International Journal of Preventive, Curative & Community Medicine
Volume 9, Issue 3&4 - 2023, Pg. No. 25-32
Peer Reviewed & Open Access Journal

Review Article

Examining the Role of Maternal and Child Health through the Application of National Family Health Survey and Various Programmes and Health Schemes

Iffat Naseem

Assistant Professor, Jamia Millia Islamia, New Delhi, India.
DOI: https://doi.org/10.24321/2454.325X.202305

I N F O

E-mail Id:
inaseem@jmi.ac.in
Orcid Id:
https://orcid.org/0009-0004-2339-4644
How to cite this article:
Naseem I. Examining the Role of Maternal and Child Health through the Application of National Family Health Survey and Various Programmes and Health Schemes. Int J Preven Curat Comm Med. 2023;9(3&4):25-32.

Date of Submission: 2023-07-13
Date of Acceptance: 2023-08-20

A B S T R A C T

The Maternal Mortality Ratio (MMR) is defined as the death of a woman who is expecting or within 42 days of the termination of pregnancy, regardless of the duration of the pregnancy, from any reason associated with or aggravated by the pregnancy or its management. The National Family Health Survey (NFHS) has analysed the primary direct national evaluation of maternal mortality in India. The MMR is 437 maternal deaths per 100,000 live births (WHO, 2022). According to this, over 100,000 females in India die each year from reasons associated with pregnancy and childbirth. Mothers received antenatal care (ANC) for 81% of births in urban areas and 57% of births in rural areas. The proportion receiving ANC ranges from 50% for births to uneducated mothers to 95% for mothers who have completed high school. Further analysis revealed that out of 100 births during the four years preceding the survey, one-fourth were carried out in health facilities, while 74% were delivered at home. Overall, 34% were attended by doctors/ nurses/ midwives, 35% were attended by a traditional birth attendant, and 30% were attended only by friends, relatives, or neighbours. This article analyses the status of MMR according to the NFHS. It also includes a comparative analysis of maternal and child health(MCH) care in rural and urban areas. The study highlights the targets achieved so far and identifies the remaining goals that need to be accomplished to achieve the Sustainable Development Goals (SDGs) targeted for 2030.

Keywords: Maternal Mortality Rate, National Family Health Survey, Maternal and Child Health, Sustainable Development Goals, Antenatal Care, Traditional Birth Attendant

Copyright (c) 2023: Author(s). Published by Advanced Research Publications

Introduction

Maternal health is well-defined as the well-being of women during pregnancy, childbirth, and postpartum period. This is an important pointer of growth. Maternal mortality is considered to be a vital measure of maternal health. According to the Sample Registration System (SRS) 2019 report by the Registrar General of India (RGI), the Maternal Mortality Ratio (MMR) in India was 113 per 100,000 live births throughout 2016–18. This figure was high compared to other developing nations. Some of the key maternal health factors include institutional deliveries, deliveries conducted by health personnel, antenatal care (ANC), postnatal care (PNC), and pregnancy outcomes. Maternal health is of supreme importance in India due to its direct influence on the well-being of both mothers and children[1]. The shifting trends in maternal health in India reflect efforts to improve healthcare services and address the challenges related to pregnancy and childbirth.

Review of Literature

The Registrar General of India, Sample Registration System (RGI-SRS), provides nationwide disaggregated data on the different causes of maternal and infant mortality at different intervals. According to Sample Registration System: Maternal Mortality in India: 2001-2003 major reason for maternal deaths as per RGI-SRS (2001-03) are[2]:

Haemorrhage (38%)

Sepsis (11%)

Abortion (8%)

Hypertensive disorders (high blood pressure during pregnancy) (5%)

Obstructed labour (5%)

Other reasons account for 34% of maternal deaths, including anaemia and various other causes. Furthermore, it has been observed that the maternal death rate was 101 per 1,000 live births from 1978 to 1982. Afterwards, it was found to have reduced to 79 per 1,000 from 1988 to 1992. According to the National Family Health Survey (NFHS) report for the year 1992–93, the Infant Mortality Rate (IMR) was 52% higher in rural areas compared to urban areas. The IMR is particularly high among illiterate women. The percentage of IMR has been found to be 37% among women who have completed high school education. According to the Sustainable Development Goals (SDGs), the target is to achieve less than 70 maternal deaths per 100,000 live births by 2030[3].

