Growth and Determinants of Post Delivery Complication of Women in Respect of Access to Health Care Facilities in West Bengal: An Inter-District Analysis

Uttam Kumar Sikder¹, Barsha Choudhury²

¹Assistant Professor (Stage 3), ²Student of MA Final Year, Department of Economics and Politics, Visva-Bharati University, Santiniketan, Bolpur, West Bengal, INDIA

Abstract: The discrimination against women and access to health care facilities among social groups are closely related in Indian context. The status of health particularly the women health, have could have more affected the human development index through the increase in neonatal mortality, child mortality, infant mortality, life expectancy at birth, maternal mortality etc. The lack access of full antenatal cares or poor quality of such care, post natal care leads to increase in pre delivery and post delivery complication of married women of ages 15-45 years which may be the cause of maternal mortality and its has adverse effects on other health indicators.

But it is painful fact that the Indian women are excluded and discriminated socially by the norms of “Hindu” culture, basically by the law of “Manusmriti” which was written by “Manu” in 200 B.C. (Muri, J., 1972). This social discrimination of Indian’s women adversely affect on the access to health care, education, income and etc. If a woman wants to obtain all amenities of our society, it is necessary destroy the existing social norms / practice by the means of empowerment of women by taking political power in their own hand both at micro and macro level.

The post delivery complication (PDC) is very much important health indicator of married women. It has for reaching consequences of women and children’s’ health. The present paper examines the percentage growth rate of change in PDC in different years and the factors which are responsible for growth of PDC of women. Finally we should suggest the policies which may eradicate this problem of women.

1. Introduction

There is an also association between gender a see and access to health care facilities in India. In Indian society the women are socially excluded and discriminated from a thousand of years. This gender discrimination was born by the ‘Hindus’ culture in India. According to ‘Manusmriti’ written by ‘Manu’ in 200 B.C. (Muri, J., 1972) and in “Shreemat Bhagabat Gita” women are treated as ‘Sudhrami’ which means untouchable. According to the constitution of ‘Manu’ “by a young girl, by a young women or ever by an aged one, nothing must be done independently, even in her own house. “In a childhood a female must be subject to her father, in youth to her husband, when her lord is dead to her sons, a women must never be independent” [Athava Veda, 6.2.3 (Ath. Ved VI, 2.3.)]. Women’s lives are shape by customs that are centuries old. “May you be the mother of hundred son’s is a common Hindu weeding blessing (Mukherjee, P., 1978). No any other religion in the world did not, discriminate the women like ‘Hinduism’ in India (Babasaheb Dr. B.R. Ambedkar).

Women are suffering from discrimination in the access to health care facilities, nutrition, education, liberty etc. After independence of India in 1947, the constitution in India has safeguarded the Indian women for enjoying equal right like a man. But till day they have faced so many exclusions in their social life. This gender inequality affects the health of poor women and girl’s more adversely. For a poor people health is also a crucially important asset because their livelihood depends on it. When poor women became ill or injured, the entire households can become trapped in downward spiral of lost income and high health care costs. Therefore, the health status of women need to be examine in both micro and macro level.

From different official reports and records like sample Registration system, Governor General in India, different rounds of National Family Health Survey (NFHS) of IIPS (International Institutes of Population Science) & the Ministry of Health and Family welfare it is seen that the women behind the men for some key indicators of health like infant mortality rate, child mortality rate, neonatal mortality rate, maternal mortality rate, birth rate, death rate, life expectancy of birth etc. both at macro as well as micro level except few exceptional cases. There are so many socio-demographic as well as economics factors which are responsible for maternal mortality in India and its different states / districts. Out of these complication during pregnancy and post delivery
complication (PDC) seems to be major factors. About 31.4 percent women were suffering from some post-delivery complication and among them 50.3 percent had sought treatment (Paul, L. & Challan, R., 2007). In this present paper we shall seek to examine the growth and determinants post delivery complication of married women of ages 15–44 years by using pooled data i.e. the combination of cross section and time series data of ten selected districts of West Bengal where, districts are treated as a cross sectional unit and three time reference points on the basic of three separate rounds of DLHS (District Level Household and Facility Survey) namely, DLHS-2 (2004-05), DLHS-3 (2007-08) and DLHS-4 (2012-13) as a time series unit. We have dropped DLHS (1998-99) because unavailability of relevant data in our study.

