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MATERNAL AND CHILD HEALTH SERVICES UTILIZATION IN SOUTHERN DISTRICTS

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ABSTRACT

Materal and child mortality is the outcome of a complex web of causal factors that include social, economic, educational, cultural, geographic, state of physical infrastructure, and health system. The primary, secondary and tertiary health care delivery systems are being revamped and fine tuned in such a way that health care is delivered efficaciously to the people at the bottom of the economic pyramid. The present study was undertaken based on DLHS-4 surveys of Kanniyakumari Thirunelveli and Thoothukkudi district for comparative purpose with secondary data. There is a need and scope of more focused information, education and communication efforts towards antenatal and postnatal services provided to mothers especially in rural areas in Thirunelveli, Thoothukkudi and Kanniyakumari districts.frequent isolates with C. Tropical is being the most common. Broad spectrum antibiotic use, diabetes mellitus, mechanical ventilation and malignancy were significantly associated with invasive fungal infections.

Setting

The Pattern of diseases in developing countries is very different than those in developed ones. In a typical developing country, most deaths results from infeactious and parasitic diseases, abetted by Malnutrition. In India, about 40 percent of deaths are from infeactious, parasitic and respiratory Diseases as compared with 8 percent in developed countries. An increase in the frequency of new Health problems such as coronary heart disease hypertension, cancer diabetes and accidents has been noted. Maternal and child mortality is the outcome of a complex web of causal factors that include social, economic, educational, cultural, geographic, state of physical infrastructure, and health system. According to WHO estimated (2000), India contributes about 24,00,000 out of 108,00,000 global child deaths and accounts for 25 percent of 529,000 global maternal deaths (WHO, 2004).

The Millennium Development Goal (MDG) aims at reducing the maternal mortality ratio by three quarters during 1990-2015. Though India has achieved some progress, this needs to be speeded up for a sustainable faster development (Dreze, 2015). In order to achieve this goal, all women need access to high quality of Antenatal Care (ANC). However, ANC services are available in developing countries including but utilization of these existing services is poor. India continues to lag behind in checking maternal morality and child mortality to expected levels. As per the census 2011 reports, 89 million children in the age group 0-3 were malnourished, with half of the country's households lacking a latrine, remains a major concerns as well (Venkat, 2015). The utilization of reproductive health service is in turn depends upon availability and accessibility of these services and socio-demographic, communication factors and quality of care provided to the women (WHO and UNICEF 2003).

Considerable achievements have been made in Tamil Nadu in health indicators like life expectancy at birth, Infant Mortality Rate (IMR) and Maternal Mortality Rate (MMR). However, women with low educational level, those residing in rural areas, and those with low socioeconomic status were less likely to use maternal services. Some studies have also highlighted lack of knowledge as an important barrier to utilization of care and have pointed out the knowledge improves utilization rates. Literacy status of females was an important factor influencing maternal mortality. Ironically about 45.5 percent maternal deaths were in the illiterate group. Poverty was the major socio-economic factor causing maternal deaths. Also 89 percent deaths were in the below poverty line group (Elango, 2004). In the present exercise the DLHS-4 surveys in Kanniyakumari, Thoothukkudi and Thirunelveli districts are examined with an objective to study the utilization of healthcare services.

Methodology

Three rounds of District Level Household and Facility Surveys (DLHS) have been undertaken by the Ministry of Health and Family Welfare, Government of India in the past (Round-I in 1998-99, Round-II in 2002-04, and Round-III in 2007-08). In view of the completion of six years of National Rural Health Mission (NRHM) (2005-12), there was a felt need to focus on the achievements and improvements so far. The Ministry of Health and Family Welfare, Government of India, therefore initiated the process of conducting DLHS-4 during 2012-2013 and designated the International Institute for Population Sciences (IIPS) as the nodal agency to carry out the survey. The main objective of District Level Household and Facility Survey-4 (DLHS-4) is to provide maternal and child health care (MCH) indicators and prevalence of morbidity for a wide range of common, communicable, non-communicable and lifestyle diseases for the year 2012-13 covering the following aspects: Household basic amenities, Prevalence of morbidity, Coverage of ante-natal services and immunization services. Proportion of institutional/safe deliveries, JSY Beneficiaries, Economic burden of delivery, Contraceptive prevalence rate, ASHA's involvement, Unmet need for family planning, Awareness about RTI / STI and HIV / AIDS, Infrastructure, manpower, equipments, drugs, services of public health facilities, Linkage between health facility and MCH indicators. Bilingual questionnaires in the vernacular language and English pertaining to Household, Clinical, Anthropometric and Bio-Chemical tests (CAB) and Ever Married Women (age 15-49) were used and canvassed using Computer Assisted Personal Interview (CAPI).

