CHAPTER II Maternal Health and Effects of JSY – A Review

2.1. Introduction

This chapter reviews five major themes: i) socio-economic status of the women in India, ii) maternal and infant mortality and morbidity in India, iii) marriage pattern, iii) women's age and age at marriage, iv) antenatal care (ANC), postnatal care (PNC) and v) institutional deliveries and impacts and utilisation of JSY programme. The last theme is reviewed in detail. The major literature sources were collected across various disciplines that include social work, sociology, health, clinical practices, public health, community medicines and other relevant areas.

2.2. Socio-Economic Status of the Women

Ojanuga and Gilbert (1992) viewed that women in developing countries are frequently confronted with a myriad of socio-cultural factors which negatively impose upon physical well-being and accessibility to appropriate health care services. Institutional, economic, and educational barriers effect and lower their standard of living when compared to their male counterparts.

When focusing on the Indian context, Vora, et al. (2009) argued that the status of women is commonly low, except in the southern and eastern states. Particularly, the women's condition in the northeastern states is positively viewed by Tahu (2010). This author claims that women's condition in the northeastern States of India is much better than the women in north and south states in the dimensions of freedom in mobility, no dowry system, no killings in the name of dowry, no female infanticide and cultural acceptance for women remarriage. But with a dent, Tahu asserts that despite all these privileges, the women of the northeastern States are forbidden to enjoy many rights.

Conversely, Govindsamy and Ramesh (1997) opined that southern women typically enjoy greater freedom, an outcome of the Dravidian culture, and higher levels of literacy, education and employment, whereas, northern women are -strongly subjected to the traditional conservatism and predominantly illiterate, less educated, and less likely to work outside the home. Bose and Trent (2006) disclosed that the data from the 1998–99 National Family Health Survey (NFHS2) of India illustrated that southern women have relatively higher levels of literacy and labour force participation, lower levels of son preference, and smaller family size.

Vora,et al. (2009) in their study observed that female literacy is only 54%, and women lack the empowerment to make decisions, including the decision to use reproductive health services. In a study conducted in a slum in Delhi, Agarwal, Singh and Garg (2007) found that female literacy rate is 38%. Besides, the study conducted among the pregnant and nursing mothers in the coastal south India, Shetty and Shetty (2013) observed that the primary education level among the focus mothers is 36% and only 12% were graduates. In line with the contentions of the authors on the development of women in southern states, Jeejeebhoy and Sathar (2001) also found that literacy rates (population aged six and older) are much higher in Tamil Nadu (63 percent) than in Uttar Pradesh (42 percent). A higher proportion of women in Tamil Nadu have attended school than have women in Uttar Pradesh.

Agarwal, et al. (2007) evaluated the socio-demographic correlates and barriers of maternal health-care utilization amongst married women in a slum in Delhi. The result showed that the majority of them were Hindus (61%), 44% of them were in the age group of 24-29 years; and 54% were unskilled labourers. In the longitudinal study carried out to compare utilization of maternal and child health care services by urban and rural primigravida females (women who are pregnant for the first time), Mahajan and Sharma (2014) found that most of the urban women were housewives and the number of housewives in rural population was low. Similarly, Rao (1985) showed that the agriculture was the main occupation in the study areas and a considerable proportion of the pregnant women were engaged in it. Further, the author revealed that the usual family pattern is joint family. Also, Shetty and Shetty (2013) observed that most pregnant and nursing mothers (61%) in coastal south India lived in the joint family.

Mohindra, Haddad and Narayana (2006) identified in in their study that women from lower castes (scheduled castes/scheduled tribes (SC/ST) and other backward castes (OBC) reported a higher prevalence of poor health than women from forward castes. They observed that socioeconomic inequalities were observed in health regardless of the indicators, education, women's employment status or household landholdings.

The female literacy rate in Assam is comparatively lesser than the literacy rates in other seven sister states of the northeastern region. The workforce participation of women is less in the State. Most of the women in Assam are engaged in the agriculture labour. The basic needs of women are not sufficiently fulfilled and they live in a hapless state. (Dighe, 2016)

The percentage of women who are prevented to go alone to three areas (market, health facility, and outside the community) is less in Assam, Meghalaya and Nagaland States. In the same way, the percentage of women without savings accounts in bank is less in Assam, Manipur, Mizoram and Nagaland than the national average. (Das, 2013)

2.3. Maternal and Infant Mortality and Morbidity

Maternal mortality is on an average 18 times higher in developed countries compared to developing countries. In addition to the number of deaths each year, over 50 million women suffer from maternal morbidity due to acute complications from pregnancy (Agarwal, Singh, & Garg, 2007). Since the beginning of the Safe Motherhood Initiative, India has accounted for at least a quarter of maternal deaths reported globally. India's goal is to lower maternal mortality to less than 100 per 100,000 live births but that is still far away despite its programmatic efforts and rapid economic progress over the past two decades (Vora, et al., 2009).

Vora, et al. (2009) viewed that geographical vastness and sociocultural diversity mean that maternal mortality varies across the states, and uniform implementation of health-sector reforms is not possible to reduce the maternal deaths. On the other hand, Agarwal, et al., (2007) perceive that it could be related to several factors, an important one being non-utilization or under-utilization of maternal health-care services, especially amongst the rural poor and urban slum population due to either lack of awareness or access to health-care services.

However, Montgomery, Ram, Kumar and Jha (2014) asserted that most maternal deaths were attributed to direct obstetric causes (82%). Besides, they claim that three-quarters of maternal deaths were clustered in rural areas of poorer states, although these regions have only half the estimated live births in India. There was no difference in the major causes of maternal deaths between poorer and richer states. Two third of women died seeking some form of healthcare, most seeking care in a life-threatening medical condition. Rural areas of poorer states had proportionately lower access and utilization to healthcare services than the urban areas; however this rural-urban difference was not observed in richer states.

Assam has the highest maternal mortality ratio in the country, followed by Uttar Pradesh and Madhya Pradesh. Maternal mortality in Punjab and Kerala is very low, because of which estimating it from sex differentials in adult mortality of a sample population is difficult. Among the states for which estimates could be arrived at, Tamil Nadu has the lowest maternal mortality ratio. (Mishra, 2006) Despite the existence of national programs for improving maternal and child health in India, maternal mortality and morbidity continue to be high (Agarwal, et al., 2007).

When the focus moves from the mother to the child, child undernutrition happens very early in life; 30 per cent of Indian infants younger than six months old are underweight and 58 per cent of children in the age group 18–23 months old are stunted; moreover, 56 per cent of severe wasting in India happens before children are two years old (Swaminathan, 2009). Every day, more than 6,000 children below the age of five die in India (Kotecha, 2008). In addition to this, Bamji, Murthy, Williams and Rao (2008) examined that the association of maternal nutrition and related factors with sperinatal, and neonatal mortality in these villages. Mortality during perinatal, neonatal period was 8.2 per cent of all births.

In the study conducted to analyse the utilization of reproductive and child health services in tribal areas of Andhra Pradesh, Rao (2008) observed that the infant mortality rate was 85 per 1000 live births, which was higher compared to state average (68) as well as rural projects (64). The causes for infant deaths were premature birth (20.5%), low birth weight (11.4%), diarrhoea (9.1%), tetanus (6.8%) and jaundice (5.7%). Similarly, maternal mortality was observed to be very high with 992 maternal deaths per one-lakh live births against 196 for rural projects. Tetanus (23.8%), bleeding (14.3%), toxaemia (14.3%) were the important causes for maternal mortality.

