



Analysis of Maternal Mortality and Family Planning Services Practice Among Women in Gujarat

KEYWORDS

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ABSTRACT Mortality rate in developing countries is increasing which plays an important issue and concern for the family planning and women's health. Data from District Level Household surveys are examined to understand the level of maternal mortality in India and the differentials by districts of Gujarat state. The data provides information on district wise coverage of various Family Planning Methods, Antenatal care and Delivery care. Data of various indicators of maternal health are analyzed. It is further used to analyze the performance of districts of Gujarat state in providing maternal health facilities. The critical role of Antenatal check up, Institutional delivery and nutrition value for reduction in maternal mortality need to be addressed

INTRODUCTION

Giving birth is the most precious time for the mothers that they might feel terrified and delighted at the same time. But despite of all the mixed emotions that the mothers feel, there are instances that their lives were at risk. Hence, mortality rate in developing countries is increasing which plays an important issue and concern for the family planning and women's health.

OBJECTIVES

To investigate whether maternal mortality ratios in developing countries are related to health service adequacy. To determine the prevalence of mortality rate in India both rural and urban areas. To examine the family planning services that are applied in the country and to compare the effectiveness of the family planning services in Gujarat.

BACKGROUND AND PROBLEM STATEMENT

Worldwide, over 5 lakhs women and girls die of complications related to pregnancy and childbirth every year. Over 99% of those deaths occur in developing countries such as India. But maternal deaths only tell part of the story. Women and Girls, if not died, suffer from disabilities caused by complications during pregnancy and childbirth each year. For every women or girl who dies as a result of pregnancy related causes, between 20 and 30 more will develop short and long term disabilities, such as obstetric fistula, a ruptured uterus, or pelvic inflammatory diseases. Maternal deaths in developing countries are a major public health problem. The risk of dying women in developing countries is 36 times more than in developed countries. Thus, Maternal Mortality represents one of the widest health gaps between developed and developing nations and it is intriguing that developing contributes much to this death rate.

FACTS

If we can see some demographic statistics of India, approximately 70 thousands women die every year. India ranks 18th in world ranking of maternal mortality rate. As per Sample Registration System, MMR in India has decline from 301 in the year 2001-03 to 148 in 2007-09 per lakh. The average annual decline is 2.3% against target of 5.5% by UN's Millennium Development Goal. According to the target given by MDG, India has to reduce MMR to 109 by the year 2015. The Infant Mortality Rate in India is 41 in

year 2011 which is still high compared to other developed countries.

Maternal Mortality Ratio (MMR)

While referring demographic characteristics and its statistics of India and Gujarat state itself, mortality indicators catch the eye. Specially, prevailing high rates of maternal mortality in rural and backward areas.

The maternal mortality rate is the number of maternal deaths to the women in childbearing age group (15-49) per 1,00,000 women of the respective age group, during pregnancy, childbirth or within 42 days after termination of pregnancy due to complication of pregnancy or childbirth.

Major causes of maternal deaths are due to haemorrhage, sepsis, hypertension disorders, severe bleeding after delivery, infections, unsafe abortion and obstructed labour. And out of those who survive will develop short and long-term disabilities such as obstetric fistula, a ruptured uterus, or pelvic inflammatory disease.

Here an attempt is made to throw light on situation of maternal health in Gujarat with respect to various health indicators.

Gujarat state is improving demographic and health indicators at national level. As per the maternal mortality study conducted by the Registrar General of India, based on Sample Registration System, the maternal mortality ratio for Gujarat as per 2011-13 SRS is 112 as compared to 389 for the year 1992-93

Almost 57% of the population of Gujarat resides in rural area. Population of Scheduled Tribes and scheduled Castes are around 15% and 7% respectively. In rural area literacy rate is 71.77% of which 81.61% male and 61.36% females are literate. Dohad district has recorded the lowest literacy rate. Sex Ratio of Gujarat has shown declining trend. The overall sex-ratio for the state is 919, whereas it is found 949 in rural areas and 880 in urban areas for the year 2011.

