



Prioritising Women's Health; Kerala and Its Recent Trends in Maternal Mortality Ratio

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Abstract

Kerala has a unique model of social sector development. Its achievements in health indicators are highly remarkable. Maternal Mortality Ratio (MMR) is one such indicator that shows how better the reproductive health of women in the state is. Kerala has a very low MMR compared to other States of India. As per the SRS data for 2018-20, Kerala's MMR was 19, whereas it was 97 nationally. Many health and non-health factors have led the state in this regard. Along with the development of the healthcare sector, the major non-health factors include emphasis given to female education, land reforms in the past, outcomes of various socio-political movements, a decentralized system of governance based on participatory planning, and so on. The percentage of health expenditure to Gross Domestic Product (GSDP) exhibits a rising trend in Kerala. Around 2.30 percent of the total GSDP has been allocated to health and family welfare during the 2021-22 periods. Higher rates of institutional deliveries, focus on antenatal and postnatal care, spreading awareness on reproductive health, etc, have played no lesser role in maintaining a low MMR in the state.

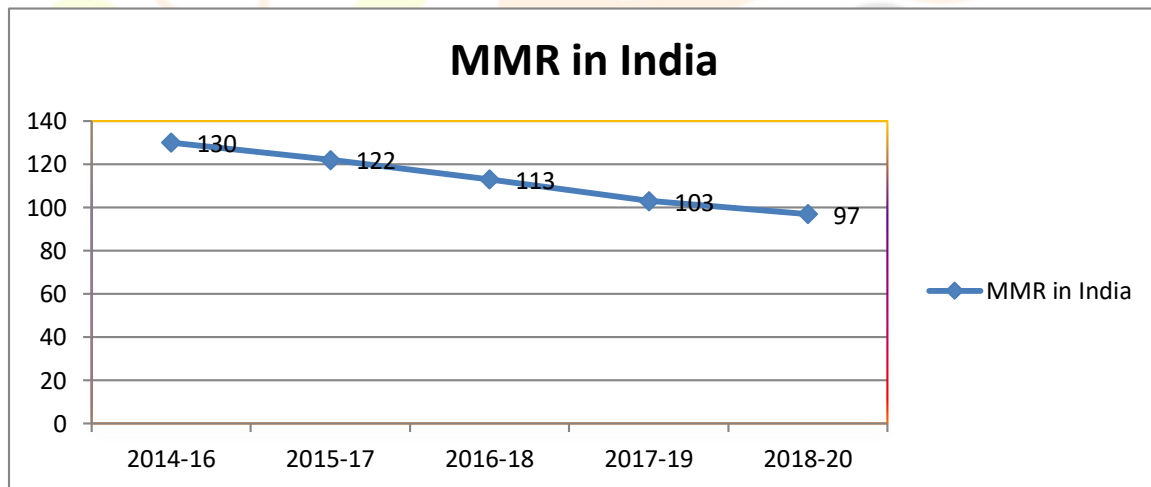
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1. Introduction

World Health Organization (WHO) defines maternal death as "the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes". United Nations Sustainable Development Goals (SDGs) target 3.1 aims to reduce the global maternal mortality ratio to less than 70 per 100,000 live births by 2030. World Health Statistics Report, 2023 by WHO, estimates 2 87000 maternal deaths worldwide due to largely preventable causes related to pregnancy and childbirth in 2020- that is around 800 women every day! The period 2000-2017 witnessed a mass reduction in maternal deaths by 35per cent due to the continuous efforts made at the global level; still, the current figure is alarming. A significant share (94%) of global maternal deaths was contributed by middle and lower-income countries, reflecting the disparities in the access to quality healthcare services between the rich and the poor (WHO, 2019).

Maternal mortality is a strong indicator of the reproductive health of women in a particular region. As per the Sample Registration System (SRS) data for the years 2018-20, the Maternal Mortality Ratio (MMR) in India is 97. It is most welcoming that the country could reduce the MMR from 130 in 2014-16 to 103 in 2017-19 and again to 97 in 2018-20. It indicates the improvements in women's reproductive health in the country. The progress made by India in bringing down maternal deaths over the years is depicted in Figure 1.

