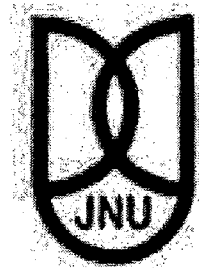


**Institutional and Non-Institutional Deliveries in Orissa: A Study
Based on National Family Health Survey (NFHS-3)
2005-06**

*Dissertation submitted to School of Social Sciences, Jawaharlal Nehru
University in partial fulfillment of the requirement of the
award of the degree of*

MASTER OF PHILOSOPHY

MRUGASEN BALIARSINGH



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2009



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DECLARATION

I, Mrugasen Baliarsingh declare that the dissertation entitled “**Institutional and Non -Institutional Deliveries in Orissa: A study based on NFHS-3 (2005-06)**” submitted by me for the award of the degree of Master of Philosophy of Jawaharlal Nehru University is my bonafide work. The dissertation has not been submitted for any other degree of this university or any other university.

.....*Ch*.....

(MRUGASEN BALIARSINGH)

CERTIFICATE

We recommended that this dissertation be placed before the examiners for evaluation.

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Dedicated
TO
MY LATE FATHER

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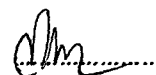
I wish to extend my special thanks to my friends and well wisher Dr. Kapil, Dr. Raj Kumar, Mr. Dhiraj, Sarbeswar, Iswar, Madhu, Biren, Sunil, Chandra and my classmate.

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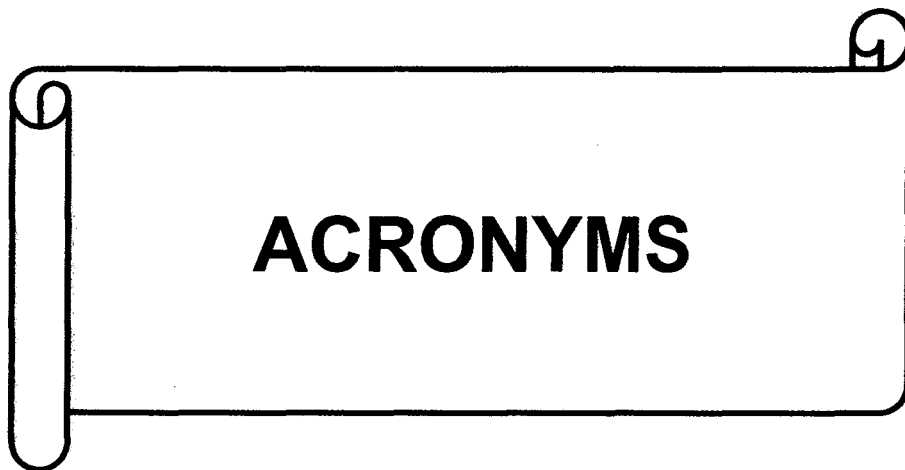
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(Mrugasen Baliarsingh)

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Place: New Delhi



ACRONYMS



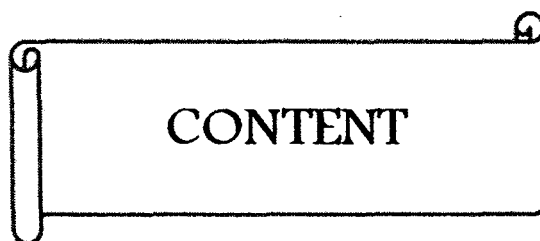
ACRONYMS

ADMO (PH)	Assistant District Medical Officer (Public Health)
AIDS	Acquired Immunodeficiency Syndrome
ANC	Ante Natal Care
ANM	Auxiliary Nurse Midwife
ASHA	Accredited Social Health Activists
AWW	Anganwadi Worker
BEOC	Basic Emergency Obstetric Care
BMW	Bio Medical Waste
CDMO	Chief District Medical Officer
CEOC	Comprehensive Emergency Obstetric Care
CHC	Community Health Centre
CME	Continuing Medical Education
CPR	Contraceptive Prevalence Rate / Couple Protection Rate
CSSM	Child Survival and Safe Motherhood
CSSMP	Child Survival and Safe Motherhood Program
DDC	Drug Distribution Centre
DFID	Department For International Development (United Kingdom)
DHS	Demographic Health Survey
DIMIS	Drug Inventory Management Information Systems
DMET	Director of Medical Education and Training
EDL	Essential Drug List

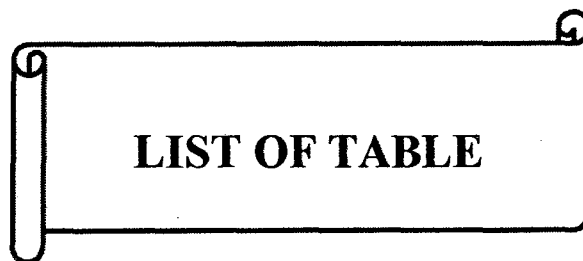
EMoC	Emergency Obstetrics Care
FLE	Family Life Education
FP	Family Planning
FRU	First Referral Unit
GOI	Government of India
GoO	Government of Orissa
GSDP	Gross State Domestic Product
HDR	Human Development Report
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HRD	Human Resource Development
IAP	Indian Association of Paediatricians
ICDS	Integrated Child Development Scheme
ICMR	Indian Council of Medical Research
ICPD	International Conference on Population and Development
IEC	Information, Education and Communication
IEOC	Increasing Emergency Obstetric Care
IFWP	India Family Welfare Programme
IIPS	International Institute of Population Science
IMA	Indian Medical Association
IMR	Infant Mortality Rate
IQ	Intelligence Quotient
ISDN	Integrated Services Digital Network
ISM & H	Indian Systems of Medicine and Homeopathy
ITD	International Development Target
JSY	Janjnini Suraksha Yojanai
KBK	Kalahandi, Balangir Koraput

LBW	Low Birth Weight
LPM	Linear Probability Model
MCH	Maternal in Child Health
MCI	Medical Council of India
MDGs	Millennium Development Goals
MDSS	Multi Disease Surveillance System
MIS	Management Information System
MMR	Maternal Mortality Ratio
MNCH	Maternal and New Born Child Health
MNH	Maternal Neonatal Health
MO	Medical Officer
MOHFW	Ministry of Health and Family Welfare
MPHS (M)	Multi-purpose health supervisor -- Male
MPVLW	Multi Purpose Village level Worker
MTP	Medical Termination of Pregnancy
NFHS	National Family Health Survey
NGOs	Non Governmental Organizations
NPP	National Population Policy
NRHM	National Rural Health Mission
NSQ	Not of Standard Quality
NSSO	National Sample Survey Organization
OBC	Other Backward Class
OFA	Obstetric First Aid
OHFWRP	Orissa Health and Family Welfare Reform Project
OHSDP	Orissa Health Systems Development Project
OOP	Out of Pocket (expenditure)
OPD	Out Patient Department
PATH	Physical Art Teaching Hospital

PC	Planning Commission
PHC	Primary Health Centre
PRI	Panchayati Raj Institution
RCHP	Reproductive and Child Health Programme
RTI	Reproductive Tract Infection
SBA	Skill Birth Attendant
SC	Scheduled Caste
SPSS	Statistics Programme for Social Sciences
ST	Scheduled Tribe
STD	Sexually Transmitted Disease
UHC	Urban Health Center
WB	World Bank
WHO	World Health Organization
WMT	Waste Management Team
WRA	White Ribbon Alliance
ZSS	Zilla Swasthya Samitee



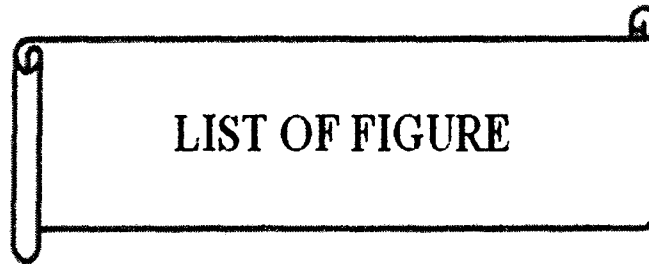
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CHAPTER-I



INTRODUCTION

CHAPTER-I

Institutional and Non-Institutional Deliveries in Orissa: A Study Based on NFHS-3 (2005-06)

Introduction

“ A woman dies every seven minutes from complications related to pregnancy and childbirth in India and in Orissa nine women die every day from the same cause. Orissa’s Maternal mortality rate (MMR) may have reduced from 367 per 1 lakh childbirths in 1993 to 358 deaths per 1 lakh births in 2003, but there is yet to be a significant reduction. Participants at the “Know your entitlements and demand for quality healthcare service” Staff Reporter Orissa: The Telegraph Issue Date: Saturday, Bhubaneswar, April 12, 2008.

Health is an important determinant of well-being in the broadest sense; improved health leads to increase capability to work and to participate in economic development. Maternal health is the most neglected area in the health care delivery system of most of the developing societies. The majority of maternal deaths take place after and before child birth, mostly within 24 hours of delivery. As per World Health Organisation (W.H.O) report 2003, worldwide about 550,000 pregnancy related deaths are reported every year and 90 per cent of these deaths happen among the poor in the developing countries. And every minute across the world, 380 women become pregnant; 190 face unplanned or unwanted pregnancy; 110 experience a pregnancy-related complication; 40 have an unsafe abortion; and one woman dies of a pregnancy complication causes.

Pregnancy Care is important for expected mother for safe motherhood and child survival. Though modern medicine and utilization of maternal health care are to some extent available still many mothers and their babies do not survive because of non-institutional deliveries, and traditional birth process. So, today good prenatal and postnatal care is essential to improve the quality of delivery for the healthy infant and mother. The following are some of the good pre and postnatal care for expected mothers:

- Good nutrition, exercise habits before and during pregnancy.
- Antenatal and postnatal care.
- Frequent prenatal examinations to detect early problems.
- Routine ultrasounds to detect fetal abnormalities and problems.
- Routine screening for: Sexually transmitted diseases immunity.

The safe motherhood conference in Nairobi in 1987 has given special attention to the problem of maternal and child mortality in low-income countries. In 1990, leaders from 189 countries decided to achieve the Millennium Development Goal (MDGs) by 2015 and reducing child mortality by two-thirds and maternal mortality by three-fourths. Since then several major national, international conferences, meetings, workshops, policies and programmes have been organised at international, governmental and non-governmental agencies level in relation to safe motherhood and child survival and prior to institutional delivery throughout the world. For example the International Conference on Population and Development (ICPD) in Cairo in 1994, created commitments to reduce maternal mortality and morbidity and the goal of reducing maternal mortality by 75 percent by 2015 that has been adopted as an International Development Target (IDT).

“In this era of high technology and medical advances, the death every year of 11 million children and over half a million mothers around the world seems senseless. Ironically, most of these deaths are preventable and caused mainly by malnutrition, infections and lack of access to even basic health care and transportation, almost all the deaths happen among the poor of the developing countries.” (World Health Report 2004, on the eve of World Health Day (April, 7).

The United Nations (2004) estimated that one out of every 55 women in India faces the risk of maternal death, compared with one in 80 in Pakistan and one in 610 in Sri Lanka. According to the World Bank, (2000) most of the maternal deaths in India can be prevented, if appropriate care during pregnancy is taken.

Promotion of maternal and child health has been one of the most important objectives of the Family Welfare Programme in India. For instance India is the first country in the world to start family planning programme officially in 1952. Since then the government of India took steps to strengthen maternal and child health services. For instance, the Minimum Needs Programme was initiated towards maternal health, child health, and nutrition services integrated with family planning services. The primary aim was to provide at least a minimum level of public health services to pregnant women, lactating mothers, and children.

In 1992–93, the Child Survival and Safe Motherhood Programme continued the process of integration by bringing together several key child survival interventions with safe motherhood and family planning. In 1996, safe motherhood and child health services were incorporated into the Reproductive and Child Health Programme. This new programme seeks to integrate maternal

health, child health, and fertility regulation interventions with reproductive health programmes for both women and men, the important elements of the programme include encouragement of institutional deliveries or home deliveries assisted by trained health personnel.

The need for bringing down maternal mortality rate significantly and improving maternal health in general has been strongly stressed in the National Population Policy 2000. This policy recommends a holistic strategy for bringing about total intersect oral coordination at the grass root level and involving the NGOs, Civil Societies, Panchayati Raj Institutions and Women's Group in bringing down Maternal Mortality Ratio and Infant Mortality Rate.

Among the national socio-demographic goals for 2010 specified by the policy, safe motherhood is an important component such as, 80 percent of all deliveries should take place in institutions, 100 percent of deliveries should be attended by trained personnel, and the maternal mortality ratio should be reduced to a level below 100 per 100,000 live births. But the studies conducted in the country show that majority of the births more particularly in the rural areas are still delivered at home, in this regard India has to go a long way to achieve universalization of institutional deliveries.

According to Ministry of Health and Family Welfare, (MOHFW) the government of India the major causes of death under pregnancy and childbirth include bleeding during pregnancy, abortion and anemia, many of these deaths could have been avoided if the pregnant women had sought full antenatal care and timely delivery care. In order to reduce maternal mortality, the Indian government has increased its commitment to institutional deliveries. **In India** more than 1 billion people, where the women on an average have three children,

a large number of maternal deaths occur due to non institutional deliveries and pregnancy related cases. (2001). As per the Register General of India (2000) maternal mortality ratio of 301 per 100,000 live births has been a major public health concern in India. It is significant that around 77,000 women die every year due to pregnancy complication and child birth.

In India promotion of maternal and child health has been one of the most important objectives of the Health and Family Welfare Programme. The current Reproductive and Child Health Programme (RCH) was launched in October 1997. The RCH Programme incorporates the components covered under the Child Survival and Safe Motherhood Programme of universal immunization, child survival and oral rehydration have been combined into an integrated reproductive and health programme. The current strategy for reducing maternal deaths Under the National Rural Health Mission in all states of India namely:

- ASHA: Accredited Social Health Activist or Skilled Birth Attendant
ASHA, A village level health worker will identify pregnant women, and motivate them to avail health services. Under Janani Suraksha Yojna financial support will be provided to poor pregnant women, above the age of 19 years, for their first two deliveries, and also third only if, she undergoes sterilization at the time of delivery. The skilled birth attendant will be a person with the ability to not only deliver babies, but to handle life-threatening risks immediately.
- Universal institutional delivery: Birth should occur only in government health centres and hospitals or in private nursing homes where the doctors will be provided with a fixed fee for normal delivery or for caesarian operations.

- Increasing Emergency Obstetric Care: Providing a basic package of services at Primary Health Centres and at Rural Hospitals. On the face of it, these three together appear to form a very reasonable strategy; nevertheless, there are significant challenges in implementing such a strategy successfully.

Health Situation in Orissa

Orissa is one of the poorest state in the India within an area of 1, 55,707 (sqkm). Since 1901 the population of Orissa has more than tripled. According to Census 2001, the population of Orissa was 36.8 million. The decennial growth rate of population between 1991- 2001 is 15.94 percent, significantly lower than the estimated national increase of 21.34 percent.

The age distribution of Orissa is typical of high fertility populations, with 33 percent below age 15 and 6 percent at 65 years and above (NFHS-2, 1999).

Orissa experienced a large number of disasters about 40 major disasters in 50 years that adversely affect health and development and health care services. The state suffers from enormous poverty and a devastating economy with poor infrastructure. It has very poor access to education, communication, transportation, sanitation, health services, potable drinking water and opportunities for income generation .In rural Orissa the health services is severely affected with very few trained medical staff to run existing health centre without modern equipment

The Human Development Report (2004) reveal that there is one qualified doctor for every 50 000 people. One out of five children dies before the age of five years. The life expectancy at birth has been estimated at 44.5 years.

Maternal mortality is considered the highest in the India with 358 per 100 000 live births. One woman dies in every 30 minutes from pregnancy-related causes. Less than 15 percent of deliveries are attended by skilled health workers. Severe poverty, ignorance, diseases, insecurity and discrimination against women has continued for decades in the rural areas especially among the deprived sections.

Orissa has poor development indicators including the highest infant mortality rate (IMR) in the country, as well as high maternal mortality rate (MMR). The National Maternal Mortality Ratio was estimated at 437 per 100,000 live births (NFHS-1, 1992-93) The Sample Registration System (SRS) in 1998 estimated the MMR in Orissa to be 361, but it is likely to be an underestimate. Again according to SRS bulletin 2006 (October) in Orissa Infant mortality and Maternal Mortality Rate is estimated to be 78 per 1000 and 358 per 100,000 live birth respectively.

Orissa also has a high prevalence of malnutrition among women and children. According to NFHS-2 report 48.5 percent of adult women in Orissa are malnourished with a body mass index below 18.5, and this is the highest proportion of malnourished women in the country. Orissa has the second highest proportion of children who are underweight 54 percent. Anaemia is very prevalent in the state with 34 percent of pregnant women and 46 percent of children under 3 have moderate or severe anaemia. Iodine deficiencies, as well as deficiency of vitamin A are also public health problems in the State. The root cause of this are poverty, ignorance, illiterate, lack of nutrition, water and sanitation, health services, and transportation, unhygienic environment, unskilled birth attendant, no emergency obstetric care and poor referral system.

According to White Ribbon Alliance (Orissa) report 800 mothers died in 30 months time in 8 districts of Kalahandi, Balangir, Koraput (KBK) region in Orissa that are the most backward area in Orissa. It also reveals the government health sector too lagged behind in putting adequate infrastructure in place to take care of mothers. Though the institutional delivery system gradually improved in Orissa, still mother's deaths are alarmingly high. The situation continued to be as pathetic as the State lost 8 to 9 mothers every day. Home delivery by unskilled persons is a major cause of high infant, maternal mortality and morbidity. Maternal and child health care has been a priority of the State Health Department, but gains in child and maternal survival have not been as much as expected. Problems of access, availability and utilization of health services remain difficult. Additionally the position of women in Orissa, as reflected by the low literacy levels and less autonomy restricts them from health care available.

In 2001, The Vision 2010 for the health sector development declared by the government of Orissa and it has been taken forward to the formulation of a health policy, strategies and proposed activities in key areas. This was accomplished through an elaborate consultative process, with documented experience and studies. The health sector strategy presents the plans, priorities and broad steps for action by the government of Orissa to all concerned. The goals are improvement of health of its people and equitable access to good quality health care.

In Orissa, marginalized groups comprise around 36 percent of the total population. Women from these groups face multiple disadvantages of income, caste and gender discrimination. Women in general have a lower social status

and this exposes them to more health risk factors. They also have lower utilization of health care services. Almost 70 percent of STs and SCs groups are landless labourers with practically no assets. They have consistently worse health outcomes and low access to health care facilities. It is observed that State health systems that direct resources and energies to address their health needs achieve better overall health status for the entire state.

