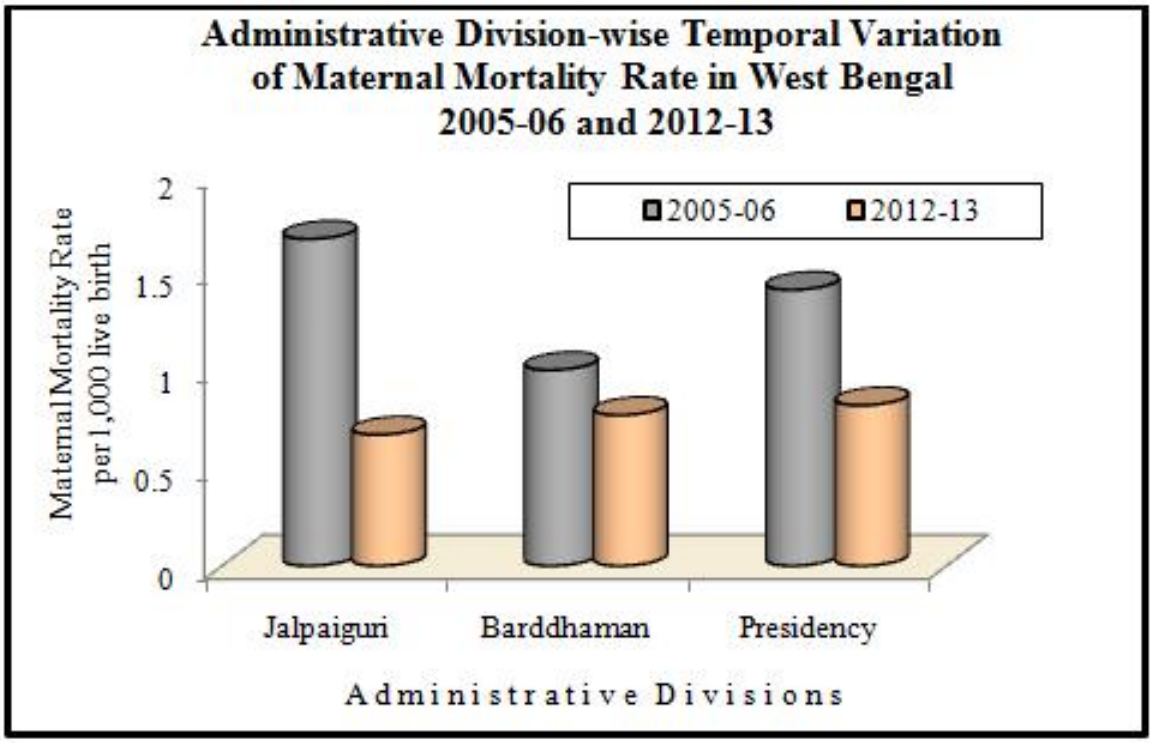

Fig. 5. Data source: Government of West Bengal

In Kolkata, the domiciliary deliveries are mainly confined to the religious minority based areas of Park Circus, Rajabazar, Metiabruz, Garden Reach, Khidderpore, Tiljala and Topsia areas. These are the areas in the city with maximum number of maternal and perinatal deaths resulting out of deliveries conducted at home by untrained personnel. A large number of deliveries are still conducted by untrained personnel in the registered slums and squatter households of North and East Kolkata where the process of delivery is carried out by family members and relatives.

Uttar Dinajpur was the leading district with highest maternal mortality rate of 4.68 followed by Darjiling district recording 3.35; lowest maternal mortality rate was observed in North 24 Parganas (0.57) followed by Bankura (0.65) (Fig.5). The Life-Time Risk of Maternal death during 2001-03 was 1.0 per cent in India while it was 0.5 per cent in West Bengal. The estimation of child survival rate is another important indicator for assessing the child health condition after birth and is linked with the health and delivery process of the mother along with the child care at various stages of life specifically up to the age

of five years. The life of a child is vulnerable to various diseases and illnesses which can be controlled if treated properly at a preliminary stage. The child survival rate has somewhat improved in all the districts especially in North 24 Parganas and Darjiling district. In 2005-2006 the leading district with highest child survival rate was South 24 Parganas (99.43%) followed by Dakshin Dinajpur (99.20%) district. The districts with miserable performance in 2005-2006 include Kolkata and Puruliya districts. In 2013-2014, highest child survival rate is observed in North 24 Parganas (99.75%) followed by Darjiling (99.60%) district (Fig.6). Again referral cases may be held responsible for such a dismal performance of proper Kolkata.