It is found from the report of DLHS-RCH-II (2002-04) that maternal mortality levels were high among scheduled tribes and scheduled castes and low among Muslims.

The less developed villages and backward areas had significantly higher MMR compare to developed areas. It has also been observed the relation of MMR with poverty and education levels. The other important fact is role of malnutrition and inadequate health care impact women's health during the stage of reproductive life.

From NFS-3 (2005-06) it reveals the fact that more than 1/3rd of women had a body mass index below normal (less than 18.5) and about 58% of the women in the child bearing age group (15-49) were found anaemic. As per NFS-2 more than half of the pregnant women in Gujarat are anaemic. It concludes that the nutritional status of women has to improve to the desired level.

Gujarat state has well maintained health infrastructure at various levels to provide better and proper health facilities. As per National Health Policy of 1983, a 'three-tier' health care system was established in Gujarat. As per December-2011 records there are 6 Major Hospitals, 24 District Level hospitals, 26 Sub-District level Hospitals, 6 Class-II hospital, 305 Community Health Centres, 1114 Primary Health Centres and 7274 Sub-centres are functional in the state.

Family Planning Scenario

In Gujarat, as in other states the family welfare programme is voluntary and the choice of the method is left to the respective couples. As observed from different rounds of NFHS, knowledge of contraception has considerably gone up. According to NFHS-III, Knowledge of FP is nearly universal in the state. Of all FP methods, about 57 percent people uses any modern method. Accordingly, 43 percent of currently married women in the state know female sterilization followed by the very small and negligible proportion of currently married men (0.6%). Spacing method comprising of oral pill, IUD and condom has been not so popularly known methods. Of these three methods, currently married women were most likely to know the pill (2.6%) and IUD (4.5%). According to NFHS-III, the Contraceptive Prevalence Rate among currently married women is 67%, which is higher than the national average (56%), NFHS-II (58%) and NFHS-I (49%).

Though contraceptive prevalence in the state is above the national average of 56 percent, the use of modern spacing methods continues to be low. Only five percent women reported ever use of any of the three modern spacing methods- pill, IUD and condom. Female sterilization accounts for about 80 percent of all contraceptive use. It can be observed that a little more than one-third of currently married women, aged between 15-49 years are not using contraceptive methods (NFHS-III) in the state, which is far lower than NFHS-II (41%) and NFHS-I (51%).

The unmet need for family planning is defined as the proportion of currently married women who either want to space their next birth or stop childbearing entirely but are not using contraception. According to this definition, about 8.2 percent of currently married women have an unmet need for family planning (4.4% for spacing birth and 3.8% for limiting) in the state during NFHS-III, which is slightly lower than NFHS-II (8.5% i.e 4.8% for spacing birth and 3.7 % for limiting). In NFHS-I, the unmet need of currently married women was much higher than NFHS-II and NFHS-III (13.1% i.e 7.6% for spacing birth and 5.5% for limiting). If all the women with unmet need for family planning accept a method, the contraceptive prevalence rate would increase by about 10 percent and increase from 67

percent to 77 percent. The unmet need for family planning in the state is about the same in urban areas (8.2%) and rural areas (8.2%).

In this study the differentials in maternal mortality by state as well as district wise has been discussed. Data is taken from DLHS-2 (2002-04) and DLHS-3 (2007-08), which provides insight into the maternal health situation in Gujarat as it provides information on coverage of various Family Planning Methods, Antenatal Care, and Delivery Care. Data of various indicators of maternal health are analysed here. Table-2 presents the percentage of women who are using various Family Planning Methods in DLHS-2 and DLHS-3. The percentage of women using any Family Planning Methods has shown marginal increase from 59.2% in 2002-04 to 61.6% in 2007-08. Out of various method, the use of Pill, IUD and Condom shows decreasing trend. The change in total unmet need for Family Planning during this period was negligible.

