

# **Summer Internship Report**

at

**Population Services International India Pvt Ltd (PSI)**

Balaji Estate, 8 Guru Ravidas Marg, Kalkaji, New Delhi,

India 110019

**April 18<sup>th</sup> – June 17<sup>th</sup>, 2022**

**Submitted by**

Dr. Abhaya Gupta

**Under the esteemed guidance of**

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PGDM (Hospital and Health Management)2021-2023

**International Institute of Health Management Research,  
New Delhi**

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## ACKNOWLEDGEMENT

For the ancestors, who paved the path before us upon whose shoulder we stand. This project has been of great significance and importance to us in ways more than we can mention. Apart from its professional importance it has taught us immensely the spirit with which one has to move ahead with responsibilities. It was indeed our good destiny that we were given a chance to work under such esteemed faculty members.

We take immense pride and pleasure that the study was done under the esteemed guidance of **Dr. Rohini Ruhil** who was a constant source of the much-needed discipline and constructive criticism. Her whole hearted help and support had been pivotal in the completion of this work. It is our profound privilege to offer thanks and utmost gratitude to our mentor who has been our inspiration and has provided us with encouragement and cooperation at all stages. She taught us to carry on things with precision & devotion, we shall always be grateful to her. She being my guide in the present study always met with encouraging words and shaped constructive ideas.

I express my sincere thanks to Dr Jacob Puliyl for his valuable suggestions, guidance and help for our research work.

## **Certificate of approval**

The Summer Internship Project of titled **“An Exploratory Study of the Determinants of Traditional home birth in Bhatti Mines, Chhatarpur Area of New Delhi.”** at **“Population Service International”** is hereby approved as a certified study in management carried out and presented in a manner satisfactorily to warrant its acceptance as a prerequisite for the award of **Post Graduate Diploma in Health and Hospital Management** for which it has been submitted. It is understood that by this approval the undersigned do not necessarily endorse or approve any statement made, opinion expressed, or conclusion drawn therein but approve the report only for the purpose it is submitted.

**Dr Rohini Ruhil**  
**Assistant Professor**  
**IIHMR, Delhi**

## FEEDBACK FORM

(Organization Supervisor)

Name of the Student: Abhaya Gupta

Summer Internship Institution: Population Services International

Area of Summer Internship: Public Health (Urban areas)

Attendance: More than 80%.

Objectives met: Yes. The purpose was to introduce her with Urban Health Context & to use strategies to improve them. She did it well.

Deliverables: Fulfilled. All tasks assigned to her were completed with full proficiency & skills.

Strengths: Team Work, Good Speaker, Good Listener.

Suggestions for Improvement: Focus & read more & more about Govt. Scheme & Health Infrastructure Smith of India.

Signature of the Officer-in-Charge (Internship)

Smriti Dhingre  
Manager - Urban Health  
SAMAGRA (SI)

Date: 17-6-2022

Place: New Delhi

## FEEDBACK FORM

(IIHMR MENTOR)

**Name of the Student:** Dr Abhaya Gupta

**Summer Internship Institution:** Population Services International (PSI)

**Area of Summer Internship:** Public Health (Urban Areas)

**Attendance:**

**Objectives met:** Participatory Rural Appraisal, Community needs assessment, community sensitisation

**Deliverables:** Field Work, Case Studies, Household mapping, Household Listing, Baseline Survey, Survey on home deliveries Vs Institutional deliveries

**Strengths:** She is very sincere, polite and hardworking. She has good writing skills and is good at academics. She is also good in field work and have team spirit and good interpersonal skills.

**Suggestions for Improvement:** She can improve on her data analysis skills.



**Signature of the Officer-in-charge (Internship)**

**Date:** 18-06-2022

**Place:** New Delhi

## **Abbreviations**

ANC: Antenatal Care

ASHA: Accredited Social Health Activist

ANM: Auxiliary Nurse Midwifery

DLHS: District Level Household Survey

JSY: Janani Suraksha Yojana

JSSK: Janani Shishu Suraksha Karyakaram

LMIC: Low Middle Income Class

MMR: Maternal Mortality Rate

NFHS: National Family Health Survey

NRHM: National Rural Health Mission

PNC: Prenatal Care

SBA: Skilled Birth Attendant

TBA: Traditional Birth Attendant

UNDP: United Nations Development Programme

## ***SECTION: I***

### ***Organizational Learning***



## **Project SAMAGRA**

Led by PSI India, Project Samagra works in partnership with the Government of India, USAID, and local and private sector stakeholders to create an affordable, equitable, responsive urban health system for the most vulnerable and the urban poor. This project aims to provide basic, attractive, and therapeutic primary health care to those caregivers who need it most.

The Samagra project works to improve access to affordable health services and address barriers related to social health decisions. Specifically, the project aims to increase the use of modern methods of contraception, diagnosis of tuberculosis (TB), and multidrug-resistant TB (MDR-TB). It also aims to improve maternal and child health services including antenatal care (ANC), antenatal care, and antenatal care (PNC) in these statistics, as well as to improve immunization rates.

In Delhi, the Samagra project is working in Fatehpur Beri and Bhati Mines which are being introduced in the vicinity of the city.

SAMAGRA is working towards achieving 16 sustainable global goals through a framework of various strategic approaches with the help of initiating partnerships with partners such as PSI, MAMTA, and CURE.

## **PSI**

Population Services International is a registered non-profit organization, founded in 1970. PSI has worked with people and it works for them; they are working to build sustainable solutions to the world's most serious health issues. PSI's mission is to make it easier for all people to live healthy lives and plan the families they desire.

PSI India Private Limited (PSI IPL) aims to provide consumers with contraceptives and safe, effective, and affordable health products, allowing them to live healthier and more productive lives. The PSI IPL currently operates in most of India and offers a wide range of products that include oral contraceptives, emergency contraception, abortion services, condoms, and oral contraceptives.

PSI is currently focusing on the SAMAGRA project which is a USAID-funded program, led by PSI that aims to create a strong urban health system.

### **MAMTA**

MAMTA-Health Institute for Mother and Child is a 30-year-old registered nonprofit organization under the Registration of Association Organization-1860 Act of the Government of India.

The organization aims to bring innovation to the level of Maternal and Child Health; Sexual and Reproductive Health with a focus on Adolescents (10-19 years) and Adolescents (10-24 years); Infectious Diseases (HIV, TB, Hepatitis B & C); and Common Infectious Diseases (High Blood Pressure, Diabetes, Obesity, and Mental Health).

### **CURE**

CURE stands for Centre for Urban and Regional Excellence. The purpose of the CURE is to reconnect with urban communities that make informed decisions to ensure sustainable urban development; to strengthen local agencies with the capacity to develop a participatory community. They aim to provide taps and toilets in the home, connect to portable drinking water, access solid waste management, harvest rainwater, and be able to withstand water.

### **Work Done at PSI-**

During the orientation, we were briefed about the organization, its objectives, goals, and implementation methods. We were introduced to the project Samagra followed by a brief discussion.

Later on, the students were divided into 5 groups and were given a topic each to make a presentation and present the next day. The topics for the presentation were National Tuberculosis Elimination Program, Janani Shishu Suraksha Karyakaram, Swach Bharat Abhiyan, Poshan Abhiyan, and National Urban Health Mission.

The presentation included the problem statement, benefits and beneficiaries profile, the current status of the program implementation, and how that program could support the geographies like Bhatti Mines.

After the presentation, there was a discussion session on gender-based violence which helped us to know the community and discuss such topics with women without harming their feelings.

After the field visits and orientation, we were given the task of reflecting on our observations and challenges in the field of Fatehpur Beri and Bhatti Mines.

### **Work Done at Mamta-**

During our field visit, we were introduced to all the nearby villages like Ansal, Asola, Chandan Hola, Fatehpur Beri, Dera, Sahurpur, Satbari, Chota Bans, and Bada Bans. we visited different anganwadis and met the ASHA workers and their helpers. We saw how the children were educated there and mid-day meals were served under the Poshan Abhiyan. We visited the Panchayat and the PHC. Only one PHC is located in the complete area in the Fatehpur Beri region. It is also the only center for DOTS. Primary and secondary school is also there in Fatehpur Beri where children from all the nearby villages and even Bhatti mines come for education. The houses here are majorly pakka and semi-kaccha.

People in Fatehpur Beri are financially sound but lack education which makes male dominance prevalent here. Women have complained of domestic abuse and they have been restricted to move out of the house. Women here are

uneducated and have low literacy levels which don't enable them to empower themselves.

We had been a part of different activities that took place in the MAMTA office in Fatehpur Beri, the activities were – attending the orientation of the health survey application by MAMTA.

The app that was launched was the HMIS application which helps in determining the different aspects of the health of the mother as well as the household member consisting of a communicable and noncommunicable measure of disease.

We had an interactive session with ANWs. We had been a part of group formation meetings. We had done the household map sketching from Chhatarpur Metro Station to Bhatti Mines and baseline data analysis.

### **Work done at CURE-**

While working with CURE, we were made familiar with the Bhatti mines area and were introduced to the Mwater application and how to carry out the baseline survey in the Bhatti Mines.

We visited the PHC and got to know that women here are giving home birth rather than institutional birth. There is a lack of health facilities here for which people have to go to either Fatehpur Beri PHC, safdarganj hospital or Malviya Nagar hospital. We observed that pregnant women in Bhatti mines register at the time of pregnancy but give birth at home due to various reasons like- lack of transportation facility, lack of family support, unsupportive behavior of the staff at the hospital, etc. women in Bhatti mines generally get delivered at home by the help of a trained Dai.

There are a total of 8 active ASHA workers working in Bhatti Mines, and there is a Mahila Panchayat office that is working on different issues raised by women in Bhatti Mines.

