



ISSN NO. 2320-5407

Journal homepage: <http://www.journalijar.com>

INTERNATIONAL JOURNAL
OF ADVANCED RESEARCH

RESEARCH ARTICLE

Believes and Preferences to have Elective Caesarean Delivery among Female Attendees to Primary Care Centers in Dhahran, Saudi Arabia

DR. Noura Al-Mousa

Consultant Family and Community Medicine

Manuscript Info

Manuscript History:

Received: 15 March 2015
Final Accepted: 22 April 2015
Published Online: May 2015

*Corresponding Author

DR. Noura Al-Mousa

Abstract

Aim: The aim of the present study was to explore women's view, and beliefs towards elective Caesarean section in an attempt to discover the role of these factors in increasing the CS rates. **Objectives:** To determine knowledge and Beliefs about caesarean sections among women attending primary health care centers in the Eastern Province. To determine the factors influencing their decision to undergo caesarian section. **Methods:** This was a cross sectional study, 400 women were selected randomly using systematic random sampling from the attendees to the primary health care centers in the King Abdulaziz Airbase Primary Health Care Center in Dhahran and were invited to respond to interview questionnaire to achieve the objectives of the study. **Results:** It was found that 157 (58.4%) of the women had previous CS, and two thirds of them was done without definite medical indication. Furthermore, about half of the women (49.7%) indicated that they agree to undergo CS in the future. It was found that the percentage of those who agree to undergone CS in the future was significantly increasing with increased age of the women, and the percentage ranged between 21.6% among those <30 years to 83.7% among those aged 40+ years. Also, the percentage was almost doubled among those who have university qualifications (66.9%) if compared to have less education level (34.7%). Similarly, the percentages were increasing consistently with increased monthly income, where it ranged between 29.9% among those with monthly income less than 5000 SR to 56% among those with monthly income more than 10000 SR. **Conclusions:** It was concluded that the rate of CS in our community come within the highest reported rates worldwide, and still considerable proportion agree to have elective CS even with absence of clinical indications. The most important potentiating factors for agreement to undergone CS were the age of the mother, educational level, monthly income and previous CS. **Recommendations:** Mothers must be fully educated about the advantages and disadvantages of CS, so they can take the proper decision, that could reduce the number of unnecessary CSs.

Copy Right, IJAR, 2015,. All rights reserved

INTRODUCTION

Cesarean section refers to the delivery of a baby through surgical incision in the mother's lower abdominal wall and uterus, rather than through the vagina.⁽¹⁾ The first successful CS was performed to deliver Julius Caesar; persistence of this legend gave rise to the name of the procedure. In the nineteenth century, the method of cesarean delivery was well-known in medical practice, yet CS was at first a major operation for high-risk pregnancy; they were rarely performed.⁽²⁾

However, nowadays, the incidence of caesarean sections performed on request without medical indications is increasing as the traditional view about caesarean sections being conducted in critical situations has changed and it is currently performed even when such danger is minimal.⁽³⁾ More women perceive caesarean section as the “easy” option; therefore, babies delivered by CS have increased over the last thirty years.⁽⁴⁾

In Great Britain, the CS rate in 2001 accounted for 21% which raised the issue that the increasing rate of CS is a matter that deserves international attention.⁽⁵⁾ Nevertheless, the observed rise in Cesarean section has been faced with imbalance in the few studies investigating the views of women towards having CS. Moreover, few studies have compared the general population of women who want a CS with those who prefer vaginal delivery. Green et al used a hypothetical situation to see the extent, which women would prefer a CS delivery if advised by their physician that a vaginal delivery was unlikely or if they had only a 50% chance of a vaginal delivery; women maintained a strong commitment to vaginal delivery.⁽⁶⁾

In the Kingdom of Saudi Arabia (KSA) Cesarean section deliveries account for approximately 10% of all births and reaching 20% in tertiary centers.⁽⁴⁾ Repeated CS is therefore, a common phenomenon in KSA, despite the cultural opposition to the limitation of CS, as this would limit the size of the family.⁽⁷⁾

This particular study may be included under the first among the three definitions of elective caesarean section suggested by practitioners of paediatrics.⁽⁸⁾ The three definitions according to The Royal Australian College of Physicians (2001) Paediatric Policy are as:

1. Low risk/elective caesarean section which does not indicate any immediate fetal or maternal risk.
2. Medium risk/semi-elective/semi-emergency caesarean section that indicates that fetal or maternal factors have evolved in the short-term creating risk which necessitates delivery best undertaken by caesarean section.
3. High risk/emergency caesarean section which indicates a significant risk to mother and or fetus and time is critical.