Figure 1.1: Maternal Mortality Ratio (MMR) in India, 2014-16-2018-20



Source: SRS data 2018-20

It is evident from Figure 1.1 that there is tremendous improvement in India's MMR over the period from 2014 to 2020. However, there is a huge discrepancy among the States in terms of maternal mortality in the country. Some states have performed well, while others have lagged behind in reducing MMR. State-wise figures on MMR, Maternal Mortality Rate, and Lifetime risk are given in Table 1.1. **MMR** refers to the proportion of maternal deaths per 100000 live births, **Maternal Mortality Rate** is calculated as maternal deaths to women in the age group 15-49 per 100000 women in that age group, and **Lifetime Risk** shows the probability that at least one woman of reproductive age (15-49) will die due to childbirth or puerperium assuming that chance of death is uniformly distributed across the entire reproductive span.

Table 1.1: Maternal Mortality Ratio (MMR), Maternal Mortality Rate and Life Time Risk; India and Major States, 2018-20.

India & Major States	MMR	Maternal Mortality Rate	Lifetime Risk
India	97	6.0	0.21%
Assam	195	12.1	0.42%
Bihar	118	11.2	0.39%
Jharkhand	56	4.2	0.15%
Madhya Pradesh	173	15.3	0.53%
Chhattisgarh	137	9.9	0.35%
Odisha	119	7.3	0.25%
Rajasthan	113	9.6	0.33%
Uttar Pradesh	167	14.3	0.50%
Uttarakhand	103	6.3	0.22%
Andhra Pradesh	45	2.4	0.08%
Telangana	43	2.3	0.08%
Karnataka	69	3.5	0.12%
Kerala	19	0.9	0.03%
Tamil Nadu	54	2.7	0.09%
Gujarat	57	3.9	0.14%
Haryana	110	8.0	0.28%
Maharashtra	33	1.8	0.06%
Punjab	105	5.4	0.19%
West Bengal	103	5.0	0.18%
Other States	77	3.9	0.14%

Source: SRS data 2018-20

Maternal Mortality Ratio in Assam (195) is the highest in India, followed by Madhya Pradesh (173), Uttar Pradesh (167), Chhattisgarh (137), and Odisha (119). MMR in Assam is double that of the national average. It is alarming that 195 maternal deaths occur per 1 00,000 live births in Assam due to pregnancy, childbirth, and related causes. States having a higher MMR than the national average other than these five States are Bihar (118), Rajasthan (113), Haryana (110), Punjab (105), West Bengal (103) and Uttarakhand (103). All five Southern States have made outstanding efforts to bring down their MMR much below the national average. Kerala, with MMR 19, outdoes all other States in India. Maharashtra is also a forerunner with MMR 33 in the 2018-20 period. With respect to the maternal mortality rate, the worst performer is Madhya Pradesh (15.3), followed by Uttar Pradesh (14.3) and Assam (12.1). Kerala again tops the list with a maternal mortality rate of 0.9. As far as lifetime risk is concerned, again, Madhya Pradesh is the poor performer, and Kerala is the highest achiever among all other States in India.

With regard to the three indicators of female reproductive health, that is, the MMR, Maternal Mortality Rate, and Lifetime Risk, the State of Kerala runs far ahead of the rest of India. The provision of public health facilities and making them affordable and accessible for the needy has been the major factors that led the state in this regard.

The present paper tries to portray the achievements made by Kerala in reducing maternal deaths and thereby offering better reproductive health to women residing in the state.

1.2 Review of Literature

Sharma et al. (2023) focus on identifying inter and intra-state variations in maternal mortality in India. The study finds that the reduction in maternal mortality ratio is not consistent with the achievements made in socio-economic indices in India. The MMR for States belonging to the Empowered Action Group (EAG) and Assam is around five times greater than that of Kerala.

Varghese (2018) analyses the utilization of health care services during delivery by women in Kerala and Tamil Nadu based on data from NFHS 3 and NFHS 4. Compared to NFHS 3, Tamil Nadu has made considerable progress in reproductive health during NFHS 4, whereas Kerala has reached a plateau from which scope for further development is limited. Maternal health also depends on women's power in decision-making, mobility, and socialization. The study emphasizes the need for a solid and sustained government commitment to ensuring good reproductive health for women.