In their retrospective study of determining the mode of deaths and incidence of maternal mortality associated with eclampsia and to assess how socio-demographic and clinical characteristics of the women influence the deaths, Das and Biswas (2015) found that over a period of 5 years from January 2008 to December 2012, eclampsia accounted for 43.35% of total maternal deaths, with case fatality of 4.960%. The commonest mode of death in eclampsia is pulmonary oedema. Death due to eclampsia commonly occurs in younger age group of 19–24 years. Eclampsia related deaths were mostly seen in illiterate and unbooked cases. Maternal deaths were also very common in lower socio economic status.

2.4. Marriage Pattern, Women' Age and Age at Marriage

The population of India is composed of many thousands of subpopulations, divided by geography, language, religion and caste or biraderi (patrilineage) boundaries, with endogamous marriage the norm. The net effect has been the creation of multiple genetic isolates with individual mutation profiles, but the clinical consequences of this highly complex differentiation have been largely ignored. In contrast, the topic of consanguinity continues to attract attention among medical and population geneticists, clinicians and social scientists. In populations where consanguineous marriage is widely practised, recessive genetic disorders will continue to gain greater prominence in the overall spectrum of ill health. (Bittles, 2002)

Kuntla, Goli, Sekher and Doshi (2013) jointly investigated the association between the marriage among blood relatives and resulting adverse pregnancy outcomes. The results showed that the occurrence of consanguineous marriages is more predominant in southern India and among socioeconomically disadvantageous groups. Moreover, women in consanguineous unions are more likely to have adverse pregnancy outcomes including stillbirths, abortions, miscarriages and spontaneous miscarriages. Consanguineous marriages continue to be a critical predictor of adverse pregnancy outcomes in India.

The average age is higher than 20 years in Kerala, Assam, Punjab, Orissa, Tamil Nadu, Karnataka, Himachal Pradesh and Haryana. In the rural areas of Madhya Pradesh, Uttar Pradesh, Bihar, Rajasthan, Maharashtra, and Andhra Pradesh more than 70% of the females aged 20-24 years are ever married by age 18 years, as against the States like Haryana, Orissa, Assam, West Bengal, Karnataka, Gujarat and Tamil Nadu which are comparatively better positioned which placed but yet more than 40 percent of the females aged 20-24 in these States get married before attaining 18 years of age. (Das & Dey, 1998)

Rao (1985) in the study conducted in 3 villages of Dharwad found that there was positive correlation between age and number of children. Age at marriage ranged from 6–25 with a mean age of 14 years. Age at marriage was negatively correlated with the number of children. The first pregnancy occurred between 12–36 years, the mode being 16 years. Age at marriage was positively correlated with age at first pregnancy.

Santhya, Ram, Acharya, Jejeebhoy, Ram and Singh (2010) compared marital, reproductive and other outcomes between young women who had married before age 18 and those who had married later in five Indian States. Young women who had married at age 18 or older were more likely than those who had married before age 18 to have been involved in planning their marriage (odds ratio, 1.4), to reject wife beating (1.2), to have used contraceptives to delay their first pregnancy (1.4) and to have had their first birth in a health facility (1.4). They were less likely than women who had married early to have experienced physical violence (0.6) or sexual violence (0.7) in their marriage or to have had a miscarriage or stillbirth (0.6).

Mahajan and Sharma (2014) examined that the incidence of early marriage (below 18 years) was high in both the rural and urban study areas. However, more rural women than urban women (46.70% rural and 34.10% urban primi females) were married before the age of 18 years.

2.5. Antenatal Care, Postnatal Care and Institutional Deliveries

Bhatia and Cleland (1995) conducted a cross-sectional survey in urban and rural areas of Karnataka State. Nine out of ten women had at least one antenatal consultation during their most recent fertile pregnancies. Most consultations were with doctors and there was minimal use of the services provided by paramedical staff of the primary health care system. Of all respondents, 38 per cent (57% urban and 29% rural) delivered in a hospital, and a majority of institutional deliveries were in private hospitals. Surgical interventions were made in more than one-third of hospital deliveries. There was a marked imbalance between antenatal and postnatal care as fewer than one-fifth of the mothers had a postnatal checkup. The educational level, economic status and religion of the mother are significant predictors of use of maternal health services.

The studies conducted in Northern and Western India showed that women's educational attainment is directly associated with use of reproductive health care; higher levels of educational attainment results in greater use of antenatal, delivery contraceptive and sexual health care (Bhatia & Cleland, 1995; Khan, Roy, & Surender, 1997)

Bloom, Lippeveld and Wypij (1999) measured antenatal care utilization in 300 low to middle income women who had given birth within the last three years in Varanasi, Uttar Pradesh. Results showed that demarcating women's antenatal care status based on a simple indicator — two or more visits versus less — masked a large amount of variation in care received. After controlling for relevant socio-demographic and maternity history factors, women with a relatively high level of care (at the 75thpercentile of the score) had an estimated odds of using trained assistance at delivery that was almost four times higher than women with a low level of care (at the 25th percentile of the score).

The incidence of and risk factors for developing post-partum depression in a cohort of women living in rural south India was determined. The incidence of post-partum depression was 11% (95% CI 7.1-14.9). Low income, birth of a daughter when a son was desired, relationship difficulties with mother-in-law and parents, adverse life events during pregnancy and lack of physical help were risk factors for the onset of post-partum depression. Depression occurred as frequently during late pregnancy and after delivery as in developed countries, but there were cultural differences in risk factors. (Chandran, Tharyan, Muliyil, & Abraham, 2002)

Jai, Kanani and Patel (2002) developed an ethnographic decision models to understand and improve iron–folic acid supplement procurement and compliance-related behaviours of poor urban pregnant women in Vadodara, India. Regular counselling until delivery, based on the ethnographic data, helped to improve compliance, which resulted in 95% of the women consuming over 90% of the required dose. The mean haemoglobin level also improved from 9.6 to 11.08 g/dl until the end of the last trimester.

In the study on the association of maternal nutrition and related factors in five villages of Medak district in Andhra Pradesh, not serviced by the Integrated Child Development Scheme (ICDS), Pallikadavath, Foss and Stones (2005) observed that overall, about three-fifths of rural women did not receive any antenatal check-up during their last pregnancy. Services actually received were predominantly provision of tetanus toxoid vaccination and supply of iron and folic acid tablets. Only about 13% of pregnant women had their blood pressure checked and a blood test done at least once. Women visited by health workers received fewer services compared to women who visited a health facility. Home visits were biased towards households with a better standard of living. There was significant under-utilisation of nurse/midwives in the provision of antenatal services and doctors were often the lead providers. The average number of antenatal visits reported in this study was 2.4 and most visits were in the second trimester. Higher social and economic status was associated with increased chances of receiving an antenatal check-up, and of receiving specific components including blood pressure measurement, a blood test and urine testing but not the obstetric physical examination, which was however linked to ever-use of family planning and the education of women and their husbands. Thus, pregnant women from poor and uneducated backgrounds with at least one child were the least likely to receive antenatal check-ups and services in the four large north Indian states.

The evaluation on maternal health care utilisation amongst married women in a slum in Delhi, Agarwal, et al., (2007) found that as many as 76% women received antenatal care either from government hospitals (59%) or from the peripheral health post (17%), and 24% did not seek antenatal care. Antenatal care received was significantly lower among illiterate women and among those whose husbands were illiterate and unskilled laborers. No significant association was found with either their religion or the mean per capita income of family.