The village and health facility questionnaires were canvassed by using paper and pen in DLHS-4. In the household questionnaire, information on all members of the household and socio-economic characteristics of the household was collected. The ever-married women questionnaire contained information on women's characteristics, maternal care, immunization and childcare, contraception and fertility preferences, reproductive health including knowledge about HIV/AIDS. For the first time, a population-linked facility survey has been conducted in DLHS- 4. At the district level, all Community Health Centres (CHCs) and the District Hospitals and Sub Divisional Hospitals were covered. Further, all Sub-Health Centres and Primary Health Centres (PHCs) which were expected to serve the population of the selected Public Sector Undertakings (PSUs) were also covered. Fieldwork in Kanniyakumari, Thirunelveli and Thoothukkudi was conducted during March 2013 to April 2014, gathering information from 3921 households and 887 ever married women and 79 Health Facilities.

Analysis and Discussion

Access to health services leads to improved intake of maternal healthcare facilities. The quality of care has an independent and significant effect on the use of ANC indicating special emphasize should be laid for providing good quality care in order to improve the health of the pregnant women. Maternal medical complications were not significantly different between the teenage and older mothers assuming the socioeconomic status of both teenage and older mothers. Table 1 outlines the socio economic features of the selected households.

Table – 1: Socio Economic Background of the Sample Household

Indicators	Kanniyakumari N=1294	Thirunelveli N=1297	Thoothukkudi N=1330
Having electricity	98.6	97.1	98.3
Drinking water	95.1	98.2	94.3
Having Toilet facility	95.5	58.3	57.3
Use clean fuel for cooking	52.5	66.0	59.1

Source: DLHS- 4.

The above table shows that about 98.6 percent of the respondents have electricity respectively in Kanniyakumar district. It can be understood that drinking water source was around 94 percent in these (Kanniyakumari, Thirunelveli and Thoothukkudi) three districts. Nirmal Gram Puraskar scheme is successful in Kanniyakumari district as only 95.1 percent of the household have well in their homes. Because of the literacy in Kanniyakumari distisct was high to Compare with Thirunelveli and Thothukkudi districts. 58.3 percent of the household have not well in their homes in Thirunelveli and Thoothukkudi (57.3 percent). Like that use of clean fuel for cooking in Kanniyakumari district is estimated to 52.5 percent during DLHS-4 survey, 66.0 percent in Thirunelveli; and 59 percent in Thoothukkudi. As many as 97.9 percent of households have electric connections, 38 percents of households use wood for cooking in Tamilnadu. Two households which do not have access to improved clean toilet constitute 48 percent of the total surveyed households and almost than half of the households have access to improved flush / septic/ pit toilets in Tamil Nadu.

Maternal Health Care package of RCH components to cured on ANC under the NRHM / NHM programme. The maternal health care activities are implemented to strengthen and fulfill the RCH goals. ANC serious provided by medical and paramedical profesionals companies of the regular physical checks with, height, weight and Blood Pressures (BP), Hemoglobin (HB) level test, Consumption of IFA, Tetarus (TT) injection and the status and position of foetus. These primary serious are made compulsory to be provided during ANC check up from the health facility. At least four checkups are made compulsory to complete the full ANC encourage in order to prevent and Protect women from pregnancy related complication faced during the pregnancy and bill the delivery.

The Government of Tamil Nadu (GOI), initially an amount of Rs.300/- was given to cover the expenses of child birth. Eight years later, it was increased to Rs.500/-. When the Diravida Munnettra Kazhagam (DMK) returned to power, introduced Dr.Muthulakshmi Reddy Maternity Benefit Scheme in September 2006. This is one of the innovative health care intervention incentive schemes in Tamil Nadu. Many empirical studies have found out that many pregnant women benefitted from this. Under the scheme, cash assistance of Rs.6000/- is given to pregnant women falling below poverty line (Rs.3000/- before delivery and (Rs.3000/- after delivery). This intervention is meant to help women cover costs of nutritious food and also compensate for wage loss so that they get adequate rest.

Table – 2: Antenatal Care Services in Three District

Indicators	Kanniyakumari	Thirunelveli	Thoothukkudi
ANC Check-up in first trimester	52.7	48.2	43.2
3 and more ANC visits	72.0	61.2	61.7
At least one TT doses	87.8	71.3	87.2
BP checkup	77.3	66.0	84.3
Hb Tested	60.7	54.4	79.6
Abdomen examined	33.6	21.9	41.3
Consumed 100/more IFA tablets	34.0	37.6	51.5
Full ANC checked	32.2	29.2	36.9

Source: DLHS- 4.