TABEL-2
Current use of Family Planning methods– KEY INDICATORS FOR GUJARAT

Indicators	DLHS - 3 (2007-08)			DLHS - 2 (2002-04)		
	Total	Rural	Urban	Total	Rural	Urban
Any method (%)	61.6	60.6	64.4	59.2	56.4	64.6
Any modern method (%)	54.3	53.8	55.8	52.4	50.6	55.7
Female sterilization (%)	41.5	43.7	35.5	39.3	42.9	32.4
Male sterilization (%)	1.7	2.2	0.4	1.3	1.4	1.3
Pill (%)	3.0	2.4	4.8	3.2	1.8	5.8
IUD (%)	3.5	2.5	6.3	3.8	2.1	7.0
Condom (%)	4.5	3.0	8.8	4.8	2.4	9.1
Any traditional method (%)	7.2	6.7	8.6	6.9	5.8	8.9
Rhythm/Safe period (%)	6.5	6.0	7.9	5.4	4.6	6.7
Total unmet need (%)	16.5	16.8	16.0	16.3	17.0	15.0
For spacing (%)	6.5	7.0	5.3	6.8	7.3	5.9
For limiting (%)	10.0	9.8	10.7	9.5	9.7	9.2

ANTENATAL CARE

According to District Level Household survey (DLHS-3) for year 2007-08, 50% mothers in rural area and 79% mothers in urban area had three or more Ante-Natal Care (ANC), 52.3% mothers in rural area and 45.4% mothers in urban area consumed 100 IFA tablets, 16% mothers in rural area and 32.8% mothers in urban area had full antenatal check-up and 63.1% mothers in rural area and 86.4% mothers in urban area had at least one tetanus toxoid injection. Moreover, NFHS-II results shows that 14% of women who did not receive any antenatal check-up were mostly high-parity rural women from scheduled tribes, illiterate and women with a low-standard of living. It concludes that women of rural areas are lagging behind in availing health facilities. Various parameters of antenatal care are recorded in table-3.

TABEL-3: ANTENATAL CARE (BASED ON WOMEN WHOSE LAST PREGNANCY OUTCOME WAS LIVE/STILL BIRTH DURING THE REFERENCE PERIOD)

Indicators	DLHS-3 (2007-08)			(DLHS-2 (2002-04)		
	Total	Rural	Urban	Total	Rural	Urban
Mothers who received any antenatal check-up (%)	71.5	66.4	88.4	87.6	84.9	93.6
Mother who had antenatal check-up in first trimester (%)....	52.4	45.9	73.4	47.1	39.9	63.5
Mothers who had three or more ANC (%)	56.8	50.0	79.0	57.3	48.3	77.8
Mothers who had at least one tetanus toxoid injection (%)	68.6	63.1	86.4	82.5	78.8	91.0
Mothers whose Blood Pressure (BP) taken (%)	51.0	44.8	71.3	53.8	43.3	77.6
Mothers who consumed 100 IFA tablets (%)	50.7	52.3	45.4	29.9	25.3	40.4
Mothers who had full antenatal check-up (%)	19.9	16.0	32.8	25.2	19.6	37.9

We can see from table-3, that most of the indicators of antenatal care shows decreasing trend. Whereas percentage of mothers consuming 100 IFA tablets has shown significant increase from 29.9% in 2002-04 to 50.7% in 2007-08. Over all it reveals from the above table that antenatal care which appears to be significant factor for the reduction of MMR in the early and late 1990s, is no longer effective in reducing maternal mortality rate.

All the developmental health indicators in Gujarat are not synchronizing with the availability of health infrastructure as expected over a period of time. According to DLHS-III, more than one third of deliveries (42.2%) in the state take place at home, only about one-fourth of home deliveries are attended by trained health personnel and sixty percent of women have received postnatal care within two weeks of birth. About fifty-five percent of children aged 12-23 months are fully vaccinated in the state against to six killer diseases. Gujarat is still lagging behind in all aspects with neighboring state of Maharashtra. Most of the developmental indicators, generally attributed for decline in fertility including female literacy, have yet to reach the threshold level in the backward districts of the state. As observed, the present health infrastructure in the state is not sufficient for its existing and growing population. Though the urban situation is better to some extent in the state, but some interior villages and in backward are still lagging behind the basic amenities, such as approach roads, transportation, safe drinking water, housing and schools