The Government of Orissa has launched RCH-2 programme in the State since April 2005 with goals of reducing IMR from 87 per 1,000 live births to 50 per 1000 live births, MMR from 367 per 100000 to 250 per 100000. The challenges of poverty, backwardness coupled with inadequate infrastructure have to be tackled in the State so as to improve delivery of health care. The most important challenge lies in the place of deliveries in states like Orissa and Uttar Pradesh, over two-thirds of deliveries take place at home, and through the support of family members or traditional birth attendants.

Taking into the account of high rate of maternal mortality , morbidity and infant mortality in comparison to national average, the proposed area of study will be undertaken in one state of India, Orissa to understand and examine the determinants of delivery location (home, public or private facility) in using data from the National Family Health Survey (NFHS-3, 2005-06). In Orissa, the scenario of institutional delivery is more pathetic. As per the NFHS-1, 2 and 3 report, only 14.1 and 19.3 percent and 36.1 percent of births delivery found in medical institutions. It is worst in rural and South Western part of Orissa. This study will be an attempt to focus on the relevant aspects of institutional delivery in Orissa. The socio-economic, cultural and behavioural aspects are predominantly affect the accessibility to health and services utility of institutional deliveries.

Objective

The present study will examine the effect of demographic, socio-economic, and health related factors affecting the utilization of institutional services for delivery in Orissa. The specific objectives of this study are as follows:

- To assess non-institutional and institutional deliveries in Orissa.
- To understand the factors that influence institutional delivery in Orissa.

The findings of the study would help in formulating strategic policy incorporating local situational issues. In addition to these the findings could also be referred for monitoring and evaluation of National Rural Health Mission which have the components of maternal and child health services at present.

Organization of the Chapters

This study consists of five chapters namely (i) Introduction (ii) Literature Review (iii) Conceptual Framework and Methodology (iv) Data Analyses and (v) Conclusions. The first chapter describes the current scenario on non-institutional and institutional deliveries and the utilization of maternal health care of globe, nation, and area of study. It also places the problem investigated in the current study. The second chapter contains a description of literature review related to the study. In this chapter the findings of various countries and national studies have been presented. In the third chapter we have described the conceptual framework for the study, proposed research questionnaire, methodology such as data source, presentation of the data, statistical tools, study variables and methodology used for the analysis of the data, and area of

study and limitations of the study. The fourth chapter provides a detailed statistical analysis of the data to show the factor that influence institutional and non-institutional deliveries in Orissa. The fifth or final chapters bear the conclusion of the study and suggest some of the policy measure to provide and improve institutional delivery in Orissa.

Table-1.1 Indian states ranking by institutional delivery

States	Percentage of Institutional delivery	Rank
Kerala	100	1
Goa	93	2
Tamil Nadu	90	3
Andhra Pradesh	69	4
Karnataka	67	5
Maharashtra	66	6
Mizoram	65	7
Gujarat	55	8
Jammu & Kashmir	54	9
Punjab	53	10
Sikkim	49	11
Tripura	49	11
Himachal Pradesh	45	13
West Bengal	43	14
Haryana	39	16
Orissa	39	16
Uttaranchal	36	18
Rajasthan	32	19
Arunachal Pradesh	31	20
Madhya Pradesh	30	21
Manipur	30	21
Meghalaya	30	21
Assam	23	24
Bihar	22	25
Uttar Pradesh	22	26
Jharkhand	19	27
Chhattisgarh	16	28
Nagaland	12	29
INDIA	41	15

Source: SRS, 1998

Table 1:2 MMRs and Other Indicators for Indian States

	MMR	Population (Million)	Att. Delivery. percent	Female Anemia percent	Publ. Health Exp/P in \$
Assam	984	26.6	21.5	69.7	3.1
Uttar Pradesh	737	174.5	23.0	48.7	2.2
Madhya Pradesh	700	81.1	30.1	54.3	2.0
Orissa	597	36.8	33.7	63.0	2.3
Gujarat	596	50.6	53.5	46.3	3.0
Rajasthan	580	56.5	36.2	48.5	3.1
Bihar	513	109.8	23.5	63.4	1.7
Karnataka	480	52.7	59.2	42.4	3.0
Haryana	472	21.1	42.0	47.0	2.8
West Bengal	458	80.2	44.5	62.7	2.7
Maharash tra	380	96.8	59.7	48.5	3.0
Andra Pradesh	283	75.7	65.1	49.8	2.5
Punjab	199*	24.3	62.7	41.4	3.7
Tamil Nadu	195*	62.1	84.1	56.5	3.6
Kerala	195*	31.8	94.1	22.7	4.0
INDIA	479	1027.2	42.3	51.8	2.3

NOTE- *These figure less than 200 MMR

Sources: Planning Commission GOI (2002)

CHAPTER-II



***LITERATURE
REVIEW***

CHAPTER-II

Review of Literature

A women desires pregnancy as she is in the process of getting another human being or life, this is the reason that a mother is appear the highest importance in the society. As the greatest poet of the modern India Rabindra Nath Tagore says, mother is the living God on the earth. Complications of pregnancy and childbirth are often the major causes of mortality and morbidity among women in child bearing ages in the developing countries (Das Gupta 2001). There is no denying the fact that pregnancy is the most complex test for women. This phenomenon is more applicable in rural areas, where most of the deliveries take place at home without being attended by trained personnel (MOHFW, 2000).

“It is obvious to many practitioners that professionalisation of delivery care is a key to reducing maternal mortality” (Graham et.al. 1989). Maternal mortality remains high in many developing countries and pregnancy is result with high incidences of miscarriages, pre-term deliveries, low birth weight and birth trauma, which endanger the chances of survival of the newborn as well as mothers. The high associated mortality risk of pregnancy together with a low survival chance of the child makes pregnancy a major investment for many women. During pregnancy the fetus is entirely dependent on his mother for his growth and development. A woman’s general physical status affect the health status of the neonate at birth and so his survival chances.

Statement of Mother and Child Health Care

According to U.N. Population Fund Executive Director Thoraya Ahmed Obaid, one sure way to make every mother and child count is to guarantee universal access to reproductive health, as was agreed at the International Conference on Population and Development (which was held in Cairo in 1994).

World Health Organization (W.H.O) defines maternal mortality as the death of a woman while pregnant or within 42 days of termination (by delivery, miscarriage or abortion) of pregnancy. Women should not die giving birth; their deaths are preventable even in the poorest countries. But many women have no role in decision-making even when it comes to their own health.

According to a WHO study, a safe motherhood programme using existing resources would cost developing countries less than \$3 per person a year. It reflects the critical need may be one of generating sufficient political and social will at international and national levels to overcome this avoidable tragedy. Dr.Ardi Kaptiningsih of the WHO says: "Many women die not only because they are too young but also because of repeated pregnancies for the sake of a son." The World Health Report (WHR, 2004) categories India on the list of 51 slow progressing countries with regard to infant, child and maternal mortality and morbidity. Every year, about 10 per cent of all newborn do not live to see their fifth birthday.

A study conducted by the government of India (RCH Facility Survey) showed that in UP, Rajasthan and Orissa a labour room was available in less than half the Primary Health Centres surveyed, and emergency drugs for managing

labour were available in less than 5 per cent of the PHCs. Over the whole country only a quarter (26.9) percent of the CHCs had a labour room, and less than half (48 percent) had a labour room kit, while nearly 30 percent had an obstetrician or gynecologist, less than 10 percent had an anesthetist. Thus, even if women from the rural communities were to come to the PHC, the chances of receiving full emergency obstetric care from qualified specialists would be quite low. At the district level too, the availability of staff trained in emergency obstetric care was found to be very low (R.C.H-2, 2005).

According to National Family Health Survey–3 (NFHS–3) in India, only 20 percent of mothers received all the recommended types of antenatal care, 24 percent of births were delivered in a medical institution, 42 percent of deliveries were assisted by a health professional and 17 percent of non-institutional deliveries had a postpartum check-up within two months of birth (IIPS and ORC Macro, 2000). Wide differentials are also observed between rural and urban areas. Similarly, two-thirds of deliveries in urban areas, and one-quarter of deliveries in rural areas, took place in health care facilities. These measures indicate that the utilization of various maternal care services are not encouraging, particularly in the rural areas. It is common that deliveries happen at home, which accounts for three-fourths of all child birth in India.

The National Population Policy of India (2000) focuses on the government's commitment to safe motherhood, by 2010 to reduce MMR to below 100, IMR to below 30; NMR to below 20; achieving 80 per cent deliveries within health institutions. Addressing the unmet needs for basic reproductive and child health services, supplies, and health infrastructure, and the presence of trained personnel in the community at all births. To make childbirth safer, the Health Ministry decided to pay midwives to bring pregnant women to hospitals for check-up and delivery, and the latter for having their babies there. The idea

behind this is to raise the number of women delivering in medical institutions from 33 per cent to 80 per cent.

As per UNICEF report, 2007 on the eve of safe motherhood day (April-11) only 9.7 per cent of married rural women (15-49 years) have a hospital within the village and 40 per cent live more than 10 km from a hospital in India. In such cases a skilled health worker is a blessing. The UNICEF has also suggested that skilled birth attendance for every new born is must for Safe Motherhood Day.

Since the International Conference on Population and Development (ICPD) in 1994 and the Fourth World Conference on Women in 1995, there have been dramatic changes in population policies and programs around the world. Particularly in developing countries, the consequence of this paradigm shift has changed the focus of these policies and programs from population control to reproductive health emphasizing a holistic approach to women's health and well being. ICPD advocated population programs aimed to facilitate couples to have children as they desire in timing and number and also to assist mothers through pregnancy and childbirth safely so that the outcome of pregnancy is successful in terms of maternal and infant survival and well-being.

As per the recommendations of ICPD, the Indian Family Welfare Program (IFWP) went through many policy changes towards population control and emphasis on utilization of maternal care services. Unfortunately, similar to other developing countries, during this era the IFWP was not designed to address causes of mortality due to labor, delivery and complications during the postpartum period (Abou-Zahr and Wardlaw, 2001).

In 1996, in response to global action plans adopted at the Cairo and Beijing conferences emphasizing that men's shared responsibility was essential to improving women's health.

A Review of USAID- funded Activities," indicated that USAID cooperating agencies lacked clear guidance on the priority that they should place on this issue, and needed models on how to integrate men into existing programs in a way that enhanced services to women. (USAID, 1998) According to a report that tracks the progress made by 68 priority countries, which account for 97 percent of maternal and child deaths worldwide, only 16 (24 percent) were on track to meet the MDG compared to 7 of 60 (12 percent) in 2005 , however, India is out of them.

As per the medical journal Lancet, India's progress towards MDGs target in maternal and child mortality, Newborn and Child Survival has been found to be insufficient and maternal mortality has been recognised high.

According to Dr Francisco Songane, director of WHO's partnership for maternal, newborn and child health, "India along with Bangladesh, Pakistan and Indonesia, contribute over 50 percent of all maternal and child deaths globally. What's worse, India is not making sufficient progress. India's population is massive and even if the ratio of maternal and child mortality may not be high, the numbers are staggering.

According to the report, brought out by the International Partnership for Maternal, Newborn and Child Health (MNCH), an umbrella organization comprising about 240 members such as UNICEF, WHO and Save the Children, India's average annual rate of reduction of child deaths between

1990-2006, has been just 2.6 percent. If India wants to achieve the agreed targets by 2015, the required rate to reduce child and maternal mortality will have to be 7.6 percent from 2007-2015. Only 50 percent women and newborns benefit from a skilled birth attendant at the time of birth globally

The important elements of the program for maternal care include the provision of antenatal care, the encouragement of institutional deliveries or deliveries at home assisted by a trained health professional and the provision of postnatal care. The important role of these elements in improving reproductive health of women is undisputed (WHO, 1989). Furthermore, several studies have shown the importance of providing health care services to mothers during and after pregnancy (Abbas and Walker, 1996; Kwast et. al; 1986; Obermeyer and Potter, 1991; Bhatia, 1999).

Safe Motherhood and Child Survival Programme in India.

The Government of India has launched the Janani Suraksha Yojana to promote safe motherhood, safe birth-outcomes and institutional delivery under the Reproductive & Child Health Project -II, that constitutes Part-A of the National Rural Health Mission (NRHM). The Program was launched all over the country in order to promote safe delivery practices. Cash assistance is integrated with antenatal care during the pregnancy period, institutional care during delivery and immediate postpartum period in a health center by establishing a system of coordinated care by field level health worker. Under the Janani Suraksha Yojana the accredited social health activist (ASHA) is a trained female community health worker, provided in each village with 1,000 populations. Her role is to act as a link between the community and health centers. The objective of this scheme is to promote institutional deliveries

among the rural poor, by assisting them in meeting the expenses in traveling to the hospital town incurred by the pregnant woman and one or two family members who accompany her, loss of wages for the family members accompanying the pregnant woman for up to two to three days, food and incidental costs for the accompanying family members, etc.

The Departments of Health and Family Welfare under the Government of India have been merged in all the states. In India the current National Health and Family Welfare Program, renamed Reproductive and Child Health (RCH) Program, combined all the related programs of Child Survival and Safe Motherhood (CSSM) initiated during 1992-93. Under this new approach, the RCH program intends to take into account the community's needs and thus aims to improve quality of services instead of a mere fulfillment of targets. In this respect, there are no pre-specified targets for various services. Instead, the grass-root level workers are expected to assess the needs of the community in consultation with that community. Based on their assessment, goals are formulated for various health and family welfare activities in the community. Thus the concept of RCH is to provide needs-based, client-centered and demand-driven integrated services to the beneficiaries. (MHFW, 1998).

Although several studies have addressed the importance and determinants of the use of maternal care in India, many limitations are noted in these studies. First, while prior studies on utilization of maternal care in India have focused on individual characteristics the effects of program components seldom received any attention. Many studies have approached the use of health care services as a behavioral phenomenon while the quality and cost of and access to services are not included. (Bhatia and Cleland, 1995; Raghupathy, 1996; Dharmalingam et. al 2002).

With regard to high maternal mortality and poor patient management several problems i.e. shortage of trained personnel, lack of equipment and facilities (including consumables such as blood products and antibiotics). These problems are also pinpointed in the World Bank assessment of obstacles to the achievement of health related MDGS. (Sundari, 1992).

Graham and colleagues have developed a technique for estimating rich-poor differentials in maternal mortality using Demographic and Health Survey (DHS) data for 10 countries of (Burkina Faso, Chad, Ethiopia, Indonesia, Kenya, Mali, Nepal, Peru, Philippines and Tanzania) with large sample sizes using wealth-quintile methodology. Multivariate regression techniques to study cross-national variation of maternal mortality estimates (Wagstaff and Claeson, 2004).

Rani and Lule (2004) analyzed DHS data for 12 poor countries and they found young women from the poorest households were more likely than those from the richest ones to be married by age 18 and to have had at least one child by that age. Research on the links between early childbearing and poor maternal and neonatal health outcomes have concluded that most of the adverse health consequences (delivery complications and maternal mortality, prematurity and higher prenatal death rates) of teen pregnancy are associated more with socioeconomic factors than with the biological effects of age. Births that are too closely spaced are also associated with higher prenatal mortality, and may be a risk factor for maternal mortality (Miller, 1991).

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“Infants of adolescent mothers are more likely to suffer higher prenatal and neonatal mortality, that levels of anemia and complications of pregnancy are higher for adolescent mothers, but that they are less likely to obtain antenatal care and trained attendance at delivery than older mothers.” (Jejeebhoy, 1995).

A cross-national study of 18 Latin American countries found that women with inter pregnancy intervals of less than six months had a higher risk of maternal death and complications of delivery than those conceiving at 18 to 23 months.

The association between short birth intervals and poor maternal and neonatal health has been ascribed to the so-called maternal depletion syndrome, in which maternal nutrition plays a critical role (Winkvist et.al, 1992; King, 2003). According to him maternal depletion of energy and protein resulting from short inter-pregnancy intervals or early pregnancies leads to a reduction in maternal nutritional status at conception and altered pregnancy.

Each time a women has a child, she faces an increased risk of dying in the relatively short period (two to three years) after that birth, thus a woman who bears seven children has seven chances of this risk, whereas a woman who bears two children has only two chances (Menken et.al, 2003). Women with unintended pregnancies are less likely to seek prenatal care, more likely to use alcohol and tobacco during pregnancy, and more likely to suffer physical abuse and violence (Santelli et.al, 2003). Studies show that a woman’s chances of dying as a result of pregnancy and delivery are affected by her age and parity (Maine et.al, 1994).

Community Based Maternal Health Study

A community based study of maternal mortality in Anantapur of Andhra Pradesh in 1985-86 revealed a maternal mortality ratio of 830 and 545 in rural and urban areas, respectively maternal deaths accounted for 38 percent of all deaths among women in the reproductive ages in rural areas and 28 percent in urban areas. (Bhatia, 1999).

A study conducted in Maharashtra suggests the importance of relying on multiple sources of information to identify maternal deaths (Rao and Richard, 1984). Community based studies in India indicate high rates of maternal morbidity, 41 percent in a study of Karnataka (Bhatia and Cleland, 1995), 45 percent in a study of Tamil Nadu and Pondicherry (Srinivasa et al, 1997).

A study conducted in Maharashtra indicates that 72 percent of maternal deaths were due to direct causes. Many of the conditions that cause maternal mortality also lead to obstetric morbidity and disability. It indicates community level studies of maternal morbidity are rare. (Graham and Campbell, 1992).

A study in rural Rajasthan which followed up a total of 281 women and their 349 pregnancies from 1974 to 1979, recorded a total of 33 complications of pregnancy, and childbearing representing over a quarter (29 percent) of all morbidity.

In Karnataka a study was conducted among women less than 35 years of age in the antenatal and postnatal stages, as well as at delivery. It found that 41 percent of women reported at least one morbidity associated with their last pregnancy, 18

percent reported morbidity associated in the antenatal period, 18 percent at delivery and 23 percent in the post-partum period (Bhatia and Cleland, 1994).

In Tamil Nadu and Pondicherry a survey of 3686 women conducted who had recently delivered and it was probed morbidity at all three stages of pregnancy. 45 percent, which is a serious life threatening for expected mother (Srinivasa et.al, 1997).

In Uttar Pradesh around 90 percent of deliveries were conducted at home and nearly half the deliveries were assisted by family or kin. This can be dangerous for both the mother and the child. The association between antenatal care, institutional deliveries and deliveries assisted by trained professionals was observed as an important component for safe delivery (Kwast, 1988) “Utilization of antenatal care services by women may lead them to seek treatment for various complications occurring during pregnancy and after delivery” (Shehu, 1997).

At community-level safe motherhood committees and local health volunteers can provide effective support for institutional delivery and they can link effectively to the health system. For example, In Malaysia community groups were mobilized to conduct maternal death enabling them to identify and address the conditions that contributed to the death of a mother in their community found that lack of trained staff at peripheral health facilities and access to those facilities accounted for most of the variation in maternal. Experience in Malaysia and Brazil has demonstrated that effective involvement of TBAs in community mobilization, awareness and demand creation, and referral of emergencies can be effective, particularly as countries move from situations in which delivery by a skilled attendant is rare toward fully

functioning systems with deliveries by professional attendants in comprehensive obstetric care facilities (Koblinsky et al, 1999).

