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INCREASING TREND OF CAESAREAN DELIVERY RATE AND WOMEN'S HEALTH IN TIRUNELVELI DISTRICT OF TAMIL NADU-INDIA

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Abstract:-

The rates of caesarean delivery in many countries have increased beyond the WHO recommended level of 10-15 %. This paper tries to throw light on the current trends in caesarean delivery in Tirunelveli District of Tamil Nadu. With the increasing numbers of institutionalised births, the trend of caesarean delivery is also sharply rising. The objectives of this study are to explore the situation and trend in caesarean delivery in Tirunelveli District of Tamil Nadu and analyse the determinants for the preference of caesarean delivery. This paper will explore the relationship between the factors influencing the decision for caesarean delivery and the demand for it. An attempt has also been made to identify various factors associated with caesarean delivery and to understand the possible reasons of very high rate caesarean delivery in the Study area.

Keywords: Caesarean Delivery rate, HMIS, Private and public institutions,

INTRODUCTION

Caesarean delivery rate has increased rapidly over the past two decades in India mainly driven by non-medical factors. Caesarean Delivery is a major surgery like all surgery carries risk. Recently the American College of Obstetricians and Gynaecologists issued a statement that "pregnant women plan for normal delivery unless there is a medical reason for a caesarean". In recent years, especially in parts of world, it is often argued that with thriving private practice, obstetricians increasingly prefer for caesarean birth than normal birth. Bearing in mind that in 1985 the World Health Organization (WHO) stated: "There is no justification for any region to have caesarean delivery rates higher than 10-15%", this paper will explore the relationship between the factors influencing the decision for caesarean delivery and the demand for it. An attempt has also been made to identify various factors associated with caesarean delivery and to understand the possible reasons of very high rate caesarean delivery in the Study area.

STATEMENT OF PROBLEM:

The trend of caesarean delivery is also sharply rising in Tirunelveli District of Tamil Nadu. The caesarean delivery rate is alarmingly high in Tirunelveli District, which is more than 50 percent in both public and private institution. This is indication of an impending public health problems especially women's health problems.

Period of Study: 2012 to 2014.

Objectives of study:

Keeping in view the above background, present study seeks

1)To examine the level and trend of the caesarean delivery in Tirunelveli District of Tamil Nadu.
2)To identify various factors associated with caesarean delivery in Tirunelveli context.
3)To understand the possible reasons of very high rate Caesarean Delivery.

Data and method

The methodology adopted for study is both descriptive and analytical. The data has been collected from both the Primary and Secondary sources. A sample of 92 respondents includes both mothers who had normal delivery (43) and caesarean delivery (49). A structured questionnaire was prepared to collect primary data. The secondary data for the analysis is taken from the HMIS (Health Management Information System) of three consecutive Years 2012, 2013 and 2014 to examine the level and trend of the caesarean delivery in Tirunelveli District of Tamil Nadu.

Informal conversation was carried out with some doctors and patients from different government and private hospitals to understand the possible reasons of very high caesarean delivery rate.

REVIEW OF LITERATURE:

In General, Caesarean is more costly to the health care system, is associated with increased risk for both mother and infant, and has the potential to complicate subsequent pregnancies.

According to the World Health Organisation (WHO), the surgical option ought to be exercised cautiously, only when necessary, and no country is justified in having a surgical delivery rate higher than 10-15 per cent. But the rate of Caesarean operations has been climbing steadily in Kerala since the 1980s, giving rise to concern that private healthcare institutions are misusing the procedure for commercial gain.

Hannah et al. (2000) found that no significant differences did exist in maternal mortality or serious maternal morbidity between planned caesarean section and planned vaginal birth for breech presentation. They also observed that in case of prenatal mortality, there was no benefit of caesarean delivery for the countries with high prenatal mortality rate (>20/1000).