Several reasons have been pointed out with respect to this issue. These include private medical benefit, social, cultural and psychological factors. In the opinion of the investigator, this is not true. This research would support the investigator’s opinion by looking at the views of different women. The women’s views of elective caesarean section would be very helpful to the family medicine practice as it will determine whether to continue or to stop deciding caesarean section to women who have a very low risk of having any problems with vaginal delivery and to educate women about the safe mode of delivery.

objectives:

1. To determine knowledge and believes about caesarean sections among women attending primary health care centers in the Eastern Province.
2. To determine the factors influencing their decision to undergo caesarian section.

Review of literature

Historically, caesarean section has been recorded in history since ancient times in both Western and non-Western literature. Although the first use of the term in obstetrics was from the seventeenth century, its early history is obscured by mythology. The origin of the term caesarean is believed to be from the birth of Julius Caesar; however, this is unlikely considering his mother Aurelia Cotta lived for many years afterwards. In ancient times, it was performed only when the woman was dead or dying as an attempt to rescue the fetus. With few exceptions, this was the pattern until the era of anaesthesia in the nineteenth century.⁽⁹⁾

Currently, safer caesarean section delivery may reduce both the maternal and infant morbidity and mortality; however, it remains a major surgical procedure with serious implications for the health of mother and child. Caesarean section deliveries carry high health risks including respiratory complications and neurological impairment of the newborn and long-term postpartum morbidity for the mother.⁽¹⁰⁾ Furthermore, caesarean deliveries require the use of more medical and healthcare resources compared with normal deliveries, becoming as such a real burden to health systems working with limited budgets.⁽¹¹⁾

However, the number of women having babies born by caesarean section is growing rapidly in both developed and developing countries.⁽¹²⁾ Evaluation of factors associated with this increase in CS rates has been carried out in several countries.⁽¹³⁾ These studies have demonstrated that some of the difference in CS rates observed can be explained by changes in the demographic characteristics of the childbearing population.⁽¹⁴⁾

Many women may not be fully informed of the risks and benefits of CS compared with vaginal birth. Women’s acceptance of vaginal birth after cesarean may be influenced by how the options are explained by their physician, since rates for trial of labor may vary between hospitals from 19-70%.⁽¹⁵⁾ Variations in the incidence are attributed to the increase in defensive obstetric practice, the differences in clinical practice among obstetricians, and

various hospital policies with growing privatization. Cesarean section is economically more profitable in private hospitals. The rapidly increasing number of primary, planned or emergency and subsequent repeat planned cesarean birth attract the attention to be given to the women population.^(16;17) Current policies on the provision of maternity care reflect the increasing importance attached to women's views.⁽¹⁸⁾

Many studies exhibit limitations that may have affected the reporting of women's preferred type of birth. For those women who preferred CS, most studies did not examine the information provided to women by their physician before choosing a cesarean birth⁽¹⁹⁻²²⁾ Moreover, this view fails to acknowledge evidence about the known risks of^(23;24) and a higher likelihood of rehospitalization due to uterine infection, wound complication and cardiopulmonary and thromboembolic condition.⁽¹⁷⁾ Cesarean deliveries also increase the risk of future ectopic pregnancies and placental problems.⁽²⁵⁾ Moreover, the longer postpartum stay in the hospital that is required of the newly delivered mother is overwhelming.⁽¹⁶⁾

Similarly, Geary et al examined women's preferred mode of birth and they reported that 98.5% of women preferred a vaginal birth; whereas only 1.5% of women preferred a CS.⁽²⁶⁾ Graham et al⁽¹⁹⁾ reported that 93% of the Scottish women preferred vaginal delivery. Chong and Mongelli⁽²⁷⁾ also reported that 95.1% of the Asian women indicated a preference for vaginal delivery. The most common reasons given for such a preference were a wish for a natural process (23.8%), a fast recovery (22%), and a safer mode of delivery (7.3%).