Factors Influence on Place of Deliveries

Decentralization of health system management is another tool that health reformers have employed in an effort to improve quality and accountability of health services. The rationale for such reforms is that if local authorities, and the communities that they serve, have greater control over human and financial resources, the system should be more responsive to local needs. Evaluation of experience of the impact of decentralization on poor women's access to maternal health care is not easy because many forces are at work. The lack of consumables and equipment in facilities is another obstacle. Even when an emergency is recognized and the woman suffering it has been referred to a treatment facility, she may still die if, in the case of a hemorrhage, blood products are not available, or antibiotics in the case of infection. Quality of service might have to be improved for consumers who could afford to pay, but probably at the expense of poorer ones who had to rely on free publicly provided treatment.

The maternal mortality ratio (MMR) is a measure of the risk of death once a woman becomes pregnant. In India, it is 407 there is also, a wide regional difference in MMR within India. For instance in Kerala and Punjab it is very low, while in 10 of the 15 major States (Assam, Bihar, Gujarat, Haryana, Karnataka, Madhya Pradesh, Orissa, Rajasthan, Uttar Pradesh and West Bengal) it is over 400; and in three States (Assam, Madhya Pradesh and Uttar Pradesh) it is over 700. In India, over two-thirds of women give birth at home - close to 85 per cent in the rural areas, and 95 per cent in the remote areas.

Dr. Vinod Paul of All India Institute of Medical Sciences (AIIMS) says a majority of infant deaths can be averted through affordable interventions such as breast-feeding, clean delivery, maintaining warm temperature for the baby and antibiotics." For the pregnant women who are caught between a poor and inadequate government health system and an unaffordable private one, midwives are godsend. But most important is that the midwives are trained to perform clean deliveries, recognize danger signs in the mother and the newborn, and be able to make appropriate referrals. Moreover, training can be beneficial only if the midwives are part of the larger health system and are provided the basic necessary equipment such as a disposable delivery kit. (Chakravarty et.al, 2007).

Public health care in rural areas is concentrated on prevention and promotion services to the disadvantage of curative services. The rural primary health centers are partly underutilized because they fail to provide their patients with the desired attention and medication and it is so they have inconvenient locations and long waiting times. The differences of roles for public and private health care facilities can be illustrated in their provision of services. Public hospitals provide 60 percent of all hospitalizations, while the private sector provides 75 percent of all routine care.

It is generally observed that use of health care services in any society is a complex behavioral phenomenon. It has found that only individual characteristics such as place of residence, mother's education, birth order, and status of living among many other social, economic and demographic variables influence health care utilization (Elo, 1992).

One of the most widely used analytical models to describe the use of health care services was developed by Andersen (1968). He believed that the use of medical care by an individual was a function of demographic, social and economic characteristics of the family as the unit of analysis. Expanding this approach further, he and Newman (2002) identified three sets of determinants, which influence health service utilization namely societal, system determinants (program factors) and individual determinants. This model all together as individual, environmental, and provider-related variables with regard to medical health care.

“Societal and system determinants are appeared to influence individual determinants, which directly influence the use of health care services. Social determinants include the present circumstances of knowledge as well as people’s attitude and beliefs about health and illness. System factors include health service resources and the organization of health services. Resources mainly include structures and activities through which health care and health education is provided.”(Aday and Andersen,1974). For example, system factors would consider the availability of information, education and communication (IEC) activities in a village to educate women on maternal care services.

The organizational component of system factors addresses the coordination between medical personnel and facilities. These include the distance to the nearest health facility, household visits by health workers and similar characteristics associated with delivery of services. However, it is individual determinants that are directly related to health care service utilization. Individual determinants of health service utilization include demographic factors, societal structure, family factors, community factors, illness level and evaluated health condition by health personnel.

Maternal health care often become decisive factors of society and cultural. It also plays an important role in treatment. For example utilizations of prenatal care services and giving birth in a medical institution depend on many factors such as mother's demographic and socio-economic characteristics, availability of transportation, and quality of health care. In many occasion girls are subject to discrimination in terms of sharing of family, resources and access to health care services. When women's status is low, their health, and education and psychological needs take second place to those of men. Thus social and cultural practices, which are largely responsible for the poor health conditions of most women, are also among the important causes of maternal mortality.

There are also evidences of relationship between gender violence and maternal health care, some research on the links between gender violence and reproductive outcomes shows that women who experience violence have poorer outcomes, including frequencies of pregnancies, low birth weight, and infant deaths (Nasir and Heise et.al, 1993).

“Violence in pregnancy is another risk factor and is a cause of poor delivery outcomes. violence in pregnancy accounted for 16 percent of low birth weight deliveries in Nicaragua, and that violence may be responsible for a sizable but under-recognized proportion of pregnancy related deaths on the Indian subcontinent” (Heise and colleagues (1993)

The risk of pregnancy-related deaths associated with violence was relatively higher for pregnant teenagers than for other age groups. In addition to poor nutrition and violence these include infections (Sexually Transmitted Infections and HIV/AIDS, Malaria, Tuberculosis, Hepatitis), substance abuse,

and harmful practices such as Female Genital Mutilation (FGM). Some of the world's highest MMRs are found in countries where the practice of FGM is widespread. Among the long-term consequences of FGM are increased risk of obstructed labor, delayed delivery, and increased risk of stillbirths (PATH, 1997).

Increase vulnerability to sexually transmitted infections (STIs) and HIV/AIDS, affect delivery and pregnancy outcomes, including premature birth and delivery. The link between HIV/AIDS and maternal mortality has been recognized in the latest estimates of MMRs, which include HIV prevalence in the estimating equation for the proportion of deaths in reproductive ages that are considered "maternal". (Haberland et.al, 1999).

Maternal age undoubtedly plays an important role in pregnancy and post delivery complications. A problem may arise when a girl becomes pregnant in her adolescent years. Failure to meet the increased nutritional requirement imposed by pregnancy may damage a girl's future health. In developing world one out of six women aged between 17 and 35 receives prenatal care while more than half of them are anemic; hardly 20 per cent of mothers receive complete prenatal care. The risk of complication is higher in women over age 30 that have their first babies because they are entering the later phases of their reproductive life. After the fourth pregnancy (especially within 6 to 7 years of child bearing) there is an increased risk of serious health problems like anemia and hemorrhage which increases the risk of complications in the next pregnancy for birth which is "too early" or "too many" complications will be more. (Hill. et.a, 2001).

Living standard is an important indicator for the determination of complications among women. If the living standard is low, then the complications among women are high because living standard depends upon economic and social conditions. A high living standard is due to the better economic conditions of women, which turn helps in reducing the complications. (Koblinsky, 1995; Tinker, 2000). In most households women eat last and the least, their growth is stunted by nutritional deficits. They marry early, do not use contraceptives, become under-weight and anemic mothers; they are further weakened by frequent childbearing. Malnourished mothers have low-weight babies, who have few chances for survival. Poor nutrition is another key co-factor in maternal and neonatal mortality. Poor nutrition among pregnant women in a number of the very high MMR countries is a factor contributing to those high rates.

Antenatal or pre natal care is very essential for pregnant women to reduce maternal morbidity and mortality. However, in many states in India, where women think that antenatal care is not essential, non use of such services leads to morbidity and pregnancy complication. What is more serious is that despite having complications women do not go for checkups.

It is expected that women who receive adequate antenatal care will have less complications, but it so happens that women seek such care only when they have complications.

Education of women influences reproductive health through a variety of channels, including childbearing attitudes, health-seeking behaviors, and earning opportunities. Referral transport is an important factor for obstetric emergencies. Women who undergo deliveries at home and develop complications often find it difficult to be transported to a referral unit. In view

of the importance of Emergency Obstetric Care (EmOC) services for the overall health status of women in area and its definite link with child survival, the National Population Policy 2000 as well as the Health Policy (2002) has considered EmOC as the key factor for both programme as well as intervention.

Unsafe abortion is a significant cause of maternal mortality and morbidity. For instance 19 million unsafe abortions are estimated to have taken place during the year 2000 and 98 percent of them in developing countries estimated that the abortion-related mortality risk was at least 15 times higher in developing areas and that in some regions it may be 40-50 times higher than in more developed regions. (AbouZahr and Ahman; 1998).

Abortion is a significant medical and social problem worldwide. It is estimated that half the abortions taking place around the world every year are performed outside authorized health services and or by unauthorized often unskilled providers and most take place in the developing world Whether spontaneous or induced, abortion has been a matter of concern over many decades now, particularly because of sepsis and other complications which lead to maternal morbidity and mortality. In India, abortion is a major cause of maternal death and accounts for 8.9 per cent of maternal mortality every year (RGI, 1998).

Malarial infection is another cofactor in pregnancy-related deaths of mothers and newborns. Meremikwu (2003) notes that malaria is typically a more severe disease in pregnant women and is a major contributing factor to maternal mortality in malarial areas of Africa. Malaria is associated with maternal anemia, which is another cofactor in maternal death. Malaria is associated with chronic health problems that frequently become acute during pregnancy and

are associated with higher rates of maternal mortality and morbidity in malarial areas. (Santosi, 1997).

Provision of safe water has been cited as a factor in the declines of mortality in developed countries, and lack of sanitation and safe water, along with poor personal hygiene, are known to be major factors in the wide prevalence of parasitic diseases in poor countries. Studies of the impact of safe water on infant and childhood mortality typically do not focus separately on neonatal mortality, but recognize that waterborne diseases can undermine the health of pregnant women because they cause anemia, a risk factor for mothers as well as their newborns (Santiso, 1997). “cites unsafe water supply as well as pollutants from fuels used in cooking as risk factors in the high MMRs of the African countries.”(Paul 1993)

To promote institutional deliveries, provision has been made under the current RCH Programme to give additional honorarium to the staff to encourage round the clock delivery services at PHCs and CHCs. This is to ensure that at least one medical officer, nurse, and cleaner is available beyond normal working hours. Report of the National Family Health Survey-I and II, indicated that community access to health facilities is not an important factor in explaining the utilization of various antenatal care services (Das et.al, 2001).

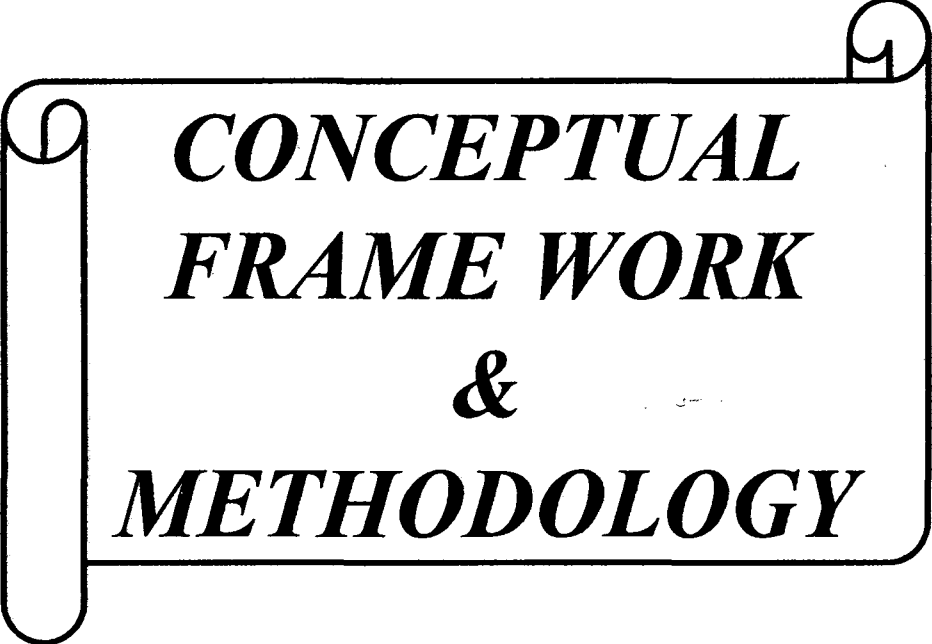
Studies from western societies however, have often argued that the use of health care services is not determined merely by design and delivery strategies but also by the characteristics of potential users. (Newmen, et.al, 2002). In other words, the mere existence of health care facilities may not ensure utilization. While these studies argue the importance of both individual and program factors they are often considered independently. This indicates a lack

of conceptualization and use of theoretical approaches in studying maternal care utilization, particularly studies from India.

Thus, studies on maternal care utilization combining individual and program factors will fill this gap in the literature and thus further strengthen our understanding the varying differentials in maternal care utilization. While previous studies from India focused either at regional (Kanitkar, and Sinha, 1989) or state levels (Bhatia and Cleland, 1995), national variations in the use of maternal care are few and far between. For example, national variations in the use of maternal care are found between rural and urban areas. Six out of ten mothers in rural areas in India did not receive the minimum recommended antenatal visits as compared to three out of ten mothers in urban areas. Similarly, approximately three quarters of the births to mothers living in rural areas took place outside of a health care facility, contrasted against one-third of births in urban areas.

The above review of literature provides us with the variables that need to be considered in examining with factors that are related to institutional and non-institutional deliveries. Using the above review of literature, in the next chapter we present a conceptual frame work for examining institutional and non institutional deliveries in Orissa.

CHAPTER-III



***CONCEPTUAL
FRAME WORK
&
METHODOLOGY***

CHAPTER-III

CONCEPTUAL FRAME WORK

A conceptual frame work is a set of concepts which are linked in an organized manner to establish nature, function and relationship or conceptual frame and may be considered as a rational model (Botha, 1989). It is used in research to outline possible course of action.

“Several different models or frameworks exist to help program managers and communities understand the de-determinants of maternal mortality and safe motherhood” (McCarthy and Maine, 1992).

According to World Health Organization, (1996) the first priority for delivery care is safe motherhood and child survival. The majority of maternal deaths and the chronic morbidity resulting from childbirth are due to the failure to get timely help for complications at delivery. So it is essential that delivery must be conducted under proper hygienic conditions with the assistance of a trained medical practitioner.

The choice of delivery locations in India can be broadly be classified into three categories. A woman can deliver her baby at home, with or without the presence of a birth attendant, who may be trained or untrained. Home delivery is usually the cheapest option, but is associated with risks. Secondly institutional deliveries can take place at Public health care facilities. It is generally provided by the government, and costs are usually minimal, and generally public with low socio-economic backgrounds depend on these services. And third option is private health facilities. Although private facilities

are the most expensive, nevertheless they are often perceived as having the best amenities and offering the best standard of care in Orissa.

Most research has focused on understanding the determinants of home vs. institutional deliveries. For example, public hospitals provide a majority of hospitalizations, while the private sector provides both hospitalization and out-patient care. Those who have economically strong they prefer to go to private hospitalization rather than public. With rapid economic growth there has been a large expansion of the private sector in health care delivery system in India but still majority of population has access as public care health facilities.

As far as Orissa is concerned the maternal and child health care programme is being implemented under RCH-II and National Rural Health Mission. The government of Orissa took initiative to improve health care facilities especially focused on women, children and disadvantage group especially in rural areas. Here people are unable to access public health services because there is hardly public health centre nearby village and at the same time people face difficulties at reaching hospitals due to lack of transportation and communication.

As per government policies agenda and law there must be one PHC comprising 30000 populations but it is not so in Orissa. Even in 50,000 populations there is no PHC, and ground reality is that it is worse affected in remote areas and also, there are lacks of health personnel and health infrastructure. Appointment of doctors is on paper only; practically they are not staying at their station rather they manage to stay in district head quarters with or without knowledge of administration. Even if in some areas PHCs or CHCs are available there is no health infrastructure i.e. no beds, any gynecologist, and health staff who can treat delivery complications. In case if the patients manages to reach health

centre they are simply referred to district hospitals for gynecological problem or EOC and at the same time attitude of health personal are so complex towards rural patients, by which people loss faith in government hospital services. In this regard people in rural areas do not come for deliveries at hospitals rather they choose home delivery safe and best; ignoring whatever may be the consequences they have to face do not matter.

Maternal morbidity comprises of pregnancy, delivery and post delivery complications. As no data has been collected on delivery complication in NFHS, the study is restricted to institutional and non institutional deliveries in Orissa.

THE "NINE PILLARS" OF SAFE MOTHERHOOD

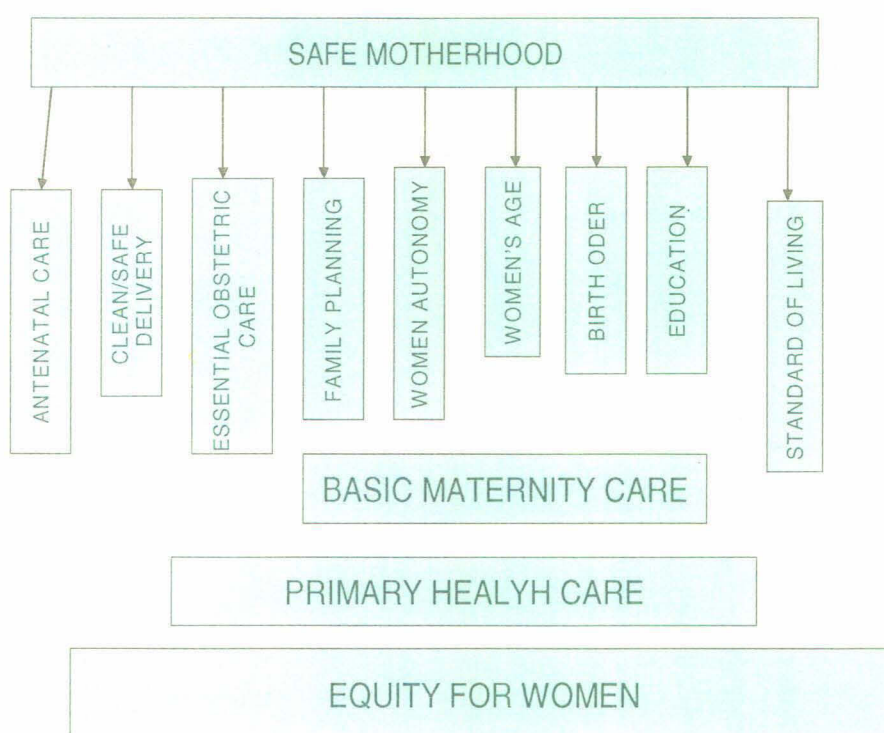


Figure 3.1:1 A conceptual frame work for the Population Policy and Reproductive Health.

Source (K.Srinivasan, 1996).

Safe motherhood interventions should be applied historically within a general health context to promote equity in access to and quality of care. There are basically four principles of safe motherhood which are considered as the four pillars of safe motherhood like Antenatal care Clean/Safe delivery, Essential Obstetric Care and Family planning Apart from that there are other five pillars of women's age, birth order, standard of living, education and women autonomy which need to be consider with intervention for achieving safe motherhood thus are as follows:

Family planning: To ensure that individuals and couples have the information and services to plan the timing, number and spacing of pregnancy.