Initiatives of Various Health Programmes

It has been analysed from various studies that MMR is increasing and also varying in different states. Therefore, in response, various health programmes have been implemented. According to the National Health Mission, the main steps taken by the Government of India to address the issues of maternal deaths and to hasten the pace of the reduction of MMR across all states are mentioned below:[4]

- Elevation of institutional deliveries through Janani Suraksha Yojana Janani Shishu Suraksha Karyakaram permits all pregnant women delivering in public health institutions to have totally free and no-expenditure delivery, including lower segment caesarean section (LSCS). The same rights have been put in place for all sick infants to access public health establishments for treatment.
- Activation of Sub-Centres, Primary Health Centres, Community Health Centres and District Hospitals for providing not only 24x7 services but also basic and complete obstetric care, neonatal, infant, and childcare facilities.
- Provision of mother and child protection cards in association with the Ministry of Women and Child Development to monitor service delivery.
- Application of mother and child tracking system to ensure antenatal, intranatal, and postnatal care and immunisation services.
- Identification and proper management of severely anaemic cases of pregnant women at Sub-Centres and PHCs.
- Provision of safe abortion services and reducing Reproductive Tract Infections and Sexually Transmitted Infections (RTI/ STI) at health facilities with a focus on "Delivery Points" .
- Establishment of maternal and child health wings at high caseload facilities to improve the quality of care for mothers and children.
- Within the National Iron plus Initiative, a life cycle approach, age, and dose-specific iron and folic acid (IFA) supplementation programme is being implemented.
- Long-Lasting Insecticide Nets (LLINs) and Insecticide Treated Bed Nets (ITBNs) are being distributed in endemic areas to overcome the problems of anaemia in mothers and children due to malaria.
- Implementation of capacity building of healthcare workers: Integrated Management of Neonatal and Childhood Illness (IMNCI), Navjaat Shishu Suraksha Karyakaram (NSSK), Facility-Based Newborn Care (FBNC), and Infant and Young Child Feeding practices in the case of newborns.
- Setting up of skill laboratories with dedicated skill stations for various training programmes to improve the quality of training in the states.
- A new initiative of "Prevention of Post-Partum Haemorrhage (PPH) through community-based advance distribution of Misoprostol" given by Accredited Social Health Activist OR Auxiliary Nurse and Midwife (ASHA or ANM).

ISSN: 2454-325X
DOI: https://doi.org/10.24321/2454.325X.202305

- Operationalisation of Special Newborn Care Units (SNCUs), Newborn Stabilisation Units (NBSUs), and Newborn Care Corners (NBCCs) at different levels to reduce child morbidity and mortality.
- Implementation of the India Newborn Action Plan (INAP) with a goal to reduce neonatal mortality and stillbirths to single digits by 2030.
- New interventions to reduce newborn mortality: Vitamin K injection at birth, antenatal corticosteroids for preterm labour, initiation of kangaroo mother care, and injection of gentamicin to young infants in cases of suspected sepsis.
- Diagnosis and management of gestational diabetes mellitus and hypothyroidism during pregnancy: newer interventions to lessen maternal mortality and morbidity.
- Training of general surgeons for carrying out caesarean sections, distribution of calcium supplementation throughout pregnancy and lactation, and distribution of deworming tablets during pregnancy.
- ASHA workers are responsible for home-based newborn care to improve newborn practices at the community level and for the early detection and referral of sick newborn babies.
- Intensified Diarrhoea Control Fortnight (IDCF) was observed in the month of July–August 2015, keeping in mind ORS and zinc distribution for the management of diarrhoea and feeding practices.
- Integrated Action Plan for Pneumonia and Diarrhoea (IAPPD) was implemented in four states with the highest infant mortality rates: Uttar Pradesh, Madhya Pradesh, Bihar, and Rajasthan.
- Establishment of Nutritional Rehabilitation Centres (NRCs) for the management of severe acute malnutrition in children.
- Promotion of appropriate Infant and Young Child Feeding practices in association with the Ministry of Women and Child Development.
- As an outreach activity, Village Health and Nutrition Days were implemented in rural areas to establish maternal and child health services.
- The Universal Immunisation Programme was established to protect children against seven vaccine-preventable diseases.
- For health screening, the Rashtriya Bal Swasthya Karyakram was established, launching early intervention services to provide comprehensive care to all children aged 0–18 years in urban areas.