In the Arab countries, an aggregate population- and hospital-based study was conducted to compare caesarean section rates for 18 Arab countries, the data were extracted from previous studies conducted in these countries. Yemen, Mauritania, Sudan and Algeria had population caesarean section rates below 5%. Palestine, Oman, Morocco, Libya, Tunisia, Saudi Arabia, UAE, Egypt, Jordan, Kuwait and Syria had caesarean rates ranging between 5–15%. Only three countries had rates above 15%, namely, Lebanon, Qatar and Bahrain. Eleven countries had hospital-based caesarean rates below 15%. The rest of the countries had rates ranging between 15.3% and 27.1%. A country like Sudan, with a population caesarean rate below 5%, was found to exhibit a hospital-based caesarean section rate of 20.4%, one of the highest in this category for the region. The proportion of hospital based caesarean rates was found to be significantly higher for women delivering in the private sector (22.6%) compared with those delivering in the public (19.0%) in Egypt. Older datasets for Jordan and Morocco also revealed higher caesarean rates in private hospitals. However, the converse was true for Yemen (4.7% and 6.6%) and Palestine (9.0% and 8.7%), where caesarean rates were higher in public hospitals.⁽²⁸⁾

Determinants of decision for elective caesarean section

From the clinical point of view, the studies showed that although CS rates have increased over the last decades, the four major clinical determinants of the CS rate have not changed. These remain fetal compromise (22%), "failure to progress" in labour (20%), repeat CS (14%) and breech (11%). The fifth most common reason given for performing a CS has changed and is now reported to be "maternal request" (7%).⁽¹⁴⁾

The maternal request drew the attention for a considerable number of researchers who attempted to explain the factors behind the escalating percentages of the women who prefer to undergone elective CS. In a study conducted in Germany to identify the maternal demographic factors associated with the decision for elective CS, it showed that the biographical data, personal birth experience and working status influence the attitude towards elective caesarean section. Although 90% would chose vaginal delivery for themselves or their partner as best medical practice, 59% of the physicians approve of the general opportunity of C-section on demand. This shows, that not only best medical practice, but also patient autonomy seem to play an important role.⁽²⁹⁾ Other studies also demonstrated that the age of the mother is considered as one of the principal factors for their decision to undergone CS. It was found that CS rates increase with maternal age and this association persists after adjustment for other. For women who have had a baby before but who have not had a CS, the rate of CS is reduced (10%) and for women who have had a baby before but who have had at least one previous CS the CS rate is markedly increased (67%).⁽¹⁴⁾

On the same line, the review of 19 observational studies that reported rates of maternal request for CS was conducted to elaborate the most common determinants of maternal request for CS among different nations. Within these studies there was a consistent relationship between women's preference for CS and either previous CS, previous negative birth experience, a complication in the current pregnancy or a fear of giving birth.^(14;30;31) The main reason given for preference for CS was that it was perceived to be safest for the baby. The main reason given by those who expressed a preference for vaginal birth was the experience of a natural event. One study concluded that maternal request for CS seems to be a marker for previously negative birth experiences and should prompt enquiries to address any issues or concerns.⁽³⁰⁾

Regarding fear of childbirth, it was estimated that about 6%–10% of pregnant women experience fear of childbirth.⁽³²⁾ Fears concerning childbirth such as pain, obstetric injury, emergency CS, health care staff and the effects on family life have been reported to be more common among primiparous compared to multiparous women, and among those who had not attended antenatal classes. Fear of health care workers was reported to be more common among women who either had problems in the current pregnancy or those who were planning an elective CS.⁽³³⁾ Manifestations of this fear included stress symptoms influencing everyday life, nightmares, a wish to have CS and a wish to avoid the current pregnancy and childbirth.⁽³²⁾

Fear of childbirth has been measured using different scoring systems. One case–control study found that women who requested elective CS due to fear of child birth were more likely to have also experienced a spontaneous miscarriage, a longer time between pregnancies, a longer duration of second stage of labour and a previous assisted vaginal birth or emergency CS.⁽³⁴⁾

Interestingly, this randomized control trial (RCT) showed that randomised women referred to an antenatal clinic for fear of child birth to receive either cognitive behavioural therapy or usual care. No difference was detected in the proportion of women who chose to deliver by CS, however fewer women in the intervention group who had vaginal births reported fear of pain in labour and had shorter labours.⁽³⁴⁾

From another view, and provided that the economic matter play a substantial role in taking voluntary decision, the cost of caesarean section was studied in comparison with alternative modes of birth from the economic point of view. The systematic review studies identified 49 studies containing primary costs and resource use data.⁽³⁷⁾ The review reported overall costs of birth from a range of sources; studies reporting primary economic data, data from one urban teaching hospital in the UK, and a survey of European maternity units of varying size. Generally, the range of costs reported for all types of birth was wide. The limitation of reporting the costs only for comparison is that it is assumed that women who have CS are similar to those who have vaginal birth, whereas there may be differences.⁽³⁸⁾ Not taking into account these differences may lead to overestimating the cost of CS. Different values were reported depending on the grade of staff attending the birth but these values did not change the costs significantly. The baseline spontaneous vaginal birth cost was estimated to be the lowest costly delivery, followed by assisted vaginal birth cost an, then emergency CS cost an additional. Emergency CS would be more if it followed an attempt at assisted vaginal birth. Cost analyses also need to take account of the longer term costs of alternative modes of birth.

