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Original Research Article

Causes of elective cesarean delivery on maternal request in Aljouf, Saudi Arabia

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ABSTRACT

Background: Recently observed there is a steadily higher rate of cesarean delivery worldwide mostly due to the increasing number of women requesting an elective cesarean section on maternal request without valid indication. The aim of the study was to determine the causes of elective cesarean delivery on maternal requests in Aljouf Saudi Arabia.

Methods: This was a descriptive cross-sectional study and data was evaluated by completing seven questionnaires and interviews with laboratory reports who were admitted for cesarean delivery at the Obstetrics department of Maternity and Children Hospital (MCH) Aljouf, Saudi Arabia from January 2020 to December 2020. A total of 141 Saudi women of age between 18 and over 35 years were enrolled, including those who have singleton pregnancy, no complications during pregnancy, and no medical indication for cesarean delivery.

Results: 141 women reported willingness to request cesarean delivery. The mean systolic 120 ± 6.23 , diastolic 75 ± 2.45 blood pressure mm of Hg, and fasting blood sugar level 4.1 ± 1.1 mmol/l have been found within the normal limit. The ultrasound (US) confirmed singleton pregnancy without any abnormalities. Data reveals that common causes of elective cesarean section on maternal request to avoid the episiotomy 77.3%, fear of labor pain 69.5%, trauma to the vagina 79.4%, uncertainty about timing 61.7%, losing a baby during vaginal delivery 54.6%, experience other members 41.8%, the risk for baby 39%, prolapse or incontinence 24.1%, unsatisfactory sexual intercourse 17.7% and the undesirable experience of the previous vaginal delivery 12%.

Conclusions: Maternal request for cesarean delivery is considered one of the reasons for increasing the rate of cesarean delivery in Saudi Arabia. To avoid the episiotomy and fear of labor pain may strong causes for choosing cesarean delivery.

Keywords: Cesarean delivery, Maternal requests, Causes for elective cesarean section

INTRODUCTION

Cesarean section is a surgical method to deliver a fetus by the incision of the abdomen and uterus¹. Recently the

debate on issues to raise of cesarean delivery in the world, the major component is cesarean delivery on maternal request (CDMR).² Several studies focus on the maternal requests for cesarean delivery (CD) with and without

medical indications that may provide a high rate of CD around the world.³ The maternal request of CD (CDMR) defines by elective cesarean section (CS) preferred at the request of pregnant women with the absence of valid clinical indication for both maternal and fetal.⁴ Northern Ireland carries out a national audit survey between 2000- and 2001 years for knowledge of maternal requests for cesarean delivery and reported a total CD of approximately 21.5% and among 7% maternal requests (CDMR) without having medical indication.⁵ The WHO attained a global survey on the health of maternal and perinatal in 2010, had evidence that CD in China disproportionately increased by 46.2% from 27.3% and 11.7% them because of non-medical indications which was subsequently a high rate in the world.⁶ Besides, the WHO suggested lowering the rate of cesarean sections by approximately not more than 10%-15%.⁷ While in Turkey, the CD dramatically increase from 1993 to 2008 from around 6.9% to 36.7%.⁸

However, the cesarean delivery on maternal request (CDMR) is supported by the American College of Obstetrics and Gynecology (ACOG).⁹ While CDMR is widely preferred in developed countries but has recently also followed the developing countries such as Nigeria.¹⁰ A previous study reported that CDMR main reason for the awareness of trauma or injury by surgery.¹¹ The pregnant mother mostly fears and anxiety about vaginal delivery because of prolonged labor pain, episiotomy and incontinence due to trauma of the pelvic, especially in the first pregnancy.¹²

Moreover, around 20% of pregnant women have experienced extreme fear of childbirth.^{13,14} Saudi Arabia gradually increase cesarean delivery by 80% between 1997 to 2006 due to medical indications, while this study didn't focus without medical indications of cesarean delivery by maternal request.¹⁵ Besides, no study revealed enough evidence for allowing the non-medical indication of elective cesarean section by maternal request.¹⁶

However, there was no published data available on elective cesarean section or cesarean delivery by maternal request in Aljouf Saudi Arabia. The aim of the study was to determine the causes of cesarean delivery by maternal request.