The VHN who examines the beneficiary during pregnancy would be sufficient to avail the benefit; also the pregnant women took ANC in government institution. In 2012, the GoT raised incentive amount to Rs.12000/- up to two deliveries for Below Poverty Line (BPL) women. Of this, first Rs.4000/- paid during the seventh month after completing ANC, Rs.4000/- immediately after delivery in a government health facility and the final instalment of Rs.4000/- in the fifth-month after the child receives the immunization as per the national schedule. In 2017, the GoT raised incentive amount Rs.18000/- to every pregnant and lactating mother. In DLHS-4, only 94.1 percent of the respondents received ANC it depended education, age, number of living children, transportation and health insurance are other factors that were found to influence the use of ANC.

It is noted that 43.2 percent of the respondent or pregnant women subjected to ANC check up in first trimester during DLHS-4 in Thoothukkudi and 48.2 percent in Thirunelveli, 72 percent of the respondent were aviled 3 and more ANC care in Kanniyakimar district, 62 percent in Thoothukkudi and 61 percent in Thirunelveli. The proportion of women availing any ANC from private health facility utilization was highest in Kanniyakumari District which was the highest in Tamil nadu. The lowest ANC coverage in government health facilities was Kanniyakumari District (46 percent). The DLHS-4 data reveled that more women aviled from provate health facilities for ANC as compared to the government health facilities. About 71.3 percent of the women had at least one TT doses, followed by 81 percent in Thoothukkudi and 88 percent in Kanniyakumari.

The proportion of women who received weight, height and BP (66 percent), Hb tested (54 percent) and Abdomen examined (30 percent) was very low in Thirunelveli compared with Kanniyakumari and Thoothukkudi. Antenatal women are hesitant to avail Iron and Folic Acid (IFA) tablets as the tablets are bitter in taste and also feel sleepy/drowsiness. When they consume tablets, vomit immediately and become dull. After that women cannot go for their routine work. Educated women are aware of the utilities of the IFA and hence consume the tablets regularly unlike less educated counterparts (Rajendran and Ramachandran, 2013).

About 34 percent of the women had consumed 100+IFA tablets / syrups in Kanniyakumari, 38 percent in Thirunelveli, and 52 percent in Thoothukkudi. The proportion of women who had received full ANC was the highest in Thoothukkudi (37 percent), and lowest was 32 percent in Kanniyakumari and 29 percent in Thirunelveli. The proportion of women who had consumed 100 IFA tablets / syrup and also had received at least on TT injections was 42.3 percent and 82.7npercent respectively in Tamil Nadu during DLHS-4. Lack of health eduction is one of the reasons for low level of full ANC received. Not only this and also in BP taken, Hb tested, Abdomen examined and consumed 100/more IFA tables.

The improvements in ANC coverage are effective means for increasing professional assistance at delivery, and especially for increasing institutional delivery. Around 99 percent of the respondents had their deliveries in the Government and Private institution in Kanniyakumari and Thoothukkudi. Because of the cash incentive raised from Rs.6000 to Rs.12000/-. 64.2 percent of the respondent's delivery in government hospital in Thoothukkudi and the lowest was 56 percent in Thirunneliveli and 32 percent in Kanniyakumari. The percentage of institutional delivery at private health institutions was lowests 35 percent in Thoothukkudi, 42 percent in Thirunelveli and highest in Kanniyakumari 66 percent. Only Thirunelveli (12 percent) and Thoothukkudi (18.1 percent) district women delivery by caesarean section at Government Health institution. Around 35 percent of the women delivery by caesarean section at private health institutions. There is no any home delivery in Kanniyakumari and Thoothukkudi districts. Around one percent of the skilled birth attendant (SBA) conducted delivery at home in Thirunelveli district. Around 56 percent of the mothers who received post natal care within 48 hours of institutional delivery in birth Thirunelveli and Thoothukkudi districts. Around 99 percent of the skilled health personal attended

the delivery, 92 percent of the women discharge from institution after minimum stay of 48 hours. There is variation of institutional delivery cost compares to Kanniyakumari (Rs 2500), (Rs 3100) in Thirunelveli and (Rs.1900) in Thoothukkudi district.