Bhatti mine is an unregistered slum. People living in Bhatti mines are mainly Pakistani refugees, Sadee jati, khadi jati, and majorly belong to the labor class. People here live in kaccha, pakka, or semi-pakka houses.

In the whole Bhatti mines, there was only one private school and two government schools where kids go into different shifts.

While doing the baseline we identified major issues which needed to be supervised. Animal attacks are more prone in this area which can be dangerous for people living there. In the mud house area, dog bites are very common.

There are only soak pit toilet for public use which is not accessible to everyone so the practice of open defecation is acquired by the majority of people.

Tobacco consumers are in high number from a very young age to old age and which causes poor oral hygiene of the people. Young teenage boys are involved in drug abuse which is a major concern.

Many men of the houses in Bhatti Mines are alcoholics who are leading to major issues rising in Bhatti Mines towards women such as domestic violence and women having to bear the whole burden of her household and her children by herself.

Bhatti Mines population is largely affected by TB and most households either have a history of TB or are affected by TB.

The women of Bhatti are not only malnourished but their bodies are being affected by repetitive childbirth and many miscarriages, the cause is still unknown. While doing the survey, we go to know that many women do not know the exact cause of their pregnancy loss. Women who are undergoing home birth, are affected by the issues like postpartum hemorrhage, uterine prolapse, infections, and majorly they are anemic.

Domestic violence is more prone in Bhatti Mines, women have undergone serious assaults not only by their husbands but their in-laws and other peers too, so this might be one of the stressful reasons for women in that area.

People are not aware of the different health schemes by the government or the facilities which are provided by government organizations.

Despite these challenges we also found that the community was welcoming towards us, they are open to providing data and open to communication.

## **LEARNING**

In professional learning – we have been comprehensive with the baseline data study in the community which included the questions which have to be asked and learned household mapping.

We learned to be community-centric, sensitize with the community and deal with the different situations in the community, and also flagship the important issues.

We learned the ways to improve our communication skills in professional areas.

We learned the Presentation ethics – how to do to presentation and what the requirements are needed to be assimilated into it.

Academic Learning – we acquired the knowledge to conduct Research and Analysis; We became proficient in area mapping and sketching; Report documentation; Acquired knowledge that is necessary for the public health sectors such as government provisions, different policies, different facilities, and different missions which are ongoing in the sector of public health.

Personal Learning - As public health students we touched down on the ground levels of the community and how things work in the community; It helped us to understand the different interventions and awareness which is needed for society.

## **LIMITATIONS-**

Certain limitations to our study were-

- Since there are a majority of laborers in the area, during our time of study most of them were not at home to give the answers.
- A concurrent health facility assessment was not performed which would have helped to understand additional supply-side factors.

## **SUGGESTIONS**

After looking at the events in the Bhatti mines, we would like to recommend that-

- More emphasis on education should be provided since there is a large number of dropout young males from the school.
- Education shouldn't just be theoretical, but it should be practical and students should be taught to treat both the genders equally, about reproductive health, should be taught about the ill effects of tobacco and drugs.
- Educating the women of the house regarding nutrition is a must.
- Families should be more educated regarding family spacing methods, birth control methods, and family planning.
- Women suffer miscarriages because of poor nourishment. A special focus on the health of pregnant women should be there.
- Proper transportation facilities should be provided.
- A proper functional general hospital should be there in Bhatti mines so that people do not have to travel very far to get the treatment done.
- Since there are a lot of domestic abuse cases, special meetings for women should be held to educate them and empower them as a team.

## ***Section II***

### ***Research Learning***

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***An Exploratory Study of the Determinants of Traditional Home Births and Health Facility Assessment in Bhatti Mines in Chhatarpur Area of New Delhi.***

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## INTRODUCTION

Maternal deaths significantly increase as a result of home deliveries without competent care at birth. In 2017, 810 mothers a day lost their lives as a result of different pregnancy and childbirth-related issues, accounting for nearly 295,000 maternal deaths. According to popular belief, facility-based prenatal and postnatal care can save thousands of women's lives<sup>1</sup>. India is one of the low- and middle-income countries (LMICs) where about 94 percent of maternal deaths take place.

A crucial global goal to lower mother and newborn mortality is to increase institutional births<sup>1</sup>. India is one of many nations that have incentive programmes and regulations in place to promote institutional births. However, these programmes face particular difficulties due to the growing rise of low-income urban populations. Newcomers to cities are less familiar with the services and registration procedures available there, and they lack the support of a larger family. In low- and middle-income countries, about 40% of the urban population lives in low-income urban areas. In these environments, institutional birth rates must be increased with greater concentration. The majority of mother deaths occur during pregnancy and in the first few days after delivery<sup>2,3</sup>, and facility-based birthing is reported to be more beneficial in nations with high rates of maternal mortality and morbidity.<sup>4,5</sup>

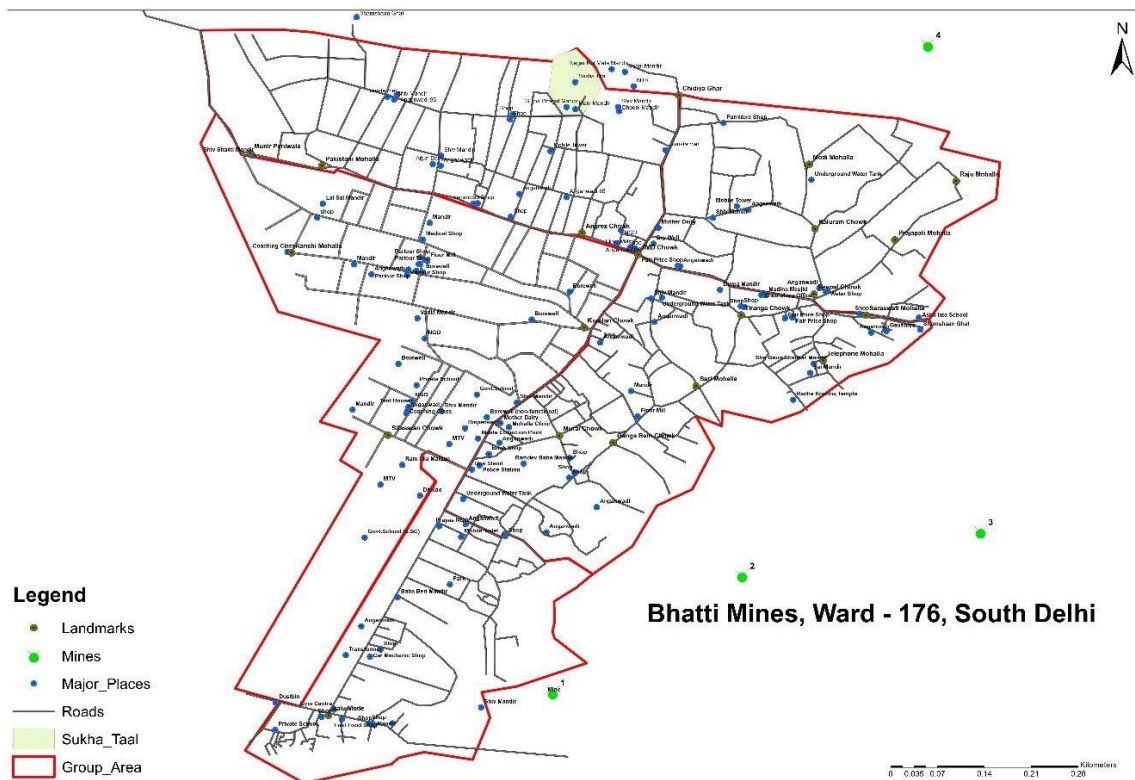
India presently accounts for almost a fifth of all maternal and newborn mortality worldwide<sup>6</sup>, and by 2030, nearly one-half of the country's population will reside in urban areas. According to WHO figures from

2010, only 50% of expecting moms in India go to all four antenatal care (ANC) appointments and deliver their babies with an SBA present.

By encouraging institutional births among low-income expectant women, India's National Rural Health Mission (NRHM) established the Janani Suraksha Yojana (JSY) initiative in 2005 with the intention of lowering maternal and newborn mortality. The number of ANC visits and institutional deliveries increased, according to a 2007–2008 review of this conditional cash transfer programme. This has not, however, resulted in a decrease in the maternal mortality rate (MMR), maybe as a result of unresolved difficulties with non-financial access hurdles and inadequate ANC, delivery, and postnatal care. Additionally, the JSY programme did not directly address all of the difficulties that the urban poor faced.<sup>8</sup>

The gap between the socially excluded group across states, as well as between the poor and the non-poor, in terms of utilisation and accessibility to maternal healthcare services has been discussed by numerous academics across India. The choice of delivery location is influenced by a number of factors, according to studies on home births. Distance to medical facilities, hospitalisation costs, transportation costs, level of education, and availability to antenatal care have all been recognised as important factors.<sup>1</sup>

The main aim of this study was to understand the factors influencing the place of delivery, and why women prefer home deliveries in urban slums areas (Bhatti Mines)



## **Objectives**

1. To ascertain the current condition of home births and institutional deliveries by looking at women between the ages of 15 and 49 who gave birth during the last three years in the Bhatti Mines region, a Delhi urban resettlement colony
2. To evaluate the factors that affect home births versus institutional deliveries in women between the ages of 15 and 49 who gave birth during the previous three years

## **METHODOLOGY**

**STUDY DESIGN** – Cross Sectional Survey using quantitative methods

**STUDY SETTING** – Approximately 1.8 million of the 22 million population of Delhi lives in slum areas.<sup>9</sup>

This study was conducted in south west zone of Delhi in Bhatti mines, which is home to nearly 22,000 people spread among 4,000 households. ASHAs and ANM workers helped to identify babies born in the area over the preceding 3 years, in Bhatti mines.