METHODS

Study design

This descriptive cross-sectional study was performed at the obstetrics department of maternity and children hospital (MCH) Sakaka, Aljouf, Saudi Arabia between January 2020 to December 2020.

The pregnant women who were admitted for cesarean delivery by self-request after full antenatal follow-up participated in this study. The sample size was calculated by using the following formula:

$$N = \frac{\text{deff } u^2 \times P(1 - P)}{d^2}$$

where deff is the design effect; N is the sample capacity; U is 1.96 when the confidence coefficient is 95%; P is the probability value. According to the use of this formula, our study attains a sample size of 141. We explain the purpose of the present study to participants and included them after their fully agreed. The inclusion criteria included full-term single pregnancy, reproductive age, educational levels, occupation, no history of diabetes, hypertension, no previous history of abortion, stillbirth, no fetal abnormality, no complication detected of current pregnancy of mother and fetus, suitable for normal vaginal delivery. The laboratories report as, blood, urine, and ultrasound were also collected. History of miscarriage, termination of pregnancy before 28 weeks of gestation, and intrauterine fetal death was excluded. The full term of pregnancy conforms to the mother by calculating the date of last menstruation and ultrasound examination. The present study was approved by the ethical committee of Jouf university

Data collection

Data of the present study were collected by questionnaires, laboratory data, ultrasound reports, and face-to-face interviews. The pattern of questionnaires was drawn and modified from the questionnaire applied in a previous study.¹⁷ We made seven questionnaires in the English language and the research assistant used the Arabic language for those who were unable to speak and write in English which was represented in Table 3. All the questionnaires were distributed for filed and interview at the same time when they were admitted for CD. During the time of questionnaires distribution and interview, we also record their medical files for detailed information on pregnant mothers and fetuses. The questionnaires were divided into two-part and the first part was focused on vaginal delivery (VD) such as if the previous experience of VD, number, and complications of VD. While the second part of the questionnaires related to if the experience of cesarean delivery or not and why they choose CD. All data were collected and recorded as a hard copy then transfer into a computer database in an excel sheet for analysis.

Statistical analyses

All data accessed from concluded questionnaires, interviews, and laboratory reports were then analyzed by using the SPSS version 21.00 software. Continuous and categorical variables were used as a mean±SD and frequency counts (percentages) respectively.

RESULTS

One hundred forty-one participants preferred cesarean delivery by self-request and completed the all questionnaires in this study. The demographic and

obstetrics characteristic were represented in Table 1. The number of participants 37 (26.2%), 45 (31.9%), and 59 (41.8%) were divided into the age group of 18-25, 26-35 and >35 years old respectively. The BMI result shown 43.2% had normal weight, 34% had overweight and 22.6% had obesity. The present participants have shown 61.7%, and 38.2% had secondary and university levels of education respectively. The participant's occupations also included and showed 31.9%, 12%, 15.6%, and 40.4% had schoolteacher, nurse, hospital cleaner, and housewife respectively. The history of the number of pregnancies was 73.7% had first pregnancy and 26.2% had a second pregnancy in current status. While participants were admitted for CD at 38 (48.2%) and 39 (51.7%) weeks of gestation. However, there was no history shown of abortion and stillbirth among all participants of this study. In Table 2, the result of the investigation is shown within normal limits as systolic blood pressure (SBP) (mean SD)

120±6.23, diastolic blood pressure (DBP) 75±2.45, fasting blood sugar 4.1±1.1 mmol/l. Besides ultrasound report found a single, cephalic presentation of the fetus without any abnormality and a normal heart rate of fetus 130±10.18.

Table 3 and Figure 1 represent that 26.2% had a vaginal delivery, among 14.1% and 4.2% showed the experience of episiotomy and postpartum hemorrhage respectively. Questionnaires' have shown 69.5% had fear of labor pain, 39% feared for risk of baby, 61.7% fear about uncertainty about the timing of labor, and 24.1% fear about future problems. In addition, 77.3% want to avoid an episiotomy, 41.8% had the experience to see the other members of suffered pain and difficulties during and after labor, and as well as 17.7% were afraid of unsatisfactory sexual intercourse.

Table 1: Demographic characteristics of participants.