Kumar (2010) points out that promoting institutional delivery can reduce the maternal mortality ratio as most maternal deaths occur during the time of labor, delivery, and the immediate postpartum period. Higher healthcare spending by Central and State governments has an impact on reducing maternal deaths, as there is a clear link between poverty and maternal deaths.

Kumar and Devi (2010) argue that women in Kerala have favorable health indicators compared to the national level. So, women's health problems in Kerala need to be addressed separately from the national-level priorities. The paper also examines whether the state addresses the varying needs of women in terms of their different health requirements.

Navaneetham (2002) examines the patterns and determinants of maternal healthcare utilization in South India based on NFHS 1992-93 data. The study found that utilization of maternal health care services was highest in Kerala, followed by Tamil Nadu. The utilization of maternal health care services is determined not only by the differences in the existing socio-economic and cultural factors but also by the variations in the implementation of maternal health care programs as well as the differences in the availability and accessibility of health services.

1.3 Objectives

The objective of this paper is to analyse the trends in Maternal Mortality Ratio in Kerala along with its comparison with all India level data. The paper also tries to highlight some specific factors behind better reproductive health among women in Kerala.

1.4 Methodology

The paper is based on secondary data collected from various sources. Data on Maternal Mortality Ratio (MMR) and other maternal indicators have been collected from Sample Registration System (SRS) data, SRS special bulletins on MMR, Kerala Annual Vital Statistics, various issues of Kerala Economic Review, etc. Data has been arranged in tables and charts for the sake of analysis.

2. Discussion

2.1 Health Profile of Kerala

Kerala's achievements in social sector development, especially in education and health, are highly commendable. The literacy rate and health indices are on par with many advanced countries in the world. The advancement in the health care system of the state can be seen mainly as a byproduct of the spread of education, political consciousness among the public, social movements, and, most importantly, the people-centric approach to development at the grassroots level. Consistent support from elected governments has been an important catalyst for the development of Kerala's healthcare sector (Ramankutty, 2000).

Despite having a weak economy in the past, Kerala could develop a strong and sustainable healthcare system for its people. The state tops in all the key health indicators compared to the rest of India. Apart from a well-built public health care system, many non-health factors, such as widespread education, land reforms, a better public distribution system, etc, paved the way for the present scenario of health in the State (Nabae, 2003). Table 2.1.1 shows the major health indicators pertaining to Kerala and all India. One of the crucial barometers of health and well-being is the life expectancy at birth. Kerala has the highest life expectancy at birth (75) among other Indian States. Expectancy of life at birth for males, which is 71.9, and for females, which is 78, are far better than the national averages of 68.6 and 71.4, respectively. Maternal Mortality Ratio- a measure of women's reproductive health- for Kerala is 19 as against the all-India average of 97. Infant Mortality Rate, which shows the number of deaths per 1,000 live births of children under one year of age, is 6 in Kerala, whereas it is 28 at all Indian levels. Kerala's birth rate stands at 13.2, in contrast with the national average of 19.5. The percentage of people who received medical attention before death at government/private hospitals or from some qualified professionals is around 97 in Kerala, and in India, it is only around 83. The total Fertility Rate is also the lowest in the state compared to the respective national figure.

Table 2.1.1: Health Indicators for Kerala and India

Sl No	Indicators	Kerala	India
1	Birth Rate	13.2	19.5
2	Death Rate		
	a) Children (0-4)	1.8	8
	b) Children (5-14)	0.5	0.4
	c) Persons (15-59)	2.7	2.9
	d) Persons (60 and above)	39.1	42.3
3	Percent of deaths receiving medical attention		
	a) Government	43.3	29.9
	b) Private	37.4	18.9
	c) Qualified Professional	16.0	33.2
	d) Untrained/Others	3.4	18.0

4	Total Fertility Rate	1.5	2
5	Infant Mortality Rate	6	28
6	Maternal Mortality Rate	19	97
7	Expectancy of Life at Birth	75	70
	Expectancy of Life at Birth- Male	71.9	68.6
	Expectancy of Life at Birth- Female	78	71.4

Source: Kerala Economic Review 2023

Kerala's organized healthcare system started a long period ago. It had the practice of traditional health care like Ayurveda, which made people more health conscious. During the colonial period, European medical practice was introduced in the state. In the 19th century itself, the princely states of Travancore and Cochin adopted the Western medical practice in their region. The Royal Proclamation of 1879 made it compulsory for students, inmates of jails, and public servants to be vaccinated against smallpox (Ramankutty, 2000). The outcomes of various social movements, missionary activities, etc, also helped to spread health consciousness among the public and strengthened health delivery in the region. After the formation of Kerala State in 1956, the elected governments were enthusiastic about laying down the foundation for further development of the state's health sector. The deliberate efforts made by the first democratically elected communist government in the world, which took power in Kerala in 1957, are remarkable in the development of the state's sound health care system.