### **SAMPLING**

**Mapping of Households** –list of deliveries for last 3 years were prepared by the help of ASHA registers.

**Sample Size** –

Assuming crude birth rate of 14.4/1000 in Delhi <sup>10</sup> a population of 22,000 had approx. 300 deliveries in a year. Using StatCal sample size calculator of Epi Info for simple random sampling in a population survey of a population of 300 persons with expected frequency of 50% and a 10% acceptable margin of error and design effect of 1 we must have a sample of 73 for confidence level of 95%.

Assuming a sample size of 75 among 300 deliveries each year, we took sample one in four deliveries each year. i.e. 225

**Sampling Method:** Out of the household list that we have prepared from the ASHA list of deliveries, our sample of every 4th household in the list. In case of non-availability of members of household the next house on the list will be selected.

Data collection tools – The data collection tools consisted of structured interview having close ended questions. The 2021 Global Multidimensional Poverty Index (MPI) of UNDP was used to measure deprivation.

Data Analysis plan – The data was recorded in the excel sheet followed by which data cleaning was done. The data was then analysed using IBM SPSS Version 22 for Windows (IBM Corporate, Armonk, New York, USA). Using Open-Epi software, Chi-square test was performed to test associations between certain factors such as deprivation, cost of delivery and high-risk pregnancy with prevalence of home births or institutional births. A value of  $p < 0.05$  was considered as statistically significant.

## RESULTS

Socio demographic features of study population are described in Table 1. Total number of women interviewed were 226. Majority of women were in the age group of 20-30 yrs., around 83%. More than 70% women were educated up to high school and more. Around 70% women have 2 or more children. Around 74% households came out to be deprived according to Global Multidimensional Poverty Index.

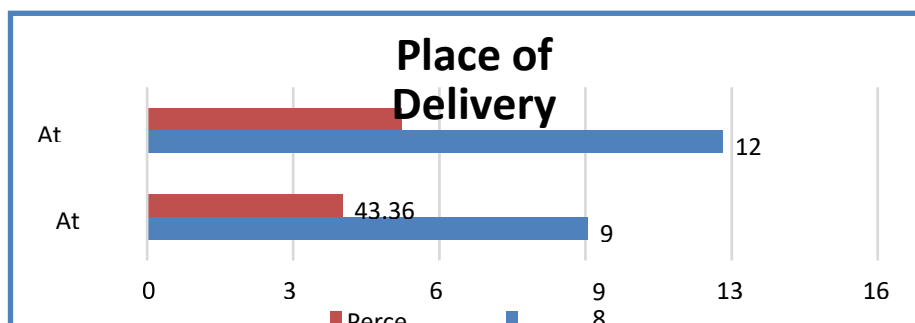
**Table 1 - Socio-demographic characteristics of Study Population (N=226)**

Variables	Study population N=226
Age	
<20 yrs.	2
20-30 yrs	187
>30 yrs	37
Education	
Illiterate	80
Up to High school	121
High school and above	25
Parity	
1	64

2	78
3	48
>3	36
Deprivation Index	
Yes	168
No	58

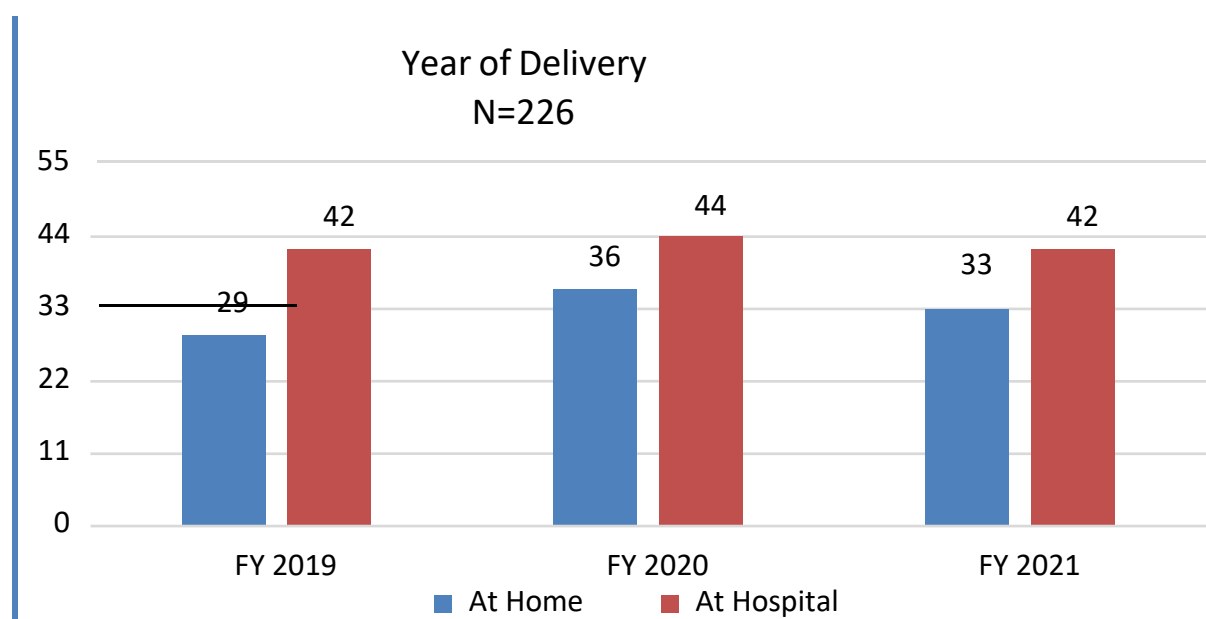
Among 226 women surveyed, 128 or 57% women went to Hospital or Nearest Health Facility for childbirth, whereas traditional home births were chosen by 98 women. (Figure 1) Out of which 29 Home Births and 42 institutional deliveries were conducted in financial year 2019, 36 home births and 44 institutional deliveries in FY 2020 and in FY 2021, 33 Home births and 42 institutional deliveries. (Figure 2)

**Figure 1: Place of Delivery (N=226)**



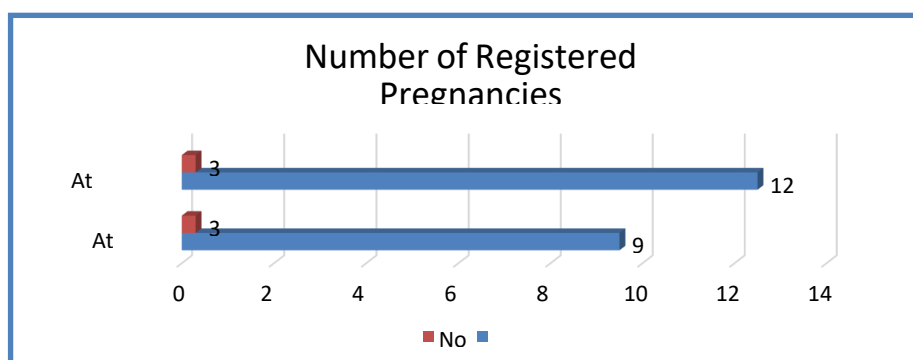


**Figure 2 Comparison of Year and Place of Delivery**

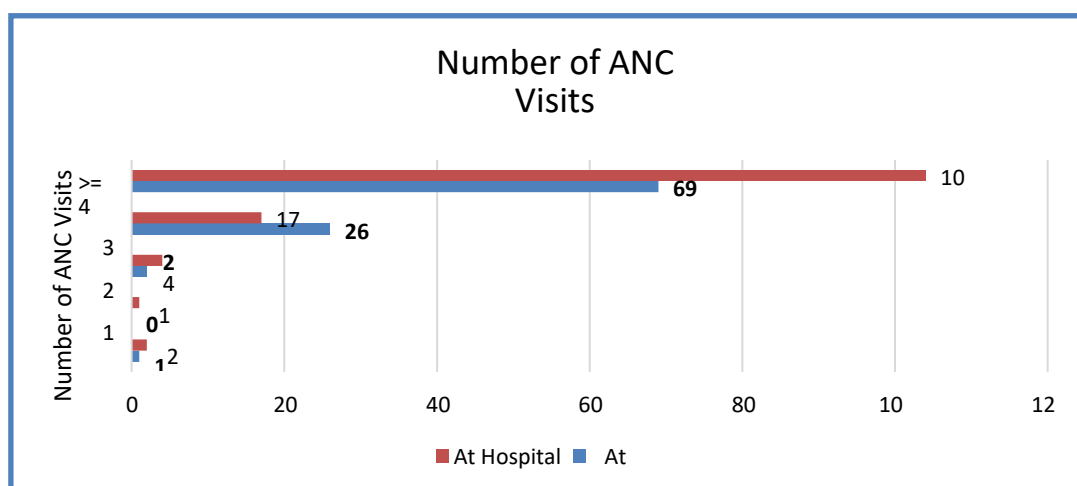


95 of women who preferred Home based childbirth got themselves registered at time of pregnancy. Around 97% of women who went for institutional delivery, registered their pregnancy. All of them got registration done under Government health facility. (Figure 3) ANC visits comprises of measuring Blood Pressure, Anaemia Test, giving Iron and Folic Acid Supplements (100 tablets), ultrasound and TT immunizations. 75% women have completed their Ante Natal Care (ANC) visits of 4 or more visits, with 40% women were those who preferred home births. 4% women went for maximum of 2 visits. (Figure 4).