National Family Health Survey (NFHS)

The NFHS is a countrywide descriptive survey of ever-married women aged 13–49 years. This survey covers the 24 states and the National Capital Territory of Delhi to provide demographic and health data for interstate comparisons. In pursuit of this, a total of 88,562 households were designated for interviews. With this information, 89,777 ever-married women aged between 13 and 49 years were surveyed.[5] Of these households, 23,455 were in urban areas and 66,322 were in rural areas. Fieldwork was conducted in three phases between April 1992 and September 1993[3,4].

Table 1. Major Challenge in Maternal and Child health services during Pandemic or disaster

Maternal Health Services	Pandemic	Disaster
Antenatal check up	• Poor access to specialists Inaccessibility of diagnostic services • Out-of-pocket payment to healthcare providers	• Deprived transportation services • Unobtainability of specialists • No satellite clinics • Locked health facilities • Unbalanced nutrition practices • Post-disaster services by male health workers

It has been found from the above mentioned table that there were application of poor access to specialists, shortage of medical facilities, out of pocket expenditure. Additionally inadequate knowledge about the pandemic was observed. This was seen as barriers to antenatal care. Apart from this many studies suggested the need for satellite clinics to continue antenatal services during disasters. Many studies noticed unbalanced dietary patterns both in pandemics and disasters [5,6].

In disaster-affected areas, healthcare providers in nearby health facilities and even TBAs were often unavailable to deliver, resulting in excessive bleeding and maternal death, due to unsafe delivery practices [7,8]. Many studies documented that the lack of planning and coordination in the health care system was the main reason for the poor condition of health centers[9,10]. One study reported that women were hardly monitored after delivery in disaster-affected regions. During the pandemic, to prevent infection transmission, usually, postnatal services for mothers and neonates are avoided[11,12]. However, a few services are provided virtually, such as breastfeeding and contraceptive-related services[13,14]. One study related to the pandemic identified paying for free services as a significant cause of non-use of postnatal care.

ISSN: 2454-325X
DOI: https://doi.org/10.24321/2454.325X.202305

Table 2. Child Health Services

Percentage of vaccination of the children	NFHS-4 (2015-16)	NFHS-5 (2019-21)
Children age 12-23 months fully vaccinated based on information from either vaccination card Or mother's recall (%)	68.8	76.0
Children age 12-23 months fully vaccinated based on information from vaccination card only12 (%)	79.6	79.4
Children age 12-23 months who have received BCG (%)	95.0	96.8
Children age 12-23 months who have received 3 doses of polio vaccine (%)	79.0	80.2
Children age 12-23 months who have received 3 doses of penta or hepatitis B vaccine (%)	84.8	85.0
Children age 12-23 months who have received the first dose of measles-containing vaccine	91.1	90.1
Children age 24-35 months who have received a second dose of measles-containing vaccine	NA	37.2
12-23 months who have received 3 doses of rotavirus vaccine14 (%)	NA	26.6
Children age 12-23 months who have received 3 doses of penta or hepatitis B vaccine (%) 81.9 (82.2) 81.9 62.7	62.7	81.9
Children age 9-35 months who received a vitamin A dose in the last 6 months	61.4	52.9
Children age 12-23 months who received most of their vaccinations in a public health Facility (%)	92.9	88.7
Children age 12-23 months who received most of their vaccinations in a private health Facility (%)	6.9	11.1

National Family Health Survey, 2019-21, compendium of fact sheets, key indicators India and 14 states (UTs,Phase-2) Ministry of Health and Family Welfare Government of India.

The above mentioned table 2 explains about the various vaccinations that have been given to the children by the NFHS report 4 and 5. The table also shows the types of vaccination that have been given to them

Table 3. Problems during Pregnancy

Problem During Pregnancy	Urban	Rural	Total
Night blindness	6.4	13.7	12.1
Blurred vision	17.0	23.2	21.8
Convulsions not from fever	11.0	15.2	14.3
Swelling of the legs, body, or face	28.2	25.8	26.3
Excessive fatigue	43.6	43.3	43.4
Anaemia	27.1	26.3	26.5
Vaginal bleeding	3.1	3.6	3.5

National Family Health Survey, NFHS-2, 1998-99 International Institute for family Sciences. Government of India.

