
Proportion of Caesarean section and its indications in Kottayam, Kerala

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ABSTRACT

Background: Though Pregnancy and delivery are considered normal physiological states in women, the incidence of caesarean section (C-section) is steadily rising and has reached an unacceptable high rate.

Aim: To find out the proportion of caesarean section, its indications and the factors associated with it in an urban community of Kerala.

Methods: A cross-sectional study was conducted in ward 7 of Kottayam Municipality from June to September 2011 among the women who had given birth to babies during June 2001 – May 2011. Data was collected using a semi-structured questionnaire and analysis was done using SPSS 16.0 version.

Results: Among the 351 deliveries studied, 35% was caesarean sections. The major indications for caesarean were previous caesarean (28.4%) and prolonged labour (20.3%). The major factors associated with C-section were higher marriage age (mean 23.89 Vs 23.1), higher socioeconomic status (23% Vs14%) and delivery in private hospitals (60.2% vs 39.8%).

Conclusion: Present study reveals higher proportion of caesarean section than accepted standards but agrees with the reported statistic of Kerala.

Key words: caesarean section, indications, Kerala

INTRODUCTION

Pregnancy and delivery are normal to women but the methods of delivery have undergone a lot of changes. According to the World Health Organisation (WHO), the surgical option in delivery ought to be exercised cautiously and only when necessary. According to NFHS III, 9% of deliveries in India are Caesareans and the rate is reported to be 30.1% in Kerala.¹ The rate should not exceed 5 -15 %² but recently, the caesarean rates have increased dramatically.

Caesarean is a necessity in emergency situations during childbirth like dystocia, bleeding, foetal distress, previous caesarean, elderly pregnancies, maternal diseases, etc. However, of late caesarean deliveries are increasingly being considered by the doctors and patients as a safe mode of delivery. Even Women have started considering Caesarean mode of delivery as easy and less painful procedure. Doctors also consider this as a time saving and easy and a less risky procedure in view of increased medico legal cases.

Studies indicate that maternal mortality and morbidity is more after Caesarean than normal delivery. There is an increased risk of complications in future pregnancies. There are increased possibilities of additional surgeries for scar rupture, hernia and hysterectomy in future. The incidence of respiratory distress syndrome is common in new-borns delivered through Caesarean. Some damage to the new-born during surgery is also a possibility.

Despite these risks associated with Caesarian, this mode of delivery is preferred due to the increased perceptions of ease and convenience. The possibility of last minute complications in normal child birth being high, doctors tend to prefer caesarian deliveries and play down the morbidity and mortality aspects of the procedure. This procedure is a steady source of income in many hospitals. The high rate of caesarean do not always suggest a good utilization of health care but it can also be suggestive of malpractices which can indirectly lead to avoidable maternal morbidity. With this

scenario in the background, this study was planned to find out the proportion of caesarean section, its indications and the factors associated with it, in an urban community of Kerala.

MATERIALS AND METHODS

A cross-Sectional study was conducted in Ward VII of Kottayam Municipality, Kottayam District, Kerala. Out of 52 wards in Kottayam Municipality, 15 wards are the field practicing area of Community Medicine department of Kottayam Medical College. Ward VII was selected randomly. All women who had child birth ten years preceding the survey (2001 – May 2011) were selected as the subjects of the study. Study was conducted during the period June to September 2011. All those women who do not wish to volunteer in this study and who could not be traced after three consecutive visits to the house were excluded from the study.

Sample Size Calculation

As per NFHS III data the caesarean rates in Kerala was 30.1%.³ Based on this data, fixing alpha error at 5% and a relative precision of 20%, the minimum sample size required for the present study was fixed to be 253.

Study Procedure

Necessary Permission for conducting the study was obtained from the Head of the Department of Community Medicine and from the Municipal secretary of Kottayam Municipal area. Written informed consent was obtained from each participant of the study. The Protocol was reviewed and approved by Institutional ethical Committee.

Boundaries of the selected ward and Houses of the ward were identified with the help of ASHA workers and the Anganwadi staff of the selected ward. Data was collected by a team of 17 MBBS students of 5th semester posted in the department of Community Medicine supervised by the faculty of the department. Information was collected from all the woman who had given birth to a baby 10 years preceding the study, using a pre - tested semi-structured questionnaire. Data regarding socio-demographic factors, antenatal, natal and postnatal period, mode of delivery, other selected risk factors for caesarean and a few questions which were indicative of the attitude of the study population towards the caesarean was collected. A universal coverage of all the houses was done. Only those houses which were found locked on three consecutive visits were not covered. The families where only maids or servants are present were also excluded. Data were collected, coded, compiled and analysed using SPSS v. 16 software. Means and frequency were calculated. Association between qualitative variables was tested with 'Chi Square Test' and where ever continuous variables were to be tested, 'Independent samples t test' was used. The level of significance was taken at a 'p' value of <0.05.

RESULTS

A total of 351 deliveries were reported during the study period from 253 women in ward VII of the Kottayam Municipality. 42.3% of women were in the age group of 20-30 years. 39.2% of mothers had education less than 10th standard and the rest had education above 10th standard. None of them were illiterate. 70.8% of women were housewives and the rest were earners for

their family. 13.6% were involved in semi professional job and 3.6% were carrying out professional jobs. Major sociodemographic factors of the study population are depicted in Table. 1.