Delivery Care

So far as Delivery Care is concern out of total 56.5% institutional delivery 48.1% are in rural area and 83.7% are in urban area. About 12% in rural area and 16.9% delivery in urban area are conducted at home by skilled health personnel. Further, 52.9% mothers in rural area and 81.1% mothers in urban area received post-natal care within two weeks of delivery. Here more efforts are required to raise the number of institutional delivery in rural areas .Moreover, 10.4% mothers in rural area and 6.3% mothers in urban area received financial assistance for delivery under JananiSurakshaYojana (JSY). Details from District Level Household survey is provided in table-4

TABEL-4: DELIVERY CARE (BASED ON WOMEN WHO'S LAST PREGNANCY OUTCOME WAS LIVE. STILL BIRTH DURING REFERENCE PERIOD)

Indicators	DLHS-3 (2007-08)			DLHS-2 (2002-04)		
	Total	Rural	Urban	Total	Rural	Urban
Institutional delivery (%)	56.5	48.1	83.7	52.2	41.2	77.4
Delivery at home (%)	42.2	50.3	15.8	47.5	58.4	22.5
Delivery at home conducted by skilled health personnel (%)	12.4	12.0	16.9	20.8	18.3	35.9
Safe Delivery (%)	62.1	54.5	86.7	62.1	51.9	85.5
Mothers who received post-natal care within two weeks of delivery (%)	59.5	52.9	81.1	N.A.	N.A.	N.A.
Mothers who received financial assistance for delivery under JSY (%)	9.5	10.4	6.3	N.A.	N.A.	N.A.

From the above table we can see that Institutional delivery has shown marginal increase of 4.3% from DLHS-2 to DLHS-3 simultaneously delivery at home has decreased by 5.3%. Delivery at home conducted by skilled health personnel has also shown significant decline from 20.8% in 2002-04 to 12.4% in 2007-08. This can be due to neglect of delivery care by ANMs and MOs. Moreover no such improvement in percentage of safe deliveries has been seen during DLHS-3 that results in slow progress in reducing maternal mortality. Lack of skilled staff, inadequate infrastructure and poor monitoring had led to unimprovement in safe delivery in the state.

Also, an attempt is made here based on DLHS-3 report to analyse the performance of districts of Gujarat State in providing maternal health facilities and its utilization by means of some major indicators affecting maternal health. District wise twelve such indicators are considered to evaluate the performance of each such district in providing health facilities in concern district. District wise achievements of key indicators in percentage terms is provided in table-5.