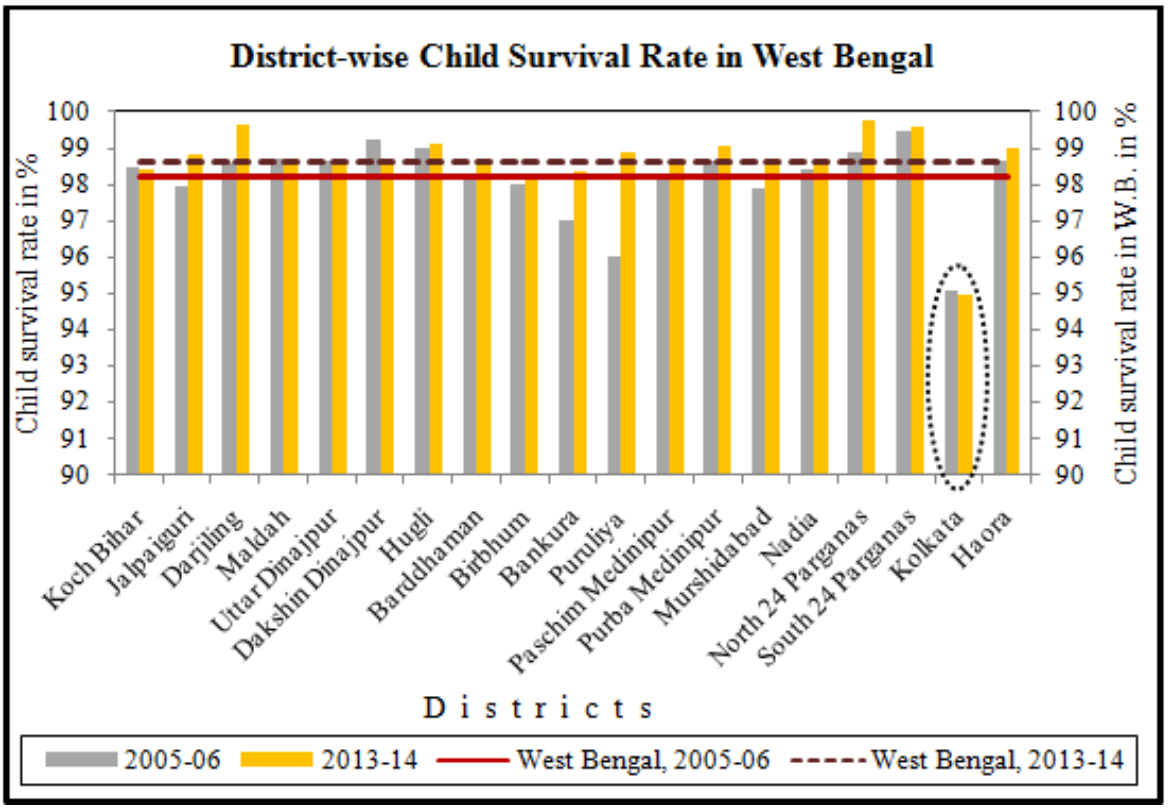

Fig. 6. Data source: Government of West Bengal

woman by the Government. Many people are ignorant about the significance of carrying out child birth process in healthcare institutions by trained health personnel. In case of West Bengal an inter-district disparity is conspicuous among the 19 districts. The percentage of institutional deliveries to total deliveries during 2005-2006 was highest in the city core of Kolkata administered by Kolkata Municipal Corporation (100%) where no domiciliary deliveries were conducted during that year followed by Darjiling district with 75.93 per cent of the deliveries being conducted in healthcare institutions. The lowest percentage was seen in Uttar Dinajpur district where only 23.31 per cent of the deliveries were institutional in 2005-2006.

Findings of the Study

The study was conducted to show the level of institutionalization of child delivery in India emphasizing on the inter-state as well as intra-state disparities observed through several indicators like percentage of antenatal care and healthcare provided to women during and after the period of pregnancy, proportion of institutional deliveries, rate of perinatal, neonatal, infant and child mortality. In the country the southern States like Kerala, Karnataka, Tamil Nadu and Andhra Pradesh have made achievements which have been really praiseworthy. These States have emerged as unmatched competitors with the backward States like Bihar inclusive of Jharkhand, Madhya Pradesh along with Chhattisgarh, Rajasthan and Uttar Pradesh collectively called the BIMARU States. These States are in fact characterized by high illiteracy female population, negligence and unawareness among men in the street regarding the healthcare benefits given to a pregnant

Kolkata Municipal Corporation Area has succeeded to maintain its leading position with 86.60 per cent institutional deliveries been conducted in 2011-2012. This percentage has declined over six years seemingly owing to increase of population in registered slums and shanties. The referral cases that visit the city hospitals are also provided with advanced urban healthcare facilities. During 2011-2012, lowest institutional deliveries were observed again in Uttar Dinajpur district (38.8%). This is due to dominance of rural landscape with slow pace of urbanization in the district. Among the administrative divisions, Barddhaman Division (72.86%) has recorded the highest percentage of domiciliary conducted by skilled birth attendants followed by Jalpaiguri Division (65.12%). This is mainly due to the appreciable performance of Bankura district where more than 84 per cent of the domiciliary deliveries are conducted by skilled birth attendant. In a number of slums of North and East Kolkata domiciliary deliveries by untrained personnel are still prevalent.

Neonates are frequently affected by neonatal jaundice and malaria due to unhygienic and crowded living environment in the slums and shanties of the city. In the rural households of the State domiciliary deliveries are still prevalent though with the initiatives of Government both at the Central and State level, the rural pregnant women are now been taken to block primary health centres, sub centres, rural hospitals, sub divisional hospitals or state general hospitals. This scenario of improving institutionalization of child delivery has been reflected in reducing perinatal mortality and has overall improved the child survival rate in the State.

Conclusion

The status of Human Development of any State is primarily reflected through health which includes life expectancy at birth, span of life, infant and child mortality rate etc on one hand and education level with health awareness on the other. The condition of women and children is therefore crucial for assessing the activities of Government both at Central and State levels and to evaluate the strategies and policies formulated by them. India exhibits a striking contrast of human development in general and health condition in particular among her major States. The condition of maternal and child health has been in a tragic state in West Bengal considered as one of the most important States in the country since the days of colonial legacy. The State struggles to cope with the evils of perinatal, neonatal, infant and child mortality at one end and poor health infrastructure on the other. The rural population suffer miserably from lack of adequate healthcare infrastructure in the villages and sub divisions. Their economic constraints further deter them from utilization of advanced healthcare facilities available in the urban cities. Similar is the condition for the population residing in registered slums and squatters in the cities. The lack of awareness among population residing in villages and urban slums and shanties can be eradicated with an orchestrated effort of the Government and Non-government organizations through mass media, advertisements and personal contact.

Acknowledgement

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