2.2 Trends in MMR in Kerala

Maternal Mortality Ratio in Kerala shows the reproductive health and well-being of the women in the state. Table 2.2.1 gives a comparison between the trends in MMR for Kerala and India based on the SRS data for the periods 2014-16 and 2018-20. The MMR has come down over the period in the state as well as at the all-India level. Kerala's MMR in 2014-16 was much below that of the national average. It was around three times lower than the all-India figure of 130. In 2015-17, Kerala could bring down the ratio to 42, whereas the national average reduced by 8 to 122. But in 2016-18, there was a marginal increase in MMR to 43 in the state. However, the periods 2017-19 and 2018-20 witnessed a considerable reduction of the ratio from 43 in 2016-18 to 30 in 2017-19 and further to 19 in 2018-20. Though the MMR for all India also showed a decreasing trend for all these periods, it stood at a higher level of 97 in 2018-20.

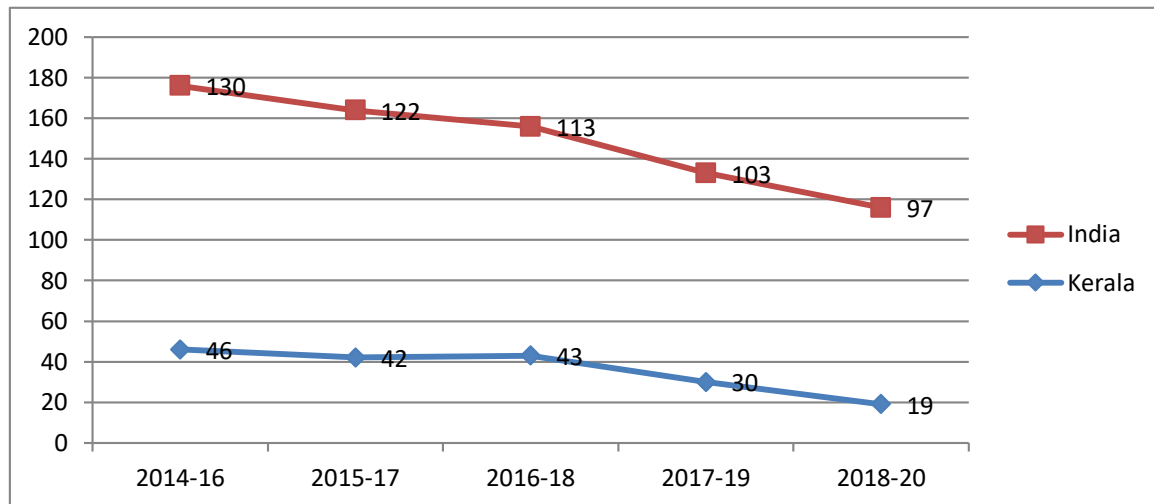
Research Through Innovation

Table 2.2.1: MMR in Kerala and India, 2014-16 to 2018-20

Year	Kerala/India	MMR	Maternal Mortality Rate	Lifetime Risk
2014-16	Kerala	46	2.1	0.1%
	India	130	8.8	0.3%
2015-17	Kerala	42	1.9	0.1%
	India	122	8.1	0.3%
2016-18	Kerala	43	2.1	0.1%
	India	113	7.3	0.3%
2017-19	Kerala	30	1.4	0.1%
	India	103	6.5	0.2%
2018-20	Kerala	19	0.9	0.03%
	India	97	6.0	0.21%

Source: Various SRS special bulletins on MMR

The other two indicators, Maternal Mortality Rate and the Lifetime Risk, also give hints towards the well being of pregnant women as well as the new born mothers. Kerala could bring down the maternal mortality rate from 2.1 in 2014-16 to 0.9 in 2018-20, whereas in the all India level the figure remained at 6 in 2018-20 period. As far as lifetime risk is concerned, Kerala could perform well throughout the period under consideration compared to India. In 2018-20, lifetime risk for Kerala was 0.03 per cent, at the same time the national average was around 0.21 per cent.