ISSN: 2454-325X
DOI: https://doi.org/10.24321/2454.325X.202305

As shown in Table 3, the pregnancy-related health problems most commonly reported are excessive fatigue (43 percent), followed by anaemia (27 percent), swelling of the legs, body, or face (26 percent), and blurred vision (22 percent). Fourteen percent reported convulsions that were not from fever and 12 percent reported night blindness. Only 4 percent reported any vaginal bleeding. The reported prevalence of both kinds of vision problems and of convulsions that were not from fever are higher in rural than in urban areas. There is little urban-rural difference in the prevalence of the other pregnancy-related health problems[15,16,17].

Data Collection

The data was collected from journals, articles, internet etc. It was collected, interpreted and analysed, and the results were formulated.

Results

Key Findings of NFHS 1 (1992-1993), NFHS 2 (1998-1999), NFHS 3 (2005-2006), NFHS 4 (2015-2016), and NFHS 5 (2018-2020)

It has been analysed from various sources of NFHS, that women who gave birth in the last 5 years preceding the survey, only 3/4th received antenatal care from a health professional. Although younger women obtained antenatal care more than older. Further it was noticed that nearly two-thirds of women in Bihar did not receive any antenatal care.[18,19,20,21]

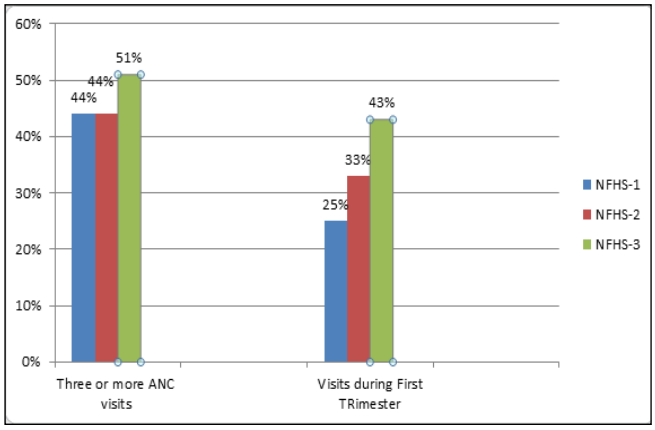

Figure 1.Are mothers getting timely, appropriate care?

Figure 1 depicts that according to the survey report of NFHS1, it has been analysed that 44 percent of women received timely and appropriate three antenatal visits. Further it has been analysed from the survey report of NFHS 2 that the same percentage 44 percent was maintained. However, it was further analysed that the percentage of receiving the timely, appropriate antenatal care of consulting three visits during first trimester was increased from 44percent to 51 percent was found in NFHS -3 [22,23].

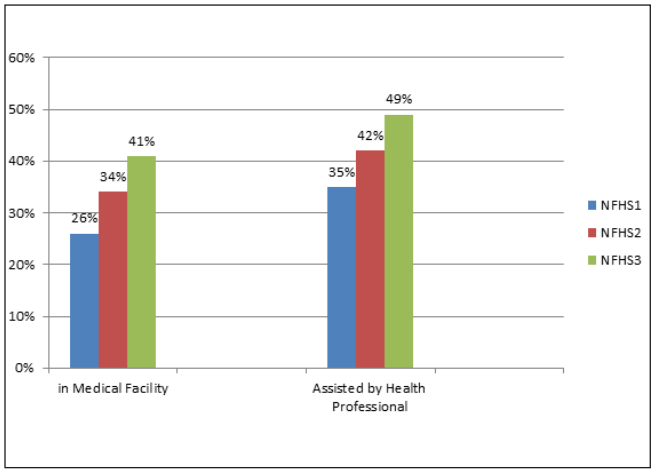

Figure 2.Are babies being delivered safely?

Figure 2 depicts that according the survey of NFHS 1 report 1997-1998 only 26 percent of the babies were given the medical facility and 35 percent was assisted by health professional. Further the percentage was increased from 34 and 42 percent in giving the medical facility and assisted by health professional respectively. Further this data was improvised in the year 2002 -2003 from NFHS 2 Survey Report. Further the data analysed from the figure 3 that the percentage was increased from 41 percent to 49 percent in improvising of medical health facility and assistance by health professional respectively[24,25].