Variables	N (%)
Age (years)	
18-25	37 (26.2)
26-35	45 (31.9)
>35	59 (41.8)
BMI	
20–24.9	61 (43.2)
25–29.9	48 (34)
>30	32 (22.6)
Educational background	
Secondary	87 (61.7)
University	54 (38.2)
occupations	
Schoolteacher	45 (31.9)
Nurse	17 (12)
Hospital administrative	22 (15.6)
Housewife	57 (40.4)
First pregnancy	104 (73.7)
Second pregnancy	37 (26.2)
Gestational weeks of pregnancy (weeks)	
38	68 (48.2)
39	73 (51.7)
Previous history of abortion	-
Previous history of stillbirth	-

Table 2: Laboratory reports of all participants.

Variables	Total (n=141)
Blood culture	Normal
Urine culture	Normal
BP	
SBP mm of Hg	120±6.23
DBP mm of Hg	75±2.45
Fasting blood sugar mmol/l	4.1±1.1
US finding	
Single fetus	Present

Continued.

Variables	Total (n=141)
Fetal presentation	Cephalic
Fetal heart rate (bpm)	130±10.18
Any abnormality	Absent

Table 3: Participants causes for request CD by questionnaire.

No. of questions	Pattern of questions	Response	N	%
1.	Do you have previous experience with VD	Yes	37	26.2
		No	104	73.7
2.	The number of previous normal VDs you have experienced? (n=37)	1	37	26.2
3.	Have you experienced any complications during or after the VD? (n=37)	Yes	26	18.4
		No	11	7.8
4.	The experience of complication is -			
	Episiotomy		20	14.1
	Post-partum hemorrhage		6	4.2
5.	Do you have previous experience with CD	No	37	26.2
6.	Choice of CD for current (first) pregnancy	Yes	141	100
7.	Why do you preferer the CD?			
	Fear of labor pain during VD		98	69.5
	Fear about the risk to the baby		55	39
	Fear about losing a baby during VD		77	54.6
	Fear about uncertainty about the timing		87	61.7
	Fear about future problems of prolapse or incontinence		34	24.1
	Fear about trauma to the vagina		112	79.4
	Experience The undesirable experience of the previous VD		17	12
	Experience other members of the family had difficulties in labor and complication during and after VD		59	41.8
	To avoid the episiotomy		109	77.3
	Fear of unsatisfactory sexual intercourse		25	17.7

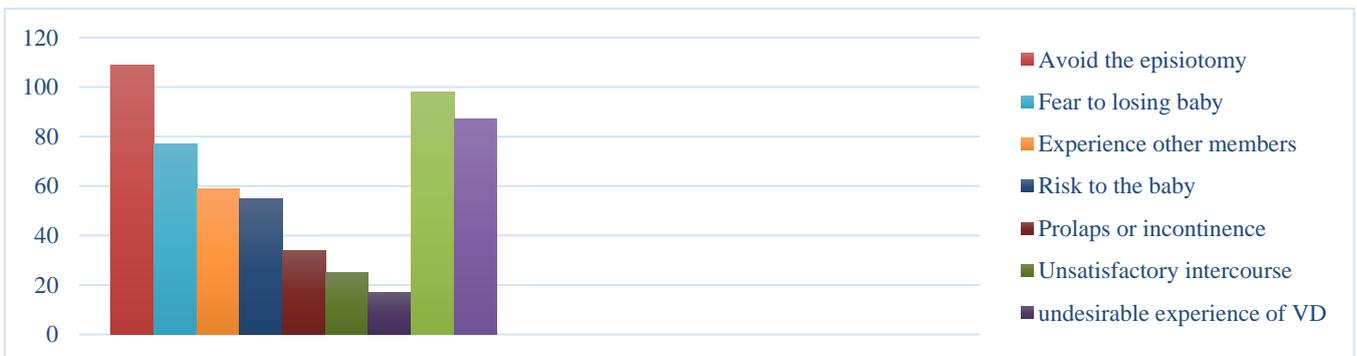


Figure 1: Causes of cesarean delivery by maternal request.