**Figure 3 Comparison of Number of Registered Pregnancies with Place of Delivery**



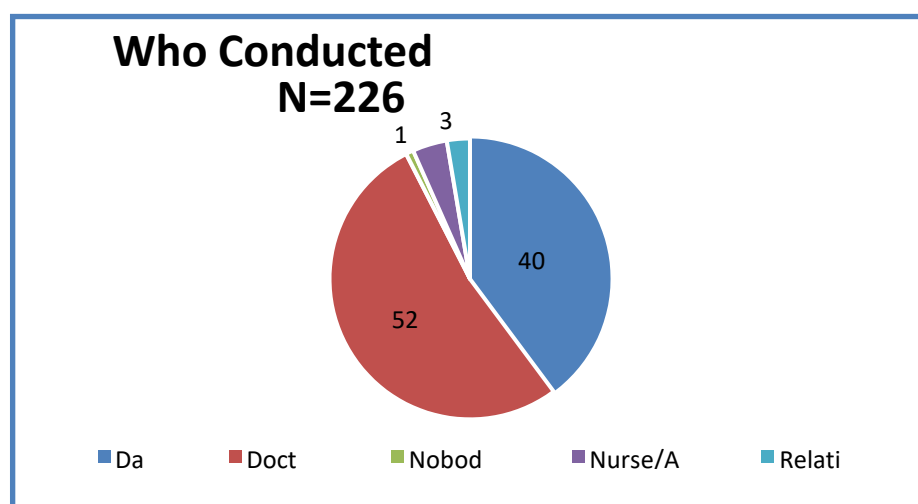
**Figure 4 Comparison of ANC Visits with Place of Delivery**



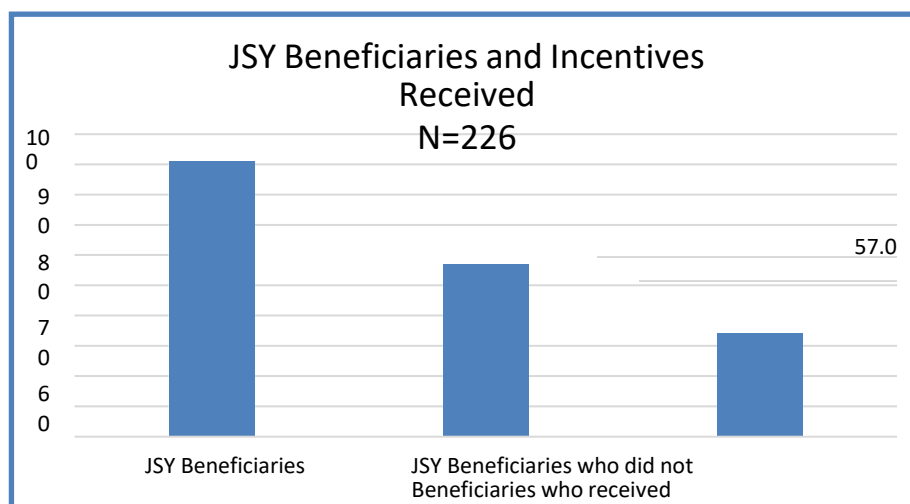
When interviewed about who conducted the delivery, 52% replied Professional Doctors and around 40% deliveries were still performed by Midwives (Dai). 1% women conducted childbirth herself while 7% took help from their Relatives or called Nurse or ANM. (Figure5) Questions on awareness of women on JSY scheme and if received incentives were asked,

where only 91 of them were aware of the scheme and only 37% of them received incentives. (Figure 6)

**Figure 5 who conducted Delivery?**



**Figure 6 Number of JSY Beneficiaries and Incentives received**



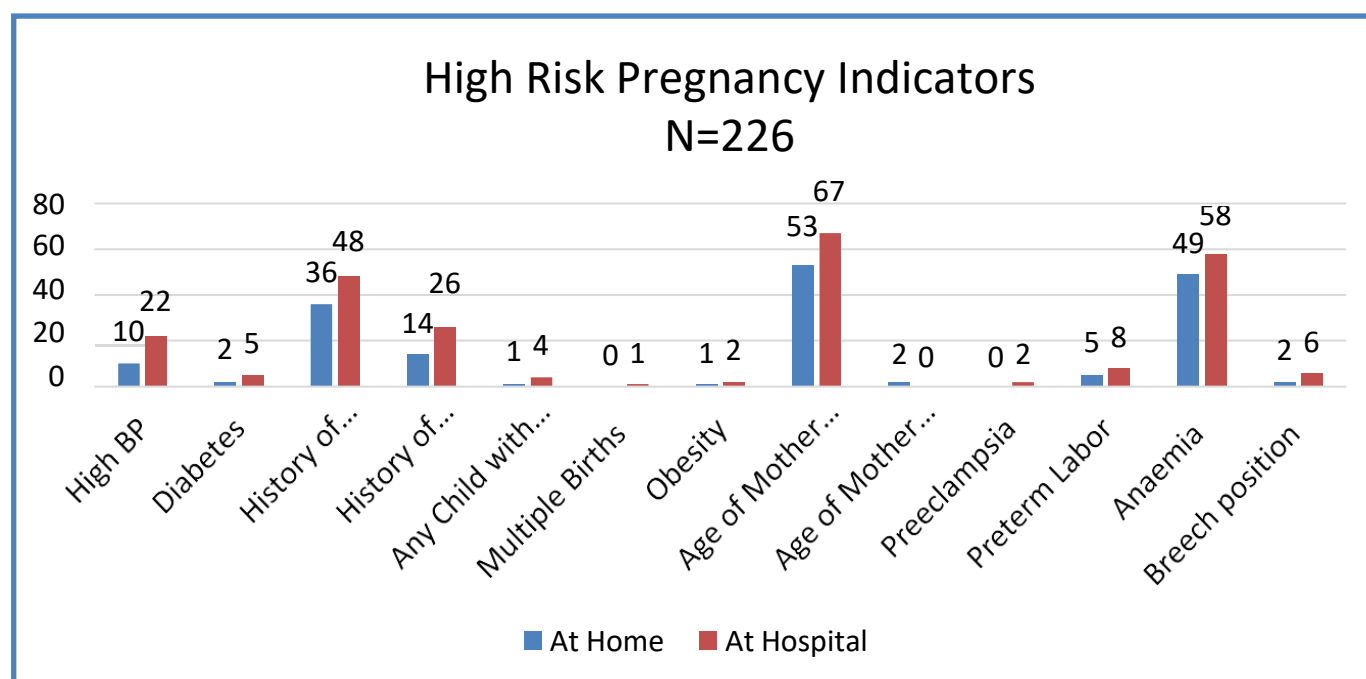
Using Chi square Test, Age of women, Education status, Parity of women and Deprivation index came out to be statistically significant. When deriving correlations using Pearson Correlation Test, Age had a weak correlation with place of delivery. Education status of women had a very strong correlation with correlation coefficient of 1 with place of delivery. Parity of women is strongly correlated with women's preference of place of delivery. Deprivation Index is strongly related with place of delivery with Pearson correlation coefficient of 0.78. (Table 2)

Table 2 Statistical Analysis

Indicators	P value	Pearson Correlation Coefficient
Age of Women	P<0.05	0.398
Education Status		1
Parity of Women		0.762
Deprived Households		0.78

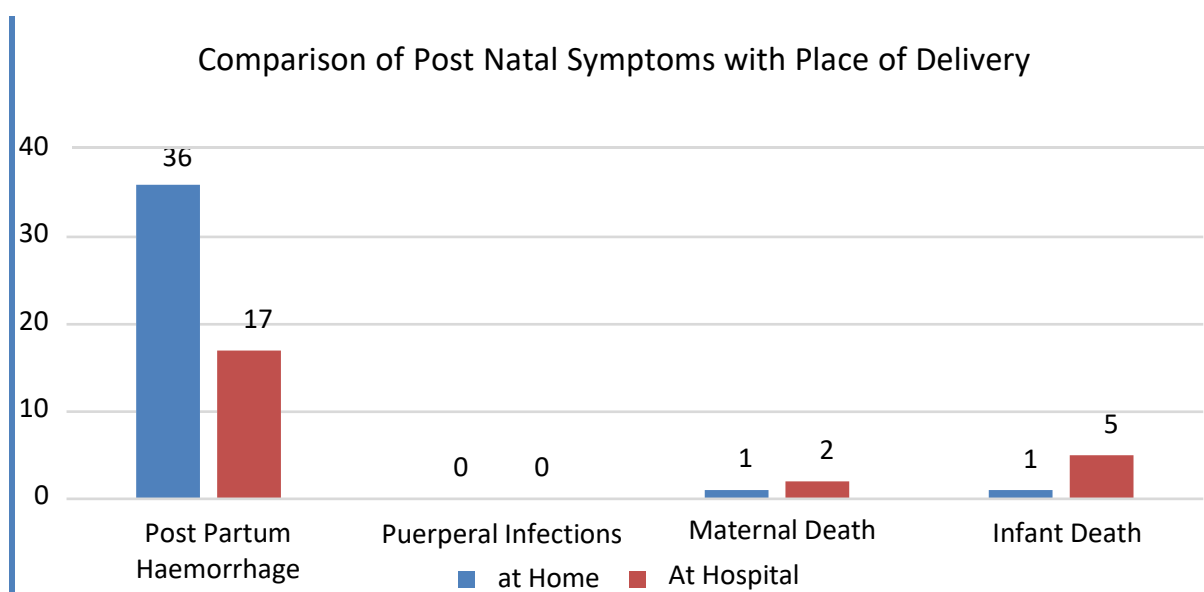
Indicators for High-Risk pregnancy were considered. 31% women who have High BP preferred Homebirths. 7 women had diabetes. Prevalence of history of miscarriages is 38% at Bhatti mines. 5 women had children with birth defects. 3 women reported obesity. 53% women had age below 18 years, of which 45% preferred traditional homebirths. 2 cases of Preeclampsia were reported. 13 women went into Preterm Labour. Anaemia was prevalent among the community with 47% women reported in survey. 8 women reported Breech position. (Figure 3)