A recent study on the `Status of Service Delivery in the Health Sector', conducted by the Achutha Menon (2005) Centre for Health Science Studies (AMCHSS) in five districts in the State, had indicated rising health care costs associated with pregnancy. On an average, pregnant women make at least eight visits to the doctor during the period of their pregnancy. Obstetricians attended to over 86 per cent of deliveries. Private hospitals charge Rs.12,000 or more just for the procedure including the doctor's fee, in addition to the expenses for a week's stay. The total bill would be anywhere between Rs. 25,000 and Rs.35,000 for a C-section delivery. According to the study, the average cost of a C-section in the State in the Government sector is a mere Rs. 3,800.

Dr. Hemachandran (March, 2005), External auditing of all C-sections and maternal deaths should be made compulsory in all hospitals, says Dr. Thankappan. Every hospital should have a committee to examine whether the C-sections performed there are medically indicated. "The most common indication for C-sections, according to hospital records, are `foetal distress' and `failure to progress in labour,' both of which are loosely defined terms,". But that seems a tall order for the present as private hospitals are outside

the ambit of all such regulations now.

Most research focuses on women's fear of the physiological consequences of a normal delivery (Behague, 2002). But on the other hand, Taffel et al (1989) argued that the decision to perform a c-section is prompted by the physician's concern for the life and health of the mother or the child.

In the case of developing countries like India, it is still unclear that what could be motivating the increasing preference for c-section. In general, it is argued that beside the medical factors, the physician's interests determine the choice of c-section (Mishra and Ramanathan, 2002). There are, for instance, practice styles among physicians, or attitudes among obstetricians that favour c-section. Fear of litigation, the physician's convenience, and most importantly, economic incentives may determine the choice of c-section delivery (Belizan et al 1999).

Economic motives may include both doctors' fear of malpractice as well as economic gain (Tussing et al 1992). At the same time, the source of payment for the delivery and the place of birth, i.e. whether it was a private or public sector institution also influence the performance of c-sections (Peterson, 1990).

A study by the Indian Council of Medical Research (ICMR) in 33 tertiary care institutions noted that the average caesarean section rate increased from 21.8 per cent in 1993-'94 to 25.4 per cent in 1998-'99 (Kambo et al 2002). According to the National Family Health Survey, 1992-'93, two states, Kerala and Goa, have shown the highest percentage of c-section deliveries (Mishra and Ramanathan, 2002). A rising trend in c-section rates, from 11.9 per cent in 1987 to 21.4 per cent in 1996 has been reported from Kerala (Thankappan, 1999). Another study in Jaipur showed that c-section rates in a leading private hospital rose from 5 per cent in 1972 to 10 percent in late 1970s and to 19.7 per cent between 1980-'85 (Kabra et al 1994). Studies show that in India, the rate of c-section delivery is relatively much higher in private hospitals rather than in public health facilities. For instance, Padmadas et al (2000) observed in the case of India the caesarean deliveries are mostly occurring in private rather than public institutions.

RESULTS AND DISCUSSION:

Caesarean deliveries too have shown an increasing trend. This paper explores trends in caesarean delivery in Tirunelveli District over the past three years 2012, 2013 and 2014. Figure 1 presents the trends in caesarean deliveries in Tiurnelveli District of Tamil Nadu. At the all-India level, the rate has increased from 2.9 per cent of the childbirth in 1992-93 to 7.1 in 1998-99 and further to 10.2 per cent in 2005-06.

For the present analysis the secondary data is taken from the Health Management Information System (HMIS) of three consecutive years (2012, 2013 and 2014). The data analyzed for three consecutive years to see the trends in caesarean delivery in Tirunelveli District of Tamil Nadu.

Percentage Distribution of caesarean Deliveries (Institution wise) in Tirunelveli District of Tamil Nadu

Table: 1

Name of the institution	2012	2013	2014
Government Hospitals	46.25	54.6	53.48
Teaching Hospital	47.73	49.15	50.99
Primary Health Centre	11.11	3.03	5.08
Urban Health Post	0.0	0.0	0.0
Approved Nursing Home	45.72	47.27	51.17
Unapproved Nursing Home	42.25	42.12	51.04
District Total	41.08	41.55	45.29

Source: HMIS (Health Management Information System)