Table. 1. Distribution of study population according to the socio- demographic profile

age	No	%
Less than 20yrs	2	0.8
20 – 30 yrs	107	42.3
30- 40 yrs	129	51.0
>40 yrs	15	5.9
Religion		
Hindu	157	62.1
Christian	66	26.1
Muslim	30	11.8
S E status		
Low	125	49.4
Middle	81	32.0
high	47	18.6
Total Population	253	

Rest of the analysis was done using deliveries as the denominator. There were 351 deliveries during the study period. 3 deliveries (0.85%) were before 18 years while 16 deliveries (4.6%) were after 30 years. One hundred and twenty three (35%) deliveries in the present study were caesarean and rest was vaginal deliveries. The main indications of caesarean section were previous caesarean delivery (28.4%) followed by the failure of progression in labour (20.3%), fetal distress (17%), and malpresentations (17%). 38 % of deliveries were primi, 48.2% were 2nd order , 13.8% were of 3rd order and above. 50.4% of caesareans were in the age group > 30 years. Out of the primi deliveries, 59.3% were caesarean. 40.1% of caesarean deliveries were primi delivery. 1.2% of deliveries did not receive any ante-natal care. 81.2% of deliveries were not associated with any antenatal complications while 6.6% had PIH, 4% had ante-partum haemorrhage, 1.7% had diabetes mellitus, etc. 100% deliveries were institutional deliveries. 53.3% of deliveries were conducted in private hospitals,

36.2% were in Medical Colleges and 10.5% were in other government hospitals. Among the caesarean deliveries 60.2% were in private hospitals, 25.2% were in Medical College and 14.6% were in other Govt hospitals, (p 0.002). 91.2 percent of the deliveries were term (37-40 weeks) while 8% had pre-term delivery (<37 weeks) and 0.8% had post term delivery (>40 weeks). The major risk factors of Caesarean delivery in the present study are shown in table 2.

Table. 2. Risk factors associated with C-section delivery

Variable	Type	% of Caesarean Section	P value
Religion	Hindu	83/205 (40.5%)	0.03*
	Christian	25/98 (25.5%)	
	Muslim	15/48 (31.3%)	
Socio economic status	Low	16/67 (23.8%)	0.02*
	Middle	78/231 (33.8%)	
	High	29/53 (54.7%)	
Antenatal Complication	Present	23/66 (34.8%)	0.09
	Absent	94/285 (33%)	
Term of delivery	Preterm	15/28 (53.6%)	0.101
	Term	107/320 (33.4%)	
	Post term	1/3 (33.3%)	
Birth order	1	79/133 (59.3%)	0.01*
	2	62/169 (36.6%)	
	3& above	2/49 (4.1%)	
Mean age of marriage	Vaginal delivery	23.1 years	0.02*
	Caesarean Section	23.89 years	
Mean age at 1 st childbirth	Vaginal delivery	24.48 years	0.019*
	Caesarean Section	25.37 years	

96.6 % of deliveries didn't have any postnatal complication. 6 % of women demanded Caesarean at some point of time during delivery. Fear and astrological reasons were the major reasons for the demand. 19 cases (7%) of the study population preferred caesarean section than normal delivery.

DISCUSSION

The proportion of caesarean deliveries in the present study was 35%, which is very high compared to the accepted standards. Similar findings were observed in other studies conducted in urban areas in other part of the country.^{4,5} As per report of NFHS 3, Kerala tops caesarean rate among the Indian states. According to Kumar GA, caesarean rate was

more in southern part of Kerala as compared to other parts of Kerala.⁶ The main indications for caesarean in the present study were previous caesarean, foetal distocia, foetal distress etc. Similar indications were reported by Bhaskin et al.

In the present study significant factors associated with caesarean rates were, Religion (Hindu), high socio economic status, high maternal age, 1st birth order, higher mean age at first childbirth and delivery at private hospital. Even though high caesarean rates are seen in pregnancies with antenatal complication and pre term deliveries, these factors were not significant in the present study. Based on the NFHS 3 data Sancheetha Ghosh revealed that higher maternal age and 1st birth order are risk factors for caesarean.² As the birth order increases the woman is gets more experienced regarding delivery procedures and the chance of caesarean is decreasing. According to Chayan Roy Choudhury C women from high socio economic status have 1.5 times more chance of having caesarean delivery than a woman from low socio economic status.⁷

Another significant finding in the present study is that 60.2% of caesarean deliveries were at private hospitals. A similar finding was observed by Bhasin.S.K et al., (91.7%) and Sreevidya et al., (42.6%). According to NFHS 3, caesarean rate in Kerala in private institution was 63.8% which is in agreement with the present study finding. Since the private Hospitals are unregulated and is the preferred choice for delivery for people belonging to a better socioeconomic status, commercial interests on the part of hospitals conducting caesarian deliveries cannot be ruled out. It is possible that this useful surgical procedure to

be used in exigencies is being misused for profit purposes in the hospitals in private sector.

Apart from these factors now a days doctors also prefer caesarean as being safe, to avoid night calls, to avoid medico legal complications and probably also for commercial gain. There is also an increasing demand from patients for caesarean section in view of the changed perception. In the present study 4% of sample population demanded caesarean. The main reasons for the demand were fear of pain, astrological compulsions etc. It may also be a related to the high female literacy and awareness, female empowerment and involvement in decision making in Kerala. According to Mishra US et al the physician's interest determines the choice of caesarean.⁸ Public health experts point out that doctors in the state often do not tell their patients the long term health hazards of the surgical procedure and instead portray it as a simple and safe alternative to natural delivery.⁹

CONCLUSION

Increasing trend of caesarean section is a public health problem as it can lead to increased maternal and child morbidity and mortality. Doctors seem to have a major role in decision making. Unlike most of the other states in India, pregnant ladies visit the health facility more frequently in Kerala. This can be utilized by the doctors as an opportunity to explain and promote the advantage of normal delivery. Health care professionals and institutions should strive to enforce medical ethics and prevent blatant commercialization and misuse in this vital health sector. Political commitment is equally necessary to promote normal child birth and prevent misuse of the medical system.

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