Rani, Bonu and Harvey (2007) investigated the socio-economic differentials in the quality and utilisation of antenatal care in four south Indian states and four north Indian states. Lower than desired quality of antenatal care was observed in both north and south Indian states, though the quality was significantly better in south India correlated with north India, especially among the disadvantaged women. Significant socio-economic differentials in the quality of care were evident in both north and south India, but were more intense in north India. A significantly positive relationship was observed between the quality and utilization of antenatal care in the rural areas.

The study on antenatal history of their recent pregnancy projected that about 87.0 % of the women were registered for antenatal check up either by Auxiliary Nurse Midwife (65.0 %) or through anganwadi worker (15.2 %). Only one fifth of the women were registered for ANC before 16 weeks of gestation. Twelve per cent of women attended ANC for more than 5 times, 42.0 % of the women had 2-3 antenatal check ups, while13.0% attended only once. Mostly ANCs were conducted by the ANM (51.2%) followed by private medical practitioner (17.5%), PHC medical officer (16.0 %). About 85.0% of deliveries were conducted at home. Among them 51.0% of the deleveries were conducted either by untrained *dai* or elders. Twenty percent of deliveries were conducted by Trained Birth Attendant followed by private practitioner (14.3 %) ANM (7.0 %) and PHC Medical officer (6.0 %). Disposable delivery kits were used only in about 40.0 % of the home deliveries. The main problems reported during lactation were anaemia (6.4 %), lactation failure (3.0 %), and breast abscess (0.7 %) and majority of them consulted private medical practitioners (67.0 %) for treatment. (Rao, 2008)

Baqui, et al., (2008) assessed the impact of the newborn health component of a large-scale community-based integrated nutrition and health programme in two rural district of Uttar Pradesh. The results showed that the frequency of home visits by community-based workers increased during both antenatal (from 16% to 56%) and postnatal (from 3% to 39%) periods, as did frequency of maternal and newborn care practices. In the comparison district, no improvement in home visits was observed and the only notable behaviour change was that women had saved money for emergency medical treatment. Neonatal mortality rates remained unchanged in both districts when only an antenatal visit was received. However, neonates who received a postnatal home visit within 28 days of birth had 34% lower neonatal mortality (35.7 deaths per 1000 live births, 95% confidence interval, CI: 29.2–42.1) than those who received no postnatal visit (53.8 deaths per 1000 live births, 95% CI: 48.9–58.8), after adjusting for socio-demographic variables. Three-quarters of the mortality reduction was seen in those who were visited within the first 3 days after birth. The effect on mortality remained statistically significant when excluding babies who died on the day of birth.

Kumar, Goel, Kalia, Swami and Singh (2008) investigated the knowledge of ever-married women regarding maternal and child health and to assess existing gap between awareness and practice levels of lactating mothers. There is significant difference (P<0.001) between proportions of women aware of ICDS (59.4%) and of beneficiaries (21.7%). Observed high levels of awareness regarding reproductive health parameters except for contraception: desire for two children (81.6%), legal ages at marriages for girls (84.5%), desired birth interval of three or more years (71.7%).

In the field study, Vora, et al., (2009) found that institutional deliveries have risen from 26% to 39%, and nearly half of the women now have their births attended by health personnel. Women of low economic status had availed 13% of institutional deliveries compared to 84% by women of the high wealth quintile. Only 19% of mothers of the lowest wealth quintile received postnatal care compared to 79% of mothers of the highest wealth quintile. These statistics reflected the inability of the public-health system to reach out to the poor and illiterate. Despite the emphasis on antenatal care by the Government, about half of the pregnant mothers still do not complete three antenatal visits, and a quarter do not receive tetanus prophylaxis.

Singh, et al., (2009) found in their study that only 44% of the mothers received any PNC within 48 hours of giving birth.Moreover, only 45% of the newborns were checked within 24 hours of birth. PNC was particularly unequal compared to antenatal care and delivery care. While the utilization of PNC was distinctly lower among home births as against facility births, the rich-poor difference was maintained at almost similar levels. The utlization of postnatal care was also limited in case of births with maternal complications – the inequalities being stark. The utilization of PNC was extremely limited in India and was particularly unequal. The utilization of PNC was also unequal in case of institutional births raising important questions about the functioning of public health care system in India.

Paul, et al., (2011) found that increases in the numbers of deliveries in institutions have not been matched by improvements in the quality of intrapartum and neonatal care. Infants and young children do not get the health care they need; access to effective treatment for neonatal illness, diarrhoea, and pneumonia showed little improvement. Absence of well functioning health systems is indicated by the inadequacies related to planning, financing, human resources, infrastructure, supply systems, governance, information, and monitoring.

Pathak, Singh and Subramanian (2010) examined the trends and patterns in utilization of prenatal care (PNC) in first trimester with four or more antenatal care visits and skilled birth attendants (SBA) among poor and non-poor mothers, disaggregated by area of residence in India and three contrasting provinces, namely, Uttar Pradesh, Maharashtra and Tamil Nadu. The results indicated that sluggish progress in utilization of PNC and SBA in India and selected provinces during 1992–2006. Enormous inequalities in utilization of PNC and SBA were observed largely to the disadvantage of the poor. There is burgeoning inequality in utilization of the two outcomes across different economic groups. The use of PNC and SBA remains disproportionately lower among poor mothers in India irrespective of the area of residence and province. Despite several governmental efforts to increase access and coverage of delivery services to poor, it is clear that the poor (a) do not use SBA and (b) even if they had SBA, they were more likely to use the private providers.

Jat, Ng and Sebastian (2011) estimated the effects of individual, community and district level characteristics on the utilisation of maternal health services with special reference to antenatal care (ANC), skilled attendance at delivery and postnatal care (PNC). The findings showed that 61.7% of the respondents utilised ANC at least once during their most recent pregnancy whereas only 37.4% women received PNC within two weeks of delivery. In the last delivery, 49.8% mothers were facilitated by skilled personnel. There was a substantial amount of variation in the use of maternal health services at community and district levels. About 40% and 14% of the total variance in the utilise of ANC, 29% and 8% of the total variance in the use of skilled attendance at delivery and 28% and 8.5% of the total variance in the use of PNC was caused by differences across communities and districts, respectively. There were only minor reductions observed in the variance at community and district level for ANC and PNC use. The household socio-economic status and mother's education were the most important factors associated with the use of ANC and skilled attendance at delivery. The community level variable was only significant for ANC and skilled attendance at delivery but not for PNC.

Singh, Yadav and Singh (2011) analytically examined the utilization of postnatal care for newborns and its association with neonatal mortality in India. Data from District Level Household Survey, waive three (DLHS-3) conducted in 2007–08 is utilized in the research. The results indicated that 39% of neonatal deaths in India occur on the first day of life, and 57% during the first three days of births. However, the association between postnatal care (PNC) for newborns and neonatal mortality has not hitherto been examined. There is no association between check-up of newborns within 24 hours of birth and neonatal mortality. However, the place where the newborns were examined was significantly associated with neonatal mortality. Moreover, the findings exposed that children of mothers who were advised on 'keeping baby warm (kangaroo care) after birth' during their antenatal sessions were significantly less likely to die during the neonatal period compared to those children whose mothers were not advised about the same.