Figure 2.2.1: Trends in MMR for Kerala and India, 2014-16 to 2018-20

Source: Table 2.2.1

The trends in MMR for Kerala and India are also depicted in Figure 2.2.1. Though the gap between the State average and the national average is getting narrow over time, it is still high.

Table 2.2.2 shows the yearly MMR figures for Kerala and districts for the five-year period from 2017 to 2021. For better analysis, the mean MMR value has been calculated for Kerala as well as for the districts. The mean MMR value for the entire state over these years is 18.60. There are 14 districts in Kerala. Of all the districts the capital district Thiruvananthapuram has the highest average MMR followed by Idukki and Alappuzha, and Wayanad has the lowest.

Table 2.2.2: MMR for Kerala and Districts, 2017-2021

Kerala and Districts	Years					Mean MMR Value
	2017	2018	2019	2020	2021	
KERALA	24	13	23	14	19	18.6
Thiruvananthapuram	36	19	38	17	42	30.4
Kollam	36	21	21	15	21	22.8
Pathanamthitta	19	25	12	20	24	20
Alappuzha	43	11	28	7	35	24.8
Kottayam	25	20	21	22	19	21.4
Idukki	25	17	53	26	09	26
Ernakulam	16	04	31	23	37	22.2
Thrissur	21	08	24	05	03	12.2

Palakkad	32	17	20	09	18	19.2
Malappuram	16	15	16	11	15	14.6
Kozhikode	22	16	30	10	11	17.8
Wayanad	14	13	07	0	24	11.6
Kannur	36	07	14	23	0	16
Kasaragod	05	05	10	31	27	15.6

Source: Kerala Annual Vital Statistics 2017 to 2021.

If we classify the districts of Kerala region wise as Southern districts, Central districts and Northern districts, all the districts in southern Kerala are having a higher mean MMR value than the State average. As far as central Kerala is concerned, except for Thrissur, others have mean MMR higher than the all Kerala figure. In contrast, all the northern districts have performed well with a lower MMR mean value in the state. It is quiet surprising that, southern districts which are far ahead of others in terms of availability of medical facilities lag behind when MMR is concerned. The northern districts of Malappuram, Wayanad and Kasaragod have excelled in the list despite of having a comparatively lower GDP per capita.

2.3 Ensuring Maternal Health in the State

Along with a highly health conscious population, the active interventions by the State Government makes Kerala women friendly in terms of reproductive health. The existence of a strong public healthcare system makes health services accessible and affordable to all sections of the population in the state. At the same time there is also a well developed private healthcare sector that co-exists across the state. A higher public health care spending is one major thing that differentiates Kerala with the rest of India. Table 5 highlights the healthcare spending by Kerala government for 2018-19, 2019-20, 2020-21 and 2021-22.

Table 2.3.1: Investment in Health and Family Welfare in Kerala (Rs in crore)

Year	Total Plan Expenditure for Health	Non-Plan Expenditure for Health	Total Health Expenditure	Percentage of Health Expenditure to Total Government Expenditure	Percentage of Health Expenditure to GSDP
2018-19	2623.26	5235.8	7859.06	6.55	1.42
2019-20	2911.60	5292.21	8203.81	7.17	1.47
2020-21	4287.34	5657.63	9944.97	7.16	1.94
2021-22	5363.70	7835.24	13198.94	8.09	2.30

Source: Kerala Economic Survey 2023

In 2018-19, total health expenditure in Kerala was 7859.06 crore which constituted 6.55 per cent of the total government expenditure of that year. In 2019-20, around 7.17 per cent of the total government expenditure was

spent on health and family welfare. The State government investment was 9944.97 crore in health sector for the year 2020-21 of which 4287.34 crore was the total plan expenditure on health and 5657.63 crore was the total non plan expenditure. Coming to 2021-22, there had been a much higher allocation on health in the state. The total plan expenditure was increased to 13198.94 crore, which is 2.30 per cent of the Gross State Domestic Product (GSDP) of that year.

