

Original Research Article

Assessment of trend and etiological factors for cesarean delivery among women residing in Ahmedabad, Gujarat, India

Kapil J. Govani^{1*}, Priyanka D. Jogia²

¹Department of Community Medicine, GMERS Medical College, Junagadh, Gujarat, India

²Department of Obstetrics and Gynaecology, GMERS Medical College, Junagadh, Gujarat, India

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***Correspondence:**

Dr. Kapil J. Govani,

E-mail: kapilgovani@gmail.com

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ABSTRACT

Background: Cesarean section (CS or C-section) is a surgical intervention and it is the 2nd commonest surgery performed on women in India after tubectomy operation. So, the study was conducted with objectives to assess the socio-demographic profile of recently delivered women and to assess the trend and etiological factors of cesarean delivery among women.

Methods: A cross sectional study was conducted among recently delivered women of Ahmedabad city, Gujarat, India during April to September 2015. Pretested performa was used for study after informed consent. Total 200 women were selected for study.

Results: Majority (56%) of women were belongs to 25 to 30 year. age group. Few (5%) of women were found illiterate. 31% women were delivered through cesarean section. Majority (63.5%) of women were delivered at Government hospitals. Most common reason (23%) for cesarean delivery was previous history of LSCS. Most preferred (33%) first choice of contraceptive method was barrier method.

Conclusions: Commonest reasons for cesarean deliveries were previous history of LSCS, Oligohydramnios and prolonged labor. Most preferred first choice of contraceptive method was barrier method followed by Oral Contraceptive pills.

Keywords: Cesarean delivery, Socio-demographic profile, Trend

INTRODUCTION

Cesarean section (CS or C-section) is a surgical intervention which is carried out to ensure safety of mother and child when vaginal delivery is not possible (emergency CS) or when the doctors consider that the danger to the mother and baby would be greater with a vaginal delivery (planned CS).^{1,2} Proportion of CS to the total births is considered as one of the important indicators of emergency obstetric care.³ As the rising trend in cesarean section is now a matter that deserves international attention and is no longer confined to western industrialized countries.^{3,4} Currently, in the

developed world, approximately 30% of caesarean sections are repeat caesarean sections after primary caesarean section, 30% are performed for dystocia, 11% are performed for breech presentation and 10% are performed for fetal distress.^{5,6} Belizan et al demonstrated that the caesarean section rates are directly related to the Gross National Product per capita, with the richest countries having the highest caesarean section rates.⁷ Thus the determinants of the caesarean section rate are likely to be extremely complex and will include financial imperatives as well as characteristics of the birth attendant and the socio-demographic factors and cultural attitudes of women and the societies in which they live.⁸

Rapid increase of CS rate throughout the world has become a serious public health issue because several studies have found that the high rate of caesarean section delivery does not necessarily contribute to an improved maternal health and pregnancy outcome.^{1,9} It has been suggested that national caesarean delivery rates do not reflect what is happening locally, supporting the trend toward monitoring rates at the level of individual hospital or physician.¹⁰ Caesarean section is the 2nd commonest surgery performed on women in India after tubectomy operation.^{2,11} Based on DLHS-3 (2007-08) data, the caesarean section delivery rate in India is 9.2 % and in Gujarat is 8.1%. The institution wise data of DLHS-3 shows that in India the rate of caesarean delivery in public institution was 12% and in private institution was 28.1%. DLHS-3 data for Gujarat state shows rate of caesarean delivery in public institution was 7.7% and in private institution was 17.3%.¹² So, the study was conducted with following objectives.

- To assess the socio-demographic profile of recently delivered women.
- To assess the trend and etiological factors of caesarean delivery among women.

METHODS

A cross sectional study was conducted among recently delivered women (within 10 days from delivery) of Ahmedabad city, Gujarat, India. Hospitals (Government, trust and private) were selected from two zones (Central

and West) of Ahmedabad municipal corporation area. Details regarding study and their objectives were discussed with women. Informed consent of them was taken prior to study. Those who denied for the same were excluded from study. Total 200 women were selected for study purpose. The selection was done on basis of availability and consent of women. The study was conducted during April to September 2015. Fully structured performa, which was specially designed and pre-tested, was used for data collection purpose. The performa has different components e.g. socio-demographic profile of women, etiological factors for caesarean, preferred choice of contraception etc. After the data collection, each woman was taught on different aspects of maternal and child health components. Family planning advices were also given. IEC (Information, Education and Communication) materials e.g. posters, charts and photographs etc. were used for improving awareness. After that, data entry was carried out and data analysis was done by using appropriate statistical software and applying suitable statistical tests e.g. Chi-square test, proportion, Mean etc.

RESULTS

Out of 200 recently delivered women, majority (112, 56%) were belongs to 25 to 30-year age group followed by 20 to 25-year age group (73, 36.5%). Mean age of women was 25.7±2.9. Among women, 138 (69%) were normally delivered whereas 62 (31%) women were delivered through caesarean section (Table 1).

Table 1: Socio-demographic profile of recently delivered women (N= 200).

Socio-demographic profile					
	No.	(%)	Demographic profile	No.	(%)
Age distribution					
20 to 25 year	73	36.5	35 to 40 year	14	07
25 to 30 year	112	56	30 to 35 year	01	0.5
Type of delivery					
Normal/Vaginal	138	69	Cesarean	62	31
Education level					
Illiterate	10	05	Higher secondary	79	39.5
Primary	32	16	Graduate	28	14
Secondary	45	22.5	Post graduate	06	03
Socio-Economical classification (According to Modified Prasad)					
Class- I	12	06	Class- IV	49	24.5
Class- II	27	13.5	Class- V	28	14
Class- III	84	42			
Type of hospital where delivery conducted					
Government	127	63.5	Private	52	26
Trust	21	10.5			
First choice of contraceptive method					
Not answered	37	18.5	IUD	34	17
Barrier method	66	33	Tubal Ligation	21	10.5
OC pills	42	21			

(OC= Oral Contraceptive, IUD= Intra uterine device).