**Figure 7 Comparison of High-Risk Pregnancy Indicators with Place of Delivery**



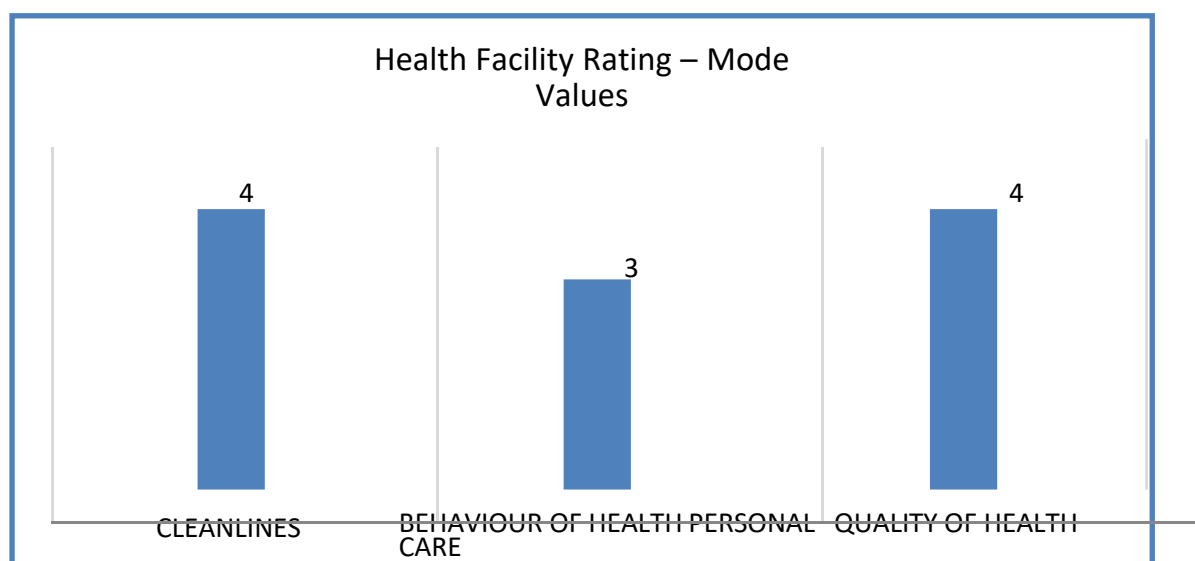
Comparison of Post Natal symptoms with place of delivery was plotted. Post-Partum Haemorrhage cases were 70% in case of homebirths. Maternal and Infant deaths were more in case of Institutional deliveries due to ignorance towards women and child's health. (Figure 8)

**Figure 8 – Comparison of Post Natal Symptoms with Place of Delivery**



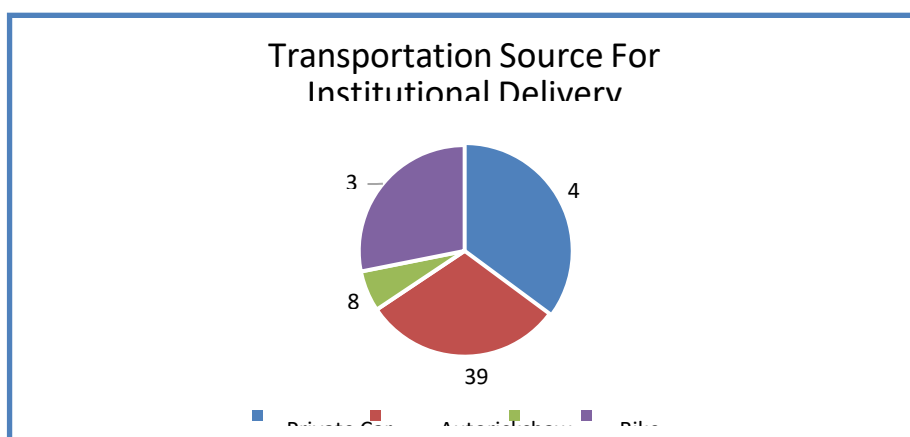
When interviewed women preferring institutional deliveries about their views on health facility using a Likert Scale from 1 to 5, they rated cleanliness as 4, behaviour of health personnel as 3 and quality of healthcare as 4, using mode values. (Figure 9)

**Figure 9 – Health Facility Rating**



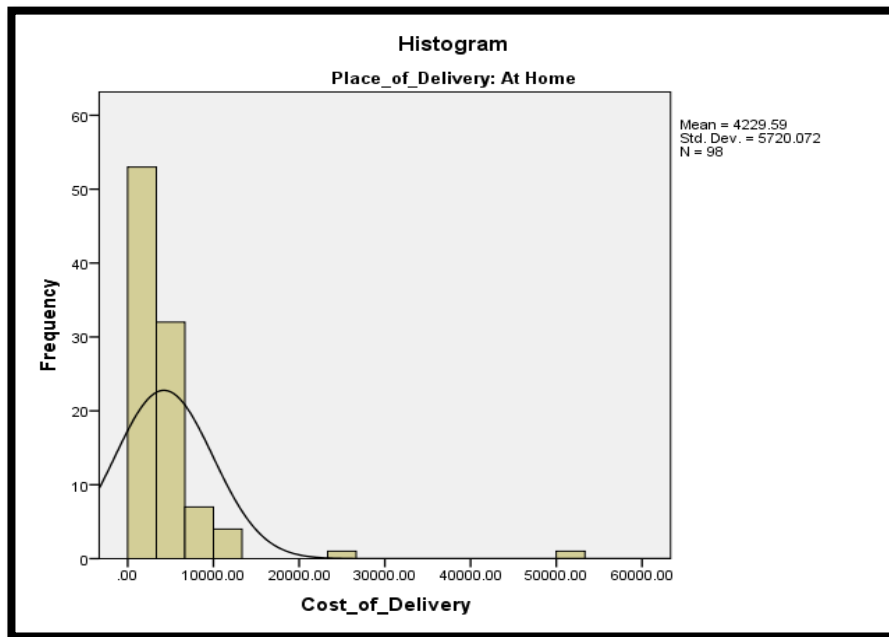
Mode of Transport used by women who preferred institutional delivery is distributed as Ambulance, Private Vehicle, Autorickshaw and Bike. 30% travelled by Ambulance. 35% used their own vehicles or preferred cabs.(Figure 10)

**Figure 10 Transportation source for institutional delivery**

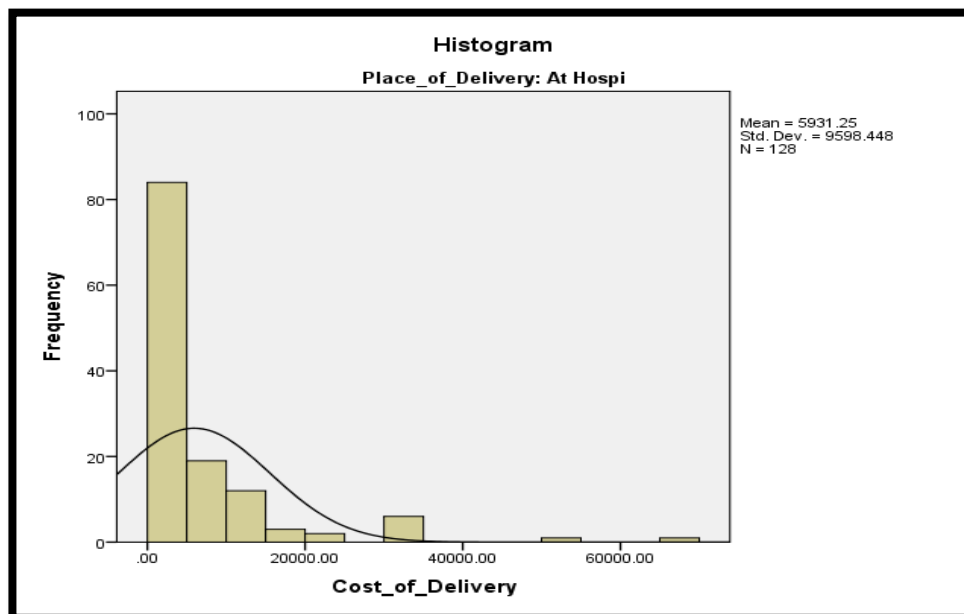


When interviewed about estimated cost in case of homebirths, range was from Rs 1000 to Rs 10,000 with a mean value of Rs 42259.59. For women who preferred institutional delivery, cost ranges from Rs 1000 to Rs 20,000 with average of Rs 5931. (Figure 11 and 12)

**Figure 11- Cost of Delivery for Homebirths**



**Figure 12 – Cost of Delivery at hospital**





## DISCUSSION

In order to decrease the number of home deliveries and increase institutional deliveries, national and international organisations have developed a number of interventions and methods. For instance, the National Rural Health Mission's "Janani Suraksha Yojana (JSY)" programme was introduced by the Indian government on April 12, 2005. (NRHM). The primary goal of the JSY plan was to encourage and improve institutional deliveries while decreasing the number of home deliveries by offering improved delivery and post delivery services and encouraging expectant mothers to use healthier food and transportation options. [1]

In order to accomplish the aim, even the National Population Policy points out that encouraging institutional deliveries among Indian women is necessary. The main objective of this policy was to enhance the Maternal Mortality Status of the nation by integrating the private and nonprofit sectors with the public health care system..[2]

Despite the ongoing efforts made by the central and state governments of India, the most recent data reveals that 43.36 percent of the women living in the Bhatti Mines neighborhood are from the Chhatarpur neighborhood in south Delhi. Traditional home births are preferred by expectant mothers. The people who live there are classified as low income. Their main justification for opting for home delivery over institutional delivery was the absence of transportation and medical facilities in the area, as well as budgetary limitations. Another reason given by them was not gaining approval from their family head, such as their spouse or mother-in-law; the primary causes of this were male ignorance, certain religious views or taboos, sociocultural difficulties, and male bias.