II. Review of Literature in Brief

In this section we would like to review the available literature in the area of the post delivery complication of married women of age 15–44 years. The paramount importance should be paid in the study of post delivery complication since it has direct and indirect effect on maternal mortality rate. Although the vast pool of literature is not available in this field. But as there is a close relation between gender discrimination and access to health care facilities among female, hence we will review the both fields simultaneously. The important socio-demographic factors which may responsible to the occurrence of PDC are full antenatal check-up of pregnant women, place of delivery, place of residence educational and economic level, induced abortion, delivery attended by skilled health personnel, percentage of currently married women below age 18, excessive use of contraceptive pills, female sterilization etc. The female, basically in rural India may not get the sufficient access to health care facilities which will increase the PDC due to the gender discrimination against female. Hence there is a simultaneous relationship between gender and access to health care facilities and post delivery complication of married women. After ICDP conference in 1994, the paramount attention has been paid to reducing maternal mortality which was caused by PDC. The recommended doses of antenatal, natal and post natal can be reduced PDC of women. In the DLHS-RCH the symptom of PDC is reported by the various factors like high fever, lower abdominal pain, foul smelling vaginal discharge, excessive bleeding, convulsion, sever head ache, and after related symptoms during the first six weeks after the delivery. Taking these, issues into account some selected socio-economic demographic explanatory variables are considered in the present study according to the availability of the secondary sources of data.

Paul, L. & Challan, R. (2007) have studied on post-delivery complication and treatment sacking behavioral scenario among women in India. They tried to assess the influence socio-economic and demographic factory on the prevalence of post delivery complication and treatment seeking behavior in the India. For the purpose of estimation they have used logistic regression model for post delivery complications and multinomial logistic regression model for treatment sacking behaviors. The results show that more than one-third women had reported any one post-delivery complication in India (31.4 percent) within six week after delivery. Half of the women (50.3 percent), who had reported any post-delivery complication, sought for treatment from any sources. For the treatment, women preferred the private medical sectors (61.8 percent) to the public medical sectors (24.8 percent) for treatment of PDC. It is also reveal that higher percentage of women who sought treatment from public medical sector mainly visited – Governmentally Municipal Hospital (14.2 percent) than the other public medical sectors. The majority of women sought treatment from doctors (40.3 percent), irrespective of public or private sectors, for PDCs. Moreover, distribution of seeking treatment from various sources for PDC shows that a very high percentage of women (80.1 percent) went to doctors for treatment, followed by ANM/Nurse LHV (9.0 percent) for the complications during post delivery period.

The results found that given the socio-economic and demographic characteristic the PDC varies from the region to region for example the reporting of PDC is significantly more likely in the eastern, north-eastern and western region than the other region in India. The more or less same scenario was found in the case of treatment seeking behaviors. The study suggested that owing to look of prenatal and post natal care in health care system many woman suffer from various reproductive problems which may result in severe complication in long run. In order for such approach to be operational, while arriving at policy recommendations for improvement of women’s maternal health during post natural period, there is a need to mobilize options and resources from various fields, like researchers, medical practitioner, social scientist. This would help to strive health facilities of women and their future children several policies had been recommended and programmes were implemented to curt maternal death but the goals are still for from being achieved. Therefore, apart from government sector intervention, Non-Government organizations (NGOs) should also come forward to make some intervention to improve the existing health infrastructure in the country. Since there is a close link between gender and access to health care facilities, so we should be reviewed some available literature regarding gender discrimination and access to health care facilities among married women.