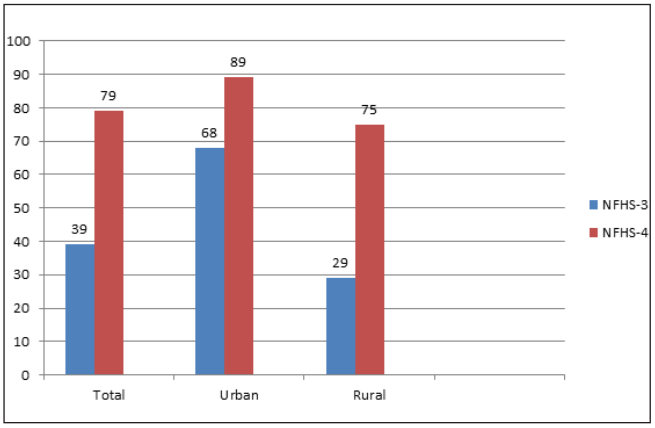

Figure 3. Depicts that survey by NFHS-3

The number of women in the age group of 15–49 years in India who received ANC has been increased from 37 % in NFHS-3 (2005-06) to 51 % in NFHS-4 (2015–16). Further the figure 3 depicts that survey by NFHS-3, 44 percent of women aged between 15-49 years have accepted ANC visits during first trimester and the percentage has been increased from 44 to 59 percent for ANC Consultation during first trimester[26,27].

ISSN: 2454-325X
DOI: https://doi.org/10.24321/2454.325X.202305

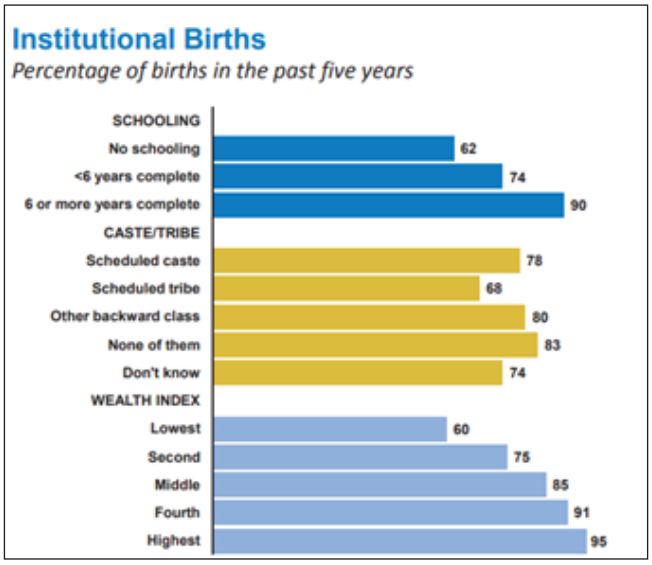

Figure 4. Trends in Health Facility Births Percentage of births in five years before the Survey

Figure 4 explains that the trends in health have been found different in rural and urban areas. In total it was figured 39 percent and 79 percent from NFHS-4 in total. Further the figure depicts that according to the survey report of NFHS-3 and NFHS-4 it was found 68 and 89 respectively. However, in rural area the NFHS3 and NFHS-4 report said 29 and 75 respectively Eighty-nine percent of women's last live births were protected against neonatal tetanus. Institutional deliveries increased markedly from 39% in 2005-06 to 79% in 2015-16. Thirty-six percent of newborns had a postnatal check up and 27% received a postnatal check up within 2 days of birth. The rate of C-section deliveries doubled from 9% in 2005–06 to 17% in 2015–16. C-sections were particularly common in private-sector health facilities (41% of deliveries)[28,29,30].

Discussion

It has been noted that ANC and delivery services are still inadequate in India, with a significant number of women receiving no ANC. Moreover, it has been observed that children in low-income countries are nearly 18 times more likely to die before the age of five than children in high-income countries. Most maternal deaths occur during or immediately after childbirth, primarily due to excessive bleeding, high blood pressure, prolonged labour, and illegal abortions. The major causes of neonatal death are preterm delivery, extreme infections, and birth asphyxia[31,32].

An enormous proportion of maternal and neonatal deaths occur during the first day after delivery. Quick postnatal care is crucial to prevent complications arising from delivery. The Ministry of Health and Family Welfare mandates that all women who deliver in a health facility receive a postnatal health checkup within the first 24 hours post-delivery, and women giving birth outside of a health facility should be brought to a health facility for a postnatal checkup within 12 hours after giving birth [34,35].