A systematic review identified 19 studies that reported data on postnatal length of stay, but these only focus on the first week of the postnatal period.⁽³⁷⁾ For CS, the data ranged from 1.8 days to 8.3 days, which are clustered around 4–5 days. For vaginal birth, the stay ranged between 1.2 days to 5.1 days, 89% of women were discharged within three days following spontaneous vaginal birth and 12% in the same period following CS. Cost data on their own provide few insights since they do not take account of the effectiveness of each mode of birth. However, these more inclusive costs of care are closer to the opportunity cost of birth and can be used as the cost values in the assessment of the overall cost effectiveness (taking into account the benefits and harm of each mode of birth).⁽³⁸⁾

2. Material and methods:

This is a Cross sectional study both descriptive and analytic. This study was conducted in primary health care centers (PHCC) in the military hospital (Air base hospital in Dhahran), Eastern Province, Kingdom of Saudi Arabia (KSA). The study population consists of women attending the airbase PHCCs. There are two main female waiting areas for the clinics, one in the family medicine clinics side and the other one in the side of the two OB/GYN clinics. In addition there are two waiting rooms in the side of the pediatric clinic which are run by family physicians. **Inclusion criteria** (All women in the reproductive age 15-49 years old, Pregnant and non-pregnant Women. ,single ladies, ladies with infertility . **Exclusion criteri** (Women in postmenopausal age. ,Women who undergo emergency caesarian section.

The sample size was calculated as 306 and was modified by adding 30% of the estimated number to compensate for the non response and the incompleteness of the returned questionnaires. Ultimately, the total number of participants in our study and after exclusion of incomplete questionnaires accounted for 386 women. Data was collected using a pre designed self administered questionnaire (Appendix). Based on the objectives of the study, the questionnaire includes the following variables:-**Independent variables**:-Socio-demographic characteristics: Age, educational level, occupation, monthly income, marital status and number of children. **Dependent variables**:- Items and statements reflecting knowledge and believes of the women towards the elective Caesarean section. The researcher interviewed

the respondents in the described session, and she was available at the time of completing the questionnaire to explain the objectives of the study to the interviewees and clarify any possible ambiguity, in addition to ensure completeness and adequate feed back of the questionnaires. A pilot study was conducted in the same clinics to test the validity and reliability of the questionnaire. Feedback taken from the women after administering the questionnaire and questions modified according to the results of the pilot study.

Data were coded and checked for accuracy then entered into SPSS statistical software version 16 in a personal computer. Analysis was performed by using the same statistical software package. Data were presented using descriptive statistics in the form of frequencies and percentages for qualitative variables, and mean and standard deviation for quantitative variables. Qualitative variables were compared using chi-square test. logistic regression was conducted to test the predictors for the decision of the women to undergone elective Caesarean section and Odds ratio was used to quantify the strength of the tested predictors. P value less than 0.05 was considered significant throughout the study.

Study was approved by the Local Training Committee of the Saudi Board Program, Eastern Province. Approval for conducting the study was taken from the authority of Primary Health care center in Airbase Military Hospital in Dhahran. Women were invited to participate in the study after the objectives of the study had been explained to them and their consent was considered as a prerequisite for inclusion in the study. Anonymity of the questionnaire was adopted to ensure confidentiality of the response. Moreover, collected data would be kept confidentially and would not be used except for the study purpose.