Goswami, S. (2013) tried to examine the issues that adversely affect the life of rural women in West Bengal, India. His study wanted to identify the following objectives – (i) To identify and understand the linkages between gender discrimination and patriarchal domination (ii) to find out in details the nature of gender discrimination at interior rural Bengal and (iii) To identify the causes and consequences of practice of gender
discrimination in the society. The finding of his study should be highlighted. First of all a situation referring to heavy workload of women and the many, overlapping tasks involved, which if computed in terms of hours of total more than 24 hours. This workload consists of unpaid reproductive work, paid productive work, and all other household works necessary for the survival of the family. In case of money utilization programme, most women have not their own choice to spend money like men. Most women invest their income for medical treatment of their own and child that is, 84% women spend their earning money for family needs such on medical purpose for own and other family members and for education of the child. Only 16% women think for savings making self banking account. It is also found that the women also have discriminated in education. At rural Bengal, 50% women are illiterate, 20% have only alphabetical knowledge, and remaining 30% illiterate, up to class six. In there families, most male members are literate and educated. So, they easily may dominate the female members due to their ignorance, absence of awareness. It is seen that even women want to give birth the son child instead of girl child. Because they think that only so are their, future supports. The girl child is seam as burden in the households. So the family members do not want to take any positive thinking about their girl child. This attitude also creates the vicious circle of poverty malnutrition, and injustice among women in the long run. Discrimination is also seen in deciding of age of marriage of women. In rural society, women’s average age of marriage married is below 15. 20% women are getting married in age of 13 and 60% women are getting married at the age of 15 and remaining 20% women are given married at the age of 18. In another side, man’s average age of marriage is 25.

Goswami, S. (2013) have been explained the clear scenario of gender discrimination in West Bengal. We think the same scenario prevails at national level also. Now shall present the more literate on gender discrimination and health which as follows.

Sikder, U.K. (2012) studied the access to health and medical service of rural poor in West Bengal empirically in respect of availability of nutritious food, living in hygienic environment to rural poor and vulnerable sections in the Indian society namely, scheduled castes, scheduled tribes, women and children. The results of the study show that households have to face health and healthcare related constraints given their social characteristics and various economic constraints. Most of the households are deprived of government health interventions and appropriate infrastructure. The conditions of children and females point to a relatively high degree of vulnerability recognizing the fact that there is a large gap between demand for and supply of state provided health services.

Sikder, U.K. (2012) studies the access to health care facility of rural poor in West Bengal which was the village based analysis of the Birbhum district on the basis of primary data collected through direct field survey this paper explained the role of health in economic development of any country like India and keeping in this view of role of health in economic development the government of India in her eleventh five year plan emphasized the concept of inclusive growth which implies that mass of her people must have access to basic facilities such as health, education, women empowerment etc. Government at different level must ensure the provision of these services. In the context of panchayet Raj led process of rural development in West Bengal there are scopes of experiment with such inclusive growth in general and in particular in the sphere of health security programme. The study reveals that conditions of children and women across different social groups i.e. SCs, STs and Hindu including OBCs indicates a high degree of vulnerability.

In India, members of gender, castes, class and ethnic identity experience structural discrimination that impact their health and access to health care. Women faces double discrimination being members of specific caste, class or ethnic group apart from experiencing gendered vulnerabilities. This idea was also supposed by Borooah, V.K. et al. (2012).