Table – 3: Particulars on Institutional Deliveries during DLHS-4

Indicators	Kanniyakumari	Thirunelveli	Thoothukkudi
Institutional delivery	99.2	97.6	99.1
Delivery at government health institutions	32.8	55.8	64.2
Delivery at private health institutions	66.4	41.8	34.9
Delivery by Caesarean section at government health institutions	10.2	11.6	18.1
Delivery by Caesarean section at private health institutions	34.6	20.8	15.2
Delivery at home	0.0	1.6	0.0
Delivery at home conducted by skilled health personnel (Out of total Deliveries)	0.0	1.2	0.0
Mothers who received post-natal care within 48 hours of Institutional delivery	46.7	55.7	55.7
Mothers who received post-natal care within two weeks of Institutional delivery	48.2	62.4	59.9
Delivery attended by skilled health personnel	99.2	98.8	99.1
Discharge of mothers from institution after minimum stay of 48 hours	94.5	96.3	92.3
Out of pocket expenditure per institutional delivery in Public health facility(in Rs. 000's)	2.5	3.1	1.9

Source: DLHS- 4.

The NRHM strengthens 30 beds hospital at PHC levels and also it leads to increased caesarean in Governmental Hospital (GH). Home delivery was around zero because of maternity welfare scheme. When the pregnant women go to the GH, it leads to increase the delivery attended by healthcare personnel. It helped to save the mother and child life. The women who either do not take ANC or take an incomplete course of ANC are exposed to the risk of maternal dealth. Improving the general health and nutrition of the girls' child, increasing the age of marriage and subsequent childbearing along with timely and quality ANC reduces the incidence of anaemia, Pregnancy Induced Hypertension (PIH), Intra-Uterine Growth Retardation (IUGR), foetal loss and LBW babies (Saxena et al., 2010). Here the table 4 offers complication pertaining to pregnancy and deliveries during surveys.

Table -4: Complications for Pregnant Women during Reference Period

Indicators	Kanniyakumari	Thirunelveli	Thoothukkudi
Pregnancy related complication	38.7	51.8	47.7
Delivery related complication	4.3	15.2	5.1
Any post –delivery related complication	7.4	21.2	9.2

Source: DLHS- 4.

It can be understand that pregnancy related complication in Kanniyakumari district was around 39 percent in DLHS-4. When the pregnant women conduct their health checkup in the GH it leads to substantially reduce the delivery complication. Post delivery complication highest 21.2 percent in Thirunelveli District. Perhaps the contribution of Health personal on health education to pregnant women in Kanniyakumari is very important for reducing complication from pregnancy and delivery. Around 11 percent of women in Tamil Nadu has faced at least one delivery complication. The main types of delivery complications experienced by women ranged from still or births in the three year preceeding the survey are mainly destructed labour (18.5 percent), premature labour (17.8percent), prolonged labour (56.8 percent) and high blood pressure (9.4 percent). In Tamil Nadu, around (13.9 percent) women had faced post delivery complication. The major problem during post delivery period was high fever (46.7 percent) and lower abdominal (45.6 percent) followed by and excesive bleeding 31.4 percent.

Immunization is one of the most cost-effective public health interventions and largely responsible for reduction of under 5 mortality rate. Nonetheless, vaccine preventable diseases are still responsible for deaths. The vaccination of children against six serious but preventable diseases has been the cornerstone of the child health care system. Health Immunization Programme is being implemented on a priority basis. Effective implementation of this measure has drastically reduced the outbreak of these diseases in the State. Under Universal Immunization Programme, it has been proposed to cover all infants and pregnant women in the State. As against the target, the achievement of administering vaccines fell short in all the years. Hence this needs to be addressed on war footing. The following table 5 illustrates particulars of child immunization during two DLHS surveys (three and four).

Table – 5: Details of Child Immunization (age 12-23 months) in the Study Area

Indicators	Kanniyakumari	Thirunelveli	Thoothukkudi
Received full vaccination*	35.1	47.4	55.9
Received BCG vaccine	84.5	89.5	86.2
Received 3 doses of DPT vaccine	63.2	66.7	64.4
Received 3 doses of polio vaccine	59.6	68.4	86.2
Received measles vaccine	70.2	86.0	84.5

Source: DLHS- 4.

Note: * means BCG, 3-injection of DPT, 3 doses of Polio (excluding polio zero) and Measles

In the District of Thoothukkudi and Thirunelveli, the highest coverage of full immunization, 56 percent and 47 percent and lowest in Kanniyakumari with 35 percent. While the coverage of BCG, Polio, DPT and Measles is quite high in Thirunelveli and Thoothukkudi. Majority (77 percent) of children in Tamil Nadu had received Hepatitis-B vaccination. There was no substantial difference in use of Hepatitis – B injections has been found by place of residence, sex of child. But mothers higher education was more responsive to received Hepatities-B injection than others.