The 2015–16 NFHS found that among women aged 15–49 years who gave birth in the five years before the survey, 65% had a postnatal checkup within the first two days after birth. Thirty percent of mothers did not receive any postnatal checkups. The proportion of mothers who received a postnatal checkup in the first two days after birth increased significantly from 37% to 65% between 2005–06 and 2015–16[36,37].

Conflict of Interest: None

References

1. https://journalsofindia.com/sample-registration-system-srs-statistical-report/
2. Directorate General of Health Services (DGHS), Ministry of Health and Family Welfare (MOHFW) in collaboration with WHO India Country Office. National Health Profile 2005. New Delhi: Central Bureau of Health Intelligence, DGHS, MOHFW, Government of India; 2005.
3. International Institute for Population Sciences (IIPS). National Family Health Survey (NFHS-3), 2005–2006. Mumbai, India: International Institute for Population Sciences; 2007.
4. Ministry of Health and Family Welfare (MOHFW). Family Welfare Program in India Yearbook: 1990-91. New Delhi: Department of Family Welfare, MOHFW; 1992.
5. Ministry of Health and Family Welfare (MOHFW). Reproductive and Child Health Program: Schemes for implementation. New Delhi: Department of Family Welfare, MOHFW; 1997.
6. Ministry of Health and Family Welfare (MOHFW). National Population Policy, 2000. New Delhi: Department of Family Welfare, MOHFW; 2000.
7. Ministry of Health and Family Welfare (MOHFW). National Health Policy, 2002. New Delhi: MOHFW; 2002.
8. Ministry of Health and Family Welfare (MOHFW). Annual report 2003-2004. New Delhi: MOHFW; 2004.
9. Ministry of Health and Family Welfare (MOHFW). Annual report 2004-2005. New Delhi: MOHFW; 2005.
10. Ministry of Health and Family Welfare (MOHFW). National Rural Health Mission (2005-2012), Mission Document. New Delhi: MOHFW; 2006.
11. Office of the Registrar General. Sample Registration System, Statistical report 2004. New Delhi: Office of the Registrar General, India; 2006a.
12. World Health Organization (WHO). Postpartum care of the mother and newborn: a practical guide. Geneva: Maternal and Newborn Health/Safe Motherhood Unit, Division of Reproductive Health (Technical Support), WHO; 1998.