Mukhopadhyay, P., Chandhuri, R.N. and Paul, B. (October 2010) studies the hospital based prenatal outcomes and complication in Teenage pregnancy in India. Teenage pregnancy is a worldwide problem bearing serious social and medical implications relating to maternal and childhealth. Their study was based on cross sectional observation and it was undertaking to compare the different socio demographic characteristics and prenatal outcomes of teenage primigravida mother with those of adult primigravida mothers in tertiary-case hospital in eastern India. These were based on primary data collected through direct field survey. Results revealed that the teenage mothers had a higher proportion (27.7%) of preterm deliveries compared to 13.19 in an adult mother (20-29 years) and had low-birth weight babies (38.9% vs 30.4% respectively), still birth rate was also significant in teenage deliveries (5.1% vs 0.9% respectively). The teenage mothers develop more adverse prenatal complication, such as preterm birth, still births, neonatal deaths, and delivered low birth weight babies, when compared with those of adult primigravida mothers. Teenage pregnancy is still a rampart and important public health problem in India with unfavorable prenatal outcomes and need to be talked on a priority basic. In general, it was found that than teenage mothers were from a socio-economically disadvantaged background with lower levels of education and used lesser antenatal healthcare services. To address this multifaceted problem, it should aim to reduce the incidence of teenage pregnancy, not only to minimize adverse outcomes on young mothers but also limit to the family size. To solve these problems the government intervention should be required.
Maternal health services have a significant role in improvement of reproductive health. Access to skilled assistance and well equipped health institutions during delivery can reduce maternal mortality and morbidity and improve pregnancy outcome. Gogoi, M. et al. tried to study the utilization of Maternal Health Care services and reproductive health complications in the state of Assam in India. Using third round of district level household survey conducted during 2007-08. Bivariate and Multivariate analysis is used to examine the interrelationship between pregnancy complication and use of health care services. Finding shows, nearly half of the women reported complication of paleness / giddiness / weakness during pregnancy and 56% reporting of having obstructed labour. Result show that women relieved full ANC has less pregnancy and delivery complications as compare to non receivers. Two fifths of women reported any type of post delivery complication who had received full ANC, checkups; most of them were reported of lower abdominal pain after delivery.

Sanmeving, I. et al. (2013) studied to categorized and explain determinants of inequality in maternal and reproductive health in India. The result of the study shows India is making progress towards reduced maternal mortality and improved access to reproductive health care. However, evidence shows that the progress made is uneven and inequitable. The objective this review was to describe the evidence in terms of structural determinants of maternal and reproductive health in India, and how these causes affects access to care. The collective picture is that structural determinants prevent reduced maternal mortality and increased access to reproductive health for women belonging to disadvantaged populations. Interventions that target maternal mortality and increased access to reproductive health care need to take into account how these structural determinants operate in the Indian society and how this may influence access to health care for certain groups of women.

III. Objective of This Article
In keeping with the above considerations the broad study is to highlight nature and extent of health deprivation of married women of age 15-44 years in selected districts in West Bengal, India. Specially, objective of the study may be stated a below.
1. To examine the inter-districs disparities of the prevalence of PDC among married women of age 15-43 years.
2. To examine the inter-distict variation of growth rate of PDC.
3. To examine the factors which are responsible of the variation of PDC in respect to the access to the benefit of health care facilities by the married women?

IV. Data, Methodology and Econometric Model
The entire data used in our study is secondary sources of data collected through different rounds of DLHS which was explained earlier. The cross sectional units i.e. the ten selected districts in our study is based on census data of 2011. To computation of the growth rate of PDC for several time periods we use the following formula.

\[ \text{Percentage rate of change of PDC between two time point-t and t-1} = \frac{\text{PDC}_t - \text{PDC}_{t-1}}{\text{PDC}_{t-1}} \times 100 \]

Where PDC; PDC at time point t
PDC\text{t-1}; PDC at time point (t-1)

Finally, we choose some important socio-demographic indicators of health which may affect the PDC of married women. The functional relationship (or, econometric model) is as follows.

\[ \text{PDC} = f(PWANC, DH, DVGH, DASP, IA, Dum 1, Dum2, Dum 3, U) \]

Where

PWANC : Pregnant women who had received full antenatal care
DH : Delivery of baby at home
DVGH : Delivery at government institution
DASP : Delivery attained by skilled health personnel
IA : Induced abortion
Dum 1 = \{1, if effect of 2002-04 is considered\}
Dum 2 = \{1, if effect of 2007-08 is considered\}
Dum 3 = \{1, if effect of 2012-13 is considered\}

U: Disturbance term or error term.

It is important to note that since we have three time reference points, we will introduce only two dummy variables to avoid falling into “dummy variable trap”, i.e. a situation of perfect callinearity. Here we are treating 2012-13 as the base a reference category. For the purpose of estimation we have applied the least square dummy variable model (LSDV). We have adopted the fixed effect least square dummy variable (LSDV) model. This is
more useful and analytically richer than simple pooled OLS regression. Before running regression we will check the pair wise correlation coefficients among explanatory variables and also with its dependent variable.