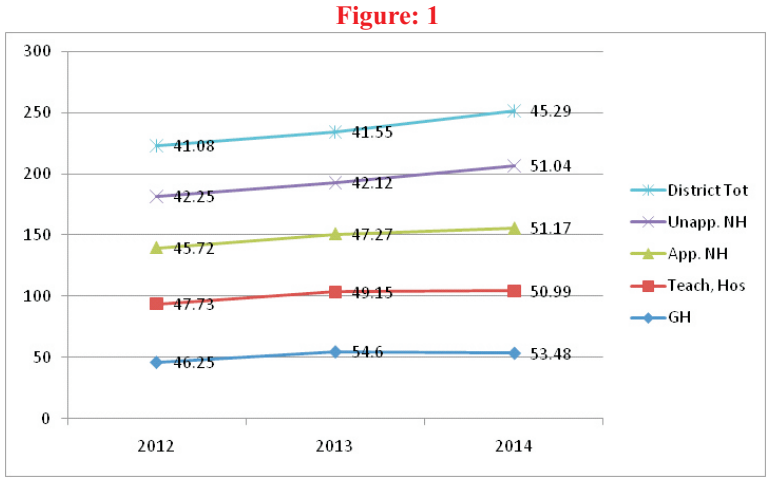
There is a positive relation between increasingly institutionalized delivery and percentage of caesarean delivery. In safe motherhood strategies, it is universally accepted that provision of essential obstetric care and ensuring institutional delivery are the best options to reduce maternal mortality in all contexts. Unfortunately, in the current scenario, Medical intervention has now led to overuse or inappropriate use of caesarean delivery in many institutions. There is a decline of 1.12% of caesarean delivery rate in Government Hospitals but there is an increase of 1.84% in Teaching hospital Tirunelveli Medical college Hospital.

There is a high rise of caesarean delivery rate in Family welfare approved Nursing Homes and family welfare unapproved nursing homes by 3.9% and 8.92% respectively. Hence there was a big uptrend found in family welfare unapproved Nursing homes.

Trends in Caesarean Deliveries - Tirunelveli District of Tamil Nadu.

Percentage of women who had undergone caesarean section delivery Institution wise

Figure: 1



The trend in caesarean section delivery institution wise is shown in Table 1. There is a significant increase in the percentage of birth by c-section in private nursing home in tirunelveli district. At the District Level, 41.08 per cent of birth was by caesarean in 2012 and it has increased by 4.21 percent. The difference in caesarean delivery is relatively high in Private Nursing homes (in Approved nursing homes the difference is 5.45 and in unapproved nursing homes the difference is 8.79). A rapid increase in caesarean delivery rates has occurred in approved and unapproved nursing homes from Jan -2012 to Nov-2014. The rate is highest, 51.17 and 51.04 percent in the approved and unapproved nursing home respectively. It is important to consider that the caesarean deliveries are mostly occurring in private rather than public institutions. the rate of Caesarean operations has been climbing steadily in Tirunelveli District, giving rise to concern that private healthcare institutions are misusing the procedure for commercial gain.

Caesarean delivery in Tirunelveli District and its Risk Factors (n=92)					
Background characteristics	**No of Respondents (Normal Delivery)**	**No of Respondents (Caesarean Delivery)**	**Percentage of Caesarean Delivery with respect to total delivery**	**Percentage of Caesarean Delivery with respect to total caesarean delivery**	**(Category wise) Percentage of Caesarean Delivery with respect to total delivery**
Risk Factors					
Age of the Mother at Birth					
Below 20 years	4	5	5.4	10.2	55.5
20-24 years	24	20	21.7	40.8	83.3
25-29 years	9	17	18.5	34.7	65.4
Above 30 years	6	7	7.6	14.3	53.8
Birth Weight of Child at Birth					
<2.000 kg	5	3	3.3	6.1	60
2.000 – 2.500 kg	23	14	15.2	28.6	60.8
2.5000-3.000 kg	15	27	29.3	55.1	64.3
>3.000 kg	0	5	5.4	10.2	100
Size of child at birth					
Very small	6	3	3.3	6.1	50
Small	14	16	17.4	32.7	53.3
Average	20	22	23.9	44.9	52.4
Large	3	6	6.5	12.2	66.7
Very large	0	2	2.2	4.1	100
Birth Order					
Ist Para	12	18	19.6	36.7	60
IIst Para	28	27	29.3	55.1	49.1
IIIst Para +	3	4	4.3	8.2	57.1
Complications During pregnancy					
Yes	0	21	22.8	42.9	100
No	43	28	30.4	57.1	39.43
Body Mass Index					
Thin	6	14	15.2	28.5	70
Moderate	36	28	30.4	57.1	43.7
Overweight	1	6	6.5	12.2	85.7
Obese	0	1	1.1	2	100
Previous Birth Interval					
< 2 years	22	15	16.3	30.6	40
2-3 years	17	25	27.2	51	59.5
Above 3 years	4	9	9.8	18.3	69.2