In the study of Mehrotra and Chand (2012), most women who did not receive health care during pregnancy expressed they felt it was unnecessary. Another cause for the low levels of prenatal care is lack of adequate health care centers. It was observed that 16 percent of the population in rural areas lives more than 10 kilometers away from any medical facility.

The study outcomes of the analyse of the utilisation of maternal and child health services at Sub-center level by target population in a sub-center area in Northern India, Kashmir Valley, showed that out of the total 671 mothers studied 640 (95.4%) beneficiaries had received any antenatal check-up while 4.6% had not received any antenatal check-up. Only 10.3% of the women had greater than 3 antenatal check-ups at the sub centre while 5.46 % had received 3 antenatal checks up and 1.4 % had less than 3 antenatal check-ups at sub centre. Multipurpose Health Worker (MPHW) was the service provider for antenatal care in only 3.1% of cases while 86.4% of the women preferred a doctor for antenatal check-ups. (Baba, Kaul, & Heena, 2013)

2.6. Reviews pertaining to Janani Suraksha Yojana (JSY)

The following section reviews the literature sources of JSY programme in the dimensions of utilisation of maternal health care services, financial assistance from JSY programme and impacts and quality of JSY programme.

2.6.1. Utilisation of Maternal Health Care Services

A study assessed 312 mothers of infants aged 2-4 months in 11 slums of Indore, India to find out birth preparedness and complication readiness (BPACR) among them. The results showed that 149 mothers (47.8%) were well-prepared. Factors associated with well-preparedness were maternal literacy [odds ratio (OR)=1.9, (95%) confidence interval (CI) 1.1-3.4] and availing of antenatal services (OR=1.7, CI 1.05-2.8). Deliveries in the slum-home were high (56.4%), of which, skilled attendance was low (7.4%); 77.3% of them were facilitated by traditional birth attendants. Skilled attendance during delivery was 3 times higher in well-prepared mothers compared to less-prepared mothers. (Agarwal, Sethi, Srivastava, Jha, & Baqui, 2010)

A cross-section study analysed the reasons of missed opportunities of Janani Suraksha Yojana benefits among the beneficiaries. Data were collected from 3212 women. Out of 3212 women, 360 (11.20%) were eligible for getting the benefit of

JSY. Among the 360 women, only 118 (32.78%) obtained the benefit of JSY while, 242 (67.22%) missed the opportunity of getting JSY benefit due to lack of information of JSY. The finding indicated that the poor IEC efforts in the implementation of JSY, divulging most of the poor eligible women from their rights of JSY benefits. (Vishwanath, Jatti, & Tannu, 2011)

One of the studies that focused on community perspectives, analysed the key areas that require improvement for proper implementation of the Mukhya Mantri Janai Shishu Swasthya Abhiyan (MMJSSA), the JSY scheme in Jharkhand. In-depth interviews (IDIs) with mothers who gave birth at home and institution and with members of Village Health and Sanitation Committees (VHSC) / Rogi Kalyan Samitis (RKS) and focus group discussions (FGDs) with pools of husbands, mothers-in-law and fathers-in-law were conducted in six districts of Jharkhand- Gumla, West Singhbhum, Koderma, Deoghar, Garhwa, and Ranchi. Although people disclosed willingness for institutional deliveries, several barriers emerged as critical barriers that included poor infrastructure, lack of quality of care, difficulties while availing incentives, corruption in the disbursement of incentives, behaviour of the healthcare personnel and lack of information about MMJSSA. Poor (and expensive) transport facilities and difficult terrain are factors contributing to geographical access difficult. The extent of utilization of maternal healthcare among women in Jharkhand is low. There was a great demand for energising sub-centres in order to increase access to maternal and child health services. (Rai, Dasgupta, Das, Singh, Devi, & Arora, 2011)

Deshpande (2011) examined the contribution of JSY in the reduction of maternal and infant mortality in Karnataka. The outcomes indicated that only 13 percent of JSY beneficiaries had received advice on danger signs of pregnancy and care to be taken during pregnancy. Just 5% of the beneficiaries were informed on place of delivery and place of referral in case of complications indicating that the scheme is not taking sufficient precaution for safe motherhood. Counseling women for institutional delivery to reduce maternal and infant mortality is another important intervention of the JSY scheme. However, it was found that only 40 percent of deliveries among the JSY beneficiaries were institutional, the remaining had deliveries at home.

Sharma, Semwal and Kishore (2011) conducted a comparative study of Utilization of Janani Suraksha Yojana in Rural Health Training Centre and Urban Health Training Centre of the field practice area of the department of Community Medicine. A total of 227 married women who were in the reproductive age group of 15-49 years and who delivered in government hospital were selected for the study. Out of which, 88 women belonged to rural areas and 139 women were from urban slums. The observations projected that out of the total number of married women who delivered at government hospitals, a majority of the women (74.15%) were registered with ASHA and maximum number (83.64%) of these women belonged to urban slums. Only 29.21% women went for three or more ANC visits and the proportion of the ANC visits was higher (33.64%) among women in slums. Around 48.31% women consumed hundred IFA tablets and the proportion of this consumption was high (79.41%) among rural women. All the women received complete TT immunization. The JSY utilization was found to be low in rural areas (i.e. 38.7%).

An observational study was conducted in a tertiary-care hospital of Madhya Pradesh to determine the total number of institutional deliveries before and after implementation of JSY. It is worth noting that proportionately more pregnant women younger than 19 years of age attended for institutional deliveries. Most women who had institutional deliveries had at least primary-level education. After implementation of JSY, there was a statistically significant ($p<0.001$) increase in the institutional deliveries among illiterate women and those from the lower socioeconomic strata. The majority of maternal deaths during both phases (57.7% and 70.8%) occurred for the expectant mothers in the 21-30 years age-group. More than half of the maternal deaths were among the illiterate women. Overall, institutional deliveries increased by 42.6% after JSY implementation, including those among rural, illiterate and primary-literate persons of lower socioeconomic sections. (Gupta, et al., 2012)

Nair, Ariana and Webster (2012) assessed the prevalence and the determinants of institutional delivery by skilled birth attendants in a rural population in Andhra Pradesh, India by employing a cross-sectional examination. In this study, 1419 rural women who were economically deprived (from the Young Lives study) were the study cohort. The data are from round-1 of Young Lives younger cohort recruited in 2002 and tracked until 2015. The participation rate of households was 99.5%. The findings showed that the prevalence of skilled institutional delivery was 36.8%. Women's education, desire to be pregnant and adequate prenatal care were observed to be the positive determinants of skilled institutional delivery. High birth order (OR for second birth 0.44; 95% CI 0.32-0.60, OR for third birth 0.47; 95% CI 0.30-0.72 and OR for ≥fourth 0.47; 95% CI 0.27-0.81), schedule caste and schedule tribe social background (OR 0.70; 95% CI 0.53-0.93) and poor economic condition of the household (OR for the poorest households 0.67; 95% CI 0.46-0.99) were negatively associated with skilled institutional delivery.