Now, let us have a look at various indicators of maternal care for Kerala and India according to the National Family Health Surveys. Indicators of maternal care are given in Table 2.3.2 based on NFHS-3, NFHS-4, and NFHS-5 data.

Table 2.3.2: Indicators of Maternal Care for India and Kerala

Indicators	India			Kerala		
	NFHS-3	NFHS-4	NFHS-5	NFHS-3	NFHS-4	NFHS-5
	(2005-06)	(2015-16)	(2019-20)	(2005-06)	(2015-16)	(2019-20)
Adolescent Pregnancy	16	7.9	6.8	5.8	3	2.4
Mothers with Antenatal Check-ups (per cent)	43.9	58.6	70	91.9	95.1	93.6
Full Antenatal Care (per cent)	11.6	21	NA	66.7	61.2	NA
Mothers received Postnatal Care (per cent)	34.6	62.4	78	84.6	88.7	93.3
Anaemic Adolescent (per cent)	55.3	53.1	57	32.8	34.3	36.3

Source: National Family Health Survey

According to the World Health Organization (WHO), adolescent mothers are prone to more health problems than women aged 20-24 years. They face high risks of eclampsia, puerperal endometritis, and other kinds of infections during pregnancy and childbirth. Moreover, the babies of adolescent mothers also face serious health issues such as low birth weight and severe neonatal conditions. So, in order to ensure maternal health, adolescent pregnancies should be controlled and addressed well. The NFHS data show that adolescent pregnancy is low in Kerala compared to the national level and the index has reduced from 5.8 during NFHS-3 to 2.4 during NFHS-5.

Proper and regular antenatal check-ups ensure the health of pregnant women and their fetuses. These check-ups are done during pregnancy to monitor the fetal growth as well as the well-being of the mother and the fetus. It ensures to check that the pregnant woman and fetus are not prone to any disease during the pregnancy period. In Kerala, antenatal check-ups are conducted through a large network of government and private hospitals. The Primary Health Centres (PHCs) functioning in every village panchayat offer antenatal check-ups to expecting women

residing even in the remote areas of the state. The Local Self Governments through PHCs, Anganwadi centres and ASHA (Accredited Social Health Activist) workers ensure that every pregnant woman gets proper antenatal care to avoid pregnancy and childbirth related health complications. Provision of supplementary food items to adolescent girls, pregnant women and lactating mothers through Anganwadi centres ensures the nutritional requirements among them. It helps to prevent the prevalence of iron and other nutrient deficiencies among women. The NFHS data shows that more than 90 per cent of the mothers got antenatal check-ups during all the three survey periods in Kerala. But at the national level, it was comparatively low. Table 6 also shows that during NFHS-3, mothers who received full antenatal care in Kerala were 66.7 per cent, whereas for all India it was only 11.6 per cent. It then decreased to 61.2 per cent in Kerala during NFHS-4, but at the national level it got increased to 21 per cent during the same survey period.

Postnatal care of new mothers is also as important as antenatal care to improve maternal health. Iron and folic acid supplementation should be continued for at least 3 months after childbirth for maintaining good health of new mothers. Mothers who are breastfeeding are required to follow a balanced diet. In Kerala these are monitored by the Local Self Governments through a network of PHCs, Anganwadies, ASHA workers etc. The percentage of mothers who received postnatal care shows an increasing trend in Kerala over the three NFHS periods. During NFHS-5, about 93.3 per cent of the mothers in Kerala received proper postnatal care, in contrast at the all India level it was only 78 per cent.

Prevalence of anaemia among women in the reproductive age group is a major challenge in ensuring maternal health in Indian States. Anemia among pregnant women causes serious health issues to them as well as to the fetuses. Babies born to anaemic mothers are at a higher risk of having anaemia after birth, developmental problems and low birth weight. Pregnant women are prone to various maternal illnesses due to iron deficiency. NFHS data on anaemic adolescents shows that the prevalence of anaemia has increased from third survey period to fifth survey period. The percentage of anaemic adolescents in Kerala during the given NFHS periods was 32.8 per cent, 34.3 per cent and 36.3 per cent respectively. Though the presence of anaemia among teenage girls in Kerala is lower than that of the national average, still it is high in the state. It is high time for the state to act and make effective interventions to reduce the presence of anaemia among women. The State Government project VIVA needs special mention here in this regard. The project VIVA was launched in 2023 to tackle the prevalence of anaemia among girls and women aged 15-59 years. The project aims to screen and treat anaemia and spread awareness regarding this.