Lack of personal hygiene, poor sanitation, nutritional deficiency and poor mother and child health services, absence of health education, lack of national preventive programmes, and lack of available health services are responsibility for the poor health of women (Deepan and Ramachandran 2016). To make the immunization cent percent successful, focus should be on increasing demand for vaccination by using effective Information Education and Communication (IEC) and bringing immunization closer to the communities. Complete immunization should be made mandatory to get admission in schools by appropriate legislation. In immunization, the State had achieved two distinctions - polio free status since 2004 and elimination of neonatal tetanus since 2006. Nonetheless, within the state, the performance varies among various regions. The sample district is moderately developed and hence the healthcare delivery is expected to be satisfactory.

Table – 6: Distribution of Health Facilities in Three District

Indicators	Kanniyakumari	Thirunelveli	Thoothukkudi
No of Sub Centers	25	25	25
No. of PHCs	14	14	10
No of CHC (including Black PHC)	12	15	09
No of District Hospital	01	01	01

Source: DLHS-4.

The above table reveals that the equal number of sub centers increased in Kanniyakumari, Thirunelveli and Thoothukkudi. Because of NRHM strengthening rural hospital by PHCs for every 5000 populations in their districts made possible this. This is being following by number of PHCs 14 in Kanniyakumari, Thirunelveli.It is low 10 Thoothukkudi number of CHC were 15 in Thirunelveli and 12 in kanniyakumarin and nine in Thoothukkudi and constant number of district hospitals.

Conclusion

Utilization of healthcare has been increased as the standard of living increased. In the same way utilization was more for household having television and radio. Lack of information was the main reason for non- immunization in almost two thirds of the children. Low awareness among the clients is one of the major reasons of low utilization of services. Health education of mothers was significantly associated with the level of services availed by them. About 98.6 percent of the respondents have electricity respectively in Kanniyakumar district. Use of clean fuel for cooking in Kanniyakumari district is estimated to 52.5 percent during DLHS-4 survey, 66.0 percent in Thirunelveli; and 59 percent in Thoothukkudi. 72 percent of the respondents were aviled 3 and more ANC care in Kanniyakimar district, 62 percent in Thoothukkudi and 61 percent in Thirunelveli.

The lowest ANC coverage in government health facilities was Kanniyakumari District (46 percent). About 34 percent of the women had consumed 100+IFA tablets / syrups in Kanniyakumari, 38 percent in Thirunelveli, and 52 percent in Thoothukkudi. Post delivery complication highest 21.2 percent in Thirunelveli District. The highest coverage of full immunization, 56 percent and 47 percent and lowest in Kanniyakumari with 35 percent. Thus there is a need and scope of more focused information, education and communication efforts towards antenatal and postnatal services provided to mothers especially in rural areas in Thirunelveli, Thoothukkudi and Kanniyakumari districts.

Suggestions

Proper counselling to the targeted women on pregnant complications such as anemia by improving the consumption of iron and folic acid tables and better self-care for a safe delivery is the order of the day. The Information Education and Communication (IEC) should reach all for enhancement of knowledge of communicable and non communicable diseases. The Behavioral Change Communication (BCC) should be strengthened to utilize more health services. Attractive bill boards should be placed on vantage points like PHCs to educate and motivate the pregnant women to avail the facilities in the Government Hospitals.

REFERENCES

1. Deepan V and R.Ramachandran (2016), "Health Problems of Scheduled Tribes in Kanyakumari District of South Tamil Nadu", International Journal of Advanced Research (IJAR),August 22, Res.4 (10) :231-234.
2. Dreze Jean (2015), "Small Leap forward in Child Health", The Hindu, September 16:11, Madurai.
3. Rajendran S and R.Ramachandran (2013), "An Economic Study of Janani Suraksha Yojana in Salem Region", Peninsular Economist, XXV (2):227-229.
4. Saxena et al. (2010), "Obstetric and Prenatal Outcomes of Teenage and Older Primigravidas-A Retrospective Analysis", Health and Population –Perspective and Issues, 33 (1):16-22.
5. Usha Samba Moorthi et al. (2004), "Antenatal Care and AIDS Knowledge among Married Women", Economic and Political Weekly, February 14:721-727.
6. Venkat Vidya (2015), "India yet to Achieve U.N. Millennium Development Goals", The Hindu, September 15:13, Madurai.
7. WHO (2004), "Maternal Mortality in 2000; Estimates developed by WHO,UNICEF and UNFPA", World Health Oranization, Geneva.
8. WHO and UNICEF (2003), "Antenatal Care in Developing Countries, an Analysis of Trends, Levels and Differentials, 1990-2001", WHO and UNICEF.