Districts	Any modern method	Female sterilization	Male sterilization	Pill	IUD	Condom	Mothers who had antenatal check-up in first trimester	Mothers who had three or more ANC	Mothers who had at least one tetanus toxoid injection	Institutional delivery	Delivery at home conducted by skilled health personnel	Mothers who received post-natal care within two weeks of delivery
	1	2	3	4	5	6	7	8	9	10	11	12
Kachchh	44.8	33.5	0.3	2.9	3.1	4.9	44.8	44.5	54.8	57.1	17.4	58.3
Banaskantha	48.4	37.5	0.4	3.4	4.0	3	26.7	28.5	46.5	61.8	14.7	43.6
Patan	54.6	33.7	0.6	9.0	5.8	5.4	58.2	56.4	70.7	61.8	12	68.4
Mahesana	57.6	40	0.3	4.3	5.7	7.3	57.4	59.2	69.1	84.2	18.7	76.9
Sabarkantha	50	40.2	0.6	1.9	2.3	4.9	44.7	48.4	66.1	61.5	19.2	56
Gandhinagar	59.8	44.4	0.2	3.7	4.5	6.8	61.7	64.6	70.2	77	22.7	74.1
Ahmedabad	53.4	36.6	0.2	4.9	5.1	6.6	62.8	65.7	79.9	80.3	9.7	75
Surendranagar	56.2	44	0.3	3.5	2.5	5.8	36.7	40.6	51.7	49	18.2	53.6
Rajkot	60.8	40.3	0.4	9.1	2.4	8.3	72.3	79.6	86.9	68.3	43.1	74.3
Jamnagar	61.7	46.5	0.1	6.6	2.7	5.8	71.8	73.5	89.2	69.3	16.2	66.8
Porbandar	54.5	39.4	0.7	6.3	3.0	5.1	76.5	71.4	86.6	68.1	32.2	68.2
Junagadh	59.9	48.2	0.3	4.2	2.3	4.9	69.4	75.4	85.6	56.3	21	68.3
Amreli	65.1	53	0.1	5.8	2.5	3.7	63.4	64.4	82.4	50.8	30.4	54.2
Bhavnagar	59.3	50.1	0.6	3.6	1.9	3.2	54.3	57.3	76.8	58.4	28.8	52.8
Anand	57.1	48	0.4	2.6	2.1	3.6	67.3	70.5	86	78.3	15.1	71.8
Kheda	60.3	52.1	0.4	2.4	1.5	3.9	67.8	67.7	77.8	69	7.8	65.4
Panchmahals	50.4	45.9	0.1	1.2	1.4	1.7	45	55	68.9	52.4	12.8	51
Dahod	37.9	35.3	0.4	0.1	0.9	1.2	42.9	48.5	67.3	60.4	1.1	48.1
Vadodra	62.3	53.4	0.7	1.4	2.3	4.5	44.5	47	59.9	54.4	1.5	51.7
Narmada	59.9	52.9	1.4	1.4	2.8	3.7	45.1	60.7	78.4	28.4	2.9	43.3
Bharuch	64.9	55.9	1	1.9	2.4	3.5	61.8	64.3	77.4	47.8	2	51.9
Surat	65.9	53.3	3.7	1.8	2.5	4.6	76.1	76.5	85.7	72.3	15	78.7
The Dangs	52.1	29.9	18.3	0.3	2.9	0.8	20.2	19.3	34.9	9.4	2.3	17
Navsari	63.4	57.2	1.2	0.9	1.1	2.9	73.5	81.1	87.1	80.8	15.3	81.1
Valsad	56.9	48.3	1.5	1.8	5.0	2.2	50.8	56.6	71	68.4	10.3	57.6

For each indicator, ranks are assigned separately to each district in increasing order of their performance. Then av-

erage of ranks for each district has been obtained. It is found that in Rajkot and Surat districts the utilization of maternal health facilities is better compared to other districts followed by Navsari, Jamnagar and Porbandar. On other hand some of the districts like Dohad, The Dangs, Panchmahals and Narmada are still lagging behind and need more attention to improve maternal health facilities and its utilization up to certain level. The detail analysis is provided in table-6.