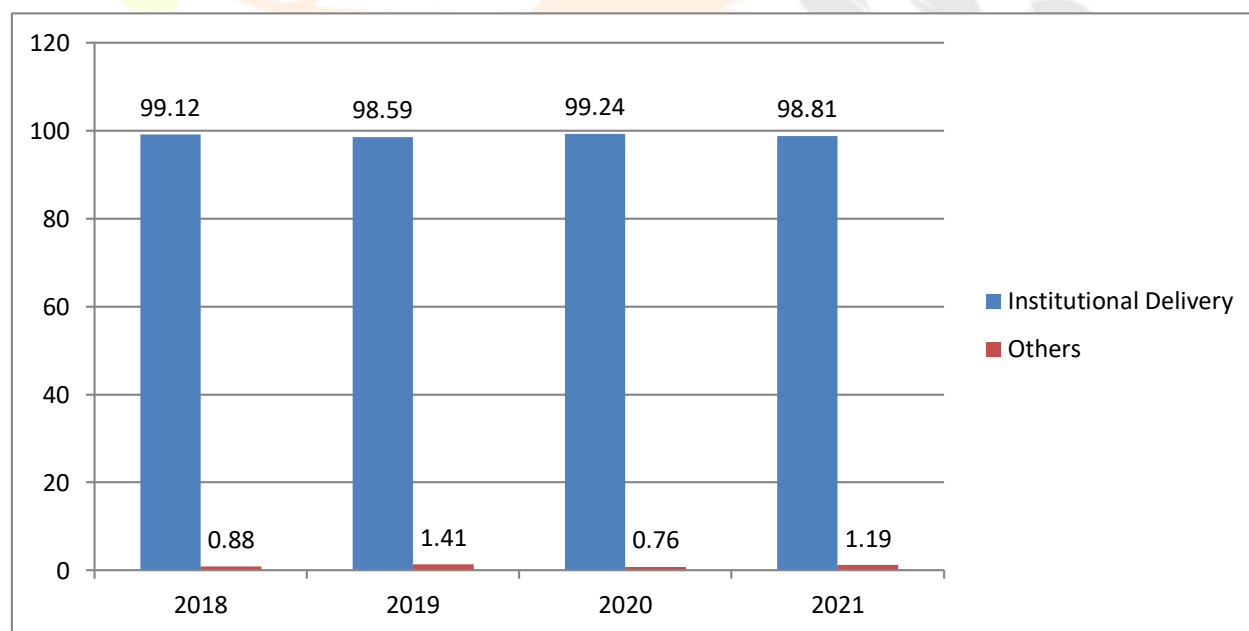
Violence against pregnant women is another thing that affects maternal health, especially their mental health. Mental stress and anxiety cause maternal illnesses among women. Thus, it is mandatory to provide a peaceful environment for them throughout the pregnancy period and also after childbirth. In Kerala the percentage of women who experienced violence from family members and others is very less. During NFHS-4, it was 1.2 per cent and it reduced to 0.5 per cent during NFHS-5. The respective figures for India were 3.9 and 3.1 respectively.

The percentage distribution of medical attention received at the time of delivery is given in Table 2.3.3 over the period 2018 to 2021. The data for both rural and urban areas in these years show that the majority of deliveries in Kerala are occurring in some institutions- either government or private. In 2018, around 99.12 percent of the deliveries happened in government/private institutions. And in 2019, 2020, and 2021 these figures were 98.59, 99.24, and 98.81, respectively. Child births occurring outside of some institutions are very negligible. Comparing the government and private institutions, people preferred private institutions over the former for deliveries both in rural and urban areas. In 2018, around 70 percent of the total deliveries in the state were at private institutions. Considering 2018 and 2021, there has been a slight increase in the preference for government hospitals in the state.