V. Results and Discussion

Inter-districts Disparities in Post Delivery Complication among women: A Bar Diagram Analysis of Selected Districts in West Bengal.

In order to supplement the descriptive statistical frame work in Bar Diagram 1 in appendix with a more revealing picture at a glance, a bar diagrammatic approach was followed by us. The PDC have been adjusted for there time reference period DLHS-2 (2002-04), DLHS (2007-08) and DLHS-3 (2012-13) on basic of state level data through vertical bar diagram approach. The bar diagram represents the disparities of the PDC for various time reference point for each district of West Bengal selected by us.

It is seen from bar diagram that PDC is as high as 58.9 percent in Uttor Dinajpur in 2002-04 which may be the influence of education of women because in this district of West Bengal the female literacy is lowest in the state followed by 2007-08 in Uttar Dinajpur (57.2) where as the PDC is as high as 43.8 percent in the district of Malda is 2012-13. We also found that the PDC is as low as 32.7 percent in Haora in 2002-04, 30.4 percent for Kolkata in 2007-08 and 7.9 percent in Haora in 2013-14. It can be explained by the fact that the all urban advantage may be enjoyed by the women those who are residing in Kolkata. The district Haora is one of the industrial belts in the state of West Bengal and most of the people in this district are richer relative to other district which may affect the utilization of health care.

Except these two special cases, PDC in varies between 37.2 percent in Nadia district to 59.9 percent in Malda district of West Bengal in 2002-04. Whereas it varies from 40 percent in Purba Midnapur to 46.5 percent in South 24 Paraganas in West Bengal in 2007-08. We also observed that the value of PDC varies between 10.8 percent in South 24 Parganas to 32.9 percent in Kolkata in 2012-13. From the bar diagram it is seen that PDC reduces between 2007-08 to 2012-13 for all districts in our consideration except the district of Kolkata. The opposite scenario have found between the time period 2002-04 to 2007-08 except the districts of Hoara, Purba Midnapur and Malda and Kolkata. It is very much encouraging fact that between 2002-04 to 2012-13 the percentage of PDC decreases for all districts in our consideration. This improvement of health status of women can be explained by various determinants. We will seek to examine the factors which are responsible for the improvement of PDC of women.

Inter-District Variation of Percentage Rate of Change of Post Delivery Complication

In this section we have examined the growth rate of PDC for selected 10 districts of West Bengal from 2002-04 to 2007-08, 2002-04 to 2012-13 and 2007-08 to 2012-13. It can be noted that from table 4.1 the growth rate or percentage change in PDC are not only fracturing over the entire period but also showed negative value over the period in our consideration. These negative values of the percentage change of PDC represent the improvement of health status through increasing access to health care facility of women. Percentage rate change of PDC between the period 2007-08 and 2012-13 have observed in the district of Haora followed by the districts of Koochhbihar (-26.7742), South 24 Parganas (-76.7742), Uttar Dinajpur (-73.7762) and North 24 Parganas (-55.7269). Where as highest percentage change in PDC was observed in Kolkata.

Next we turn to our analysis of the percentage rate of change in PDC between the time period 2002-04 and 2012-13. It is seen that the highest percentage change in PDC was observed in Haora (-12.031) as it is lowest in Kolkata (-75.84) the position of the remaining districts of West Bengal in respect of percentage change in PDC lies between these extreme values, namely -75.841 for Haora and -12.081 for Kolkata.

Between 2002-04 to 2006-08 the highest percentage rate of change of PDC (26.2996) was observed in the district of Haora followed by the districts of Koochhbihar, Burdhhman, Nadia, South 24 Paraganas and North 24 Paraganas where as lowest percentage rate of change in PDC (-18.7166) was observed in the district of Kolkata. The percentage rates change of PDC various between the two extreme values -18.7166 and 26.2996 for the remaining state in our consideration.