3. Results

1. Characteristics of the study group:-

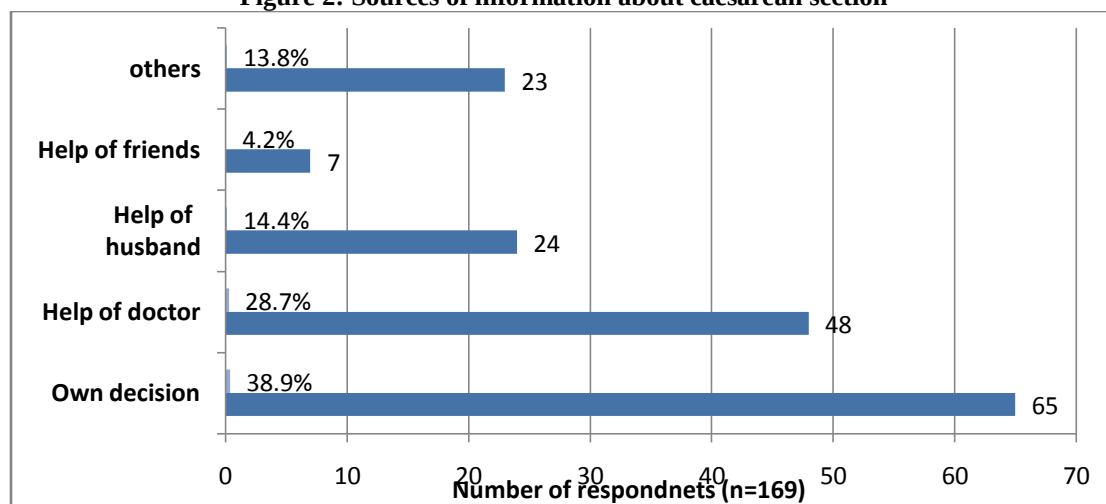
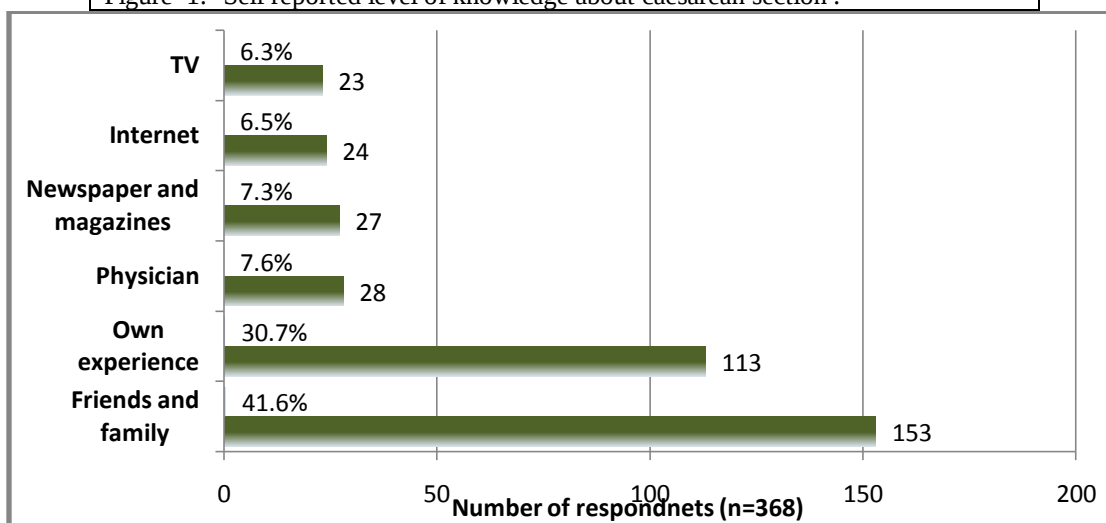
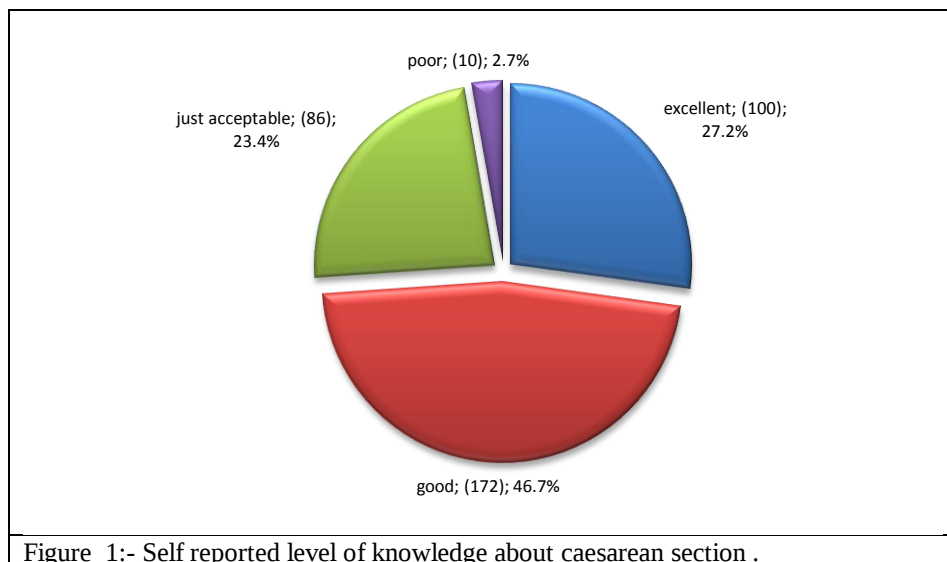
Table 1:- Socio-demographic characteristics of the study group (n=368).