DISCUSSION

To our knowledge, this is the first descriptive cross-sectional study of pregnant women to determine the cesarean delivery by maternal request (CDMR) in Aljouf, Saudi Arabia by asking a sequence of questionnaires and face-to-face interviews. A total of seven questionnaires were selected for this study and distributed among 37 (26.2%) women who have previous experience with vaginal delivery and 104 (73.7%) women who have no experience with vaginal delivery. The present study also provides a document that maternal request for cesarean

delivery in the absence of a medical indication. A total of 141 pregnant women at 38 to 39 weeks of gestation were responded to this study with the age group of 18-25, 26-35 and >35 years old had found at 26.2%, 31.9%, and 41.8% respectively, while a similar age group also reported to another study who requested for CDMR.¹⁸ The maternal investigation report reveals the mean systolic blood pressure was 120±6.23, diastolic blood pressure 75±2.45 mm of Hg, and fasting blood sugar level 4.1±1.1 mmol/l was considered within normal limit, while single pregnancy with cephalic presentation and normal fetal heart rate also diagnosed by ultrasound. However, there

was no detected infection by blood and urine culture. The present study had found their occupation and educational status as secondary at 61.7% and 38.2% at the university level, while the 31.9%, 12%, and 15.6% had the profession of a schoolteacher, nurse, hospital cleaner, and the remaining 40.4% was a housewife. The education and occupation clearly indicated that they are concerned about the method or procedure of CD. Previously reported that the most common causes for the maternal request for elective cesarean delivery are to avoid the trauma of the pelvic floor from pressure during vaginal delivery, urinary incontinence, prevention of prolapse, and as well as lower the change of sexual function.^{19,20} However, our study found similar to these findings when asking questionnaires and interviews for choosing of CD. As well the included the current pregnant were considered first and second time and they are included in this study. In the present study, the women 14.1% and 4.2% had previous complications during delivery such as episiotomy and postpartum hemorrhage. However, 24.1% and 79.4% had preferred CD due to fear of prolapse, and vaginal trauma. Several studies noticed that mothers choose CD due to fear of the loss of baby and labor pain, this finding was nearly comparable with findings of south-east Nigeria and evidence of the highest number of CDMR found in advanced maternal aged.⁹

The present result found that 69.5%, 39%, and 54.6% were afraid of labor pain, the risk to the baby, and fear of losing the baby during vaginal delivery respectively. Conversely, elective cesarean delivery may protect the neonates from intracranial hemorrhage, injury of the brachial plexus, and as well as neonatal encephalopathy.^{19,21} From the questionnaires, 77.3% of women responded because of avoiding episiotomy that subsequently preferred CD which was similarly reported in another study.²² A total of 104 pregnant women have no previous experience of VD, but they have the experience observed painful vaginal delivery to their close relatives, perhaps 41.8% of women preferred CD for this reason. The 12% and 17.7% of women in our study reported asking for a request CD out of concern for their undesirable experience of the previous VD and fear of unsatisfactory sexual intercourse. It has been reported that prolong labor and forceps vaginal delivery are responsible for the injury of nerves and random episiotomy that may damage the pelvic floor, nevertheless, to avoid this complication encourage the elective cesarean section.¹⁷ Several studies suggested that CDMR was a benefit for reducing perinatal mortality and morbidity.⁹ While previously available data suggested that increased CDMR is mainly due to mother satisfaction for safe delivery of the baby.²³ However, the present study found the mother requested CD without any medical reason. The main causes found for this request to their fear of labor pain and keeping the safety of the baby.

Limitation

The results of our study could be generalized to the whole of Saudi Arabia, our data represent only those who are

conducted in the obstetrics department at MCH because only one maternity hospital is available in Aljouf. In the future, we need to further study in multihospital different cities.

CONCLUSION

Currently detected increase the cesarean delivery in Saudi Arabia because of maternal requests without a medical reason. In the present study, we found a total of 141 women preferred CD by self-request. Cesarean delivery on maternal request is considered a new existence in obstetrics practice in both developed and developing countries. The number of CDMRs gradually increasing due to increasing the interest of women in Saudi Arabia. The major causes for the request of CD found in our study were fear of labor pain, complications of vaginal delivery, and fear of losing the fetus in addition to fear of prolapse and urinary incontinence.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee of Jouf University