A research paper analysed the factors associated with the utilization of maternal healthcare services among married adolescent women (aged 15–19 years) in rural India. The mean age at marriage was 15 years among women who gave birth in the age group 15–19 years, while it was 17 years among women who gave birth in the age group 20 years and above. Among rural adolescents who had given birth to their last child in the age group 15–19 years, the average age at first birth was 16.8, while the corresponding figure was 19.5 for the women who gave birth in the age group 20 years and above. Among rural adolescent women who gave birth in the age group 15–19 years, 35% had no mass media exposure and 33% were from socioeconomically deprived families. In the rural areas, about 69% of adolescent women exposed that they were living in the joint family. Nearly 37% of rural adolescent women, who had given birth during the five years prior to the survey reported about the health provider's visit and more than one fifth of them were from the eastern and central regions of India. (Singh, Rai, Alagarajan, & Singh, 2012)

The above study further exposed that on the whole, 14% of the rural adolescent women received full antenatal care, 46% utilized safe delivery care and 35% had postnatal care check-ups. The rate of full antenatal care (7%) and postnatal utilization (24%) was very low among uneducated women. Likewise, safe delivery care use was 31% among women with no formal education, and the same was observed to be high at 83% for those with high school education and above. The economic status was also found to be an important significant determinant in the utilization of safe delivery care. Adolescent women from the richer and richest wealth quintiles were 1.7 (CI = 1.286–2.196) and 3.6 times (CI = 1.091–5.182) more likely to use safe delivery care respectively compared to those from the poorest wealth quintiles. (Singh, Rai, et al., 2012)

To observe the utilization of health services by mothers during antenatal, natal and post-natal period under Janani Suraksha Yojna (JSY), a cross-section was conducted in rural areas of two districts of Haryana. Around 1386 JSY beneficiary mothers across 48 sub-centres were randomly selected for interviews. The study outcomes projected that majority 1216 (87.5%) of the study subjects were registered between 12-26 weeks of pregnancy while barely 170 (12.3%) of them were registered within first 12 weeks. Around one-fourth of the mothers did not receive the recommended minimum three antenatal check-ups. The coverage of TT immunization was 92.1%. Majority 1253 (90.4%) of the deliveries were institutional. More than three-fourth of the home deliveries were conducted by train**ed** birth attendants and 15% of the home deliveries were conducted by untrained personnel. Out of the 1253 institutional deliveries, 84.6% were conducted in Government hospitals while 15.4% deliveries were conducted in Private hospitals. About two-third mothers received at least three post-natal care visits by the health functionaries. (Malik, Kalhan, Punia, Sachdeva, & Behera, 2013)

Rammohan, Iqbal and Awofeso (2013) examined the factors influencing neonatal mortality will significantly improve child survival outcomes in India. Based on household data from the nationally representative 2008 Indian District Level Household Survey (DLHS-3), the analysis was done. They found that 80% of neonatal deaths occurred within the first week of birth. The probability of neonatal mortality is significantly lower when the child's village is close to the district hospital (DH). Neonatal deaths were lower in areas where emergency obstetric care was available at the District Hospitals. The parental schooling and household wealth status improved neonatal survival outcomes.

In the study conducted by Leone, James and Padmadas (2013), a cross-sectional population data from the 2004 National Sample Survey Organisation comprising of 9,643 households where at least one woman received maternal health care services during the year preceding the survey were considered for the analysis. The findings disclosed that over 80 % of households reported paying for maternal health care services, with those using private care facilities paying almost 4 times more than those using public facilities. Multilevel analyses showed evidence of high burden of maternal health care expenditures, which varied significantly across states according to the level of health care utilisation, and with considerable heterogeneity at the household and community levels. Maternal health care services in India are provided free at the point of delivery, yet many families face significant out-of-pocket expenditures.

To identify the beneficiary level factors of utilization of JSY scheme in urban slums and resettlement colonies of trans-Yamuna area of Delhi, a cross-sectional community based survey was done of mothers of infants. Of the 469 mothers interviewed, 333 (71%) had institutional delivery, 128 (27.3%) had benefited from JSY scheme and 68 (14.5%) had received cash benefits of JSY. Belonging to Hindu religion and having had more than 6 antenatal checkups were the significant predictors of availing the benefits of JSY. (Vikram, Sharma, & Kannan, 2013)

An analysis was carried out in nine Indian states to examine the change in socioeconomic inequality in institutional deliveries five years after the implementation of JSY using the concentration curve and concentration index (CI). The findings revealed that although inequality in access to institutional delivery care persists, it has reduced since the introduction of JSY. Nearly 70% of the present inequality was explained by differences in male literacy, emergency obstetric care (EmOC) availability in public facilities and poverty. EmOC in public facilities was grossly unavailable. Compared to richest division in nine states, poorest division has 135 more maternal deaths per 100,000 live births in 2010. While MMR has decreased in all areas since the implementation of JSY, it has declined four times faster in richest areas compared to the poorest, resulting in increased inequalities. (Randive, Sebastian, Costa, & Lindholm, 2014)

The performance of the Chiranjeevi Yojana (CY), a programme through the state of Gujarat pays accredited private obstetricians to perform deliveries for poor/tribal women, was evaluated. Institutional delivery trends in Gujarat 2000–2010 were considered for analysis. Piece-wise regression was adopted to study the influence of the CY program on public and private sector institutional delivery. Institutional delivery rose from 40.7% (2001) to 89.3% (2010), driven by sharp increases in private sector deliveries. Public sector and CY contributed 25–29% and 13–16% respectively of all deliveries each year. In 2007, 860 of 2000 private obstetricians participated in CY. Since 2007, more than 600,000 CY deliveries occurred i.e. one-third of births in the target population. Caesareans under CY were 6%, higher than the 2% reported among poor women by the DLHS survey just before CY. CY did not influence the already rising proportion of private sector deliveries in Gujarat. (Costa, Vora, Ryan, Raman, Santacatterina, & Mavalankar, 2014)

The utilization of JSY and its perception among mothers and health care providers were analysed. A descriptive, cross-sectional, community based study was conducted in Agra district of Uttar Pradesh. Around 246 married women who were in the reproductive age group and who had childbirth after JSY implementation for assessing their utilization pattern and perception regarding JSY services were selected for interviews. The findings showed that nearly half (53.25%) of the mothers studied had an institutional delivery and were eligible for the JSY benefits. Postnatal home visits by Accredited Social Health Activists were done in 48% of home and 100% of institutional deliveries. Nearly half (48.09%) of the JSY beneficiaries were benefited by free transport facility. Although all of the health care providers perceived JSY as beneficial for improving maternal health, 44% of them had the notion that cash incentives under JSY can have a negative effect on family planning practices. (Kumar, Misra, Kaushal, Gupta, & Maroof, 2015)

A cross-sectional study evaluated overage and financial risk protection for institutional delivery. Around 12,191 women who had delivered a child in the last one year were randomly selected from Haryana state. The coverage of institutional delivery in Haryana state was 82%, of which 65% took place in public sector facilities. Approximately 63% of the women reported no expenditure on delivery in the public sector. The mean out-of-pocket expenditures for delivery in the public and private sectors in Haryana were INR 771 (USD 14.2) and INR 12,479 (USD 229), respectively, which were catastrophic for 1.6% and 22% of women, respectively. There is substantially high coverage of institutional delivery care in Haryana state, with significant financial risk protection in the public sector. However, coverage and financial risk protection for institutional delivery vary substantially across districts and among different socio-economic groups. (Prinja, Bahuguna, Gupta, Sharma, Rana, & Kumar, 2015)

A study of the patterns and determinants of routine and emergency maternal health care utilization was conducted in rural areas of Karnataka State in 2012-13.