Table 2.3.3: Percentage Distribution of Medical attention received at the time of delivery

Year	Rural/Urban	Government Institutions (a)	Private Institutions (b)	Total (a+b)	Doctors, Nurses and Midwives	Traditional Birth Attendants	Relatives and Others	Not Stated	Total
2018	Rural	4.99	23.27	28.26	0.14	0.37	0.21	0.04	29.02
	Urban	23.97	46.89	70.86	0.04	0.04	0.02	0.02	70.98
	Total	28.96	70.16	99.12	0.18	0.14	0.23	0.06	100.00
2019	Rural	5.36	23.01	28.37	0.13	0.42	0.26	0.04	29.22
	Urban	25.77	44.82	70.59	0.12	0.03	0.02	0.02	70.78
	Total	31.13	67.83	98.59	0.25	0.45	0.28	0.00	100.00
2020	Rural	5.77	24.65	30.42	0.16	0.28	0.20	0.02	31.08
	Urban	24.57	44.25	68.82	0.04	0.03	0.02	0.01	68.92
	Total	30.34	68.90	99.24	0.20	0.31	0.22	0.03	100.00
2021	Rural	5.88	25.66	31.54	0.41	0.34	0.28	0.01	32.58
	Urban	25.87	41.40	67.27	0.07	0.04	0.03	0.01	67.42
	Total	31.75	67.06	98.81	0.48	0.38	0.31	0.02	100.00

Source: Kerala Annual Vital Statistics Report

Figure 2.3.1: Percentage Distribution of Medical attention received at the time of delivery

Source: Table 2.3.3

Figure 2.3.1 depicts the percentage of institutional deliveries in Kerala from 2018 to 2021. Preference for government/private institutions over other less professional alternatives reduces the chances of death of mother and child during and after childbirth. One of the major reasons for a comparatively very low MMR in Kerala is, of course, the greater percentage of institutional deliveries happening in the state, either in government hospitals or in private hospitals.

Usually, normal deliveries increase the chances of survival of both mother and child after delivery. Table 2.3.4 shows the percentage distribution of methods of delivery in both government and private institutions over the years 2018 to 2021. It is evident from the table that more than 50 percent of the deliveries were normal in both government and private hospitals throughout the years. Comparing the type of institution, one can see that the percentage of normal deliveries was higher in government institutions than in their private counterparts.

Table 2.3.4: Percentage Distribution of Live births by type of institution and method of delivery

Year	Type of Institution	Method of Delivery				Total
		Normal	Caesarean	Forceps/Vacuum	Not Stated	
2018	Government	58.95	39.88	1.17	0.00	100.00
	Private	54.24	42.30	3.45	0.01	100.00
2019	Government	59.87	38.70	1.43	0.00	100.00
	Private	54.47	41.92	3.60	0.01	100.00
2020	Government	57.69	40.76	1.54	0.01	100.00
	Private	53.37	42.93	3.70	0.00	100.00
2021	Government	55.87	42.56	1.56	0.01	100.00
	Private	52.87	43.29	3.83	0.01	100.00

Source: Kerala Annual Vital Statistics

3. Conclusion

Kerala's healthcare achievements reflect on the Maternal Mortality Ratio and maternal health in the state. Compared to the rest of India, the state could ensure better reproductive health for women. Besides health sector development alone, many historical factors, such as widespread education, land reforms, social and political movements, etc, have contributed towards this achievement. Higher public spending on healthcare is a peculiar feature of Kerala. Increasing allocation to health year after year indicates the importance given by the State Government to health development. Along with a higher investment in health and family welfare, specific measures were adopted to provide health awareness programs to adolescent girls regarding reproductive health, strengthening the Local Self Governments to conduct regular and proper antenatal and postnatal check-ups, efforts to eliminate the prevalence of anaemia among women in the reproductive age group, prevention of violence against pregnant women, etc. set a good environment for guaranteeing better maternal health in Kerala. The promotion of institutional deliveries also plays a vital role in reducing maternal mortality in the state. Though Kerala is far ahead compared to the rest of India, the challenges posed by the prevalence of various communicable and non-communicable diseases have to be addressed well, as they are more likely to create a threat to pregnant women. Anaemia among adolescent girls and women of reproductive age is the lowest in Kerala among other States in India, but it does not mean that the state is in a safe zone. Much more deliberate efforts are required to be taken by the state to eliminate the presence of anaemia as it adversely affects maternal health and well-being.

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