Antenatal care: To prevent complications where possible and ensure that complications of pregnancy are detected early and treated appropriately. Effectiveness of antenatal checkups of ensuring safe motherhood depends in part on the tests and measurements done and the advice given during the check-up.

Essential Obstetric Care: To ensure that essential care for high risk pregnancy complication is made available to all women who need it.

Clean/Safe delivery: To ensure that all birth attendants have the knowledge, skills and equipment to perform a clean and safe delivery and provide post-partum care to mother and baby.

Maternal age: undoubtedly is important in pregnancy and post-delivery complications. Early marriage and pregnancy, when the reproductive organs are not yet properly developed; high fertility rate leading to recurrent pregnancies; and unwanted pregnancies, when the fetus is aborted crudely most often at home, All these leave most women vulnerable.

Living standard: is an important indicator for the determination of complications among women. If the living standard is low, then the complications among women are high because living standard depends upon economic and social conditions. The level of community economic development may influence health directly, through an association between deprivation and poor health, and indirectly through access to health services and social support systems. (NFHS-2).

Education: Education of women influences reproductive health through a variety of channels, including childbearing attitudes, health-seeking behaviors, and earning opportunities. Mother's education has a strong positive effect on institutional deliveries (NFHS-2). A woman's education is a major factor affecting utilization of maternal health services in India (Govindasamy and Ramesh 1997). High levels of husbands' education increase the likelihood of health service use (American Journal of Public Health 2006).

Women Autonomy: Autonomy is an important value for feminism. The centrality of autonomy lies in choice and responsibility. Understanding a woman's choice and her responsibility for the outcome of the choice. Participation in decision making for a woman has a positive impact on family planning and child bearing, spacing birth and marriage.

A simple conceptual frame work for the explanation of socio-economic and demographic inequalities in health service utilization

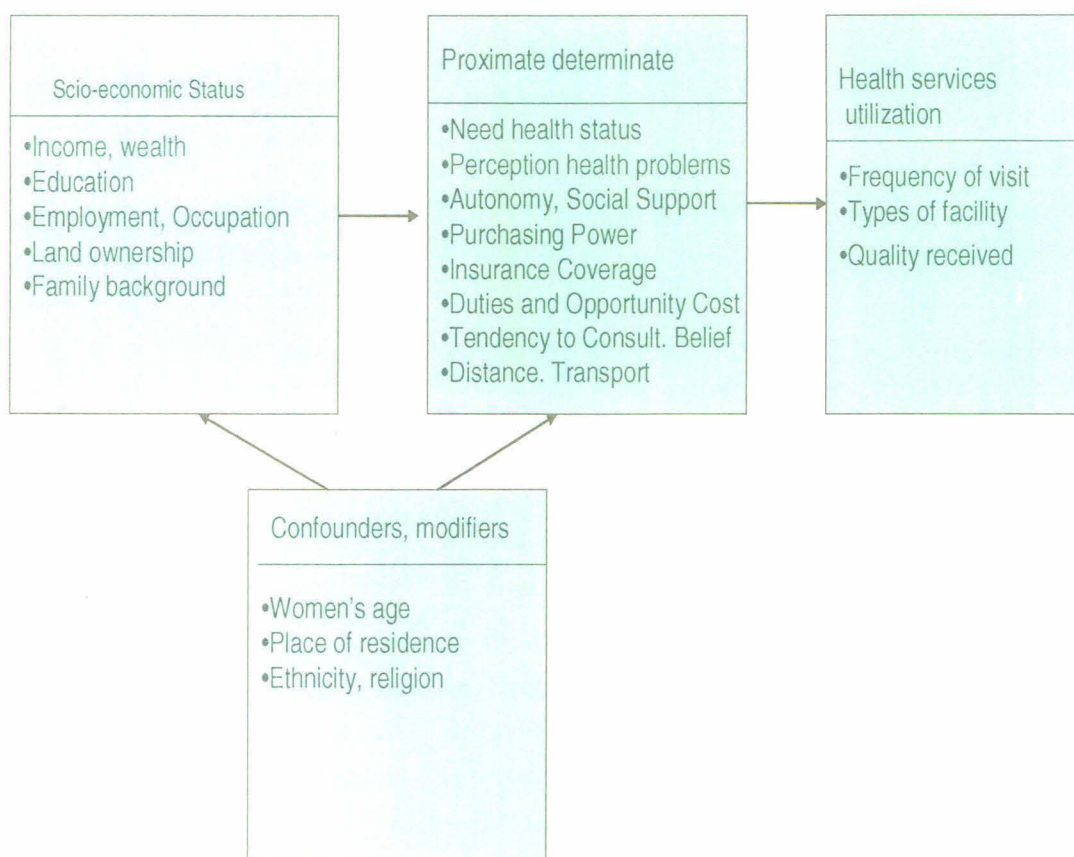


Figure 3:1:2 A simple conceptual frame works for the explanation of socio-economic and demographic inequalities in health service utilization,

Source: Graham and Bell 2000a.

These nine strategy intervention must be delivered through primary health centre and rest on a foundation of greater equity for women. Every year more than half a million maternal deaths and around four million prenatal deaths occur in developing countries, mostly among the poorest groups within these countries. There is even larger toll of morbidities resulting from complications of delivery. Most of these deaths and disabilities are preventable and avoidable. (Koblinsky et.al, 1993), But the sad reality is that in many respects these interventions are either not available to poor and needy women or so poor in quality services which is not effective. Socio-economic status like income, education, employment family back ground, Demographic like; age of women, place of residence religion, ethnicities inequalities directly and indirectly affect in health service utilisation. As far as health service utilisation is concerned frequency visit for health check-ups before delivery is most important for safe motherhood and child survival. Antenatal care and post natal care depends upon availability of types of quality health care.

Maternal-Neonatal Health (MNH) and Poverty: Factors Beyond Care that Affect MNH Outcomes.

Pathways to MNH Outcomes

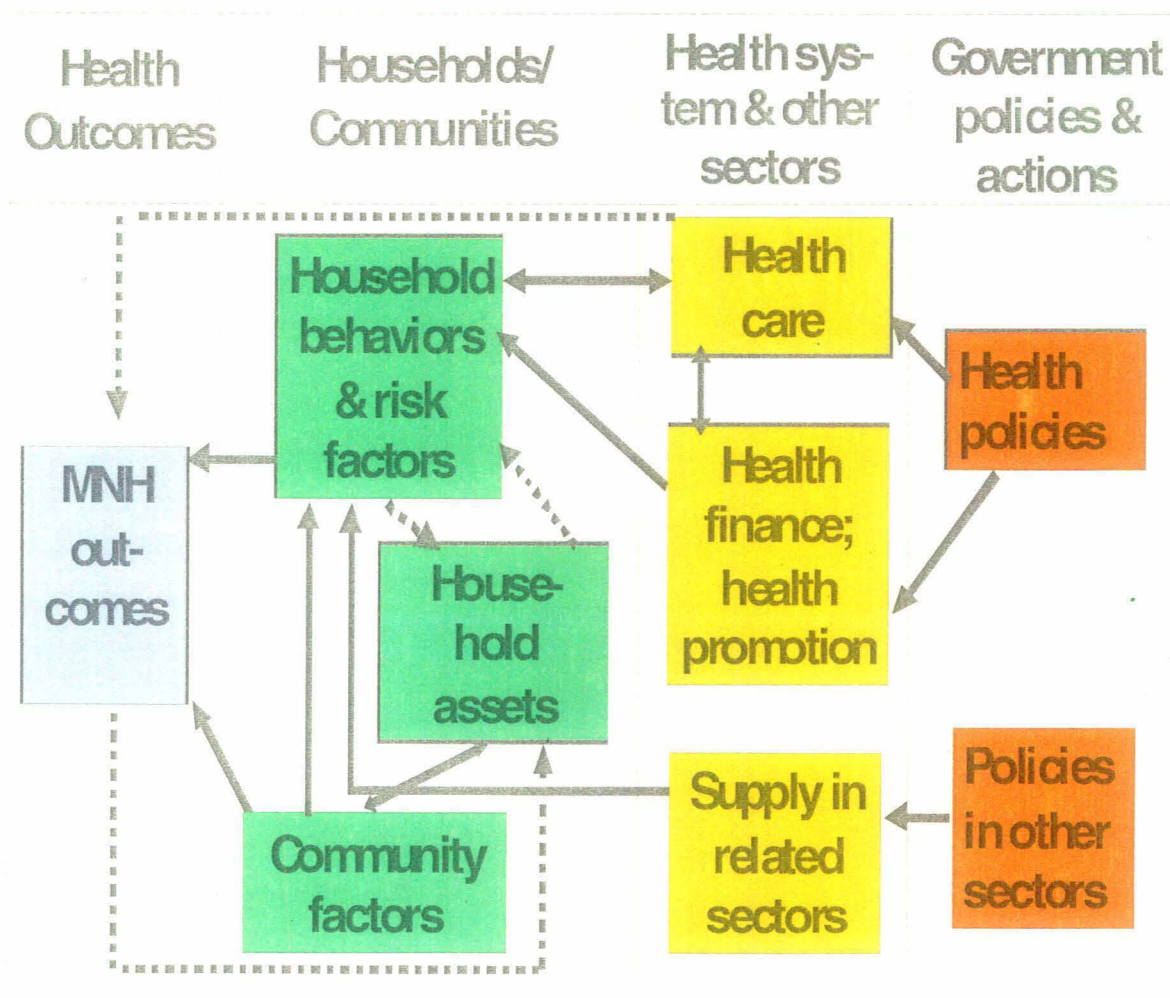


Figure 3:1:3. The framework for addressing obstacles to access to priority health interventions.

Source: Hanson et al. (2003).

The framework for addressing obstacles to access to priority health interventions developed by Hanson (2003) it has five levels that parallel those in the Pathways framework used as follows (1) Communities and households (2) Health service delivery(3) Health sector policy and strategic management (4) Cross-cutting public policy and (5) Environmental and contextual characteristics.

This model has been used extensively in both developing and developed countries to understand health services utilization. The model classifies factors that affect health services utilization into three groups: predisposing, enabling and need factors. Among the *predisposing* factors, a demographic characteristic that is age, gender, marital status reflect the desire of individuals to use health services. Social structure like education, occupation, race and ethnicity measures the ability of the individual to cope with the problem, the resources available in the community, and the state of the physical environment also related.. Health values and knowledge about health care system i.e. include general attitudes towards medical care, physicians, and disease also influence in utilization of services.

Background Characteristics of Institutional and Non-Institutional Deliveries.

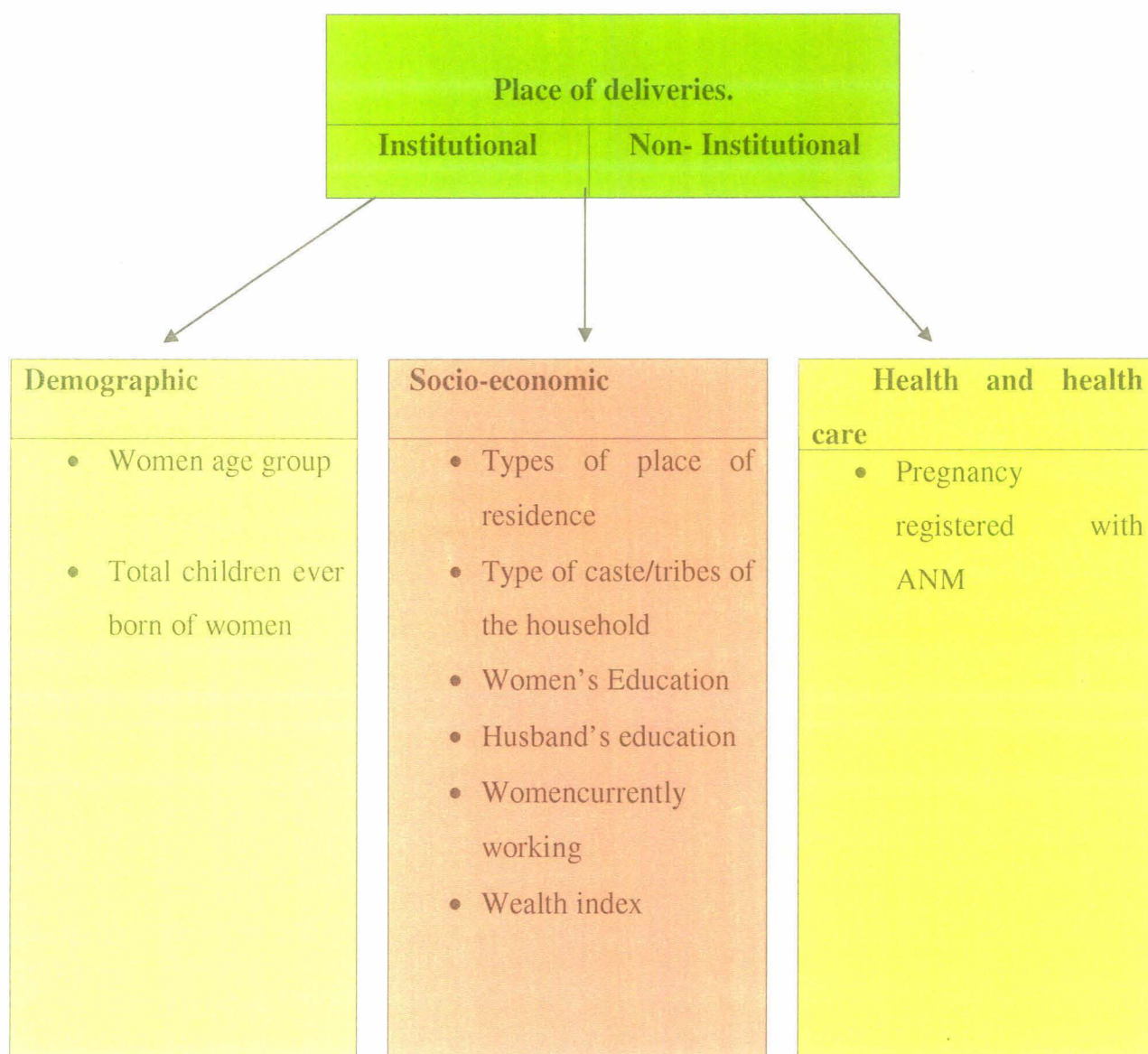


Figure 3:1:4. A conceptual framework for institutional and non-institutional deliveries in Orissa.

Research questions

Utilization of maternal health care depends not only on the availability of services but also on other factors responsible such as distance of health care centre perception of women and their families regarding the need for care; social restrictions on freedom to movement of women the opportunity cost of accessing health care and the interaction between the client and the provider of formal health care system (IIPS, 2000). A woman's social position and her health condition directly or indirectly related, her low status often cause of poor access to essential health care services. (Report on Safe Motherhood Conference, 1987).

After review of literature given in the chapter -II and different conceptual frame works we have developed four specific research questions based on figure 3:4 as follows:

1. The demographic factors like women age, birth order total children ever born influence the institutional and non-institutional deliveries in Orissa. For example institutional and non- institutional deliveries is different for young married women and old married women. Frequencies in birth order without spacing and having more children would affect institutional delivery especially in remote areas among the STs /STs and disadvantage group. In Orissa more than 80 percent people living in rural areas and more than 40 percent population belong to STs and STs, where people are lacking basic infrastructure and health care facilities. There is also problem of Information, communication, education, and transportation.

2. Socio-economic status is the important determinant in access to health facilities. For example, place of residence, caste/tribes, women and husband's education, women decision making, mass media influence on institutional and non institutional deliveries. Many studies have identified education, work participation, exposure to mass media and household standard of living as determinants or factors for institutional delivery. Education decides a woman's position through decision-making autonomy, control over resources, knowledge, exposure to the modern world and husband wife closeness (Jejeebhoy, 1995).

3. As it is well known, a factor that Orissa is one of the poorest states in India and is distinguished from other backward states in terms of socio-economic and demographic and health care facilities. It has higher levels of poverty, hunger, diseases and malnutrition compared to Uttar Pradesh, Madhya Pradesh and Bihar. Thus, Orissa provides a central testing ground for exploring child mortality and maternal mortality determinants.

4. In Orissa, due to lack of referral services, the ratio of institutional delivery is less in comparison of other states. Distance of PHC and difficulties in transportation are also additional factors for home delivery with or without TBA, ASHA, and ANMs especially in rural areas. People in remote rural areas do not easily access the public health care services, so it seems to be less institutional deliveries among the disadvantaged groups.

Background characteristic: The three components of institutional and non institutional deliveries i.e., Demographic, Socio-economic and Health and Health Care are taken separately as independent variables.

A-Demographic:

Women age group (15-25 and 26-49 years)

Total children ever born of women (1-2 and 3+)

B-Socio-economic:

Types place of residence (Urban and Rural)

Type of caste/tribes of the household

(Others, SCs, STs, and OBCs)

Women's Education

(No education, Primary, Secondary, and above)

Husband's education

(No education, Primary, Secondary, and above)

Women currently, working (Yes, and No)

Wealth index (Poor, and Non-poor)

C-Health and health care:

Pregnancy registered with ANM (Yes and No)

During pregnancy received health card from ANMs (Yes and No)

Dependable Variables

In our study we have taken dependent variables as place of deliveries i.e. Non-institutional (Home, Parents Home and Other Home) and Institutional Deliveries (Government Hospital, Dispensary, Urban Health Centre (UHC) Urban Family Welfare Centre (UFWC) Community Health Centre (CHC) Primary Health Centre (PHC) /Rural Hospital, Sub-centre, Maternity Clinic, Private Medical, NGOs/Trust Hospital/Clinic and Other Health Facilities). Ever married women in the age group of 15-49 years (respondents) were asked whether deliveries were performed in institutional and non-institutional and the total sample size of Orissa was 9100. Out of that 1,779 women were delivered.

In order to reduce maternal mortality, the Indian government has made commitment to increase institutional deliveries. Reducing the maternal mortality rate is a key goal of government, and this is reflected in the National Population Policy, which aims to provide universal access to, and make available good quality maternal and child health care services. One strategy advocated by the National Population Policy to reduce maternal mortality is to increase access to institutional deliveries in India.

Most research has focused on understanding the determinants of home (non-institutional) vs. Hospital (institutional) deliveries. It is thus important to find out the three types of institutions i.e., public, private and health or family as research has shown that each sector may provide different sets of health services. For example, public hospitals provide a majority of hospitalizations; the private sector provides most of the out-patient care, while the family or home follows the traditional model of services.