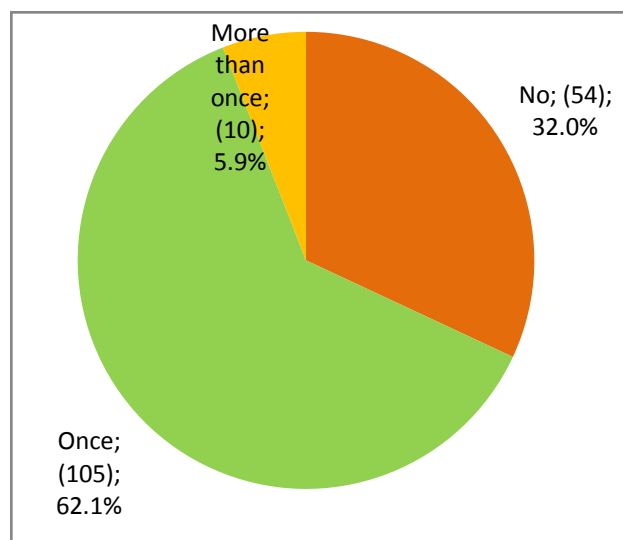
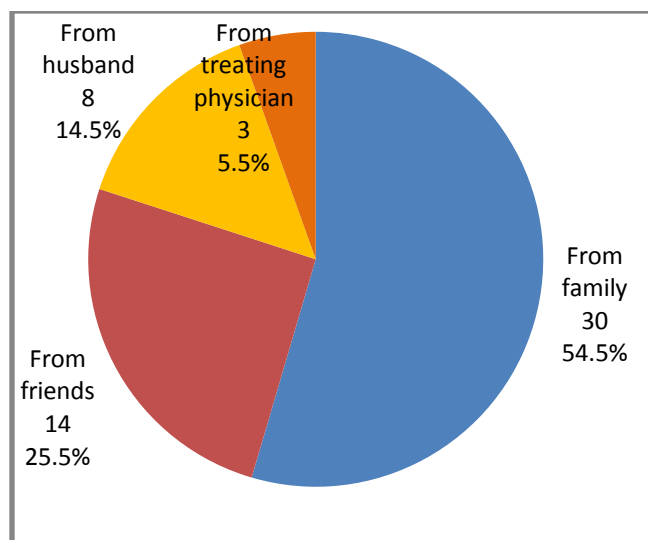
Characteristics	%
Age (years)	
15-29	41.6
30-44	46.7
45-55	11.7
Mean±SD	
Marital status	
Married	73.4
Single	22.3
Divorced or widowed	4.3
Monthly income	
<5000 SR	12.2
5000-10000 SR	64.9
>10000 SR	22.8
Education level	
Illiterate or read and write	2.4
Primary or intermediate	1.4
Secondary or Diploma	49.5
University or above	46.7
Working status	
Housewife	46.7
Teacher	11.4

Physician, engineer, pharmacist	4.1
Self employed	10.9
Student	8.2
Others	18.8

Table 2:- Obstetric characteristics and purposes of current visit (n=368).

Characteristics	%
Currently pregnant	
Yes	24.5
No	75.5
Have children	
Have less than six children	54.3
Have six or more children	16.6
Have no children.	29.1
Purpose of current visit	
Antenatal care	22.8
Postnatal care	8.2
Medical consultation	40.5
Accompanying a patient or child	27.7
Others	.8





Previous caesarean sections without medical reason

Number of children	Previous CS				X ²	P value
	Yes		No			
	No.	%	No.	%		
Less than six children	111	55.5%	89	44.5%	26.733	<0.001
Six or more children	56	91.8%	5	8.2%		

Table 3:- Agreement of the women with the factors favoring the choice of caesarean section (n=368).

Factors	No.*	%
Previous history of CS among relatives is encouraging.	281	76.4
Experience of the physician determines the choice.	274	74.5
CS is better because of less pain than NSVD.	253	68.8
CS is better when there is previous CS.	226	61.4
CS is easy (no efforts).	213	57.9
CS keeps marital relationship.	71	19.3

* Not totally exclusive

Table 4:- Beliefs of the women about the factors precluding the choice of Caesarean section for delivery (n=368).