Source: Primary data

Caesarean delivery in Tirunelveli District and its Demand Factors (n=92)					
Demand Factors					
Background characteristics	**No of Respondents (Normal Delivery)**	**No of Respondents (Caesarean Delivery)**	**Percentage of Caesarean Delivery with respect to total delivery**	**Percentage of Caesarean Delivery with respect to total caesarean delivery**	**(Category wise) Percentage of Caesarean Delivery with respect to total delivery**
Mother's Education					
Illiterate	3	2	3.2	4.1	40
Less than 5th Std	11	13	11.9	26.5	54.2
5th to 9th Std	16	17	17.4	34.7	51.5
10th to 11th Std	9	10	9.8	20.4	52.6
12th or More	4	7	4.3	14.3	63.6
Religion					
Hindu	35	38	38	77.6	52.1
Muslim	7	9	7.6	18.4	56.25
Christian	1	2	1.1	4	66.66
Caste					
SC/ST	5	8	5.4	16.3	61.5
Others	38	41	41.3	83.7	51.89
Residence					
Rural	36	33	39.1	67.3	47.82
Urban	7	16	7.6	32.7	69.56
Place of caesarean delivery					
Public Institutions					
Government Hospital	12	18	13	36.7	60
Teaching Hospital (TVMCH)	4	6	4.3	12.2	60
PHC	7	2	7.6	4.1	22
Private Institutions					
Approved Institutions	14	17	15.2	34.7	54.83
Unapproved Institutions	6	6	6.5	12.3	50
Working Status of Mother					
Currently not working	32	33	34.8	67.3	50.76
Currently Working	11	16	11.9	32.7	59.25

Source: Primary Data

A number of factors play significant roles in deciding the type of delivery. For most women, normal delivery is spontaneous; in some cases, however, with pregnancy-related complications, Caesarean delivery is preferred. A number of medical factors such as mother's age, breech presentation of the baby and the size of the child at birth are considered possible risk factors leading to caesarean delivery. It has already been pointed out that the performance of caesarean delivery is also influenced by non-medical factors. The request from women and other socio-cultural factors can influence the decision of caesarean delivery. Maternal request, the doctor's preference, and other socio-cultural factors play important roles in determining the type of delivery. The present analysis was done after taking into consideration non-medical factors too that serves as variables. Another important variable is whether the birth occurs in a private or public health facility. Some studies suggest a strong relation between the place of delivery, whether public or private, and caesarean delivery. It has already pointed out that there is a higher prevalence of caesarean deliveries in private health facilities rather than public ones. In this study

- More women gave birth by caesarean than had expressed a preference for it. Majority of women in this study preferred normal delivery (90.5%) and potential demand for caesarean delivery was mere (9.5%).
- Maximum proportion of women in this study described themselves as having very low information (60.5%) about caesarean delivery.
- Morden medical technologies which are used during child birth are creating contradictory possibilities for women
- In this study, 65.5% of the respondents replied in affirmative that the service providers were deliberately opting for caesarean deliveries instead of normal deliveries.
- The expenditure charged for caesarean deliveries were not reasonable and could not afford the

expenditure in Private institutions. The average expenditure charged in private institution for caesarean deliveries calculated from the sample is Rs.36000 and Rs.4600 in public institutions (includes travel, food and other conveyances).