Areas of study

Taking into the account of high rate of maternal mortality and morbidity and infant mortality in comparison to other states and national average, the proposed area of study will be undertaken one state of India (Orissa). As per the literature and data source the scenario of institutional delivery is pathetic. Despite 60 years of independence and expansion several health care facilities, literacy, etc. a majority of women in Orissa are still delivering their babies at places other than medical institutions. And the deliveries are assisted by untrained people such as traditional birth attendant, friends and relatives. Delivering under such unhygienic conditions and in the hands of untrained persons increases risk of maternal mortality and morbidity and child mortality. Most distressing fact is that a majority of women who are pregnant or suffering from post-delivery complications are neither seeking advice nor going to hospitals for their problems. However, one positive sign is that the women who seek antenatal care services are more likely to utilize services, which can go a long way towards improving maternal health in the state.

Methodology

To study the above area 9100 sample size of Orissa ever married women in the reproductive age group i.e. 15-49 who had given birth during the last three years preceding the survey NFHS-3 (2005-06) was selected. And the pattern of health care they sought during their latest birth (1,779) women were selected.

The study mainly uses the following research methods i.e Univariate, Vicariate chi-square, and multivariate logistic analyses to study institutional and non-institutional deliveries on the utilization maternal health care.

Data source

For this study we have used the nationwide secondary data from India's latest National Family Health Survey (NFHS-3) conducted during 2005-06. This survey covered a representative sample of approximately 130,000 ever married women in the age group of 15-49 years, from 29 states of India. The sample comprised more than 99 percent of India's population (IIPS, 2000).

The survey used uniform questionnaires, sample designs, and field procedures to facilitate comparability of the data within the country so as to achieve a high level of data quality. The survey used a comprehensive questionnaire to interview ever-married females between 15 and 49 years and obtained in-depth information about family planning, infant and child mortality, maternal and child health, and utilization of reproductive and child health services by mothers and children.

We abstracted data from the most recent birth during three years preceding. The soft Copy and filtered of NFHS-3, individual data (birth file) of Orissa has been imported into SPSS for statistical analyses. The Orissa sample of the NFHS-3 individual data of birth file had a sample size of 9100 ever-married women between the ages of 15 to 49 years out of that 1779 women were delivered.

Response Variable (Dependent Variable)

We would like to define some of the concepts such as institutional and non-institutional deliveries (place of delivery). A woman can deliver her baby at home, parents home and other home with or without the presence of a birth

attendant, who may be trained or untrained. Institutional deliveries can occur at private or public health care facilities.

We used two response variables (Dependent variable) they are coded as follows:

Non-institutional deliveries: 0

Institutional deliveries: 1

Predictor variables (Independent variable)

A-Demographic characteristics:

Women age group: 15-25 = 1

26-49 = 2

Total children ever born: 1-2 = 1

3+ = 2

B-Socio-economic:

Types place of residence: Urban = 1

Rural = 2

Type of caste/tribes of the household:

Others = 1

SCs = 2

STs = 3

OBCs = 4

Women's Education:

No education = 0

Primary = 1

Secondary and above = 2

C-Health and health care:

Pregnancy registered with ANMs:

Yes = 1

No = 0

Husband's education:

No education = 0

Primary = 1

Secondary and above = 2

Women currently working:

Yes = 1

And No = 0

Wealth index:

Poor = 1

Non-poor = 2

Statistical techniques: The research questions that have been developed will be empirically tested by using statistical techniques i.e. univariate, bivariate and multi logistic regression analyses.

Univariate: has been carried out in order to study the percentage distribution of institutional and non institutional deliveries analyses and provide the descriptive statistics on the demographic, socio-economic and health care system in Orissa.

Bivariate: has been observed between the back ground characteristics and place of delivery i.e. Institutional and non-institutional. It is examined with the help of cross tabulation. Cross tabulation is one that, each row and column is a frequency table of one variable for observation following within specific categories of the other variables. Cross tabulation shows the comparison between groups and gross effect of the variables.

$$\text{Chi- square} = \frac{(O_i - E_i)^2}{E_i}$$

Where O_i and E_i are observed and expected frequency of the i th class respectively.

Chi- square test has been used to draw conclusion about the respondent from sample data, by checking the correspondence between the observed and estimated frequencies in each category of variable. Chi-square test of Karl Pearson's model was used to explain of categorical variables in systematic manner. The main assumption behind the chi- square test is that the variable are independent each other (Mahmood, 1998).

Multivariate Logistic Regression

Multivariate Logistics Regression analyses have been used in order to measure the net effect of predicted on the response variables. Multivariate logistic regression analysis has been used in the order to measure the net effect of back ground variable on the response variables. The response variable are dichotomous in nature i.e. no = 2 and yes = 1

(Recoded 'no = 0 and yes = 1'). The variables in this study is both multinomial and dichotomous in nature.

Most commonly used approaches to estimate these of types of models are:

- (a) The Linear Probability Model(LPM)
- (b) The Probit model
- (c) The Logit model or logistic regression model (Gujarati,1995)

First we have discussed the reasons for not using LPM or Probit model in this analysis and the logistic regression model will be explained.

LPM is a special form of ordinary multiple regression model to be used in the occasion where the response variable is a dichotomous. The equation has the form

$$\hat{C} = a + b E \quad (1)$$

Where \hat{c} is the value as predicted by the regression. E is interpreted as the probability (P). That with a specific value of E, the value of c will be 1.

- (a) The estimated probability p can assume impossible values: from negative or more than unity.
- (b) The linearity assumption is violated seriously. According to the assumption the expected value of c at any given value of 'e' falls on the regression line. But this is not possible for the parts of the line for which $p < 0$ or $p > 1$. In these regions, the observed points are either all above the line or all below the line.
- (c) The homoscedasticity assumption is seriously violated. The variances of the C values tend not to behave properly either. The variance of the C tend to be much higher in the middle range of E than at the two extremes, where the values of C are either mostly Zeroes or monthly ones, In this situation, the equal variance assumption is untenable.

(d) Because the linearity and homoscedasticity assumption are seriously violated, the usual procedures for hypothesis testing are invalid.

(e) R² tends to be very low. The fit of the model tends to be very poor. Because the response variables can take two values, 0 and 1, the C values tend not to cluster about the regression line (Rutherford and Choe, 1993).

So we need such a probability model, where the P increases as the value of predictor increases but the value of p never goes beyond the 0-1 interval and also the relationship between p and the predictor variable is non-linear. Probit and logit models fulfill these two criteria. Both models use a sigmoid curve in a logistic model level of before reaching p=0 or p=1. Thus the impossible values of p (p < 0 or p > 1) that are observed in the probit model are avoided. For these reasons a binary logistic model has been selected in our study for the multivariate analyses.

The basic for logistic regression is:

$$P = \frac{e^Z}{1 + e^Z} \quad (1)$$

Where P= estimated probability

Z= the predictor variable and

e= base of natural logarithm with a value of 2.7183.

As can be seen from the logistic curve predictor variable has the largest effect on p, when p=0.52. Value of p decreases in absolute magnitude as p approaches 0 or 1 after simplifying equation (1). We get,

$$\text{Logit } Z = \frac{p}{1-p} \quad (2)$$

The quantity (p / 1-p) is called odds, and the quantity log (p / 1-p) is called the log odds or logit of p, so equation (2) becomes,

$$\text{Logit } P = Z \quad (3)$$

The multivariate logistic function 'n' predictor variables is represented by

$$P = \frac{1}{1 + e^{-(b_0 + b_1 X_1 + b_2 X_2 + \dots + b_n X_n)}} \quad (4)$$

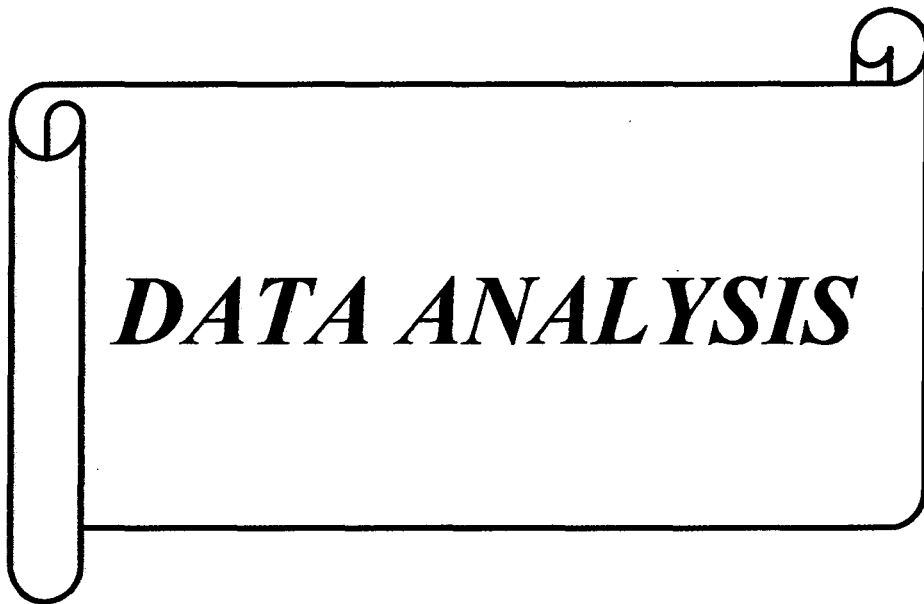
$$\text{Or Logit } P = b_0 + b_1 X_1 + b_2 X_2 + \dots + b_n X_n \quad (5)$$

Limitation of the study

The major limitation of the NFHS data on institutional and non-institutional delivery is the changing extent of coverage and methodology. The study depends on the secondary source of data, so the and information on some other desired variables were not available.

The next chapter provides detailed statistical analyses of the data to examine the various back ground characteristics on non-institutional and institutional deliveries in Orissa.

CHAPTER-IV



CHAPTER-IV

DATA ANALYSES OF NON-INSTITUTIONAL AND INSTITUTIONAL DELIVERIES IN ORISSA BASED ON NFHS-3 (2005-06)

In this chapter, statistical analyses have been carried out in order to compare non-institutional and institutional deliveries in Orissa of women in the reproductive age group 15-49 years using the individual data of birth file of National Family Health Survey-3 (2005-06). Non-institutional deliveries include delivery at home, parents' home and other home deliveries. Institutional includes deliveries in public and private health facilities i.e. Government Hospital, Government Dispensary Urban Health Centre (UHC) Urban Family Welfare Clinic (UFWC) Community Health Center (CHC) Primary Health Centre (PHC) Rural Hospital, Sub-centre, Maternity Clinic, Private Medical, NGO/Trust Hospital/Clinic, Nursing Home and other health facilities.

The back ground characteristic has been selected with a special purpose to observe and understand the delivery system in two perspectives i.e., non-institutional and institutional on the basis of information provided by the respondents. The relevant influence of independent variables in each section of this chapter result will be interpreted accordingly. The predisposing variables included in the study on demographic i.e. women age: Maternal age was a two level categorical variable (15-25 and 26-49 years), Children ever born (1-2, and 3+) Socio-economic i.e. Place of residence: urban and rural. To assess the effect of Caste/Tribes on the health services utilization the population in Orissa is classified into four groups i.e. Other, SCs, STs, and OBCs. Mother's and father's education were categorized into three levels (no education, primary

education, and secondary and above). We dichotomized currently working women (yes or no) and wealth index (poor and non-poor) To assess the effect of health and health care in regard to institutional deliveries we have included pregnancy registered with ANMs, and we categorized into three groups i.e. yes, no and missing cases.

In the analysis that follows, we first present the univariate analysis i.e. percentages of distribution that has been carried out for the independent variable. Second the bivariate relationships between the place of delivery i.e. non-institutional and institutional and the independent variable have been examined. Finally logistic regression analyses have been done to understand the net effect of the deliveries system controlling for the other predictor by background characteristics.

The total women of reproductive age group 15-49 who had delivered live birth in three years preceding the survey were 1779, out of 9100 (sample size) married women in the same age group drawn from Orissa,(NFHS-3). The whole background characteristics consist of three important components i.e. A-Demographic (Age of women, Children ever born), B-Socio-economic Place of residence, Caste/Tribes, women's education, Husband education, Currently working women, and Wealth index, and C-Health and health care (pregnancy registered with ANMs,).

A-Demographic characteristics

Age is probably the most important variable in demographics analysis. For demographic purpose age is defined as the number of full years lived by individual. Age is also the crucial variable in determining the size of women in the child bearing age. In the analysis we have taken single reproductive age group of women (15-49 years) who have delivered in the three years preceding survey in Orissa.

Women age group of 15-49 is categorized in five years interval such as 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, and 45-49. But for this study we have categorized this broad age group into two single group viz. 15-25 years and 26-49 years.

According to NFHS-3 individual data of Orissa sample Table-4.1 shows, currently married women in the age group 15-25 years constitute a share of 49.2 percentages; women in the age group 26-49 comprise 50.8 percent.

Child ever born is another back ground characteristics which affect on non-institutional and institutional delivery. As per NFHS-3 Orissa in three years proceeding survey 55.4 percent women had one to two children, and 44.6 percent women had more than three children.

B-Socio-economic Characteristics

A number of studies have demonstrated how the socioeconomic and demographic variables influence demand for and utilization of maternal and child health services (Kanitkar & Sinha, 1989; Bhatia & Cleland, 1995;

Govindasamy and Ramesh, 1997; Addai, 2000; Dharma lingam, et.al, 1999). Most of these studies reveal that besides maternal education, age, parity, locality of residence, ethnicity, exposure to mass media, standard of living and woman's status have a significant influence on the demand for and utilization of services.

Socio-economic variables are the most important and determinant characteristics in institutional and non-institutional deliveries in Orissa. We have included for this study i.e. place of residence, caste/tribes, women and husband education, currently working women, and wealth index of respondents.

Orissa is one of the most backward and poor state in India, where more than 80 percent people living in rural areas. As per data of NFHS-3, in Orissa women comprise 24.5 percent were in urban and 75.5 percent were in rural areas in the age group of 15-49 years.

As far as types of caste or tribes of the household head is concerned during three years preceding of NFHS-3, 29.2 percent Other castes, 18.32 percent were SCs, 26.4 percent STs, and 26.3 percent are OBCs. And women having institutional deliveries were as follows, 45.4 percent other castes, 16.5 SCs, 8.9 percent STs, and 29.2 percent OBCs.

Women's education as it is saying "education is sword and awareness is shield" and education also knowledge. So, woman education is most important and effective determinant characteristics in institutional delivery at any circumstances. Educated women can have more cautious in their health care especially during pregnancy and pre and post natal care. They also more aware

about child care, child bearing, to have number of children family planning and health care than illiterate women. Education enhances a woman's position through decision-making autonomy, control over resources, knowledge, exposure to the modern world and husband wife closeness (Jejeebhoy, 1996).

As far as educational levels of women in Orissa are concerned 44.2 percent have no education, 18.8 percent primary level and 37.8 percent were secondary and above women educational level.

Husband education is also another important socio-economic characteristic in regards to institutional delivery. If the life partner is well educated then institutional delivery is preferable. As far as Orissa is concerned during NFHS-3 survey 31.9 husband were having no education, 21.6 percent were primary education, 46.5 percent were secondary and above education.

Female work participation in non-agricultural sector and level of wage are also considered as determinants of empowerment. Woman's gainful employment outside home exposes her to the outside world; delays age at marriage, provide a sense of financial independence and increase her bargaining power and autonomy within the household and society. Also, women's paid employment could alter the perception of women's value and motivate investment in the girl child's education and health (United Nations, 2001). The data reveals only 23.3 percent women were currently working during the survey.

Wealth index is one of the economic characteristics and important determinants of non-institutional and institutional delivery of the women in the age group 15-49 in Orissa. For this study we have categorized wealth index

into two sections i.e., poor and non-poor. As per output of Orissa data 60.3 percent women were poor and 39.7 percent women were non-poor background.

C-Health and health care characteristics

“Health is wealth.” It is also one of the back ground characteristic in regards to non-institutional and institutional delivery. Those women who have been maintaining good health care during pregnancy there is less complication after and before delivery. The fact that a woman has experienced any pregnancy or delivery complication affects the utilization of health care services. Among women who had experienced a pregnancy complication or delivery complication, service use is higher compared with women who had not experienced any such complication.

A pregnancy registered with ANMs is also one of the important characteristics in regard to institutional delivery. Women who get registered her pregnancy is advised to go for institutional delivery by the ANMs and other health professional. Women were asked whether they have registered their pregnancy with ANMs or other health professional. For the purpose of this study we have categorized it into three groups as no, yes, and missing number. As per data output 27.5 percent women have not registered with ANMs, 46.8 per cent were registered and interestingly 25.6 percent case were found missing.

Table 4:1 Percentage distribution of ever-married women in the age group 15-49 years in Orissa, according to selected background characteristics during the three year preceding survey of the NFHS-3 (2005-06)

Characteristics Background			
Demographic		Total	
1	Women age group	Number	Percent
	15-25	875	49.2
	26-49	904	50.8
	Total	1779	100
2	Total children ever born of women		
	1-2	986	55.4
	3+	793	44.6
	Total	1779	100
B	Socio-economic		
3	Types of place of residence		
	Urban	436	24.5
	Rural	1343	75.5
	Total	1779	100
4	Type of caste/tribes of the household		
	Others	520	29.1
	SCs	323	18.2
	STs	469	26.4
	OBCs	467	26.3
	Total	1779	100
5	Women's Education		
	No education	787	44.2
	Primary	334	18.8
	Secondary and above	658	37.0
	Total	1779	100
6	Husband's education		
	No education	568	31.9
	Primary	384	21.6

	Secondary and above	827	46.5
	Total	1779	100
7	Women currently Working		
	No	1365	76.7
	Yes	414	23.3
	Total	1779	100
8	Wealth index		
	Poor	1073	60.3
	Non-poor	706	39.7
	Total	1779	100
C	Health and health care		
9	Pregnancy registered with ANM in last birth		
	Yes	490	27.54
	No	833	46.82
	Missing	456	25.64
	Total	1779	100

Table 4:2: (Univariate) Percentage distribution of non-institutional and institutional deliveries of women age group 15-49 according to their selected background characteristics.