Most interviewed women reported regular antenatal care attendance, for an average of four visits, and more often for high-risk pregnancies. Antenatal care was typically delivered at the periphery by non-specialised providers. The surveyed women reported that sought was care women experienced danger signs of complications. Postpartum care was rare and mainly sought for the purpose of neonatal care. Factors that influenced women's care-seeking included their limited autonomy, poor access to and funding for transport for non-emergent conditions, perceived the poor quality of healthcare facilities. (Vidler, et al., 2016)

2.6.2. Financial Assistance from JSY Programme

A study analysed the effect of JSY on intervention coverage and health outcomes. The researchers collected data from the nationwide district-level household surveys done in 2002–04 and 2007–09 to determine the effect of JSY on antenatal care, in-facility births, and perinatal, neonatal, and maternal deaths. Implementation of JSY in 2007–08 was extremely variable by state—from less than 5% to 44% of women giving birth obtaining cash payments from JSY. The poorest and least educated women did not always have the highest odds of receiving JSY payments. JSY had a significant effect on increasing antenatal care and in-facility births. In the matching analysis, JSY payment was associated with a reduction of 3·7 (95% CI 2·2–5·2) perinatal deaths per 1000 pregnancies and 2·3 (0·9–3·7) neonatal deaths per 1000 live births. In the with-versus-without comparison, the reductions were 4·1 (2·5–5·7) perinatal deaths per 1000 pregnancies and 2·4 (0·7–4·1) neonatal deaths per 1000 live births. (Lim, Dandona, Hoisington, James, Hogan, & Gakidou, 2010)

Gopalan and Varatharajan (2012) studied the impact of demand side financing (DSF) on health care seeking and its effect on financial access to care, out-of-pocket spending (OOPS) on India's Janani Suraksha Yojana (JSY) program. This study was conducted in three districts of Orissa, selected through a three-stage stratified sampling. The quantitative method was employed to review the Health Management Information System (HMIS). The findings showed that the number of institutional deliveries, ante-and post-natal care visits increased after the introduction of JSY with an annual net growth of 18.1%, 3.6% and 5% respectively. The financial incentive rendered partial financial risk-protection as it could envelop only 25.5% of the maternal healthcare cost of the beneficiaries in rural areas and 14.3% in urban areas. The incentive stimulated fresh out-of-pocket spending for some mothers. Conversely, the existing level of financial incentives and systemic support were insufficient to encourage the volunteers optimally on their performance.

Modugu, Kumar, Kumar and Millett (2012) analysed variations in out-of-pocket-expenditure (OOPE) for normal/caesarean-section deliveries, JSY programme use and delivery associated borrowings - by states and union territories, and socio-demographic profiling of families, in India. The study outcomes showed that half (52%) of all deliveries in India occurred at home in 2007-08. OOPE for women having institutional deliveries remained high, with considerable difference between states and union territories. Average OOPE of a normal delivery in public and private institution respectively in India were Rs. 1,624 and Rs. 4,458 and for a caesarean-section it was Rs. 5,935 and Rs. 14,276 respectively. There was a significant state-level variation in use of the JSY programme for normal deliveries (15% nationally; ranging from 0% in Goa to 43% in Madhya Pradesh) and the percentage of families having to borrow money to pay for a caesarean-section in a private institution (47% nationally; ranging from 7% in Goa to 69% in Bihar). Increased literacy and wealth were associated with a higher likelihood of an institutional delivery, higher OOPE but no major variations in the use of the JSY.

A research analysed the differential and sequential effects of a Government of India conditional cash transfer scheme for the socio-economically disadvantaged and the strengthening of the primary health centre (PHC) network to provide 24/7 obstetric care in promoting institutional deliveries. The study assessed 7796 births from the Ballabgarh Health and Demographic Surveillance Site between April 2006 and March 2010 when both the schemes were implemented in a spread out manner. The multiple baseline design took advantage of interventions separated by time and geographical zone to calculate differences in the rate of institutional deliveries. In relation to villages with poor access, institutional deliveries nearly doubled among villages with access to 24/7 delivery services. The introduction of JSY in villages with poor access resulted in a 1.4-fold (95% CI: 1.1, 1.8) increase in institutional deliveries and a 1.1-fold (95% CI: 0.9, 1.4) increase in villages served by PHCs 24/7. However, the introduction of PHC 24/7 care to villages served by JSY doubled the rate of institutional deliveries. Among the underprivileged population, institutional deliveries increased by 34.4%, compared with 24.8% among the non-disadvantaged. (Amudhan, Mani, Rai, Chandrakant, & Krishnan, 2013)

Carvalho, Thacker, Gupta and Salomon (2014) jointly evaluated the effect of maternal receipt of financial assistance from JSY on childhood immunizations, post-partum care, breastfeeding practices, and care-seeking behaviours. They used data from the district-level household survey (2007–2008) to conduct a propensity score matching analysis. The results showed that the receipt of financial assistance from JSY caused an increase in immunization rates ranging from 3.1 (95% CI 2.2–4.0) percentage points for one dose of polio vaccine to 9.1 (95% CI 7.5–10.7) percentage points in the proportion of fully vaccinated children. JSY has increased post-partum check-up rates and healthy early breastfeeding practices around the time of childbirth. No effect of JSY was observed on exclusive breastfeeding practices and care-seeking behaviours. The effect sizes were consistently larger in states identified as being a key focus for the programme.

Powell-Jackson, Mazumdar and Mills (2015), in their study of the health effects of one of the world's largest demand-side financial incentive programmes—India's JSY, found that cash incentives to women were related with increased utilisation of maternity services. However, there is no strong evidence that the JSY was associated with a reduction in neonatal or early neonatal mortality. The positive effects on utilisation are larger for less educated and poorer women, and in places where the cash payment was most munificent. The financial incentive programme was associated with a substitution away from private health providers, an increase in breastfeeding and more pregnancies.

2.6.3. Impacts and Quality of JSY

Thind, Mohani, Banerjee and Hagigi (2008) studied the determinants of home, private and public sector utilization for a delivery in Maharastra state. The dataset had a sample size of 5391 ever-married females in the age group of 15-49 years. The findings showed that a majority delivered at home (n = 559, 37%); with private and public facility deliveries accounting for 32% (n = 493) and 31% (n = 454) respectively. For the choice set of home delivery versus public facility, women with higher birth order and those dwelling in rural areas had greater odds of delivering at home, while increasing maternal age, higher media exposure, and more than three antenatal visits were associated with greater odds of delivery in a public facility. Maternal and paternal education, scheduled caste or tribe status, and media exposure were statistically significant predictors of the choice of public versus private facility delivery.

A rapid appraisal on functioning of Janani Suraksha Yojana in South Orissa was appraised to observe the operational mechanism and usage status of JSY Scheme, reasons for non usage, perception and awareness of beneficiary and non-beneficiary mothers and the involvement of ASHAs, ANMs along with district and block officers in the implementation of JSY. The study revealed that there was a lack of orientation of health staff other than ASHA on JSY. ASHA played a major role for institutional deliveries in two third of the utilisers. Most of the utilizers expressed the problem of communication and transport. Further, no availability of 24x7 facilities and lack of staff were major deterrents for prospective mothers in accessing JSY services. (Devadasan, Elias, Grahacharya, & Ralte, 2008)

The study of the advantages of JSY programme as perceived by the beneficiaries in Bikaner District in Rajasthan by Vinod, Singh and Raj (2009) revealed that some essential advantages perceived by the beneficiaries of JSY were safe delivery at PHCs and CHCs, helpful in population control, payment of Rs. 1400 to the mother (in rural areas) after delivery, full protection after delivery etc, availability of water, bed and electricity etc. at PHCs. This results indicated that incentive under JSY in antenatal period had positive association on institutional deliveries.