Table - 6: Districtwise Ranks of Key Indicators

Districts	Any modern method	Femile sterilization	Male sterilization	PIR	Con-dom	Mothers who had antenatal check-up in first trimester	Mothers who had three or more ANC	Mothers who had at least one tetanus toxoid injection	Institutional delivery	Delivery at home conducted by skilled health personnel	Mothers who received post-natal care within two weeks of delivery	Average Rank	Rank of Avg. Rank	
	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12		
Kachh	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Mahesh	24	24	17	13	7	9	18	22	17	10	13	16	9	
BanasKantha	23	20	12	12	6	19	24	24	13	15	23	16	10	
Patn	17	23	9	2	1	7	13	16	14	12	17	8	12	6
Mahesana	13	18	18	7	2	2	14	13	16	1	8	3	10	4
Sabarkantha	22	17	10	16	16	10	19	19	19	13	7	14	15	8
Gandhinagar	11	14	21	9	5	3	12	10	15	5	5	6	10	4
Ahmedabad	19	21	22	6	3	4	10	9	3	19	4	11	5	
Surendranagar	16	15	19	11	11	5	23	23	23	22	9	17	16	9
Rajkot	7	16	23	1	14	1	4	2	3	16	1	5	6	1
Jamnagar	6	13	23	3	10	6	5	5	1	17	11	11	8	3
Porbandar	18	19	8	4	8	8	1	6	4	11	2	10	8	3
Junagadh	9	5	20	8	17	11	6	4	7	16	6	9	10	4
Anjar	2	5	24	5	13	15	9	11	8	21	3	16	11	5
Bhavnagar	12	8	11	10	20	18	15	14	12	16	4	18	13	7
Anand	14	10	14	14	19	16	8	7	5	13	7	11	11	5
Kheda	8	7	15	15	21	14	7	8	10	8	20	12	12	6
Panchmahals	21	13	25	22	22	23	17	17	17	20	16	21	20	11
Dohad	25	22	16	25	25	24	21	18	18	15	25	22	21	12
Vadodara	5	3	7	20	18	13	20	20	21	19	24	20	16	9
Narmada	10	6	4	21	23	21	22	21	20	24	21	24	18	10
Shroven	3	2	6	17	15	17	11	12	11	23	23	19	13	7
Surat	1	4	2	18	12	12	2	3	6	14	14	2	7	2
The Dangs	20	25	1	24	9	25	25	25	25	25	22	25	21	12
Navsari	4	1	5	23	24	20	3	1	2	12	1	1	8	3
Valsad	15	12	3	19	4	22	16	15	13	9	18	15	13	7

From the above table of the performance of the districts in key indicators, Rajkot districts stands at a first position followed by Surat district at 2nd position. Whereas Jamnagar, Porbandar and Navsari all together stands at 3rd position in providing better health facility in the district. On the other hand The Dangs and Dohad stands at a last position which are followed by Panchmahals, Narmada and Banas-Kantha which are considered to be lagging behind in providing better health facilities in the district.

4.5 CONCLUSION & RECOMMENDATION

Health department of Government of Gujarat has taken some action to improve maternal health. In reference to that some suggestions are as below

- Management capacity should be improved by creating additional permanent post for maternal health at the directorate to plan, implement and monitor safe motherhood programmes in Gujarat.
- For maternal health, especially EmOC, it is on 24/7 basis with labour room and operation theatre facilities with adequate staff. But due to lack of infrastructure at the sub centre, PHC and CHC village makes it difficult for staff to live with their families in rural areas. Sometimes the facility is located at the outskirts of the village, with no proper road.

- The ANM is the main provider of antenatal, delivery and postnatal care services in rural areas. Even if they are posted in villages, they prefer to stay in nearby town or city. In such cases emergency services that can arise due to unpredictable childbirth cannot be available.
- Most First Referral Units (FRUs) are non-functional due to lack of availability of specialists.
- Haemorrhage is the major cause of maternal death; here blood transfusion plays an important role in saving mothers. Many mothers may die due to lack of access to blood. Unfortunately, the pace of setting up blood-storage units has been quite slow, creates shortcomings in blood-bank services.
- Accurate and proper data of maternal deaths are required to know the effectiveness of steps taken to improve maternal health services. For that proper and permanent registration system of maternal deaths and maternal death audit has to be set up.

Because of the observed number of deaths caused by pregnancy and childbirth, it is proposed that there should be a specified services and practices that will protect the women and at the same time emphasize the family planning. Various programs have been proposed to reduce this human cost, involving a multitude of interventions to deal, at different stages, with the life-threatening conditions related to pregnancy and delivery. The maternal deaths can be prevented with cost-effective health care services. Reducing maternal mortality and disability will depend on identifying and improving those services that are critical to the health of Indian women and girls, including antenatal care, emergency obstetric care, and adequate postpartum care for mothers and babies, and family planning and STI/HIV/AIDS services. All of the political bodies and NGOs should encourage and support the appropriate action and monitor the progress of the Family Welfare program over time. Health care programs to improve maternal health must be supported by strong policies, adequate training of health care providers and logistical services that facilitate the provision of those programs. Once maternal and neonatal programs and policies are in place, all women and girls must be ensured equal access to the full range of services. At last but not the least Literacy among Women will definitely create a positive impact on this issue.

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