

Cesarean section: requested mode of delivery?

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Summary

Aim: To constitute accurate policies for reducing the cesarean section (C/S) the authors evaluated the attitudes and knowledge of health workers and public population towards the mode of delivery, C/S on demand, and delivery complications in a large population. **Materials and Methods:** 1,892 female volunteers in reproductive age were enrolled in the study and 589 of them were health workers. Patients were evaluated with questionnaire about their delivery mode and their answers were analyzed. **Results:** The overall cesarean rate of the study population was 45.4%. This rate were 51.4% and 28.2%, respectively, for the health workers and public group ($p < 0.001$). Medical indication ratio were 57.7% and 40.1% for the healthcare group and the public population respectively and 20.2% of health workers and 13.9% of the public group had C/S by their preference without any medical indications ($p < 0.001$). **Conclusion:** C/S rate is high in Turkey and an action plan is needed to decrease the rate. When a patient's preference towards the mode of the delivery is C/S on demand, obstetricians, in their capacity as patient advocate, should help guide their patient through the sophisticated detailed medical information toward a decision that respects both the patient's attitude and the physician's obligation to optimize the health of both the mother and the newborn.

Key words: Cesarean section; Vaginal delivery; Cesarean section on demand.

Introduction

Cesarean section (C/S) rates are increasing in Turkey as well as all over the world. A national study reported a rate of 23.8% on 2001 [1], this ratio was 47% on 2009 [2]. Turkish Ministry of Health generate an action plan to decrease the rate to 35% in 2013 by clinical, governmental, and public strategies.

Several factors like education and occupation influence the attitudes of women towards mode of delivery, however insurance companies did not cover the cost of C/S on demand until 2010 in Turkey. Understanding the attitudes of Turkish health workers and public population towards the mode of delivery is very important to overcome the ethical and legal implications of C/S. In the authors' previous study, C/S was performed without any medical indications with the ratio of 45.3% in health workers and 20.6% in the public group [3]. To constitute accurate policies for reducing the C/S, the authors aimed to evaluate the attitudes and knowledge of Turkish health workers and public population towards the mode of delivery, C/S on demand, and delivery complications in a large population.

Materials and Methods

The study was conducted from January 2010 and May 2011 in the Obstetrics and Gynecology Clinic of Afyon Kocatepe University and Antalya Education and Training Hospital. 1,892 healthy female volunteers in reproductive age were enrolled in

the study and 589 of them were health workers, such as doctors, nurses, midwives, and lab technicians. A questionnaire (30 questions) about age, sex, number of children, marital status, mode of delivery experienced, attitude towards C/S on demand and vaginal delivery, knowledge of possible medical complications arising from cesarean and vaginal delivery, and expectations regarding cesarean and vaginal deliveries was performed in the participants. The questionnaire included both open and closed questions. The formulation of the questions was guided by the aim of the study, previous questionnaires, and expert opinion. Approval from the Institutional Review Boards of Afyon Kocatepe University and Antalya Education and Training Hospital were obtained prior to conducting the study. Informed consent form was obtained from all participants before distributing the questionnaire.

The results taken from the questionnaires were analyzed using SPSS 15.0 for statistical analysis. Statistical methods used included χ^2 test, Student t -test, and Pearson's correlation analysis; p values < 0.05 were accepted as statistically significant.

Results

Demographic characteristics of the study population are shown in Table 1. Education level of the health workers were higher than the public population. Cesarean rate of the health workers and public group were 51.4% and 28.2%, respectively ($p < 0.001$). The overall cesarean rate of the study population was 45.4%. Safety of the mother and the baby are the most common reasons for the preference of the mode of the delivery in both groups (Table 2). Multiparity population that delivered vaginally of the two

Table 1. — *Demographic characteristics of the groups.*

	Health workers	Public population	<i>P</i>
Age ^a (year)	34.9±8.1	34.7±11.1	NS
Education (%)			<0.001
Primary	0.7	43.9	
Secondary	13.7	26.4	
University	85.7	29.7	
Parity (%)			NS
Nulliparity	25.1	23.8	
Multiparity	74.9	76.2	

^aValues given as mean ± SD.