The lower percentage rate of change in PDC implies better access to health care facilities among married women of age 15-44 years and vice-versa. It is observed that the women those who are residing in urban based district have better access to the health care facilities relative to rural based districts in West Bengal. From the table 4.1 we found that the Kolkata district of West Bengal is highest performer in respect of access to health care facilities among women in terms of percentage change in PDC in 2002-04 to 2012-13 as well as 2002-04 to 2007-08. The opposite picture was depicted for district of Haora. Not only that scenario of PDC in 2007-08 to 2012-13 is totally opposite interns of percentage rate of change in PDC relative to 2002-04 to 2012-13 and 2002-04 to 2007-08. From our descriptive analysis we can say that for a given time period there is no district wise uniformity of the percentage of PDC but there exist a perfect inequality of this health indicator as well as access to health care facilities of married women.

Profile of Inter-correlation among Different Socio-Demographic Variable

In the present section we shall try to examine the extent of correlation between the dependent variable namely, post delivery complication and the different explanatory variables namely, percentage of women who had taken
full antenatal care (PWANC), delivery at home, delivery at government hospital, delivery attained by skilled health personnel (DASP) and induced abortion (ID). We would also test empirically the statistical significance of these correlation coefficients we have computed a matrix which represents pair wise correlation coefficients between dependent variable and explanatory variables as well the correlation coefficients among the all explanatory variables included in our model separately this is represented by the following triangular matrix (Table 4.2).

There is a negative degree of association between PDC and PWANC, DVGH and DASP and value of these correlation coefficients are found to be statistically significant 5% level of significance. On the other hand the positive degree of association between PDC and DH was found and it is statistically significant at 5% level of significance. Although the correlation coefficient between PDC and IA was found to be positive but it is statistically insignificant.

Our significant inverse relation between PDC and PWANC (correlation coefficient is -0.7873) can be explained by the fact that government policy of the empowerment of women in Panchayet or Municipality in West Bengal made awareness to received the all antenatal care in the situation of pregnancy of women. The sign of correlation coefficient between PDC and DVGH (-4.4189) and correlation coefficient between PDC and DASP (-0.6539) are found to be negative and consistent with our general assumption and increase in these two variables leads to reduce the PDC.

Not only that we shall try to examine the extent of correlation coefficient among the explanatory variables. It is seen that PWANC is highly correlated with DH (-0.7219) and DASP (0.8467) and it is also correlated with IA although its value is low -0.5530. On the other hand it is found that there is a negative correlation coefficients between DH and DVGH (-0.8110) and DASP (-0.7852) the correlation coefficient between DH and IA is very low (0.3715) although it is significant. We also found a positive degree of association between DVGH and DASP (0.3696) and it is also significant at 5% level. Finally, we found that there is a quite high negative correlation between DASP and IA (-0.6215) which is statically significant at 5% from the analysis of inter-correlation profile among the explanatory variable included our model we can predict surely that regression model will suffer from severe multicollinearity problem.

**Results of the Multiple Regressions (Robust) Models (Pooled) of Post Delivery Complication (PDC)**

We have attempted alternative pooled model by experimenting with the independent variable adopted. Tanking post delivery complication as a dependent variable the best performing fixed effect least square dummy (LSDV) was found to be that which included pregnant women who had full antenatal care (PWANC), delivery at home (DH), delivery in government institution (DUGH), delivery attained by skilled health personnel (DASP), induced abortion as the explanatory variables along with two chosen Dummies for two different time points viz, dum1 and dum2. Even though there are there time points with respect to DLHS – 2, DLHS – 2 and LDHs – 4. We have chosen the DLHS – 4 to be dropped from our reference point. Thus, out of three possible dummy variables only two are chosen in order to avoid a situation of perfect collinarity and dummy variable trap. In terms of multiple coefficient of determination (R squared) the overall goodness of fit of the chosen model is very much satisfactory as it is observed to be 0.8436. Hence about 84% of the variations in post delivery complication of women (PDC) (dependent variable) can be explained in terms of the explanatory variables included in the model. The observed F value also points to an overall satisfactory performance of the multiple regressions. Further as the variance inflation factor (VIF) is more than ten (10), the model also suffers from sever multicollinearity effect.