The impact of Janani Suraksha Yojana on selected family health behaviours in rural Uttarpradesh was studied by Khan and Kumar (2010), which explored the extent to which the JSY has succeeded in achieving its goal or promoting positive family health behaviours that have a significant bearing on maternal and neonatal mortality. The outcomes showed that the analysis of women's awareness of the JSY and its benefits, women who know or have met the ASHA, and the impact of JSY on promoting institutional delivery showed that most women (88 percent) were aware of the JSY and the incentive it offers for institutional delivery.

The social profile, knowledge, attitude and utilization pattern of JSY beneficiaries were analysed. Around 300 JSY beneficiaries in Jabalpur region of Madhya Pradesh were surveyed. The results showed that 77.66% belonged to below poverty line (BPL) category and 67 % of the respondents arranged their own / hired vehicle for transportation for delivery. Only 17.33 % were encouraged by ANM /Dai/ ASHA/ AWW for institutional delivery. The decision of expenditure depends upon husband in one third of cases. Majority of the expectant mothers were in favour of cash payment (94.33%). (Gupta, et al., 2011)

The effect of community based neonatal care by community health workers (CHWs) on neonatal mortality rate (NMR) in resource-limited settings was assessed. A systematic review was conducted by exercising 13 controlled trials comprising of 192000 births. The study outcomes projected that community based neonatal care by CHWs was associated with reduced neonatal mortality in resource-limited settings. There was no consistent effect of training duration of the health workers, type of intervention (home visitation versus community participatory action and learning), number of home visits done by CHWs, and provision of only preventive versus both preventive and therapeutic care. The interventions are highly effective when baseline NMR is above 50/1000 live births [RR=0.64(0.54 to 0.77)]. The interventions showed a significant decrease in efficacy as the NMR drops below 50/1000 live births [RR=0.85 (0.73 to 0.99)], however, is still substantial. A considerable decrease in NMR is possible by providing community based neonatal care in areas with high NMR by community health workers with a modest training duration and ensuring high program coverage with home visitation on the first two days of life. (Gogia, et al., 2011)

An analysis of the impact of Janani Suraksha Yojana (JSY) on Maternal Mortality Ratio (MMR) was done between January 2001 and December 2009. The total number of deliveries has been steadily increasing from 1,685 in 2001 to 3,957 in 2009. The MMR doubled from 1,500/100,000 live births in 2001 to 3,000/100,000 live births in 2006, then decreased to 2,464/100,000 live births in 2009. Implementation of the various maternity benefit schemes has had no significant impact on the profile of dying mothers—admission-to-death interval. Deaths due to anaemia and eclampsia have significantly increased ($P < 0.05$), whereas due to sepsis ($P < 0.001$) and haemorrhage ($P < 0.05$), deaths have significantly decreased. Almost 96 % of dying subjects received inadequate antenatal care. However, significantly less number ($P < 0.001$) of women have delivered at home. (Guin, Sahu, Khare, & Kavishwar, 2012)

A cross-sectional study was conducted in a rural area of Jaipur to evaluate safe motherhood practices and observe impact of JSY on it. This result showed that 49.52% women took proper antenatal care which includes proper TT immunization, complete Iron-Folic Acid prophylaxis and appropriate antenatal checkups. Delivery was institutional or at health centre in 93.8% cases. Most of the mothers who registered at the beginning of pregnancy received proper antenatal care. Registration for JSY had a significant relationship with literacy levels of husband and socioeconomic status. The motivation for registration under JSY was the monetary incentive in 60% cases, while 30.6% mothers were motivated by ASHA. (Mangal & Ladha, 2012)

Subha, Sarojini and Khanna (2012) conducted a fact-finding mission in January 2011 to investigate the 27 maternal deaths reported in Barwani district in Madhya Pradesh from April to November 2010. They revealed that an absence of antenatal care despite high levels of anaemia, absence of skilled birth attendants, failure to carry out emergency obstetric care in obvious cases of need, and referrals that never resulted in treatment. They also exposed that poor quality facilities without first ensuring the quality of care was contributed to the maternal deaths. Further, lack of accountability, discrimination against and negligence of poor women, particularly tribal women, and a close link between poverty and maternal death are also significant factors that led to maternal deaths.

An observational study with desk review conducted to assess the impact of Janani Suraksha Yojna on Various MCH Indicators in Gwalior district of Assam. The outcomes show that there has been a significant rise in the number of institutional deliveries after the inception of JSY which was around 32744 (48.8%) in 2003-04 on the other hand it was counted around 36589 (50%) and 36045 (73.1%) in year 2006-07 & 2007-08 respectively. (Gour, Srivastava, Adhikari, & Shahi, 2012)

Mandal, Kaur and Murhekar (2012) evaluated JSY in South 24-Parganas district of West Bengal. They sampled 256 mothers who were eligible under JSY and who had a child below one year of age. For stakeholder analysis, they randomly selected 97 female health worker (auxiliary nurse midwives), 32 block medical officers and public health nurses, 12 *gram panchayat pradhans* (elected representatives in local governments) and district nodal officers for JSY. They found that 57% (147) of 256 mothers who were eligible to receive JSY benefits were registered with health services within 12 weeks of pregnancy; 85.9% (220) mothers completed at least 3 antenatal care visits and 96.9% (248) mothers had completed one dose of tetanus toxoid injection.

Further, Mandal, et al. (2012) found that 78% (202) of 256 mothers were registered under JSY and 73% (188) got JSY benefits after three antenatal care visits. Of mothers (188) who received JSY benefits, 11% (20) got financial benefits during antenatal period. Of 49% (99) mothers who delivered in healthcare institutions, 51% (51) got financial benefits for referral transport as well as institutional delivery after childbirth; 29 mothers obtained it before the discharge from institutions. Institutional delivery was low among Muslims women (OR- 0.41, 95% CI: 0.23-0.72). Of 256 mothers 50% (128) had home delivery. Concerning awareness on JSY, they observed that 90% (231) mothers knew that some financial benefits are being given to pregnant mothers but only 64% (164) mothers had heard the name of JSY. Husband's education (Odds Ratio-2.5, 95%CI: 1.2-5.1) and knowledge of JSY (OR-11.2, 95%CI: 5.9-21.9) was positively associated likelihood of mothers getting JSY benefits.

Concerning the roles of the health personnel, Mandal, et al. (2012) found that all female health workers, 94% of block medical officers and block public health nurses, and 58% of *gram panchayat pradhan* had correct knowledge of JSY. District nodal officer, 55% (53) female health workers and 47% (15) of block officials experienced inadequate and late allotment of fund for JSY. Most (88%) female health workers identified non-availability of necessary documents as a barrier to receipt of financial benefits from the hospitals. Disbursement of financial benefits of JSY was made on daily basis from 62% (23/37) of healthcare institutions. District or state nodal officer did not crosscheck any beneficiary.