Factors	No.*	%
CS has more complications for the mother.	277	75.3
NSVD is preferable because it is rewarding.	269	73.1
CS leaves unpleasant skin mark.	222	60.3
CS necessitates long hospital stay.	188	51.1
CS prevents breast feeding.	136	37.0
CS is expensive.	130	35.3
CS determines birth.	103	28.0
CS has more complications for the baby.	61	16.6

* Not totally exclusive

Table 5:- Agreement of the women about the statement that caesarean section is easier than vaginal delivery according to their characteristics.

Characteristics	CS is easier than NSVD		X ²	P value
	Yes	No		

	No.	%	No.	%		
Age group						
<30 years	82	53.6%	71	46.4%		
30-44 years	117	68.0%	55	32.0%	19.721	<0.001
45+ years	14	32.6%	29	67.4%		
Education level						
Less than university	124	63.3%	72	36.7%	4.988	0.026
University or above	89	51.7%	83	48.3%		
Monthly income						
<5000 SR	34	75.6%	11	24.4%		
5000-10000 SR	142	59.4%	97	40.6%	12.590	0.002
>10000 SR	37	44.0%	47	56.0%		
Working status						
Housewife	83	48.3%	89	51.7%	12.271	<0.001
Working	130	66.3%	66	33.7%		
Have previous CS						
YES	99	58.6%	70	41.4%	0.063	0.802
NO	114	57.3%	85	42.7%		
Have children						
YES	169	64.8%	92	35.2%	17.381	<0.001
NO	44	41.1%	63	58.9%		

Table 6:- Agreement of the women about the statement that caesarean section is less painful than vaginal delivery according to their characteristics.

According to their characteristics:						
Characteristics	CS is less painful than NSVD				X ²	P value
	Yes		No			
	No.	%	No.	%		
Age group						
<30 years	93	60.8%	60	39.2%	9.889	0.007
30-44 years	132	76.7%	40	23.3%		
45+ years	28	65.1%	15	34.9%		
Education level						
Less than university	125	63.8%	71	36.2%	4.830	0.028
University or above	128	74.4%	44	25.6%		
Monthly income						
<5000 SR	21	46.7%	24	53.3%	22.031	<0.001
5000-10000 SR	184	77.0%	55	23.0%		
>10000 SR	48	57.1%	36	42.9%		
Working status						
Housewife	131	76.2%	41	23.8%	8.260	0.004
Working	122	62.2%	74	37.8%		
Have previous CS						
YES	125	74.0%	44	26.0%	3.955	0.047
NO	128	64.3%	71	35.7%		
Have children						
YES	181	69.3%	80	30.7%	0.150	0.699
NO	72	67.3%	35	32.7%		

Table 7:- Agreement of the women about the statement that caesarean section is causes more complications to mothers than vaginal delivery according to their characteristics.

Characteristics	CS has more complications on mothers than NSVD		X ²	P value
	Yes	No		
	No.	%		

	No.	%	No.	%		
Age group						
<30 years	111	72.5%	42	27.5%	1.143	0.565
30-44 years	132	76.7%	40	23.3%		
45+ years	34	79.1%	9	20.9%		
Education level						
Less than university	144	73.5%	52	26.5%	0.732	0.392
University or above	133	77.3%	39	22.7%		
Monthly income						
<5000 SR	23	51.1%	22	48.9%	28.641	<0.001
5000-10000 SR	200	83.7%	39	16.3%		
>10000 SR	54	64.3%	30	35.7%		
Working status						
Housewife	144	83.7%	28	16.3%	12.386	<0.001
Working	133	67.9%	63	32.1%		
Have previous CS						
YES	133	78.7%	36	21.3%	1.971	0.160
NO	144	72.4%	55	27.6%		
Have children						
YES	202	77.4%	59	22.6%	2.173	0.140
NO	75	70.1%	32	29.9%		

Table 8:- Agreement of the women about the statement that caesarean section prevent breast feeding according to their characteristics.

CS prevent breast feeding						
Characteristics	Yes		No		X ²	P value
	No.	%	No.	%		
Age group						
<30 years	29	19.0%	124	81.0%	36.477	<0.001
30-44 years	86	50.0%	86	50.0%		
45+ years	21	48.8%	22	51.2%		
Education level						
Less than university	66	33.7%	130	66.3%	1.940	0.164
University or above	70	40.7%	102	59.3%		
Monthly income						
<5000 SR	10	22.2%	35	77.8%	5.499	0.064
5000-10000 SR	90	37.7%	149	62.3%		
>10000 SR	36	42.9%	48	57.1%		
Working status						
Housewife	52	30.2%	120	69.8%	6.267	0.012
Working	84	42.9%	112	57.1%		
Have previous CS						
YES	77	45.6%	92	54.4%	9.934	0.002
NO	59	29.6%	140	70.4%		
Have children						
YES	121	46.4%	140	53.6%	34.069	<0.001
NO	15	14.0%	92	86.0%		

Table 9:- Agreement about undergoing caesarean section in the future according to characteristics of the women.