In general the incidence of PDC is found to be close association with socio-demographic variables. Out of these antenatal case of pregnant women seems to be major factor. One might expect that antenatal care of pregnant women to be producing a significant effect on incidence of PDC. A priori we expect that PDC to be positively related to DH and IA and negatively related to PWANC, DVGH and DASP. Our results present a little divergence from the general expectation as estimated coefficient of DVGA and DASP are found to be positive while all other estimated coefficients are found to negative/ positive according to our general expectation.

However on the basis of t-statistics and p values we find that the explanatory variables DH, DASP, IA Dum 1 and Dum 2 are statistically significant at 10%, 5%, 1%, 1% and 1% level of significance. The positive relationship between PDC and DVGH is explained by the fact that the pregnancy delivery infrastructure in government hospital in West Bengal may be inadequate or in sufficient as per requirement unlike elite private hospital / nursing home.

Next the positive relationship between PDC and DASP is explained by the fact that the part of negligence of skilled health personal may leads to post delivery complication of women in West Bengal. The Dummy variable effect (Dum 1 and Dum 2) was found to positive and statistically significant implying that the year 2002-04 and 2007-08 have a significant impact on determinants of post delivery complication of women in West Bengal. The positive relationship between PDC and Dum 1 and Dum 2 may be explained by the fact that in 2002-04 and 2007-08 the health infrastructures were poor relative to 2012-13 which was taken as base year. It is expected and the fact that there is a significant improvement of medical science and health care system in West Bengal as well as India.
On analysis based on bar diagram from DLHS data clearly points to the inter-district disparities of the important health indicator, namely PDC in different time reference points. There is some evidence of deprivation of health of married women of ages 15-44 year. Table 1.1 depicted that there are 23 cases out of 30 where percentage rate of change of PDC is negative which implies the development of health states of women i.e. they were able to get the access to health care facilities 

The pooled regression results show that it is the social demographic and economics variables that have a close association with PDC. Most of the estimated coefficients deviate from our expected sign. Only coefficient of delivery at home and percentage of women who received full antenatal care reveal the sign according our assumptions. However, both positive dummy variables impacts are observed for respective time reference points. Most of our estimates are found to be statistically significant with a satisfactory overall goodness-of-fit. We may infer that while public health has made some significant impact of female health between different rounds of DLHS, its sustainability depends on complementing some measures with increased entitlement and empowerment of women in political power both at micro and macro level. The problem gender discriminations against women are a thousand year old problem and it is very sensitive social issue. Hence women should come into picture to eradicate this problem by the means of democratic process of women empowerment. Till now it is not possible to empower the women both at grass root as well as macro level. We should wait for this golden era when women empowerment will be possible both at macro level and to solve not only problem of access to health but each and every problem of emancipation.

A.K.Sen (“Pragupta”,pp.189-209) have been followed the idea of Babasaheb Dr. Ambedkar(1929) about the right of women. The political empowerment of women is the only way by which they can change their socio-economic status. Five ingredients should be needed for the empowerment of women. These are higher education of women, property right of women, job opportunity of women, existence of women at labour market and attitude of the family and society towards women about their participation in job market. Although the participation of women in governance of women is ensured in Panchayet and Municipalilty level but it is not ensured at macro level that is, assemblyly or Parliamentary level through the constitutional amendment in India. The fight against gender discriminations is not only necessary for social justice, it become obstacle for economic development. Economies progress of women leads to decrease in population growth of a country. Therefore, “Human development, if not engendered, is endangered” (Human Development Report, 1995)

References

[1]. Athava Veda. 6.2.3. (Ath. Ved VI.2.3).
[7]. Samneving, L.et al.(2013), “ Inequality in India: The case of maternal and reproductive health”. Citation: Global Health Action 2013,6:19145- http://dx.doi.org/10.3402/gva.v6i0.
[12]. Sample Registration System and Million Death Study / Form 2012 and UN Mortality Software: MORTPAK, Version 4.0.0.86.
[14]. District Level Household and Facility Survey-3 (DLHS-3),2007-08, IIPS, Mumbai, India and Ministry of Health & Family Welfare