Characteristics Background		Place of delivery					
		Non-institutional		Institutional		Total	
1	Demographic	No.	Percent	No.	Percent	No.	Percent
	Women age group						
	15-25	512	47.6	263	51.6	875	49.2
	26-49	563	54.4	341	48.4	904	50.8
	Total	1075	100	704	100	1779	100
2	Total children ever born of women						
	1-2	454	42.2	532	75.6	986	55.4
	3+	621	47.8	172	24.4	793	44.6
	Total	1075	100	704	100	1779	100
B	Socio-economic						
3	Types of place of residence						
	Urban	159	14.8	277	39.3	436	24.5
	Rural	916	85.2	427	60.7	1343	75.5
	Total	1075	100	704	100	1779	100
4	Type of caste/tribes of the household						
	Others	197	18.5	323	45.9	520	29.1
	SCs	208	19.5	115	16.0	323	18.2
	STs	407	38.2	62	8.9	469	26.4
	OBCs	263	24.7	204	29.2	467	26.3
	Total	1075	100	704	100	1779	100
5	Women's Education						
	No education	665	61.9	122	17.3	787	44.2
	Primary	188	17.5	146	20.7	334	18.8
	Secondary and above	222	20.7	436	61.9	658	37.0
	Total	1075	100	704	100	1779	100
6	Husband's						

	education						
	No education	471	44.1	97	13.9	568	31.9
	Primary	263	25.2	121	17.1	384	21.6
	Secondary and above	241	32.7	486	69.0	827	46.5
	Total	1075	100	704	100	1779	100
7	Women currently Working						
	No	756	70.3	609	86.5	1365	76.7
	Yes	319	29.7	95	13.5	414	23.3
	Total	1075	100	704	100	1779	100
8	Wealth index						
	Poor	841	78.2	232	33.0	1073	60.3
	Non-poor	234	21.8	472	67.0	706	39.7
	Total	1075	100	704	100	1779	100
C	Health and health care						
9	Pregnancy registered with ANM in last birth						
	Yes	279	36.0	211	38.4	490	27.54
	No	493	64.0	238	61.6	833	46.82
	Missing	303	28.0	255	36.22	456	25.64
	Total	1075	100	704	100	1779	100

Association between background characteristic and places of deliveries

Association between place of deliveries institutional and non institutional deliveries and by the selected background characteristics i.e. consist of Age of women, Children ever born (Demographic) Place of residence, Caste/Tribes, women's education, Husband education, Currently working women, Wealth index, and etc (Socio-economic) Pregnancy registered with ANMs, (Health and Health Care) of women in 15-49 years age group in Orissa. The likelihood of institutional and non-institutional deliveries depends on many factors including Place of delivery, demographic, socio-economic and health characteristics and availability and quality of health services.

The cross tabulation between the indicators of place of delivery i.e. institutional and non-institutional deliveries table 4.3 shows the relation between dependent variables with independent variables of women in 15-49 age groups in the three years preceding. From this it can be found that whether there exists any difference in the institutional and non-institutional with regard to background characteristics.

A-Demographic characteristics

Women age group well associated with regards to place of delivery. Table 4.3 represents the proportion of women institutional and non-institutional delivery during the three years proceeding of survey by selected background characteristics in Orissa. According to NFHS-3, 58.5percent in the age group of 15-25, 62.3 percent in the age group, 26-49 have been non-institutional delivery, where as 41.5 percent, 37.7 percent in the same age group have been

institutional delivery during three years preceding. It shows that older mothers are somewhat less likely to have institutional delivery than younger mothers.

Children ever born, the total children ever born among the women of age group 15-49 years represent that 54.0 percent women had institutional delivery having been 1-2 children 21.7 percent had institutional delivery having more than three children and . It reveals that older women have less institutional delivery and younger women have been more institutional delivery. More children cost high to parents so they do not prefer institutional delivery rather at home. Here we found that still people are not aware of family planning and two child norms and values. And how they are accessible the government health care service it is imaginative.

B-Socio-economic Characteristics

The background of socio-economic disadvantage, socio-cultural problems, adverse traditional attitudes and low socio-economic disadvantage, socio-cultural problems adverse traditional attitudes. And low status of women as the potentially important determinants of maternal reproductive health. Evidence shows that even when the cause and effect of a disease were unknown and treatment was unavailable, changes in socio-economic conditions have been associated with the reduction in ill health and mortality. The correlation between institutional and non-institutional delivery and socio-economic condition of women reveals the following consequences in the three years preceding of NFHS-3 survey.

Types of place of residence this is an important factor with regards to place of delivery i.e. non-institutional and institutional Orissa is one of the poor state in

India, where child mortality and maternal mortality is high in comparison other states. Here almost 80 percent people living in rural areas and more than 40 percent people under below poverty line and 42 percent population belong to SCs and STs.

As per NFHS-3 survey in Orissa 36.5 percent urban women and 68.2 rural women were non-institutional and institutional delivery, where as 63.5 percent urban and only 31.8 percent of rural women were institutional delivery. It shows that urban women are two times more than rural women in comparison institutional delivery.

Caste / Tribes of the household head as far as Orissa is concerned 42 percent population are belonging to SCs and STs. During the three years survey the women were asked about their house hold head caste and it reveals that among four groups of castes 62.9 percent others, 35.6 percent SCs, 13.2 percent STs, and 43.7 percent OBC have been institutional deliveries. We found that STs Women had almost five times less institutional delivery than others caste women. It could be imaginative how the STs and SCs people are aware of institutional deliveries.

Women education is very important variables with regard to place of deliveries. Education mother wants to deliver her child in hospitals, but in other side an illiterate mother prefer to home delivery because of certain circumstances. Educated mother knows how to take health care, diet, exercise and family planning methods etc. Education of women influences reproductive health through a variety of channels, including childbearing attitudes, health-seeking behaviors, and earning opportunities. Early gains in female literacy

played an important role in MMR declines in Malaysia and Sri Lanka (Pathmanathan, 2003).

During three years preceding of survey women were asked about their educational status and grouped in four categories viz no education, primary education, secondary education and higher education and comprises 84.5 percent no education, 56.3 percent per cent primary education, 33.7 percent women secondary and above women have been non-institutional deliveries in the age group 15-49 years. Here it shows that women having no education less institutional delivery where as educated women have been more institutional deliveries.

Husband's educational: As far as the partners or husband's educational level of women is concerned 82.9 percent no education, 68.5 percent primary education, 41.2 percent secondary plus education have been non institutional deliveries. It shows that women having educated partner or husband have been more institutional deliveries than less educated husband. Husband educational effect is more positive with regards to institutional deliveries.

Women currently working during the period of survey the women were asked whether currently they are working or not? It reveals that only 22.9 percent currently working women had institutional deliveries.

Wealth index: As Kunst and Houweling (2001) provide compelling evidence that poverty play an important part in accessing maternal care by presenting poor-rich differentials in skilled attendance at delivery for large range of countries. Their analysis shows huge differences between the highest and lowest wealth quintile for many countries as measured by asset indices. As per

output of the survey only 21.6 percent poor women had institutional delivery, whereas 66.9 percent non-poor women have institutional deliveries in Orissa. It is found that economic condition is the determinant factor for institutional deliveries.

C-Health and health care characteristics

Pregnancy registered with ANMs presented women in age group 15-49 years. This is also important health indicator with regards to institutional deliveries. As per data women who have registered their pregnancies with ANMs had 40.6 percent institutional deliveries, and 34.0 percent were found missing number in regards to registered with ANMs. It is found women those who have been registered their pregnancy with ANMs or other health personnel had more institutional deliveries.

Table: 4:3 Associations between place of delivery and selected characteristics background of women who have delivered in last three years preceding of NFHS-3.

Characteristic Background		Place of deliveries				Total
A	Demographic	Non- institutional deliveries		Institutional deliveries		Pearson Chi-square
1	women age group	Numbers	Percent	Numbers	Percent	
	15-25	512	58.5	263	41.5	2.635***
	26-49	563	62.3	341	37.7	
	Total	1075	60.4	704	39.6	
2	Total children ever born					
	1-2	454	46.0	532	54.0	191.348***
	3+	621	78.3	172	21.7	
	Total	1075	60.4	704	39.6	1779
B	Socio-economic					
1	Type of Place of residence					
	Urban	159	36.5	227	63.5	138.646***
	Rural	916	68.2	427	31.8	
	Total	1075	60.4	704	39.6	1779
2	Caste/tribes					
	Others	197	37.9	323	62.1	252.142
	SCs	208	64.4	115	35.6	
	STs	407	86.8	62	13.2	
	OBCs	263	56.3	204	43.7	
	Total	1075	60.4	704	39.6	1779

3	Women Education					
	No education	665	84.5	122	15.5	389.089***
	Primary	188	56.3	146	43.7	
	Secondary+	222	33.7	436	66.3	
	Total	1075	60.4	704	39.6	1779
4	Husband's educational level					
	No education	471	82.9	97	17.1	2568.047** *
	Primary	263	68.5	121	31.5	
	Secondary+	341	41.3	486	58.8	
	Total	1044	60.1	704	39.9	1779
5	Women currently working					
	No	756	55.4	609	44.6	62.251***
	Yes	319	77.1	95	22.9	
	Total	1075	60.5	704	39.5	1779
6	Wealth index					
	Poor	841	78.4	232	21.6	364.351
	Non-poor	234	33.1	472	66.9	
	Total	1075	60.4	704	39.6	1779
C	Health care					
	Pregnancy registered with ANMs					
	No	279	56.9	221	43.1	8.785
	Yes	495	59.4	338	40.6	
	Missing	301	66.0	155	34.0	
	Total	1075	60.4	704	39.6	1779

Multivariate analyses

A logistic regression analysis shows the net effect of independent variable on dependent variables. Analyses here are based on live births during the three year preceding survey of the NFHS-3 (2005-06) to ever-married women in the age group 15-49 years in Orissa.

To study the net effect of these different dimensions of non-institutional and institutional deliveries two separate binary logistic regression analyses were done. In table 4.4 in the first logistic regression all the independent variables were included without pregnancy registered with ANMs i.e. Age of the women , Children ever born (demographic) Type of residence (rural or urban), Type of caste/tribes, Women education, Husband education, Wealth index, and Women currently working (socio-economic)

In the second logistic regression (Table 4.5) we have included whether the last pregnancy was registered with ANMs including missing cases? When we included this variable it reduced to 1323 out of 1779. And in the third table 4.6 we have excluded women education.

In our study from the logistic regression analyses it is found that the age of women is not major factor to influence on institutional deliveries. Here we focus on findings from table 4.4 on age which is not statistically significant in explaining institutional deliveries.

When other demographic variables are considered children ever born to women. Women who had more than three children were less likely to use institutions in deliveries than women who had less than two children. Here it reveals that women having more children prefer non-institutional deliveries.

From the socio-economic point of view some factors like place of residence, caste/tribes of the household, education of both wife and husband and wealth index also influence institutional deliveries. Some studies have presented evidence that the effects of inadequate access to services on utilization of services are greater than the effects of socio-economic factors (Elo, 1992) and that as access to public health facilities improves, the effects of socioeconomic factors on utilization of services become less important(Govindasamy and Ramesh 1997).

In our study we found, 75 percent women are living in rural areas in Orissa, and it has strong effect in institutional deliveries. In Orissa rural women are more than nearly 50 percent likely no delivery in institutions than their urban counterpart.

As far as type of caste/tribes of women are concerned with regard to place of deliveries scheduled tribes and scheduled caste women are less likely to have institutional deliveries in comparison to their general counterpart. It is because of lack of awareness, education, information, communication, transportation and nearby health care facilities and also due to poverty. (Cadwell, 1986) As per data 26 percent of scheduled tribes women are living in remote Orissa where neither health care facilities are accessible nor any health personnel visit them during pregnancy. And that is the main reason for more non-institutional deliveries among the tribal women as well as scheduled caste women.

Institutional deliveries are positively associated with mother's education and strong odds ratio in institutional delivery. Women who had primary and secondary education were more than two times likely to deliver in institutions than women with no education.

In our study we found those women were currently working during the survey was not significant in explaining institutional deliveries. The nature of work of women was not classified.

In our study we found that husband education did not significantly influence institutional deliveries. Only husband with secondary education and above showed significant odds ratio of 1.35.

Household wealth index has strong and significant odds on place of delivery. As far as wealth index of women in Orissa is concerned non poor women were 2.5 times more likely to deliver in compared to women who were poor. Women who were poor generally deliver at home and relatives generally help them (Obermeyer, 1991).

Health and health care variables are also found to be significant back ground characteristic in regard to non-institutional and institutional deliveries. In our study we found that woman who had the pregnancy registered with ANMs were likely to deliver in institutions than who were not registered.

In Orissa place of residence i.e. rural areas has a significant strong odds ratio in regard to institutional deliveries. Women who are living in rural areas were less likely to have institutional deliveries. Women education also an important

variable with regard to institutional deliveries .Women who have no education had more non institutional deliveries. Women poor economic condition also has a strong effect on place of deliveries.

Table 4.4: Logistic Regression Odds ratio of institutional and non institutional by back ground characteristics (Without pregnancy registered with ANMs)

Background Characteristics		Odd ratios	
A	Demographic	Exp(B)l	Significant
1	women age group		
	15-25®	--	0.000
	26-49	1.186	0.197
2	Total children ever born		
	1-2®	--	0.000
	3+	0.360	0.000
B	Socio-economic		
1	Type of Place of residence		
	Urban®	--	
	Rural	0.542	0.000
2	Type of caste or tribes		
	Others ®	--	0.000
	SCs	0.680	0.026
	STs	0.278	0.000
	OBCs	0.689	0.015
3	Husband education		
	No education®	—	0.000
	Primary	1.153	0.440
	Secondary and above	1.340	0.099
4	Wealth index		
	Poor®	—	0.000
	Non-poor	2.437	0.000
5	Women currently working		
	Yes®	--	0.000
	No	0.968	0.842
6	Women education		
	No education®	--	0.000
	Primary	2.209	0.000
	Secondary+	2.809	0.000

Table 4.5 In our study from the logistic regression analyses it is found that women age is not a major factor to influence institutional deliveries. Here we focus on findings from table 4.on age which is not statistically significant in explaining institutional deliveries.

In the second we have included whether the last pregnancy was registered with ANMs or not? When we included this variable it reduced to 1323 out of 1779.

Women age group 15-25 has less likely to have institutional deliveries than 26-49 age groups. It indicates that women above twenty six years are more likely to have institutional deliveries than age below 25 years mother.

When other demographic variables are considered children ever born to women. Women who had more than three children were likely to use institutions in delivery than women who had less than two children. Here it reveals that women having more children prefer non-institutional deliveries.

From the socio-economic point of view some factors like place of residence, caste/tribes of the household, education of both wife and husband and wealth index also influence institutional deliveries. In Orissa rural women are more than 60 percent likely to deliver in non institutions. As far as type of caste/tribes of women are concerned with regard to place of deliveries scheduled tribes and scheduled caste women are less likely to have institutional deliveries in comparison to their general counterpart.

Institutional deliveries are positively associated with mother's education and strong odds ratio in institutional delivery. Women who had primary and secondary education were more than two times likely to deliver in institutions than women with no education.

In our study we found those women were currently working during the survey had more institutional deliveries than those who were not working. The nature of work of women was not classified.

In our study we found that husband education did not significantly influence institutional deliveries. Only husband with secondary education and above showed significant odds ratio.

Household wealth index has strong and significant odds on place of delivery. As far as wealth index of women in Orissa is concerned non poor women were 2.5 times more likely to deliver in compared to women who were poor. Women who were poor generally deliver at home and relatives generally help them.

Health and health care variables are also found to be significant back ground characteristic in regard to non-institutional and institutional deliveries. In our study we found that woman who had the pregnancy registered with ANMs were likely to deliver in institutions than who were not registered.

Table 4.5. Odds ratio of institutional and non institutional deliveries by background characteristics (pregnancy registered with ANMs including missing cases).

Background Characteristics		Odd ratios	
A	Demographic	Exp(B)l	Significant
1	women age group		
	15-25®		
	26-49	1.218	0.140
2	Total children ever born		
	1-2®		
	3+	0.348	0.000
B	Socio-economic		
1	Type of Place of residence		
	Urban®		
	Rural	0.527	0.000
2	Type of caste or tribes		
	Others ®		0.000
	SCs	0.658	0.017
	STs	0.271	0.000
	OBCs	0.680	0.012
3	Women education		
	No education®		0.000
	Primary	2.179	0.000
	Secondary and above	2.805	0.000
4	Women currently working		
	Yes®		
	No	0.967	0.837
5	Husband education		
	No education®		0.215
	Primary	1.130	0.509
	Secondary and above	1.352	0.090
6	Wealth index		
	Poor®		
	Non-poor	2.456	0.000
7	Pregnancy registered with ANMs		
	No®		0.108
	Yes	1.273	0.102
	Missing	1.423	0.043

In our study from the logistic regression analyses it is found that the age of women is not major factor to influence on institutional deliveries. Here we focus on findings from 4.6 on age which is not statistically significant in explaining institutional deliveries.

Women age group 15-25 has less likely to institutional deliveries than 26-49 age groups. It indicates that women above twenty six years are more likely to have institutional deliveries than age below 25 years mother in Orissa.

When other demographic variables are considered children ever born to women. Women who had more than three children were likely to use institutions in delivery than women who had less than two children. Here it reveals that women having more children prefer non-institutional deliveries.

From the socio-economic point of view some factors like place of residence, caste/tribes of the household, education of both wife and husband and wealth index also influence institutional deliveries. Some studies have presented evidence that the effects of inadequate access to services on utilization of services are greater than the effects of socio-economic factors and that as access to public health facilities improves, the effects of socioeconomic factors on utilization of services become less important .

In our study we found, 75 percent women are living in rural areas in Orissa, and it has strong effect in institutional deliveries. In Orissa rural women are more than nearly 50 percent likely no delivery in institutions than their urban counterpart.

As far as type of caste/tribes of women are concerned with regard to place of deliveries scheduled tribes and scheduled caste women are less likely to have

institutional deliveries in comparison to their general counterpart. It is because of lack of awareness, education, information, communication, transportation and nearby health care facilities and also due to poverty. As per data 26 percent of scheduled tribe's women are living in remote Orissa where neither health care facilities are accessible nor any health personnel visit them during pregnancy. And that is the main reason for more non-institutional deliveries among the tribal women as well as scheduled caste women.

Institutional deliveries are positively associated with mother's education and strong odds ratio in institutional delivery. Women who had primary and secondary education were more than two times likely to deliver in institutions than women with no education.

In our study we found those women were currently working during the survey had more institutional deliveries than those who were not working. The nature of work of women was not classified.

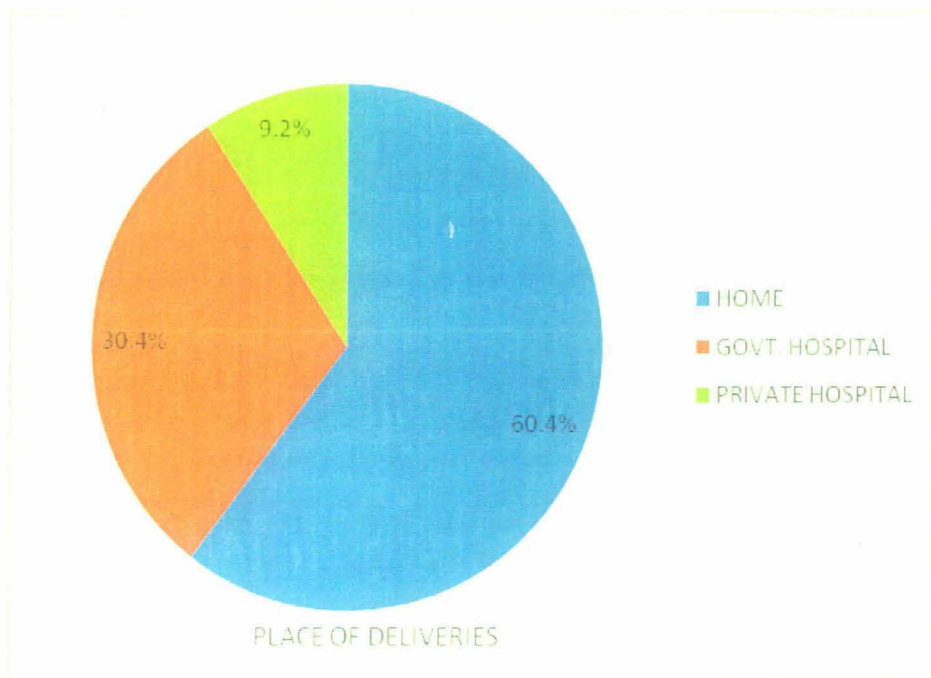
In our study we found that husband education did not significantly influence institutional deliveries. Only husband with secondary education and above showed significant odds ratio of 1.35.