- ❖ Primary Health centres were conducting more normal deliveries because of these institutions have low level of modern medical technologies. No Gynaecologist and no Obstetrician are present here.
- ❖ A very high rate of caesarean delivery found in Government Hospitals (53.48% in 2014) a slight decline (1.12%) is found from 2013 (54.6%). It is because of the referral cases from primary health centre (in this case the mother reaches the government hospital in very crucial and emergency health conditions, hence the hospitals prefer to do caesarean), due to the presence and availability of Gynaecologists, Obstetricians, General surgeons, Anaesthetists and medical technological instruments.
- ❖ There is a high rise of caesarean delivery rate in Family welfare approved Nursing Homes and family welfare unapproved nursing homes (3.9% and 8.92% respectively). Hence there was a big uptrend found in family welfare unapproved Nursing homes.

LIMITATION OF THE STUDY:

There are several limitations to this study. Choice of delivery type preference during pregnancy may not be accurate or are subject to recall bias, as all information was collected post delivery. There can be some bias in classifying caesarean deliveries into those with and without clinical indications. The interpretation of findings was based on the primary data (n=92) collected and referred to recent studies only, Hence generalization should be made with caution.

CONCLUSION:

Women are not well educated or informed about caesarean delivery. The hospital environment influences women's decision-making on delivery mode. During the prenatal stay, women saw women who had Caesarean delivery and this may raise anxiety about their own birth, as they reported having had less confidence in normal delivery. An important findings of this study is that There is a high rise of caesarean delivery rate between 2013 and 2014 in Family welfare approved Nursing Homes and family welfare unapproved nursing homes (3.9% and 8.92% respectively). Hence there was a big uptrend found in family welfare unapproved Nursing homes. Measures may be taken to minimise the heavy rise of caesarean delivery rate in both approved and especially in unapproved nursing homes. The findings of this study have important research and policy implications for controlling the high Caesarean delivery rate in all the districts of Tamil Nadu, as they suggest healthcare providers have the crucial role in all other health issues. Public health education and health awareness need strengthening, including discussion of the risks associated with caesarean delivery and psychological and social support given to women, who are in the reproductive age group. Obstetricians should abide by ethics in their services and carefully evaluate the risks and indication in every caesarean delivery.

REFERENCES:

1.World Health Organization. Appropriate technology for Lancet 1985; 2(8452): 436-7.
2.National Institutes of Health Consensus Development conference statement: vaginal birth after caesarean: new insights March 8-10, 2010. Obstet Gynecol. 2010 Jun; 115(6):1279-95. PMID: 20502301
3.Ash A, D Okah (1997). What is the right number of caesarean sections?, Lancet, 349:1557.
4.Baskett T F, R M McMillen (1998). Caesarean section: trends and morbidity, American Journal of Public Health, 88.
5.Ballard Karen and Elston Mary Ann (2005). Medicalisation: A Multi-dimensional Concept, Social Theory and Health, 3 (3): 22.
6.Behague Dominique P, Cesar G Victora and Fernando C Barros (2002). Consumer demand for caesarean sections in Brazil: informed decision making, patient choice, cohort study linking ethnographic and or social inequality? A population based birth epidemiological methods, British Medical Journal, 324 (20).
7.Belizan J, F Althabe, F Barros and S Alexander (1999). Rate and implications of caesarean sections in Latin America: Ecological Study. British Medical Journal, 319.
8.Bruekens, P (2001). Over-medicalisation of maternal care in developing countries. In V De Brouwere and W Van Lerberghe (ed), Safe Motherhood Strategies: A Review of the Evidence. Antwerp:ITG Press.
9.Bury, M and Jonathan Gabe (2004). The Sociology of Health and Illness: A Reader. London: Routledge.
10.Cai W W, J S Marks, C H C Chen, Y X Zhuang, L Morris and J R Harris (1998). Increased Caesarean Section Rates and emerging patterns of health insurance in Shanghai, China, American Journal of Public Health, 80.
11.Friedson Eliot (1970). Professional Dominance. In The Social Structure of Medical Care. Chicago: Aldine pub.