REFERENCES

1. Tsega F, Mengistie B, Dessie Y, Mengesha MM. Prevalence of Cesarean Section in Urban Health Facilities and Associated Factors in Eastern Ethiopia: Hospital Based Cross Sectional Study. *J Preg Child Health.* 2015;2:169.
2. Latham SR, Norwitz ER. Ethics and "cesarean delivery on maternal demand". *Semin Perinatol.* 2009;33(6):405-9.
3. Mufti R, McCarthy A, Fisk NM. Survey of obstetricians' personal preference and discretionary practice. *Eur J Obstet Gynecol Reprod Biol.* 1997;73:1-4.
4. National Institutes of Health state-of-the-science conference statement: Cesarean delivery on maternal request March 27-29, 2006. *Obstet Gynecol.* 2006;107(6):1386-97.
5. RCOG. Clinical Effectiveness Support Unit. The National Sentinel Cesarean Section Audit Report. London: RCOG Press; 2001.
6. Lumbiganon P, Laopaiboon M, Gülmezoglu AM, Souza JP, Taneepanichskul S, Ruyan P, et al. Method of delivery and pregnancy outcomes in Asia: the WHO global survey on maternal and perinatal health 2007-08. *Lancet.* 2010;375(9713):490-9.
7. WHO. Appropriate technology for birth. *Lancet.* 1985;2(8452):436-7.
8. Harer WB. Elective Cesarean Section: an option for primipara? *OBG Manag.* 2002;14:38-44.
9. Chigbu CO, Ezenyeaku CC. Women's opinions and experiences with induction of labor and cesarean delivery on request in south eastern Nigeria. *Int J Gynaecol Obstet.* 2008;103(2):158-61.

10. Efekhar K, Steer P. Cesarean section controversy. Women choose cesarean section. *BMJ.* 2000;320(7241):107.
11. Weaver J, Statham H, Richards M. High cesarean section rates among women over 30. High rates may be due to perceived potential for complications. *BMJ.* 2001;323(7307):284-5.
12. Wang CP, Tan WC, Kanagalingam D, Tan HK. Why we do caesars: a comparison of the trends in cesarean section delivery over a decade. *Ann Acad Med Singap.* 2013;42(8):408-12.
13. Størksen HT, Garthus-Niegel S, Adams SS, Vangen S, Eberhard-Gran M. Fear of childbirth and elective cesarean section: a population-based study. *BMC Pregnancy Childbirth.* 2015;15:221.
14. Waldenström U, Hildingsson I, Ryding EL. Antenatal fear of childbirth and its association with subsequent cesarean section and experience of childbirth. *BJOG.* 2006;113(6):638-46.
15. Ba'aqueel HS. Cesarean delivery rates in Saudi Arabia: a ten-year review. *Ann Saudi Med.* 2009;29(3):179-83.
16. Lavender T, Hofmeyr GJ, Neilson JP, Kingdon C, Gyte GM. Cesarean section for non-medical reasons at term. *Cochrane Database Syst Rev.* 2012;2012(3):CD004660.
17. Akintayo AA, Ade-Ojo IP, Olagbuji BN, Akin-Akintayo OO, Ogundare OR, Olofinbiyi BA. Cesarean section on maternal request: the viewpoint of expectant women. *Arch Gynecol Obstet.* 2014;289(4):781-5.
18. Arikani DC, Ozer A, Arikani I, Coskun A, Kiran H. Turkish obstetricians' personal preference for mode of delivery and attitude toward cesarean delivery on maternal request. *Arch Gynecol Obstet.* 2011;284(3):543-9.
19. Robson S, Carey A, Mishra R, Dear K. Elective cesarean delivery at maternal request: a preliminary study of motivations influencing women's decision-making. *Aust N Z J Obstet Gynaecol.* 2008;48(4):415-20.
20. Hankins GD, Clark SM, Munn MB. Cesarean section on request at 39 weeks: impact on shoulder dystocia, fetal trauma, neonatal encephalopathy, and intrauterine fetal demise. *Semin Perinatol.* 2006;30(5):276-87.
21. Abdulrahim G, Afrah A, Albatool A, Dina A, Hanan A, Marwa A. Cesarean section on demand: Is it a choice among women in Saudi Arabia? *Jordan Med J.* 2015;49(3):175-82.
22. Hall MH, Bewley S. Maternal mortality and mode of delivery. *Lancet.* 1999;354(9180):776.
23. Matthews TG, Crowley P, Chong A, McKenna P, McGarvey C, O'Regan M. Rising cesarean section rates: a cause for concern? *BJOG.* 2003;110(4):346-9.

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