Household wealth index has strong and significant odds on place of delivery. As far as wealth index of women in Orissa is concerned non poor women were 2.5 times more likely to deliver in compared to women who were poor. Women who were poor generally deliver at home and relatives generally help them.

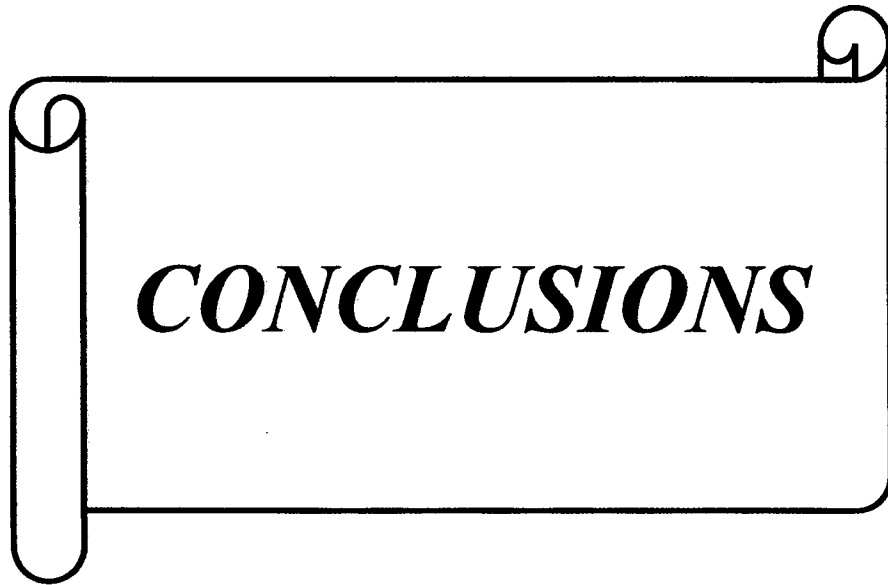
Table 4.6: Odds Ratios: Association between institutional and non-institutional deliveries and selected background characteristics. (With Pregnancy registered with ANMs missing cases)

Background Characteristics		Odd ratios	
A	Demographic	Exp(B)l	Significant
1	women age group		
	15-25®	--	0.000
	26-49	1.251	0.151
2	Total children ever born		
	1-2®	--	0.000
	3+	0.351.	0.000
B	Socio-economic		
1	Type of Place of residence		
	Urban®	--	0.000
	Rural	0.532	0.000
2	Type of caste or tribes household head		
	Others ®	--	0.000
	SCs	0.689	0.068
	STs	0.303	0.000
	OBCs	0.783	0.169
3	Women Education		
	No education®	--	--
	Primary	2.677	0.000
	Secondary and above	2.858	0.000
4	Husband education		
	No education®	--	0.193
	Primary	0.994	0.991
	Secondary and above	1.343	0.151
6	Wealth index		
	Poor®	--	--
	Non-poor	2.607	0.000
7	Pregnancy registered with ANMs		
	Pregnancy registered with ANMs		
	No®	--	--
	Yes	1.282	0.097

Figure 4.1. Percent distribution of place of deliveries as per NFHS-3 in Orissa



CHAPTER-V



CHAPTER-V

CONCLUSIONS

It is well established that giving birth in a medical institution under the care and supervision of trained health-care providers promotes child survival and reduces the risk of maternal mortality. Utilization of maternal health care depends not only on the availability of services but also on factors such as distance of health care facility; perception of women and their families regarding the need for care; social restrictions on freedom to movement; the opportunity cost of accessing health care; and the interaction between the client and the provider of formal health care system (IIPS, 2000). Also as a woman's social status and her health are intrinsically related, her low status often is the cause of poor access to essential healthcare.

Background factors such as age, education of both wife and husband, place of residence, caste, wealth index and pregnancy registered with ANMs of women showed both positive and negative impact on maternal health care utilization. As NFHS-III shows that 69 percent women in Orissa are anaemic, 29 percent deliveries occurred in public health institutions, only 7 percent deliveries in private institutions. Institutional delivery in Orissa is only 36 percent which is less than national average of 39 percent. In Orissa overall only 44 percent of deliveries are assisted by health professional, however almost 2/3 or 64 percent of deliveries still take place at home and only 13 percent of home deliveries are delivered by skilled personnel (health) provider, Apart from that only 41 per cent with recent deliveries received any post natal care.

The results indicate that education, place of residence, caste and wealth index of women shows significant odd ratio of institutional delivery. The analysis

indicates that among rural mothers the odds of giving birth in a medical institution are five times lower as compared to their urban counterpart. Among the other predictor variables considered caste, mother's education, and wealth index has a strong positive effect on the odds of institutional delivery in Orissa.

Despite gradual improvement in health status over many years preventable maternal mortality (MM) and morbidity in Orissa are high because of non-institutional deliveries and pregnancy related complications. The root causes of poor health continues to be poverty, social deprivation low level of literacy, inefficient health systems and infrastructure for health care and control of disease. Demographic, socio-economic inequalities and barriers in sufficient assertion and spread of services outlets and poor quality health care reduce access to and effectiveness of public services. Scheduled caste, scheduled tribes women and children are worse affected. For example the tribal population is most disadvantaged social group in Orissa.

As far as scheduled tribes women are concerned institutional delivery is four times lower as compared to other caste women. This may be due to higher incidence of poverty and ignorance among the tribal population. In spite of the government's effort to reach out to pregnant women in all parts of the state to provide all components of maternal health care free or with nominal charges, utilization of maternal health care remains low in Orissa.

The following inputs could be mentioned as suggestion for improving institutional delivery in Orissa:

Government and health providers should recognise that every pregnancy is special and should ensure that all pregnant women have access to high quality maternal health services by

- Educating women and their families about the risk of complications faced by all women, and about actions they should take if and when a problem arises.
- Providing adequate care as close as possible to where women live. Services should include clean deliveries by health professional/ workers who have been trained in midwifery; prompt recognition of complications and appropriate referral; and treatment of a woman who is experiencing complications until she can be transferred safely to a higher level of care.
- Ensuring that a functioning system of communication and transport link health workers who are working in communities health centre and hospitals so that women with pregnancy complications can receive prompt and appropriate medical care.
- Improving women's overall well-being and reproductive health through prevention and through screening and treatment for existing problems that contribute to poor reproductive health.

The Janani Suraksha Yojna has been rolled out with good intentions, but there are some provisions which make it discriminatory and may reduce its effectiveness in serving some of those who need it the most. The JSY uses a 'minimum age' criterion and a 'two child' norms. However it is well known from both large scale surveys and smaller in depth studies that women do not fully have control over their ages of marriage and childbirth, and that risks are higher at younger ages with regard to safer delivery. This knowledge makes

the minimum age cut off seem discriminatory towards young women, and may also be counter-productive.

Similarly women do not usually have the right to decide the number of children they will have, and the phenomenon of sex pre-selection is increasing. The two-child cut-off will thus exclude women have their third - or more - deliveries, who may also be at higher risk, and families may also be tempted to opt for sex-selection to reduce family sizes. For example this has been shown in Haryana and Himachal Pradesh, where such the two-child norm has been accompanied by rapid declines in the child sex-ratio.

The National Rural Health Mission includes provisions for giving voice to community people through village and district level planning, Citizen's Charters, public hearings and social monitoring. If citizens, especially women whose lives are most at risk without proper care, are given the opportunity to directly place their concerns before decision-makers and planners, the chances of success of many of the provisions in the Mission will increase. From the standpoint of child survival and the health of mother, it is advantageous for babies to be born under hygienic condition with the assistance of trained medical practitioner.

Demographic and some economic factors play in important role in institutional deliveries. In many part of the Orissa girls are discriminated in terms of allocation of family, resources and access to health care. When women status is far their health, education and emotional need take second place to those of men. Thus, there is a need to focus on rural areas to better understand the factors influencing this disparity in the use of maternal care in these areas.

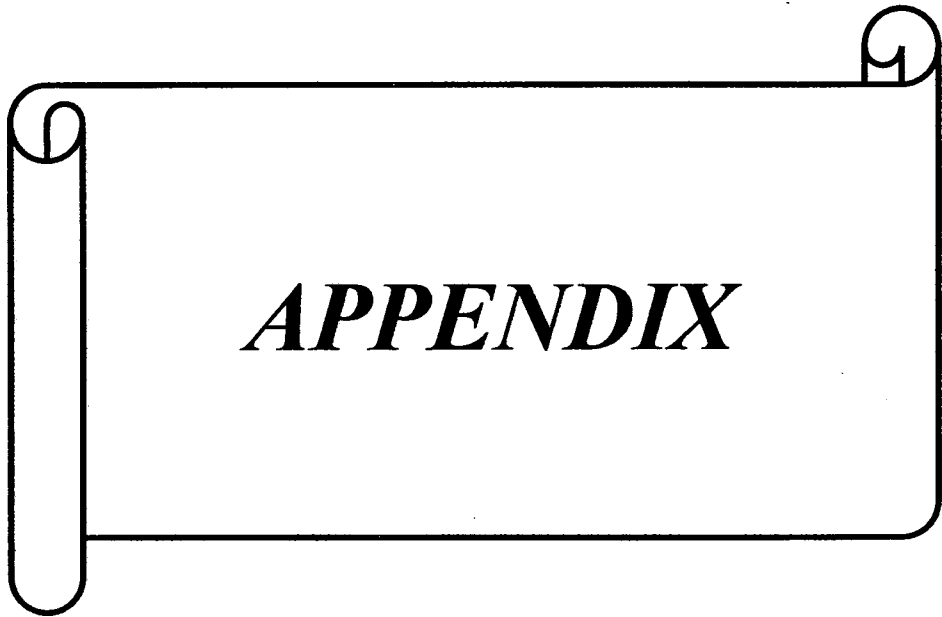
By studying preventable factors for each major cause of maternal death, (Studies in Health Policy 2002) experts had estimated that maternal deaths can be reduced by at least 50 percent in general. Immunization programmes, iron prophylaxis, early detection of complication, wife and husband education, advice and preparation for transport and safe delivery are elements which may make a difference. Inadequate reporting of maternal deaths and causes of death is an obstacle to proper monitoring of the epidemic of maternal death. Revision and upgrading of the systems should go hand in hand with quality improvement of health care programmes.

Many socio-economic determinants of health are not directly within the system of health care services. However, other services with health effects are addressed to a certain extent through an inter-sectoral approach; the strategy uses the primary health care approach and public health principles for priority health problems in Orissa. The Strategy sections may be referred to, for a detailed understanding of how the issues of safer delivery addressed?

In conclusion, the Health and Family Welfare Department reiterates its commitment to improve institutional deliveries and health care services in Orissa .Information, Education and Communication (I. E. C) and workshop, awareness activities should organised by health personnel like Doctor, ASHA, MPVLW, and Anganwadiat village level with regard to safe mother hood and child survival, family planning. With more women and adolescent participation. It will enable people to increase institutional delivery and improving their own health. Apart from wife husband, different groups such as women group, community leaders and health workers be addressed about the importance of institutional deliveries . The use of local folk media need to be encouraged to propagate the safe motherhood and child survival programme and National Rural Health Mission The State Institute of Health & Family Welfare should look after the function.

In Orissa program factors, particularly educational activities promoting the benefits of maternal care services carried out through ANMs centre, sub-centre, Mahila Mandal and Anganwadi Centers, are important in increasing the use of maternal care services in rural areas. Additionally, the results indicate that the mere presence of a private health care facility need not necessarily improve utilization. Increase in utilization is observed among households if the health worker visited these households during pregnancy.

Despite the many benefits associated with institutional delivery, Orissa maternal and child health programmes have not aggressively promoted institutional deliveries, except in high-risk cases. The reason is that providing facilities for institutional deliveries on a mass scale in rural areas is viewed as a long-term goal requiring massive health infrastructure investments. Existing maternal and child health services at primary health centres (PHCs) should be upgraded, and new first-referral units (FRUs) must be set up at the PHSs for improving institutional deliveries.



APPENDIX

APPENDIX-I

Frequency and percent distribution of institutional and non-institutional deliveries of women age group 15-49 according to their selected background characteristics.

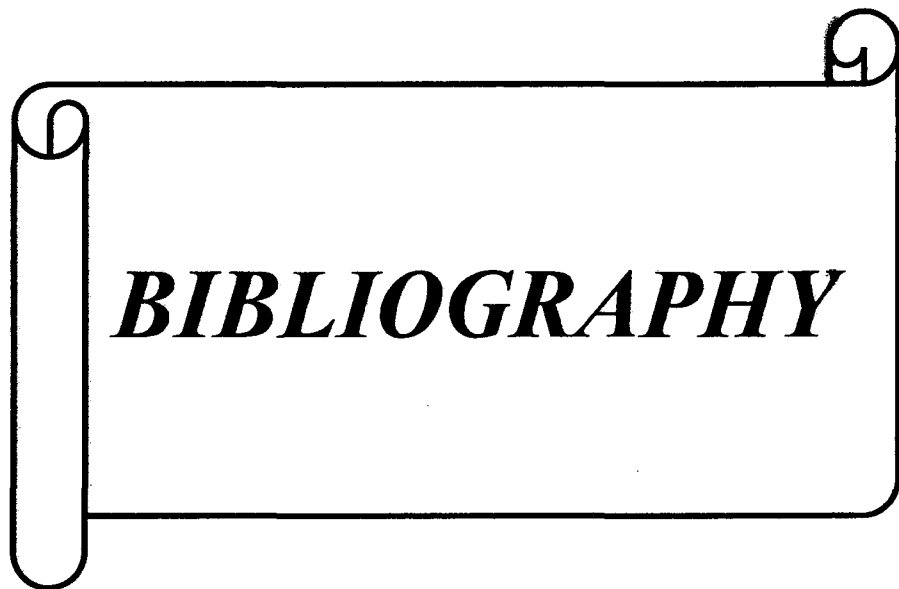
Place of deliveries	Frequency	Percent	Valid Percent	Cumulative Percent
Respondents home	959	10.5	53.9	53.9
Other home	2	.0	.1	54.0
Parent's home	114	1.3	6.4	60.4
Government hospital	307	3.4	17.3	77.7
Government dispensary	2	.0	.1	77.8
UHC/UHP/UFWC	6	.1	.3	78.1
CHC/Rural Hosp/PHC	214	2.4	12.0	90.2
Sub-centre	5	.1	.3	90.4
Other public	8	.1	.4	90.9
Private hospital/maternity/clinic	143	1.6	8.0	98.9
Other private medical	8	.1	.4	99.4
NGO/Trust hospital/clinic	3	.0	.2	99.6
Other	8	.1	.4	100.0
Total	1779	19.5	100.0	
Missing	99	2	.0	
System	7319	80.4		
Total	9100	100.0	7321	80.5
Women age group				
15-19	99	1.1	1.1	1.1
20-24	773	8.5	8.5	9.6
25-29	1532	16.8	16.8	26.4
30-34	1852	20.4	20.4	46.8
35-39	1832	20.1	20.1	66.9
40-44	1727	19.0	19.0	85.9
45-49	1285	14.1	14.1	100.0
Total	9100	100.0	100.0	

Total children ever born	Frequency	Percent	Valid Percent	Cumulative Percent
1	598	6.6	6.6	6.6
2	1718	18.9	18.9	25.5
3	2097	23.0	23.0	48.5
4	1788	19.6	19.6	68.1
5	1335	14.7	14.7	82.8
6	774	8.5	8.5	91.3
7	385	4.2	4.2	95.5
8	224	2.5	2.5	98.0
9	90	1.0	1.0	99.0
10	80	.9	.9	99.9
11	11	.1	.1	100.0
Total	9100	100.0	100.0	
Type of place of residence				
Urban	2475	27.2	27.2	27.2
Rural	6625	72.8	72.8	100.0
Total	9100	100.0	100.0	
Type of caste or tribe of the household head				
Valid Percent	1821	20.0	20.2	20.2
Scheduled tribe	2028	22.3	22.5	42.7
Other backward class	2354	25.9	26.1	68.8
None of above	2816	30.9	31.2	100.0
Total	9019	99.1	100.0	
Missing	9	.63	.7	
System	18	.2		
Total	9100	100.0	81	.9

Highest educational level of women	Frequency	Percent	Valid Percent	Cumulative Percent
No education	4757	52.3	52.3	52.3
Primary	2012	22.1	22.1	74.4
Secondary	2124	23.3	23.3	97.7
Higher	207	2.3	2.3	100.0
Total	9100	100.0	100.0	
Husband's education level				
No education	2808	30.9	31.0	31.0
Primary	2271	25.0	25.1	56.1
Secondary	3174	34.9	35.1	91.2
Higher	654	7.2	7.2	98.4
Don't know	143	1.6	1.6	100.0
Total	9050	99.5	100.0	
Missing	9	.48	.5	
System	2	.0		
Total	9100	100.0	50	.5
Wealth index				
Poorest	3426	37.6	37.6	37.6
Poorer	1869	20.5	20.5	58.2
Middle	1537	16.9	16.9	75.1
Richer	1185	13.0	13.0	88.1
Richest	1083	11.9	11.9	100.0
Total	9100	100.0	100.0	

Respondent currently working	Frequency	Percent	Valid Percent	Cumulative Percent
No	6238	68.5	68.8	68.8
Yes	2828	31.1	31.2	100.0
Total	9066	99.6	100.0	
Missing	9	34	.4	
Total	9100		100.0	
Pregnancy registered with ANM				
No	490	5.4	37.0	37.0
Yes	833	9.2	63.0	100.0
Total	1323	14.5	100.0	
Missing	7777	85.5		
Total	9100	100.0		
During pregnancy, receive health check-ups				
No	231	2.5	24.2	24.2
Yes	722	7.9	75.8	100.0
Total	953	10.5	100.0	
Missing	9	3	.0	
System	8144	89.5		
Total	9100	100.0	8147	89.5
During pregnancy, receive health and nutrition education				
No	543	6.0	57.7	57.7
Yes	398	4.4	42.3	100.0
Total	941	10.3	100.0	
Missing	9	15	.2	
System	8144	89.5		
Total	9100	100.0	8159	89.7
Antenatal visits for pregnancy				
No antenatal visits	157	1.7	1.7	1.7
1	315	3.5	3.5	5.2

2	471	5.2	5.2	10.4
3	8157	89.6	89.6	100.0
Total	9100	100.0	100.0	
Reason HH members don't use Govt facility: no nearby facility				
No	7499	82.4	82.7	82.7
No nearby facility	1291	14.2	14.2	97.0
Not de jure resident	273	3.0	3.0	100.0
Total	9063	99.6	100.0	
Missing	9	37	.4	
Total	9100	100.0		



BIBLIOGRAPHY

BIBLIOGRAPHY

1. Abou Zahr and. Wardlaw. T 2001. Maternal Mortality at the End of a Decade: Signs of Progress. **Bulletin of the World Health Organization** 79(6): pp. 561-68.
2. AbouZahr, C. and Ahman E.1998. Unsafe Abortion and Ectopic Pregnancy. Health Dimensions of Sex and Reproduction. **Bulletin of the World Health Organization**: pp. 267-296.
3. Acharya, L.B., and Cleland, J. 2000. Maternal and Child Health Services in Rural Nepal: Does Access or Quality Matter More. **Health Policy and Planning** 15(2): pp. 223-229.
4. Addai, I. 2000. Determinants of Use of Maternal Child Health Services in Rural Ghana, **Journal of Biosocial Sciences** 32: pp. 1-15.
5. Bhatia, J.C. 1999. Levels and Causes of Maternal Mortality in South India. **Studies in Family Planning** 24(5): pp.310-318.
6. Bhatia, J.C. and Cleland, J. 1995. Determinants of Maternal Care in a Region of South India. **Health Transition Review** 5(2): pp.127-142.
7. Botha, M.E. 1989. Theory Development in Perspective: The Role of Conceptual Frame Works Models in Theory Development. **Journal of Advance Nursing**.14: pp.49-55
8. Caldwell, J.C.1986. Routes to Low Mortality in Poor Countries. **Population and Development Review** 12(2): pp.171-220.
9. Chakrabarti Anindita; Chaudhuri Kausik, 2007. Antenatal and Maternal Health Care Utilization: Evidence from Northeastern States of India. **Applied Economics**. 39 (6): pp.683 – 695.