Long wait times are a sign of a health system's inefficiency, according to

earlier studies, and they make patients feel unsatisfied. The present study's findings revealed that women believed institutional delivery was not necessary and families did not permit them to deliver at healthcare facilities, which is another important issue associated to home delivery. The difficulty of home delivery may be greatly impacted by several deeply held myths as well as societal and religious taboos. The present investigation found a number of predisposing characteristics that prevent facility-based delivery. Rural setting and older age of women were demographic factors, whereas poorer income, education, and lack of employment were socioeconomic ones.[18]

The current study's findings, however, indicate that when asked how much was expected to be spent on either capital or money, home births were found to be more expensive than institutional deliveries. According to a recent study, both women who chose home delivery and those who chose institutional delivery registered their pregnancies at the time of their pregnancies. All of them registered with a government health facility. ANC visits include blood pressure checks, blood tests, the administration of 100 tablets of iron and folic acid, ultrasounds, and TT immunizations. Seventy-five percent of pregnant women have finished their antenatal care (ANC) visits, with 40 percent of them opting for home delivery. Women made up to two trips in 4% of cases.

According to the results of the current study, midwives (Dai) performed 40% of deliveries, while 7% of expectant mothers sought assistance from family members and 1% of women gave birth on their own. According to the current study, postpartum haemorrhage cases were 70% more common in home deliveries than institutional deliveries due to high-risk pregnancies, and mother and child mortality were more common in institutional deliveries. Financial limitations, a lack of health insurance, and difficulty accessing

healthcare facilities were major obstacles to care delivery among the economically disadvantaged sections of society. Women's lower levels of education in the society also played a significant role in the prevalence of home births.

Women who were more educated and economically powerful thought that institutional births were required, which raised the likelihood that they would give birth in a facility. [19]

Women living in rural areas were unable to utilise the services of a health facility for childbirth due to the lack of skilled healthcare doctors, medical staff, and attendants; therefore, a well-functioning public healthcare system, with the provision of adequate skilled healthcare providers and quality healthcare services, is necessary to address this inequity.

In India, home delivery was predisposed by domestic abuse and partner control. Women were denied decision-making power and were prohibited access to healthcare services due to the society's inherent patriarchy and the domineering behaviour of men. The burden of home deliveries in India may increase due to the reduced status of women in both society and the household. [20]

## **CONCLUSION**

Home births are a major cause of death for many women each year. Even though health services are close by and offered help to

a community of urban poor people, access is limited.

This occurs as a result of overcrowding, inefficient outreach efforts, a poor referral system, social marginalisation, a lack of knowledge, and unfamiliarity with the contemporary world.

The Bhati mines have a maternal and child care centre, but there are no birthing facilities there. As a result, the community must travel a great distance to reach the government facilities where babies are delivered.

For the welfare of expectant mothers and infant babies, the Indian government has put up a number of measures. The government of India's Ministry of Health & Family Welfare (MoHFW) has introduced the Pradhan Mantri Surakshit Matritva Abhiyan, which aims to offer guaranteed, thorough, and top-notch antenatal care, free of charge, to all pregnant women on the ninth day of every month. The Janani Suraksha Yojana (JSY) programme was introduced by NRHM of India in 2005 with the goal of lowering maternal and newborn mortality by encouraging institutional births.

Despite all of the government's policies and initiatives, women in urban slums and rural areas still prefer to give birth at home. This is likely due to a complex interplay of factors, including socio-cultural concerns, religious beliefs, a lack of knowledge and awareness, and inaccurate perceptions of the women. To ensure that they receive the

best delivery care, policymakers should concentrate more on the women who reside in more socioeconomically challenged areas and other vulnerable populations. Through increased health awareness and family decision-making authority, women's electronic and economic empowerment could significantly lower the number of home deliveries in India.

According to NFHS 5, the percentage of hospital deliveries in Bhatti mines is quite low—56.6 percent—compared to the country's average of institutional deliveries, which is 88.6 percent.

As a result, this study emphasises the critical need for hospital facility upgrades and the need of family support as the main modifiable factors affecting the majority of this population. The development of initiatives to encourage institutional births should be guided by these findings.

## **Review of literature**

Afsana et al conducted study November 1998 and January 1999 in a district located 300 km north of the capital city of Dhaka to determine the challenges of rural Bangladeshi women's needs in delivery care. Despite initiatives and interventions undertaken at national and international levels, maternal health were still neglected in Bangladesh, and the maternal mortality ratio remained one of the highest in the world. In order to improve rural women's access to maternity care, in 1996 the Bangladesh Rural Advancement Committee (BRAC) instituted services for birthing women in

2 1 health facilities in each Thana (Block/Ward). The study reported research conducted over three years, based on interviews with women who gave birth in one BRAC Health Centre (BHC) and women who gave birth at home, interviews with staff of the BHC and observation of provider-patient relations. Acceptance of delivery in a health facility by rural women is still minimal. Most women only attended the BHC due to complications, yet the BHC was unable to handle most complications and referred women to the district hospital, where they received poor quality care. Cost, fear of hospitals and the stigma of an 'abnormal' birth were also important constraints. Female paramedics who attended normal deliveries were praised for being caring, but made women deliver lying down, did not always use aseptic procedures and were too busy to give information, making birth a passive experience. Recommendations to provide comprehensive emergency obstetric care at the BHC and upgrade staff skills, introduce rural health insurance and others have already begun to be implemented<sup>11</sup>.

Koblinsky et al analysed national level data from several south Asian countries which reduced the MMR drastically since 1950 and showed that maternal deaths could be reduced by providing training to dais or professionals developing a partnership with dais, however it required apart from political will, effective outreach and referral mechanisms that support traditional system of birthing. Experiences from Malaysia and Sri Lanka show that women are willing to move from home based to facility based care if transport and services are made free for all, if there is improved awareness and also assured quality of service at the facilities.<sup>4</sup>

Niveditha et al<sup>8</sup> did a Cross-sectional survey in urban slums of Delhi concluded in their study that high prevalence of home births conducted by TBA among the urban poor of north-east district of Delhi. Fear of surgical

procedures, unfamiliarity with hospital surroundings, and lack of help for childcare and loss of wages were some of the reasons that drove women to choose home births. Other predictors of home births were low literacy, higher parity and migrant status. Concordance between results derived from qualitative and quantitative data lends greater credibility to these findings.

The prevalence and reasons for home births in the Study were similar to that found in most other urban surveys <sup>12,13</sup> from India.

Sushmita et al conducted prospective study of births in 48 urban slum areas of Mumbai for the period of two year and showed a wide variation in the proportion of home deliveries. Majority of these home deliveries were assisted by **traditional birth attendants** (TBA/DAI) and the direct cost was substantially lower as compared to institutional delivery. Home births were more likely for parous poorer women with less education, living in insubstantial homes in slum areas with high rates of migration and hazardous location. Limits to the study included the sampling frame, cluster size, loss to follow-up, the omission of certain groups such as pavement dwellers, and the methods used to assess poverty. There was a possibility of reporting bias because interviews were done six weeks after delivery a further limitation was that the reasons for home delivery were recorded as open answers to a brief question within a quantitative interview. This makes them potentially superficial and limited the ability to interrogate the drivers of choice<sup>14</sup>.

Prafulla et al study showed 16.1% of births were delivered at home. The institutional deliveries in the country had increased from 38.7% as per the National Family Health Survey (NFHS-III) in 2005-06 to 46.9% as per District Level Household Survey (DLHS-III) in 2007-08. As per NFHS4 (2015-16) % of institutional versus home deliveries in India is 79.9% and

21.1%, respectively. Our findings also suggest that significant regional variation exists with respect to choosing the place of delivery. Especially in the north eastern part of India high prevalence of home deliveries are reported. Promoting institutional deliveries is one of the key strategies of Government of India to reduce morbidity and mortality of pregnant women. Under the National Health Mission, the key steps taken by the Government of India to universalize the facility of institutional delivery in the country are: Promotion of institutional deliveries through JSY, a conditional cash transfer scheme. JSSK entitles all pregnant women delivering in public health institutions to free and no expense delivery, including caesarean section. Findings show advanced maternal age and higher parity are strong predictors for home deliveries. This has been shown previously by various studies that poor pregnancy experience during previous deliveries lead to decreased utilization in subsequent pregnancies<sup>15</sup>.

Garces et al conducted Face-to-face interviews by trained interviewers to assess level of training, knowledge and practices regarding care during the antenatal, intrapartum and postpartum periods. The survey was administered to a sample of birth attendants conducting home or out-of-facility deliveries in 7 sites in 6 countries (India, Pakistan, Guatemala, Democratic Republic of the Congo, Kenya and Zambia) A total of 1226 home birth attendants were surveyed. Less than half the birth attendants were literate. Eighty percent had one month or less of formal training. Most home birth attendants did not have basic equipment (e.g., blood pressure apparatus, stethoscope, infant bag and mask manual resuscitator). Reporting of births and maternal and neonatal deaths to government agencies was low. Indian auxiliary nurse midwives, who perform some home but mainly clinic births, were far better trained and differed in many characteristics from the birth attendants who only performed deliveries at home<sup>16</sup>.