ISSN: 2454-325X
DOI: https://doi.org/10.24321/2454.325X.202305

13. World Health Organization (WHO). Provision of effective antenatal care. In Standards for maternal and neonatal care. Geneva, Switzerland: WHO Integrated Management of Pregnancy and Childbirth Care (IMPAC), WHO; 2006. Available from: http://www.who.int/making_pregnancy_safer/publications/standards/en/index.html
14. Ministry of Finance (MOF). Economic Survey, 1999-2000. New Delhi: Economic Division (MOF); 2000.
15. Ministry of Health and Family Welfare (MOHFW). Family Welfare Program in India: Yearbook, 1990–91. New Delhi: Department of Family Welfare, MOHFW; 1992.
16. Ministry of Health and Family Welfare (MOHFW). Annual Report 1992–93. New Delhi: MOHFW; 1994.
17. Ministry of Health and Family Welfare (MOHFW). Model Plan for District Based Pilot/Sub-projects of Reproductive and Child Health (RCH). New Delhi: MOHFW; 1996.
18. Ministry of Health and Family Welfare (MOHFW). Reproductive and Child Health Program: Schemes for Implementation. New Delhi: Department of Family Welfare, MOHFW; 1997.
19. Ministry of Health and Family Welfare (MOHFW). Family Welfare Program in India, Yearbook, 1996–1997. New Delhi: Department of Family Welfare, MOHFW; 1998a.
20. Ministry of Health and Family Welfare (MOHFW). Manual on Community Needs Assessment Approach in Family Welfare Program. New Delhi: Department of Family Welfare, MOHFW; 1998b.
21. Ministry of Health and Family Welfare (MOHFW). Evaluation of Routine Immunization 1997–98. New Delhi: Department of Family Welfare, MOHFW; 1999.
22. Ministry of Health and Family Welfare (MOHFW). National Population Policy, 2000. New Delhi: Department of Family Welfare, MOHFW; 2000.
23. Ministry of Health and Family Welfare (MOHFW). Reproductive and Child Health Program. New Delhi: Department of Family Welfare, MOHFW. 2014
24. Ministry of Health and Family Welfare, Government of India. A strategic approach to Reproductive, Maternal, Newborn, Child, and Adolescent Health (RMNCH+A) in India. New Delhi: Ministry of Health & Family Welfare, Government of India; 2013.
25. Office of the Registrar General. Sample Registration System: Statistical Report 1997. New Delhi: Office of the Registrar General, India; 1999a.
26. Office of the Registrar General. SRS Compendium of India's Fertility and Mortality Indicators, 1971-1997 (Based on the Sample Registration System). New Delhi: Office of the Registrar General, India; 1999b.
27. Office of the Registrar General. New Delhi: Office of the Registrar General, India. SRS Bulletin. 2000;34(1).
28. Park JE, Park K. Textbook of preventive and social medicine. 12th ed. Jabalpur: M/S Banarsidas Bhanot Publishers; 1989. (these should be removed).
29. Sobhy S., Arroyo-Manzano D., Murugesu N., Karthikeyan G., Kumar V., Kaur I., Fernandez E., Gundabattula S.R., Betran A.P., Khan K., et al. Maternal and perinatal mortality and complications associated with caesarean section in low-income and middle-income countries: A systematic review and meta-analysis. Lancet. 2019;393:1973–1982. doi: 10.1016/S0140-6736(18)32386-9. [PubMed] [CrossRef] [Google Scholar]
30. Abdullah A.S.M., Dalal K., Halim A., Rahman A.K.M., Biswas A. Effects of climate change and maternal morality: Perspective from case studies in the rural area of Bangladesh. Int. J. Environ. Res. Public Health. 2019;16:4594. doi: 10.3390/ijerph16234594. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
31. Oluoch-Aridi J., Chelagat T., Nyikuri M.M., Onyango J., Guzman D., Makanga C., Miller-Graff L., Dowd R. COVID-19 Effect on Access to Maternal Health Services in Kenya. Front. Glob. Women's Health. 2020;1:19. [PMC free article] [PubMed] [Google Scholar]
32. Bakouei F., Nikpour M., Rad H.A., Marzoni Z.A. Exploration of the Pregnant Women's Experiences during COVID-19 Disease Crisis: A Qualitative Study. [(accessed on 24 March 2021)]; Available online: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3634840
33. Brunson J. Maternal, newborn, and child health after the 2015 Nepal earthquakes: An investigation of the long-term gendered impacts of disasters. Matern. Child. Health J. 2017;21:2267–2273. doi: 10.1007/s10995-017-2350-8. [PubMed] [CrossRef] [Google Scholar]
34. Dynes M.M., Miller L., Sam T., Vandi M.A., Tomczyk B., Centers for Disease Control and Prevention (CDC) Perceptions of the risk for Ebola and health facility use among health workers and pregnant and lactating women—Kenema District, Sierra Leone, September 2014. MMWR Morb. Mortal. Wkly. Rep. 2015;63:1226–1227. [PubMed] [Google Scholar]
35. Lusambili A.M., Martini M., Abdirahman F., Asante A., Ochieng S., Guni J.N., Maina R., Luchters S. "We have a lot of home deliveries" A qualitative study on

ISSN: 2454-325X
DOI: https://doi.org/10.24321/2454.325X.202305

the impact of COVID-19 on access to and utilization of reproductive, maternal, newborn and child health care among refugee women in urban Eastleigh, Kenya. J. Migr. Health. 2020;1:100025. doi: 10.1016/j.jmh.2020.100025. [PMC free article] [PubMed] [CrossRef] [Google Scholar]

36. Theuring S., Koroma A.P., Harms G. "In the hospital, there will be nobody to pamper me": A qualitative assessment on barriers to facility-based delivery in post-Ebola Sierra Leone. Reprod. Health. 2018;15:1–9. doi: 10.1186/s12978-018-0601-9. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
37. Semaan A., Audet C., Huysmans E., Afolabi B., Assarag B., Banke-Thomas A., Blencowe H., Caluwaerts S., Campbell O.M.R., Cavallaro F.L., et al. Voices from the frontline: Findings from a thematic analysis of a rapid online global survey of maternal and newborn health professionals facing the COVID-19 pandemic. BMJ Glob. Health. 2020;5:e002967. doi: 10.1136/bmjgh-2020-002967. [PMC free article] [PubMed] [CrossRef] [Google Scholar]

ISSN: 2454-325X
DOI: https://doi.org/10.24321/2454.325X.202305