Table 2. — *Perceived advantages and disadvantages of vaginal and cesarean deliveries.*

Criteria	Health workers	Public Group	<i>p</i>
Safe for mother			<0.001
VD	416 (76)	1051 (83)	
CS	132 (24)	214 (17)	
Unsafe for baby			<0.001
VD	241 (47)	430 (36)	
CS	271 (53)	755 (64)	
Cost effective			0.35
VD	558 (98)	1229 (97)	
CS	10 (2)	31 (3)	
Natural			0.006
Yes	541 (96)	1126 (92)	
No	25 (4)	97 (8)	
Complications			0.11
VD	122 (23)	236 (19)	
CS	421 (77)	995 (81)	

VD: vaginal delivery; CD: cesarean delivery.

Values given as number (percentage) unless otherwise indicated.

study groups primarily chose this mode as their preference (79.6%, health workers; 76.2%, public; $p = 0.48$). A total of 641 women those gave their birth by C/S, 57.7% of the health workers group and 40.1% of the public population had medical indications ($p < 0.001$); 20.2% of health workers and 13.9% of the public group had cesarean delivery by their preference without any medical indications ($p < 0.001$) (Table 3).

Multiparity women that gave their first birth vaginally preferred vaginal delivery for their other babies (77.5% of health workers, 88.7% of public group; $p < 0.001$) (Table 3). Epidural anesthesia was performed to 15.8% of the health workers and 9.4% of the public population ($p = 0.01$).

71.2% of the health workers and 71.7% of the public group found unacceptable C/S on demand ($p > 0.05$).

Finally, logistic regression analysis was performed to assess whether maternal characteristics were predictive of maternal preferences towards mode of delivery. None of these factors were significantly linked to maternal preferences.

Table 3. — *Characteristics of the study groups according to mode of the delivery.*

	Health workers	Public group	<i>p</i>
Why VD?			NS
My preference	79.6	76.2	
Doctor's suggestion	14.1	17.7	
Others	6.3	6.1	
Why CS?			<0.001
Medical indication	57.7	40.1	
My preference	20.2	1.9	
Doctor's suggestion	16.1	38.2	
Others	6	7.8	
First VD, others?			<0.001
VD	77.5	88.7	
CS	22.5	11.3	
First CS, others?			NS
VD	14	17	
CS	86	83	
First VD, why others VD?			NS
First VD	25.5	30.3	
Healthy	65.5	54.4	
More easy	3.6	3.9	
Doctor's suggestion	0	0.9	
Others	5.5	10.5	
First VD, why others CS?			NS
VD more painful	30	52.9	
Completed quickly	60	26.5	
Others	10	20.6	
First CS, why others VD?			NS
Healthy	50	61.1	
CS more risky	33.3	22.2	
Others	16.7	16.7	
First CS, why others CS?			NS
First CS	52.1	50	
Risk of complication	23.9	21.3	
Doctor's suggestion	7	8.3	
Fear of VD	15.5	15.7	
Others	1.4	4.6	

Values are given as percentages.

Discussion

Increasing cesarean rate is a major healthcare problem all over the world. This rate was 51.4% in health workers, 45.4% in the combined study group. According to the World Health Organization, a C/S rate of 10% to 15% is considered acceptable. The availability of the health resources and their knowledge about complications may influence the health workers decision regarding C/S in relative indications. Increased safety of the surgical procedures with various techniques of anesthetics, routine administration of antibiotics, and reliable blood product supply effects obstetricians preference towards C/S, instead of medico-legal problems associated with fetal risk at vaginal birth.