Agarwal et al conducted study in the slum area of Balmiki Basti, New Delhi (June-July 2004). All married women in the age group of 15-45 years who were either pregnant at the time of interview or had delivered within the last 1 year were included. A total of 100 women identified by door-to-door survey participated in the study after getting informed written consent. These women were interviewed using a pre-structured interview schedule including identification data, socio-demographic profile, details of antenatal care, delivery, postnatal care and perceived barriers for non-utilization of maternal health-care services. In the study population, various socioeconomic factors such as literacy of women and their husbands, husbands' occupations showed a significant association with respect to utilization of antenatal care services, indicating the impact of education on awareness and health status of, and utilization by, the population. Most women (76%) received antenatal care.

Mothers availing ANC preferred it to a lesser extent (13.1%) than those having no ANC (66%). The present study shows that there is lack of awareness or interest among few slum dwellers of Delhi for maternal health care in spite of the availability of the health facility in the vicinity. In a study of utilization of maternal health-care services over time, a significant improvement was observed in subsequent pregnancy due to better awareness<sup>17</sup>.

Chung et al conducted secondary research on the NFHS-4 data and found the current study indicated various predisposing factors standing in the way of facility based delivery in India. The demographic factors were older age of women, rural location and Muslim religion, while the socioeconomic factors were lower education level, lower income and lack of health insurance coverage. Through the updated network of healthcare facilities and various government schemes introduced in the recent years, younger

women have received better delivery care than older women. Moreover, the younger women, due to advancements in education and empowerment opportunities, were more aware of the adverse effects of home delivery and therefore delivered at the healthcare facilities. Rural women delivered proportionately more than twice as often at home than the urban women. Seasonal or occasionally employed women delivered more at home than their peers who worked all year round. Women who experienced domestic violence delivered more at home than the women who did not face domestic violence<sup>1</sup>.

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## **CASE STUDIES**

### **Drug Addiction case**

A household in Aloo Morr (Bhatti mines) informed our team during the survey that their teenage boy went missing a few days ago. The family stated that they had been searching for their child for four days now. It came to our knowledge that the police were also not very supportive of the issue. The team went for the second time after 5 days and got to know that the boy was still missing and all the efforts of the family to search for him went in vain. The third visit was after the next 5 days when the family informed us that the boy came back home and they have sent him to work. On asking about the whereabouts of the boy, they couldn't give us satisfying answers.

On further enquiring the local people, we got to know that this is a very common pattern in the Bhatti mines where young teenage boys go missing from their houses for 10-15 days or sometimes even more and come back by themselves or were spotted in the jungle by the local people and their families were informed regarding the same.

### **Women Burnt Alive in Bhatti Mines**

A household in Bhatti Mines informed our team member during the survey about her sister-in-law that she was burnt alive a few months back by her husband after a heated argument. Even when she was admitted to the hospital for further treatment, she refused to blame her husband or in-laws, thinking about their children. Later on, she died after one month in the hospital.

### **A Pregnancy Complication By Preeclampsia**

A 23-year-old pregnant female in her 8<sup>th</sup>-month pregnancy had 2 -3 episodes of vomiting post that she started showing symptoms of a seizure, as stated by her husband. Her body started getting stiff, shivering abnormally, and frothy secretion from the mouth. The husband immediately arranged for an auto-rickshaw and took her to PT.Madan Mohan Malaviya Hospital. Hospital referred her to Safdarjung hospital. According to the family, till they reached

Safdarjung, the female already had 5 to 6 episodes of convulsion. Further, the female showed some incoherent behavior, not oriented to time, place, and person.

### **High Incidence of Miscarriages at Bhati Mines, Delhi**

A 28-year-old female when asked about the number of miscarriages she has had to date, reported two miscarriages in between her four live-born children. She weighed only 40 kgs. When inquired in detail about the reason, she stated malnourishment and less hemoglobin, for which she was prescribed iron tablets.

Another case of a 28-year-old female was considered having 4 miscarriages in between 5 children i.e., four girls and the eldest boy. Her first conception was at the age of 18 years and that is the reason stated to her for these spontaneous abortions.

## **BLOG 1 - Reach to non – communicable disease starts with the health system**

Bhatti Mines, a solicited area of Delhi, home to more than twenty thousand people. Every day is a new challenge for the people living over there. Reaching out to people living in Bhatti Mines comes up with a different set of exceptions.

While conducting the survey the set of questions which reflects not only the livelihood of the people but the health determinants concerning the population that is Non – communicable diseases. Talking about non-communicable diseases, during baseline we found that people are prone to be diabetic and hypertensive over here.

According to WHO, Diabetes is a chronic disease that occurs either when the pancreas does not produce enough insulin or when the body cannot effectively use the insulin it produces. Insulin is a hormone that regulates blood sugar

In 2014, 8.5% of adults aged 18 years and older had diabetes. In 2019, diabetes was the direct cause of 1.5 million deaths and 48% of all deaths due to diabetes occurred before the age of 70 years.

Diabetes is of two type's type 1 and type 2:

Type 1 is also known as insulin-dependent where our body does not produce enough insulin and had to inject it from outside. Another is Type 2 also known as a non-insulin dependent, which occurs when the stored glucose is not efficiently converted into energy. It can cause by many reasons such as hormonal imbalance, physical inactivity, and obesity.

Hypertension is known as the force exerted by the blood against the wall of the arteries, the more blood your heart pumps and the narrower your arteries, the higher your blood pressure. The major cause of hypertension is not taking adequate diet and lifestyle changes.

As earlier, it was a say that **'hypertension and diabetes are diseases of rich people'** but now it can be seen in middle and lower-class people too. Looking towards the cases of Bhatti Mines during the baseline survey, it was found that yet there is a reach of a system but there is a resistance from the people, they are either do not want to tell or they do not seek medical help despite knowing



the consequences, lack of education and awareness leading to the life that affects their health.

It was seen that in Bhatti Mines, many people are large numbers of tobacco and alcohol consumers, eventually developing diabetes and hypertension. The total of the tobacco consumers identified in Bhatti Mines was 16 percent and alcohol was 13 percent respectively

The status of hypertension in Bhatti Mines is 10 percent and diabetes is 8 percent but in total cumulative data we can observe that there is only 5 percent of the cases who are seeking medical help and others are not.

Tobacco and alcohol consumption in total contributes 29 percent of their holdings for carrying out diabetes and hypertension in the major population. Cheap alcohol and tobacco led to more intake and were easily accessible in Bhatti Mines are the major contributing factors.

The question here arises what can be done? As in Bhatti Mines, people are already prone to communicable diseases like TB and other health problems which are faced by women of the community, malnourishment, and other social determinants such as water health and sanitation, how we can acknowledge that decreasing the burden of non-communicable diseases should be done. And secondly why there is a need?

The need for health is not valued until the sickness comes. In accordance what are the approaches we can go for that could reach the community and will aim the community, is free health check-up camps on regular intervals, follow-ups, raising awareness by educating them, and managing the workforce within the health system

The need is not falling for one person but their generations too, if one can be healthy it would be an asset and the health expenditure not only from one's pocket will reduce but a disease burden on the country will reduce too.

When we talk about data, we only talk in numbers but there are many cases that are left behind, which are latent, the given data has shown us the exact numbers of the exact forms but actually, the question comes in the last, how and what –

How can we reach the deep-rooted cause and how can we aim to eradicate it?

What could be done for the people who don't come out?

All answers can not only be found in the reach of the health system for the community but also as an individual either from health or not, but educate them if there we seek a succession we have to step forward, that how we can make this health system for us.

Though much resistance would be there overcoming these will establish resilience.

## **BLOG 2 - Traditional Home Birth in Urban Slums of Delhi**

### **Field experience**

Sanjay colony, Bhatti mines was our area of concern. It is an unregistered slum which is located in the Southwest part of Delhi (ward no. 725). During our field visit, we came to know that people here are not much educated which pushes them to the labour sector and lower socioeconomic status. We were exposed to the lifestyle of urban poor population and they were very welcoming.

### **Issues observed & Reflections:**

Non-health indicators:

Electricity is present in most of the houses in Bhatti mines but the water supply is comparatively dissatisfactory. People are unaware of the methods to treat water before drinking, which results in many water-borne diseases, especially in the monsoon.

No proper garbage disposal system or proper sanitation facility is present in the households, which makes the area unhygienic, and the lack of toilets in the houses results in open defecation which attracts many vector-borne diseases.

No proper transportation facility is present in Bhatti mines, which makes commuting very difficult for the local people.

Health indicators :

People here are mostly malnourished and women of the reproductive age group also appeared to be very weak.

No proper hospital is present in Bhatti mines, because of which people suffer a lot of problems even for the basic treatments. Pregnant women suffer inconvenience due to no ultrasound machinery present in the Bhatti mines.

Drug abuse was evident in Bhatti mines. Most of the men were alcoholics and their wives complained of them spending a major amount of money on alcohol. Women also complained of domestic violence.

Most of the young boys dropped out of school to earn a livelihood, but some of them were deluded towards drug abuse.

### **Analysis from Data Collection :**

The total sample size taken for the **Exploratory Study of determinants of traditional home birth in Bhatti Mines, Chhattarpur Area in New Delhi** was 226.

Out of 226 deliveries, 71 deliveries were from the year 2019 (31.4%), 80 deliveries from the year 2020 (35.4%), and 75 deliveries from the year 2021 (33.2%).

220 pregnancies out of 226 (97.3%) were registered pregnancies.

Deliveries in Bhatti mines were conducted via 5 channels- deliveries by doctors were 119 (52%), deliveries by nurses/ANMs were 9 (4%), deliveries by Dai were 90 (40%), and deliveries by relatives were 6 (3%), and women who delivered by themselves were 2 in number (1%).

212 women reported high-risk pregnancies out of a total of 226 women, due to which institutional deliveries were slightly more (57%) than the home births (43%).