10. Cleland J. and Ali. M. 2004. Reproductive Consequences of Contraceptive Failure in 19 Developing Countries. **Obstetrics and Gynecology** 104: 2 pp.314 – 20.
11. Das Gupta 2001. Dimensions of Women's Autonomy and the Influence on Maternal Health Care Utilization in a North Indian City. **Demography**- 38: pp. 67-78.
12. Das Gupta and Krishnan T.N. 1995. Women's Health in India: Risk and Vulnerability. Bombay: Oxford University Press.
13. Elo, I.T. 1992. Utilization of Maternal Health-Care Services in Peru: The Role of Women's Education. **Health Transition Review** 2(1): pp. 49-69.
14. Govindasamy, P. and B. M. Ramesh. 1997. Maternal Education and the Utilization of Maternal and Child Health Services in India. National Family **Health Survey Subject Reports**, No. 5. Mumbai: International Institute for Population Sciences; Calverton, Maryland: Macro International, **Demographic and Health Surveys (DHS)**.
15. Graham, W., Brass W. and Snow, R.W. 1989. Estimating Maternal Mortality: The Sisterhood Method. **Study Family Planning** 20: pp.125-35.
16. Graham Wendy and Campbell M. R. 1992. Maternal Health and The Measurement Trap. **Social Science and Medicine**. 35 (8) pp.967-977.
17. Graham, W. J Fitzmaurice, A. E. 2004. The Familial Technique for Linking Maternal Death with Poverty. 363: pp. 23-27.
18. Graham. W. 1998. Safe Motherhood. **LANCET**. 351(9116):1664.
19. Gujarati, D.N. Basic Econometrics. New Delhi, McGraw-Hill.
20. Hanson, K., Ranson, M. K. 2003. Expanding Access to Priority Health Interventions: a Framework for Understanding the Constraints to Scaling-up. **Journal of International Development** 15(1): pp.1-14.

21. Heise, Lori, 1993. Violence Against Women: The Missing Agenda. *The Health of Women: A Global Perspective*. (Ed.,) Koblinsky, M., Timyan, J. and Gay J. West View Press. (8) pp. 171-195.
22. Hill, K., C. AbouZahr, 2001. Estimates of Maternal Mortality for 1995. **Bulletin of the World Health Organization** 79(3) pp. 182-193.
23. ICPD-International Conference on Population and Development-5-13 September 1994. Safe Motherhood. Downloaded from <http://www.unfpa.org/icpd/icpd.cfm> on 5.2.2009.
24. International Institute for Population Sciences (IIPS) and ORC Macro. 2000. **National Family Health Survey (NFHS-1)**, 1992-93: Mumbai: IIPS. India.
25. International Institute for Population Sciences (IIPS) and ORC Macro. 2000b. **National Family Health Survey (NFHS-II)**, 1998-99: Orissa, Mumbai: IIPS. India,
26. International Institute for Population Sciences (IIPS). **National Family Health Survey (NFHS-III)**, 2005-06: Orissa, Mumbai: IIPS. India,
27. International Institute for Population Sciences and ORC, Macro. 2000. **National Family Health Survey (NFHS-II)**, India 1998-99. Mumbai: IIPS.
28. International Institute of Population Sciences (IIPS), RCH Facility Survey Phase -1, Mumbai: IIPS 2001.
29. International Institute of Population Sciences and ORC Macro. **National Family Health Survey-2005-06**. Orissa report, IIPS, Mumbai. Down loaded from: <http://www.iipsindia.org/nfhs3.html>.18.11.2008
30. Jeffery Roger 1997. *Population, Gender and Politics: Demographic Change in Rural North India*. Cambridge: Cambridge University Press.
31. Jejeebhoy, S. 1995. *Women's Education, Autonomy, and Reproductive Behavior: Experience from Developing Countries*. Oxford, Clarendon Press.
32. Kanitkar, T. and. Sinha. R. K. 1989. Antenatal Care Services in Five States of India. In S. N. Singh, M. K. Premi, P. S. Bhatia, and Ashish Bose, (Eds.)

- Population Transition in India, Delhi: B. R. Publishing. (2.) pp.201–11.
33. King, J. C. 2003. The Risk of Maternal Nutritional Depletion and Poor Outcomes Increases in Early or Closely Spaced Pregnancies. **Journal of Nutrition**. 133: pp. 1732s-1736.
 34. Koblinsky, M. A. 1999. Organizing Delivery Care: What Works for Safe Motherhood. **Bulletin of the World Health Organization** 77(5) pp.399-406.
 35. Koblinsky, M. A. and Campbell O. R. 1993. Mother and More: a Broader Perspective on Women's Health. *The Health of Women: A Global Perspective*. M. A. Koblinsky, J. Tyman and J. Gay. Boulder, CO, West Views Press.
 36. Kunst, A. E. and Houweling T. 2001. A Global Picture of Poor-rich Differences in the Utilization of Delivery Care. *Studies in Health Services and Organisation and Policy*: 17 pp. 293-311
 37. Kwast, B. 1996. Reduction of Maternal and Prenatal Mortality in Rural and Peri-urban Settings: What Works. **European Journal of Obstetrics and Gynecology and Reproductive Biology** 69: pp. 47-53.
 38. Mahmood, A. 1998. *Statistical Methods in Geographical Studies*. New Delhi, Rajesh Publication.
 39. Maine, D. A., Freedman, L. 1994. Risk, Reproduction and Rights: the Uses of Reproductive Health Data. *Population and Development: Old Debates, New Conclusions*. N J, Transaction Publishers: pp. 203-227.
 40. Majhi, A.K., Mondal, A. and Mukherjee G.G. 2000. Safe Motherhood-a Long Way to Achieve. **Journal of Indian Medical Association**, 99(3) pp. 132-137.
 41. McCarthy, J. and Maine, D. 1992. A Framework for Analyzing the Determinants of Maternal Mortality. **Studies in Family Planning** 23: (1) pp. 23 – 33.
 42. Menken, J. and Duffy, L. 200. Childbearing and Women's Survival: New Evidence from Rural Bangladesh. **Population and Development Review**. 29(3) pp. 405-426.

43. Meremikwu, W. 2006. Malaria in Children and Pregnant Women. Reducing Malaria's. **The Malaria Journal** 50:43
44. Miller, B.D. 1981. *The Endangered Sex: Neglect of Female Children in Rural North India*. Ithaca and London: University Press.
45. Miller, J. E. 1991. Birth Intervals and Prenatal Health: an Investigation of Three Hypotheses. **Family Planning Perspectives**. 23(2) pp. 62-70.
46. Ministry of Health and Family Welfare. 2000. Health Information of India, 1997-98. **Central Bureau of Health Intelligence, Ministry of Health and Family Welfare**. Government of India, New Delhi.
47. Ministry of Health and Family Welfare. 2000a. Bulletin on Rural Health Statistics, 2000. **Department of Family Welfare**, Government of India New Delhi.
48. Nasir, K. and Hyder. A. 2003. Violence Against Pregnant Women in Developing Countries: Review of Evidence. **European Journal of Public Health**. 13:pp. 105-107.
49. **National Family Health Survey (NFHS-II)**, 1998 - 99: International Institute for Population Sciences (IIPS) and ORC Macro. 2000b. Orissa, Mumbai: IIPS.
50. National Population Policy. 2000. **Department of Family Welfare**, Ministry of Health and Family Welfare. 2000. Government of India. New Delhi.
51. Newman, J. and Pradhan, M. 2002. An Impact Evaluation of Education, Health, and Water Supply Investments by the Bolivian Social Investment Fund. **World Bank Economic Review**. 16(2) pp. 241-274.
52. Newman, J., Pradhan, M. 2002. An Impact Evaluation of Education, Health, and Water Supply Investments by the Bolivian Social Investment Fund. **World Bank Economic Review**. 16(2) pp. 241-274.
53. Obermeyer, C.M. 1991. Maternal Health Care Utilization in Jordan: a Study of Patterns and Determinants. **Studies in Family Planning**. 22(3) pp. 177-187.

54. Orissa Maternal and Child Health care Programme, 2005. Downloaded from http://www.orissa.gov.in/health_portal/Directorate/dfw/activity.html on 12.2.2009.
55. Orissa Maternal and Child Health Care Programme, 2005. Downloaded from: http://www.orissa.gov.in/health_portal/Directorate/dfw/activity.html on 12.2.2009
56. PATH 1997. The Facts: Female Genital Mutilation. Seattle, Program for Appropriate Technology in Health. Downloaded from: <http://circ.ahajournals.org/cgi/content/full/97/22/2191> on 16.2.2009
57. Pathmanathan, I Liljestrang. 2003. Investing in Maternal Health. Learning from Malaysia and Sri Lanka. The World Bank, **Human Development Network**.
58. Paul, B. K. 1993. Maternal mortality in Africa: 1980-87. **Social Science and Medicine**. 37(6) pp. 745-752.
59. Planning Commission, 2002. Maternal Mortality Rates and Other Indicators for Indian States, Government of India. New Delhi.
60. Raghupathy, S. 1996. Education and the Use of Maternal Health Care in Thailand. **Social Science and Medicine**. 43(4), pp. 459-471.
61. Rani, M. and. Lule E, 2004. Exploring the Socioeconomic Dimensions of Adolescent Reproductive Health: a Multicounty Analysis. **International Family Planning Perspectives**. 30(3) pp. 110-117.
62. Rao, P.S. and Richard. J. 1984. Socio-economic and Demographic Correlates of Medical Care and Health Practices. **Journal of Biosocial Science**. 16(3) pp 343-55.
63. Registrar General of India 2000. Sample Registration System, **Statistical Report**. 1998. New Delhi: Office of Registrar General, India.
64. Registrar General of India: 2006. Sample Registration System Bulletin. Government of India. New Delhi. pp. 1-7.

65. Reproductive Child Health, RCH-II: Orissa. 2005. Downloaded from <http://india.gov.in/citizen/health/viewscheme.php?schemeid=1223> on 22.1.2009.
66. Rutherford, D.R. and Choe, M.K. 1993. *Statistical Models for Casual Analysis*. New York, USA. John Wiley and Sons.
67. Safe 'Motherhood' and District Health Systems. 2003. **European Journal of Obstetrics & Gynecology and Reproductive Biology**. 69, (1), pp 5-10.
68. Sample Registration System 1998. "Base Line Survey Report" Orissa Census 2001, India.
69. Sample Registration System 1998. Indian States Ranking by Institutional Delivery. **Planning Commission, 2002**. Maternal Mortality Rates and Other Indicators for Indian States, Government of India.
70. Sample Registration System 1998. Indian States Ranking by Institutional Delivery. **RGI**.
71. Santelli, J., Rochat, R. 2003. The Measurement and Meaning of Unintended Pregnancy. **Perspectives on Sexual and Reproductive Health**. 35(2): pp.94-101.
72. Santiso, R. 1997. Effects of Chronic Parasitoids on Women's Health. **International Journal of Gynecology and Obstetrics**. 58: pp.129-136.
73. Shehu, D., A. T. Ikeh, 1997. Mobilizing Transport for Obstetric Emergencies in Northwestern Nigeria. **International Journal of Gynecology and Obstetrics**. 59: pp. 173-180.
74. Srinivasan, K. (1996). *Regulating Reproduction in India's Population: Efforts, Results and Recommendations*. New Delhi: Sage Publications.
75. Srinivasan, K., Sharriff, A., Zaman, W.A. and Bierring, C. 1997. *India: Towards Population and Development Goals*. New Delhi: Oxford University Press.

76. Sundari, T. 1992. The Untold Story: How the Health Care Systems in Developing Countries Contribute to Maternal Mortality. **International Journal of Health Services**. 22(3) pp. 513-528.
77. The millennium Development Goals Report, 2007. Meeting the Challenge of a Changing World. Downloaded from [http://www.google.com/#hl=en&q=Millennium+Development+Goal+\(MDGs\)+by+2015&aq=f&oq=&aqi=&fp=leBsIIJAIN0](http://www.google.com/#hl=en&q=Millennium+Development+Goal+(MDGs)+by+2015&aq=f&oq=&aqi=&fp=leBsIIJAIN0) on 2.1.2009.
78. The National Population Policy of India, 2000. *Government of India: New Delhi*.
79. The United Nations 2002. Maternal Care in India Reveals Gaps Between Urban and Rural, Rich and Poor. **POPLINE Document Number: 182394** Downloaded from <http://www.popline.org/docs/1589/182394.html>.
80. *The World Health Report. 2005. Make Every Mother and Child Count*. Downloaded from <http://www.who.int/features/qa/12/en/index.html>.
81. Tinker, A. 2000. Women's Health: the Unfinished Agenda. **International Journal of Gynecology and Obstetrics**. 70: PP.149-158.
82. UN Millennium Project. 2005. Investing in Development: A Practical Plan to Achieve the Millennium Development Goals. pp. 13 and 20. London.
83. UNICEF report 2007 on the Eve of Safe Motherhood: A Statistical Review. UNICEF, New York.
84. UNICEF. 2001. Early Marriage: Child Spouses Innocenti Digest. 7: PP. 11.
85. United Nation, 2004. Review and Appraisal of the Progress made in achieving the goals and Objectives of the Programme of Action of the International Conference on Population Development. **Report of the Secretary General**, United Nations New York.
86. USAID 2003. Improved Child Survival and Nutrition in Selected Areas of India. pp. 386-403.
87. W. Graham. 1998. Safe Motherhood. **LANCET**. 351 pp.1664.

88. Wagstaff, A. and Claeson, M. 2004. The Millennium Development Goals for Health: Rising to the Challenges. Washington, DC, the World Bank.
89. White Ribbon Alliance report, 2008. Deliver Now for Women and children. Downloaded from: http://www.who.int/pmnch/activities/orissadelivernowUpdate_24June2008.pdf 14.2.2009.
90. WHO 1996. Estimates of Maternal Mortality: A New Approach by **WHO and UNICEF**. Geneva: WHO.
91. WHO 2003. Reducing Maternal Mortality. Downloaded from <http://www.who.int/features/qa/12/en/index.html> on 12.12.2008.
92. Winkvist, A, Rasmussen, K. M. 1992. A New Definition of Maternal Depletion Syndrome. **American Journal of Public Health**. 82 (5) pp. 691-694.
93. World Bank 2000. Reaching Beyond the Health Sector: Reducing Maternal Mortality.
94. World Bank, 2004. World Development Report. Investing in Health. Oxford University Press, New York.
95. World Health Organization. 2004. Making Pregnancy Safer: The Critical Role of the Skilled Attendant. A Joint Statement by **WHO, ICM, and FIGO**. Geneva, Department of Reproductive Health and Research, WHO.
96. World Health Organization Report, 1999. The Worldwide Burden of Postpartum Hemorrhage: Policy Development Where Inaction is Lethal. **International Journal of Gynecology & Obstetrics**, M. Potts, A. Hemmerling (Ed) 94, pp.116-121.
97. World Health Organization. 1986. Maternal Mortality: Helping Women off the Road to Death. **World Health Organization Chronicle** 40: pp.175 – 183.
98. World Health Report 20004. The Introduction of Confidential Enquiries into Maternal Deaths and Near-Miss Case Reviews in the WHO. Downloaded from <http://linkinghub.elsevier.com/retrieve/pii/S0968808007303340on>

WEBSITE

- i. <http://www.iipsindia.org/nfhs3.htm>
- ii. http://www.orissa.gov.in/health_portal/Directorate/dfw/activity.html.
- iii. <http://india.gov.in/citizen/health/viewscheme.php?schemeid=1223>.
- iv. <http://www.igovernment.in/site/shortage-of-doctors-hits-india%E2%80%99s-health-mission/>.
- v. [http://www.google.com/#hl=en&q=Millennium+Development+Goal+\(MDGs\)+by+2015&aq=f&oq=&aqi=&fp=leBsIJAIN0](http://www.google.com/#hl=en&q=Millennium+Development+Goal+(MDGs)+by+2015&aq=f&oq=&aqi=&fp=leBsIJAIN0) .
- vi. <http://www.millenniumpromise.org/site/PageServer?pagename=home> .
- vii. <http://www.who.int/features/qa/12/en/index.html>.
- viii. <http://www.who.int/features/qa/12/en/index.html>.
- ix. <http://india.gov.in/citizen/health/viewscheme.php?schemeid=1223>.
- x. <http://linkinghub.elsevier.com/retrieve/pii/S0968808007303340> .