Higher number of women were delivered at Government hospitals (127, 63.5%) followed by private (52, 26%) and trust / granted (21, 10.5%) hospitals.

Table 2: Etiological factors for cesarean delivery among women (N=200).

Factors	Frequency (No.)	Percentage (%)
Short stature (Height≤140cm)	22	11
Malpresentation of baby	24	12
Antepartum haemorrhage	06	03
Pre-eclampsia / Eclampsia	13	6.5
Oligohydramnios	43	21.5
Twins/multiple pregnancy	05	2.5
Previous history of LSCS	46	23
Associated medical diseases	07	3.5
Prolong labor (foetal distress)	26	13
Personal choice	08	04

Majority (79, 39.5%) of women were studied up to higher secondary level followed by secondary level (45, 22.5%). Few (10, 5%) women were found illiterate. Regarding Modified Prasad's socio-economical classification, majority (84, 42%) women were belonging to Class-III followed by Class-IV (49, 24.5%).

Regarding first choice of contraceptive method, majority (66, 33%) women preferred barrier method followed by Oral Contraceptive pills / Hormonal methods (42, 21%). Table 2 shows the etiological factors for cesarean delivery. The reasons for planned / emergency cesarean delivery were explained to women or their family members from hospital side. Most common reason (46, 23%) for cesarean delivery was previous history of LSCS. The other reasons were Oligohydramnios (43, 21.5%), Prolong labor (26, 13%), Malpresentation of baby (24, 12%) etc. Comparison of trend of normal and cesarean delivery with different particulars of women was shown in Table 3.

Table 3: Comparison between types of delivery with different variables (N=200).

Variables	Type of delivery		Chi-square & P value
	Normal	Cesarean	
Illiterate	07	03	Chi-square: 0.004
Literate	131	59	P value: 0.9
S-E class (I, II, III)	75	48	Chi-square: 9.6
S-E class (IV, V)	63	14	P value: 0.001
Govt. hospital	96	31	Chi-square: 8.2
Trust hospital	14	07	P value: 0.01
Private hospital	28	24	
Age group (20 to 30 year)	132	53	Chi-square: 4.9
Age group (30 to 40 year)	06	09	P value: 0.02
Primi women	43	28	Chi-square: 3.7
Multipara women	95	34	P value: 0.05
Birth weight (<2.5 kg)	32	07	Chi-square: 10.1
Birth weight (2.5 to 3.5 kg)	96	42	P value: 0.006
Birth weight (>3.5 kg)	10	13	

(P Value: <0.05 indicates significant level).

According to that statistically significant difference was noted for following particulars of women e.g. Socio-economic status (P: 0.001), Types of hospital where delivery taken place (P: 0.01), Age group (P: 0.02), Birth weight of baby (P: 0.006) etc.

DISCUSSION

Mean age of recently delivered women was 25.7±2.9. Out of 200 women, half of them were found of 25-30 yr. age group. The NFHS-III (2005-06) data shows that institutional birth of India and Gujarat was 41.5% and 56.9% accordingly. And among them proportion of cesarean deliveries was 9.8% in India and 10.2 % in Gujarat.¹¹ Based on DLHS-III (2007-08) data, the

caesarean delivery rate in India is 9.2% and in Gujarat is 8.1% and among them the rate is higher for urban areas of India (16.8%) and of Gujarat (14.5%).¹² In current study the proportion of cesarean delivery was 31% which is quite high as compare to NFHS-3 and DLHS-3 data. This might be due to low sample size. Study reveals, majority of women were belonging to socio-economical Class-3 group (Modified Prasad's criteria). According to the census 2011, literacy rate of female was 65.5% in India and 70.7% in Gujarat.¹³ The current study also show higher literacy rate (95%) among women. The DLHS-III (2007-08) had data on institution (public/private) wise proportion of cesarean among women. According to DLHS-III in India, the proportion of cesarean delivery in public and private institution was

12% and 28.1%. For Gujarat, the proportion was 7.7% and 17.3% for public and private institution.¹² In current study majority of women were delivered at Government (public) hospitals as compare to private/trust hospitals and there was significant difference regarding trend of normal and cesarean deliveries among them (P: 0.01).

The family planning data of NFHS-3 shows that in India 48.5% of married couples were using any modern method of family planning, among them most preferred method (37.3%) was tubal ligation (TL). First choice of family planning method in current study group women was barrier method (33%) followed by hormonal method (21%). Table 2 shows the probable reasons for cesarean delivery. Most common reason was previous history of CS followed by Oligohydramnios and prolonged labor. Study also reveals significant difference among rate cesarean delivery and few of women e.g. Socio-economic status (P: 0.001), Age group (P: 0.02), Birth weight of baby (P: 0.006) etc. (Table 3).

CONCLUSION

Commonest reasons for cesarean deliveries were previous history of LSCS, Oligohydramnios and prolonged labor. Most preferred first choice of contraceptive method was barrier method followed by Oral Contraceptive pills. Awareness and healthy practices on different aspects of maternal and child health components e.g. antenatal care, postnatal care, Family planning etc. were recommended to all women.

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