Women who had high-risk pregnancies preferred the hospital more but still suffered a post-partum miscarriage due to poor health conditions during pregnancy. 84 women out of 226 women have suffered a post-partum miscarriage, out of which 36 women delivered at home (42.9%) and 48 women delivered at the hospital facility (57.1%).

173 women out of 226 women had more than 3 ANC visits, out of which 69 women delivered at home (39.9%) and 104 women delivered at the hospital (60%).

Women who spent less than 3000Rs per delivery generally delivered at the hospital (57.6%); women spending 3001-6000Rs per delivery, delivered at home (52.5%); women spending 6001-1000Rs per delivery, delivered at home (52.6%); and women spending more than 10,000Rs per delivery mostly delivered at the hospital (85.7%).

Total beneficiaries for Janni Suraksha Yojna were 96 out of 226 (42.4%). Women who received incentives were (37%) far less than the women who didn't (63%).

Conclusion: Total number of home births were 98 out of 226 (43.4%) & 128 (56.6%) were institutional deliveries.

### **Connecting Practical experience to theory –**

A pregnant woman needs good nourishment for herself and her baby at the time of pregnancy; failing so, if adversely affects the health of the new born and the mother as well.

Since the women in Bhatti mines were malnourished and anaemic, most of them suffered miscarriage during the pregnancy or gave birth to a very weak child who couldn't survive after birth.

Knowledge regarding reproduction should be provided to the young adults, so that they are aware of the family planning methods and contraceptions; failing so, we could see the large family size in the area.

Alcohol results in disruptive mood pattern which could be seen in the males of the Bhatti mines. Most of the men are alcoholics which results in the complete burden on the female to take care of the house & children. A significant correlation was seen in the alcoholic husbands and domestic violence in those families.

# ANNEXURE

## (1) Informed Consent

### Information by the interviewer

Namaste! We are students at a health management institute in Dwarka, New Delhi, named IIHMR. We want to ask you some questions related to a research project which we are working on under PSI. This project is regarding childbirths that take place either at home or in the institute and reasons for the decision regarding the place of delivery.

Your participation in the survey is voluntary. The questions which will be asked to you usually take about 10-15 minutes. All the answers you give will be confidential and will not be shared with anyone other than the members of our survey team. Your name and identity will not be recorded. You may refuse to take part in the research or exit the survey at any time without any consequences. You are free to decline to answer any particular question you do not wish to answer for any reason. You will receive no direct or indirect benefits from participating in this research study. However, your responses may help us to learn more about the subject which may also be beneficial to you in terms of improvement of health services in your area in the future. Thereby we request you to please participate in this study.

In case of any query, you may contact the institute at 01130418900 or IIHMR, Plot no 3, Sector 18 A, Dwarka Phase II, New Delhi 110075.

### Informed Consent by Participant

"I understand that my participation in the study is purely voluntary, and I may choose to withdraw from the study at any point if necessary. I also understand that the information provided by me will be kept confidential and will be used for this research only.

The details of this study have been explained to me. I hereby provide my voluntary consent to participate in the above research study."

(The sign of the participant)

## **(2) Study Tools – Questionnaire**

House Number (Code) –

Q1 Type of Family/ Household

- Nuclear Family
- Joint Family

Q2 What is your caste category?

- General
- SC
- ST
- OBC
- Don't want to say/ Don't know

Q3 How many live-born babies did you had?

- 1
- 2
- 3
- More than 3

Q4 Did you get yourself registered at the nearest health facility during your last pregnancy?

- YES If Yes, Which Health Facility
  - Govt.
  - Private
- NO

Q5 How many check-ups/ ANC visits have you had during your last pregnancy?

- 0
- 1
- 2
- 3
- >3

Q3 Did ASHA/ ANM/ Health personnel perform the following tests/ procedures?

- Blood Pressure (Yes/ No)
- Anaemia (Yes/ No)
- Urine test (Yes/ No)
- Ultrasound (Yes/ No)
- TT injections (Yes/ No)
- Iron/Folic acid tablets (Yes/ No)

Q4 Where was the last baby delivered?

- At Hospital/ Health facility,
  - If Hospital/ Health Facility
  - What was the type of health facility?
    - Govt.
    - Private
  - How did you get to the health facility?
    - Ambulance
    - Private Car
    - Rikshaw
    - Autorikshaw
    - Bike
    - Tractor
    - Other, Specify.....
  - On a scale of 0 to 5, how would you rate following in the health facility?
    - Cleanliness.....
    - Behaviour of health personnel.....
    - Quality of medical care.....
- At Home
  - If at home, Who conducted the delivery?
    - Trained Dai
    - Relative/ Neighbour (untrained)
    - Nobody/ herself

Q5 What was the cost of delivery?

Answer.....

Q6 Are you aware of the Janani Suraksha Yojana scheme of Government?

- Yes            If Yes, then did you receive any cash incentives?
  - Yes
  - No
- No

Q7 Are you registered under Ayushman Bharat?

- Yes
- No

Q8 Did you encounter any of the following high-risk pregnancy criteria during your last pregnancy?

- High blood pressure
- Diabetes
- HIV positive
- history of miscarriage, preterm labor, or cesarean delivery with previous pregnancies
- History of pregnancy loss
- Any child with birth defect
- Multiple Births
- Obesity
- Age <18
- Age above 35

Q9 Did you encounter any of the following complications during your last pregnancy?

- Gestational Diabetes
- Preeclampsia
- Preterm labor
- Anaemia
- Infections
- Breech Position
- Placenta Previa
- Low birth weight



## Annex: The dimensions, indicators, deprivation cutoffs, and weights of the global Multidimensional Poverty Index

Dimensions of Poverty	Indicator	Deprived if living in the household where...	Weight
Health	Nutrition	Any adult under 70 years of age or any child for whom there is nutritional information is undernourished. <sup>1</sup>	1/6
	Child mortality	Any child under the age of 18 years has died in the family in the five-year period preceding the survey. <sup>2,3</sup>	1/6
Education	Years of schooling	No household member aged 'school entrance age + six' years or older has completed at least six years of schooling.	1/6
	School attendance	Any school-aged child is not attending school up to the age at which he/she would complete class eight. <sup>4</sup>	1/6
Standard of living	Cooking Fuel	The household cooks with dung, wood, charcoal or coal.	1/18
	Sanitation	The household's sanitation facility is not improved (according to SDG guidelines) or it is improved but shared with other households. <sup>6</sup>	1/18
	Drinking Water	The household does not have access to improved drinking water (according to SDG guidelines) or improved drinking water is at least a 30-minute walk from home, round trip. <sup>7</sup>	1/18
	Electricity	The household has no electricity. <sup>8</sup>	1/18
	Housing	At least one of the three housing materials for roof, walls and floor are inadequate: the floor is of natural materials and/or the roof and/or walls are of natural or rudimentary materials. <sup>9</sup>	1/18
	Assets	The household does not own more than one of these assets: radio, television, telephone, computer, animal cart, bicycle, motorbike or refrigerator, and does not own a car or truck. <sup>10</sup>	1/18

1. Adults 19 to 70 years of age (229 to 840 months) are considered undernourished if their Body Mass Index (BMI) is below 18.5 kg/m<sup>2</sup>. Those 5 to 19 years (61 to 228 months) are identified as undernourished if their age-specific BMI values are below minus two standard deviations from the median of the reference population (<https://www.who.int/growthref/en/>). In the majority of the countries, BMI-for-age covered people aged 15 to 19 years, as anthropometric data was only available for this age group; if other data were available, BMI-for-age was applied for all individuals 5 to 19 years. Children under 5 years (60 months and under) are considered undernourished if their z-score for either height-for-age (stunting) or weight-for-age (underweight) is below minus two standard deviations from the median of the reference population (<https://www.who.int/childgrowth/software/en/>). Nutritional information is not provided for households without members eligible for measurement, these households are assumed to be not deprived in this indicator.
2. All reported deaths are used if the date of child's death is not known.
3. Child mortality information is typically collected from women of reproductive ages 15-49 years. Households without women of such ages do not provide information about child's deaths and are assumed to be not deprived in this indicator.
4. This country-specific age cutoff was introduced in 2020. Previously, the age cutoff was 10 years which did not recognize the fact that by age 10 children do not normally complete 6 years of schooling.
5. Source for official entrance age to primary school: United Nations Educational, Scientific and Cultural Organization, Institute for Statistics database. Education systems [UIS, <http://data.uis.unesco.org/?ReportId=163>].
6. A household is considered to have access to improved sanitation if it has some type of flush toilet or latrine, or ventilated improved pit or composting toilet, provided that they are not shared. If the survey report uses other definitions of improved sanitation, we follow the survey report.
7. A household has access to improved drinking water if the water source is any of the following types: piped water, public tap, borehole or pump, protected well, protected spring or rainwater, and it is within 30 minutes' walk (round trip). If the survey report uses other definitions of improved drinking water, we follow the survey report.
8. A few countries do not collect data on electricity because of 100% coverage. In such cases, we identify all households in the country as non-deprived in electricity.
9. A household is considered deprived if the dwelling's floor is made of mud/clay/earth, sand or dung; or if the dwelling has no roof or walls or if either the roof or walls are constructed using natural materials such as cane, palm/trunks, sod/mud, dirt, grass/reeds, thatch, bamboo, sticks or rudimentary materials such as carton, plastic/ polythene sheeting, bamboo with mud/stone with mud, loosely packed stones, uncovered adobe, raw/reused wood, plywood, cardboard, unburnt brick or canvas/tent.
10. Television (TV) includes smart TV and black and white TV, telephone includes cell phones, computer includes tablets and laptops, and refrigerator includes freezers.



## PICTORIAL JOURNEY