A cross-sectional study covering 418 women who delivered in 2009 in Ujjain district in Madhya Pradesh was conducted to analyse the extent of JSY programme uptake, reasons for participation/non-participation, factors associated with non uptake of the programme. The outcomes presented that the majority of deliveries (318/418; 76%) took place within the JSY program; 81% of all mothers below poverty line delivered in the program. Around 90% of the women had prior knowledge of the program. Most expectant mothers reported receiving the cash incentive within two weeks of delivery. The ASHA's influence on the mother's decision on where to deliver appeared limited. Women who were uneducated or lacked prior knowledge of the JSY programme were significantly more likely to deliver at home. (Sidney, Diwan, El-Khatib, & Costa, 2012)

Using the third round of the Indian National Family Health Survey (NFHS) 2005–06, mortality of most recent singleton births was assessed in a discrete-time logistic model with maternal tetanus vaccination, together with antenatal care utilisation and supplementation with iron and folic acid. The findings disclosed that around 59% of mothers reported receiving antenatal care, 48% reported receiving IFA supplementation and 68% reported receiving two or more doses of TT vaccination. The odds of all-cause neonatal death were reduced following one or more antenatal dose of TT with odds ratios (OR) of 0.46 (95% CI 0.26 to 0.78) after one dose and 0.45 (95% CI 0.31 to 0.66) after two or more doses. Reported utilisation of antenatal care and iron-folic acid supplementation did not influence neonatal mortality. In the statistical model, 16% (95% CI 5% to 27%) of neonatal deaths could be caused by a lack of at least two doses of TT vaccination during pregnancy, representing an estimated 78,632 neonatal deaths in absolute terms. (Singh, Pallikadavath, Ogollah, & Stones, 2012)

Roy, et al. (2013) ascertained whether a women's group intervention involving participatory learning and action has a sustainable and replicable effect on neonatal survival in rural, eastern India. Births and neonatal deaths in 36 geographical clusters in Jharkhand and Odisha from 2004 to 2011 were observed. The observations showed that in zone 1, the intervention's effect was sustained: the cluster-mean neonatal mortality rate was 34.2 per 1000 live births (95% confidence interval, CI: 28.3–40.0) between 2008 and 2011, compared with 41.3 per 1000 live births (95% CI: 35.4–47.1) between 2005 and 2008. The effect of the intervention was replicated in zone 2: the cluster-mean neonatal mortality rate decreased from 61.8 to 40.5 per 1000 live births between two periods: 2006–2008 and 2009–2011 (odds ratio: 0.69, 95% CI: 0.57–0.83). Hygiene during delivery, thermal care of the neonate and exclusive breastfeeding were significant factors.

Solanki, Shah, Parmar and Yadav (2013) assessed Janani Suraksha Yojana in both rural and urban areas of Jamnagar district in Gujarat. Out of 10 Taluks in the district, one Primary Health Centre (PHC) from each Taluk was selected randomly. Two villages from each selected PHC were chosen randomly and 10 beneficiaries from each village were taken randomly as study participants. The outcomes indicated that the number of institutional delivery has increased to 89%. The main reasons for this increase according to the study were found to be supportive nature of ASHA and safety of babies in 100% cases, whereas money under JSY was only 47.47% responsible for the beneficiaries to opt for institutional delivery.

Dongre and Kapur (2013) assessed JSY's functioning by using a unique data set covering eight districts spread across seven "low performing states" in the country. The result showed that JSY is working reasonably well, judging by the proportion of women receiving incentives after delivering in a government facility, locations of receiving incentives, mode of payments and payment of bribes. However, the accredited social health activists, an important component of JSY, play a limited role in facilitating delivery in a medical facility. Significantly, although the proportion of women delivering in a medical facility has improved considerably, a significant fraction of women continues to deliver at home. These women are more deprived than those who deliver in government facilities.

A study investigated whether birth attendants at institutions under the program are competent at providing appropriate care for obstetric complications. Written case vignettes for two obstetric complications, haemorrhage and eclampsia, were administered to 233 birth attendant nurses at 73 JSY facilities. The results indicated that the mean emergency obstetric care (EmOC) competence score was 5.4 (median = 5) on a total score of 20, and 75% of participants scored below 35% of the maximum score. The overall score, although poor, was marginally higher in respondents with Skilled Birth Attendant (SBA) training, those with general nursing and midwifery qualifications, those at higher facility levels, and those conducting >30 deliveries a month. In all, 14% of respondents were competent at assessment, 58% were competent at making a correct clinical diagnosis, and 20% were competent at providing first-line care. (Chaturvedi, Upadhyay, & Costa, 2014)

The quality of intrapartum care provided in facilities under the JSY programme across 11 facilities in Madhya Pradesh was examined. Attendants served as ‘go-betweens’ patients and providers. The interviews with providers revealed their awareness of the compromised quality of care, but they were constrained by structural problems. Positive practices were also observed, including companionship during childbirth and women mobilising in the early stages of labour. (Chaturvedi, Costa, & Raven, 2015)

2.7. Summary of the Reviews

In this chapter, the following literature sources are reviewed:

- The socio-economic status of women, particularly pregnant and lactating mothers, were reviewed.
- A significant sources were reviewed pertaining to maternal and infant mortality and morbidity that provided a statistical figures about the scenario in India as well as in Assam.
- Reviews concerning the marriage practice, the age of the pregnant and lactating mothers and their age at the time of marriage were done.
- A considerable number of studies related to ANC and PNC are clinical in nature. In this study, the utilisation of the ICDS services, especially the AWC services in the ANC and PNC is observed.

- In India, an adequate number of studies concerning the utilisation of maternal health care services, the financial assistance under JSY programme and the level of impacts and quality of JSY programme were conducted.

The identified gap from the analysed literature sources is that there is lack of indications concerning the effectiveness and impacts of JSY in the most backward regions like Karimganj district.

2.8. Perlman – Problem Solving Model – (Cited in Coady and Lehmann, 2008)

In 1957, Perlman promoted a problem-solving process for social casework (i.e., direct social work practice), the problem-solving model has developed into a cornerstone of social work practice. Coady and Lehmann (2008) The problem-solving model is a critically important element in generalist-eclectic approach to direct practice because its flexible structure and general guidelines for practice facilitate an eclectic use of theory and technique (the science of practice) and the use of reflective, intuitive-inductive processes (the art of practice).

In 1986, Perlman has identified the problem- solving model as an eclectic construct, with theoretical roots in psychodynamic ego psychology and selected ideas from existential, learning, and ecological systems theories. Perlman pointed out that effective problem-solving, whether in everyday life or in professional helping, consists of similar processes. In professional helping, these processes include (a) identifying the problem, (b) identifying the person’s subjective experience of the problem, (c) examining the causes and effects of the problem in the person’s life, (d) considering the pros and cons of various courses of action, (e) choosing and enacting a course of action, and (f) assessing the effectiveness of the action (Perlman, 1970). These problem-solving processes or stages that were outlined by Perlman are the basis of most current problem-solving models in social work. Whether the JSY programme can be treated as a problem solving model in the prevention of maternal and infant deaths or not, is analysed in this study.

2.9. Conclusion

Maternal healthcare service is very crucial for the protection of both mother and child. If the mother dies, it has a negative effect on the growth of the child and also affects the other family members. The studies pertaining to the impact of JSY on the pregnant women are observed more in the literature organised in India. The reviewed literature shows a gap in the analysis of the effectiveness and efficiency of JSY in the most backward regions like Karimganj district and how far the JSY programme creates better health status among the pregnant mothers during delivery times. There is a need for filling up the research gap in analysing the impact of JSY in minority-dominated as well as backward areas of Karimganj district in social work dimension.