C/S is an important surgical procedure in obstetrics to decrease the maternal fetal mortality rates [4]. On the

other hand, high cesarean rates have shown no additional benefit for the mother and the baby. Some studies have even shown that C/S could be linked to negative consequences in maternal and child health without any additional benefits [5, 6]. To advocate for a rational use of C/S in this country, Turkish Social Insurance Institute does not cover the costs of C/S on demand. Professional associations, healthcare organizations, and the general public also support programs that are aimed to decrease excess cesarean rate and costs.

Elective repeat cesarean delivery is a major indication of this operation. Scoring techniques may be used to increase women undergoing trial of labor [7] those were done C/S.

Study group that delivered by C/S, health workers remarked medical indications more than public group, but public group chose doctor's preference more. This difference may arise from the cesarean indications. Relative indications may be remarked by public group as doctor's preference while health workers chose the medical indication choice.

C/S on demand is the solution for a couple that desires maximum control over pregnancy, childbirth, and the arrival of a new baby [8, 9]. In the present study, the number of people who believe that there should be an indication for this abdominal surgical procedure were higher in the public group. These results show that both health workers and public population need to be supported to know the real medical indications of C/S to select the useful mode, which is more suitable for them [10].

The present results have shown that C/S rate was high in this study population especially in health workers without any indication. When a patient's preference towards the mode of the delivery is C/S on demand, obstetricians, in their capacity as advocates should help guide their patients through the sophisticated detailed medical information towards a decision that respects both the patient's attitude and the physician's obligation to optimize the health of both the mother and the newborn.

References

- [1] Çiçek N., Çelik Ç., Köküş N., Görkemli H., Acar A., Akyürek C.: "Rate of our cesarean section". *Selçuk University, Medical Faculty Journal* 2001, 17, 117.
- [2] Turkish Society of Obstetrics and Gynecology (TJOD-2012): "Turkish Health Ministry and TJOD action plan to decrease cesarean section rate". Available at: <http://www.tjod.org/saglik-bakanligi-tjod-sezaryen-oranlarini-azaltma-ortak-eylem-planlari/> [Article in Turkish]
- [3] Koken G., Cosar E., Sahin F.K., Arıöz D.T., Duman Z., Aral I.: "Attitudes towards mode of delivery and cesarean on demand in Turkey". *Int. J. Gynaecol. Obstet.*, 2007, 99, 233.
- [4] Betran A.P., Merialdi M., Lauer J.A., Bing-Shun W., Thomas J., Van Look P., Wagner M.: "Rates of caesarean section: analysis of global, regional and national estimates". *Paediatr. Perinat. Epidemiol.*, 2007, 21, 98.
- [5] Villar J., Valladares E., Wojdyla D., Zavaleta N., Carroli G., Velazco A., et al.: "Caesarean delivery rates and pregnancy outcomes: the 2005 WHO global survey on maternal and perinatal health in Latin America". *Lancet*, 2006, 367, 1819.
- [6] Minkoff H., Chervenak F.A.: "Elective primary cesarean delivery". *N. Engl. J. Med.*, 2003, 348, 946.
- [7] Gilbert S.A., Grobman W.A., Landon M.B., Spong C.Y., Rouse D.J., Leveno K.J., et al.: "Elective repeat cesarean delivery compared with spontaneous trial of labor after a prior cesarean delivery: a propensity score analysis". *Am. J. Obstet. Gynecol.*, 2012, 206, 311.e1.
- [8] Billard M.: "Cesarean section on demand: is it a fad or an advance in medical practice?" *Can. Fam. Physician*, 2011, 57, 1243.
- [9] Kalish R.B., McCullough L.B., Chervenak F.A.: "Patient choice cesarean delivery: ethical issues". *Curr. Opin. Obstet. Gynecol.*, 2008, 20, 116.
- [10] Aktaş D., Gönenç İ.M.: "Cesarean and ethics". *Türkiye Klinikleri J. Med. Ethics*, 2011, 19, 186.

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