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VI. Conclusion

"Human development, if not engendered, is endangered\" (Human Development Report, 1995)
APPENDIX

Table 4.1: The Percentage Change of Post Delivery Complication between DLHS-2 & DLHS-3 and DLHS-2 & DLHS-4 and DLHS-3 & DLHS 4

<table>
<thead>
<tr>
<th>Districts of West Bengal</th>
<th>% Change in PDC between 2002-04 &amp; 2007-08</th>
<th>% Change in PDC between 2002-04 &amp; 2001-02</th>
<th>% Change in PDC between 2007-08 &amp; 2012-13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kolkata</td>
<td>-18.7166</td>
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<td>8.223684</td>
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<td>-45.1965</td>
<td>-37.25</td>
</tr>
<tr>
<td>Malda</td>
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<td>-17.2023</td>
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<td>Kooch Bihar</td>
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<td>-78.3784</td>
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<td>-44.4444</td>
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<tr>
<td>North 24 Pargana</td>
<td>19.1601</td>
<td>-47.2441</td>
<td>-55.7269</td>
</tr>
</tbody>
</table>

Sources: Author’s own calculation from the data of DLHS-2, DLHS-3 and DLHS-4, International Institute of Population science (IIPS), Mumbai, India & Ministry of Health and Family Welfare

Bar Diagram 1: Inter-District Disparities in Post Delivery Complication of the Women of age 15-44 in selected District of West Bengal.

Table 4.2: Pair Wise Correlation Coefficient between Post Delivery Complication (PDC) & All Explanatory Variables in the Model

```
pwcorr pdc pwanc dh dvgh dasp ia,star(5)
```

```
        pdc    pwanc      dh      dvgh      dasp      ia
pdc  1.0000
pwanc -0.7873  1.0000
dh   0.6985 -0.7219  1.0000
dvgh -0.4189  0.3330 -0.8110  1.0000
dasp -0.6539  0.8467 -0.7852  0.3696  1.0000
ia    0.1978 -0.5530  0.3715 -0.0139 -0.6215  1.0000
```
Table 4.3: Multiple Regressions Model (Pooled) of Post Delivery Complication (PDC): Determinants of PDC

```
.reg pdc pwan ch dvgh dspa ia dum1 dum2,robust
Linear regression
Number of obs = 30
F( 7, 22) = 23.56
Prob > F = 0.0000
R-squared = 0.8436
Root MSE = 6.4351

|   | Coef. | Robust Std. Err. | t  | P>|t| | [95% Conf. Interval] |
|---|-------|------------------|----|-----|-----------------------|
| pwan | -0.9378 | 0.3015 | 3.1 | 0.005 | -1.039 | 0.237 |
| ch | 0.7722 | 0.3019 | 1.7 | 0.088 | -0.033 | 1.237 |
| dvgh | 0.2502 | 0.2909 | 1.0 | 0.321 | -0.209 | 0.657 |
| dspa | 0.2774 | 0.1128 | 2.4 | 0.022 | 0.0431 | 0.511 |
| ia | -0.8178 | 0.8543 | -1 | 0.160 | -1.636 | -0.103 |
| dum1 | 27.4861 | 7.7808 | 3.6 | 0.002 | 11.343 | 43.614 |
| dum2 | 18.7226 | 4.2093 | 4.4 | 0.000 | 9.993 | 27.452 |
| _cons | -7.9047 | 34.8441 | -0.23 | 0.823 | -80.166 | 64.357 |
```

```
.vif

<table>
<thead>
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<th>Variable</th>
<th>VIF</th>
<th>1/VIF</th>
</tr>
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<tbody>
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<td>dvgh</td>
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<td>pwan</td>
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<tr>
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<tr>
<td>ia</td>
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<td>0.428802</td>
</tr>
</tbody>
</table>

Mean VIF: 10.88
```