Characteristics	Agreement to do CS				X ²	P value
	Yes		No			
	No.	%	No.	%		
Age group						

<30 years	33	21.6%	120	78.4%		
30-44 years	114	66.3%	58	33.7%	87.253	<0.001
45+ years	36	83.7%	7	16.3%		
Education level						
Less than university	68	34.7%	128	65.3%		
University or above	115	66.9%	57	33.1%	37.916	<0.001
Monthly income						
<5000 SR	13	28.9%	32	71.1%		
5000-10000 SR	123	51.5%	116	48.5%	9.407	0.009
>10000 SR	47	56.0%	37	44.0%		
Working status						
Housewife	80	46.5%	92	53.5%		
Working	103	52.6%	93	47.4%	1.337	0.248
Have previous CS						
YES	134	79.3%	35	20.7%		
NO	49	24.6%	150	75.4%	109.248	<0.001
Have children						
YES	165	63.2%	96	36.8%		
NO	18	16.8%	89	83.2%	65.345	<0.001

Table 10:- Best fit binary logistic model for factors predicting the decision in undergoing caesarean section.

	B	S.E.	Wald	df	P value	Exp(B)
Age group (reference age group <30 years)			32.188	2	0.000	
Age group(30-44 years)	2.066	0.57	13.123	1	0.000	7.895
Age group(45+ years)	0.555	0.547	1.03	1	0.31	1.742
Previous caesarean sections	2.034	0.278	53.404	1	0.000	3.222
Constant	0.164	0.492	0.111	1	0.739	1.178

Model Chi square: =156.280, p<0.001

Variables excluded by model (non-significant): education, income and having children

Discussion

The current study was conducted to elaborate the women's view, knowledge and believes towards elective caesarean section. Accordingly 368 women were selected randoly from the attendants to the primary health care centers in the airbase in Dhahran, and they were invited to fill up a questionnaire designed to achieve the onjectives of the study.

The results showed that 157 (58.4%) of the respondents reported that they had previous caesarean section, and two thirds of them 105 (68%) addressed that it were done without definite medical indication. On the same line and regarding the future perspectives of our respondents, it was found that half of the participating women (49.7%) indicated that they agree to undergone CS in the future. In the following part we will discuss the relevant factors that might play important role in formulating the decision of undergoing CS.

One of the factors that were assumed to have its impact on the knowledge, beliefs and making the decision of undergoing CS is the educational level. The current study showed that percentage of the participants who have low educational level (3.8%) is very close to the percentage of those who rated their level of knowledge about CS poor (2.7%), this coincidence might reflect the association between the education level and the level of knowledge about CS. This notion is supported by the findings of the study which was conducted in Nigeria, where it was stated that the education level of the attendants to the antenatal care clinics was one of the main predictor for their knowledge and consequently their decision on undergoing CS. ⁽⁴⁰⁾ The same was also observed in our study which showed that a significantly higher percentage of those who have higher education levels agree to undergone CS in the future. This notion was explained by Gilbert et al (2003) who addressed that illiterate women have usually inadequate information about the adverse perinatal outcome of vaginal delivery in some situations for example breech delivery due to inadequate or no antenatal care. On the other side, mothers who are better educated are more likely to having adequate antenatal care and being assigned to planned caesarean section by their obstetrician. ⁽⁴¹⁾

The role of the obstetrician or the physicians responsible for antenatal care as being source of information for our respondents was not valuable if compared to other sources reported by the interviewed women. It was found that only 7.6% of them who pointed out their physicians as the main source of their information about CS. Meanwhile, the main source of information for the majority of the women was either the family and friends or self experience. This remark can be viewed as a reflection of the relatively high percentage of previous caesarean section among our respondents (58.4%) that could provide a rough estimate for the real percentage among the whole community.

Awareness of the mothers about the capabilities and experience of the operating physicians seems to play an important role in their decision for undergoing caesarean section even when there are no medical indications for it. The majority of our respondents (74.5%) agreed that the experience of the operating physician favor their choice for elective caesarean section. Almost similar findings were found in a study conducted in Mexico to describe the reasons for increasing trends in caesarian sections (CS) associated with non-clinical factors, where they found that the size of the hospital and experience of the physicians are directly related with the incidence of CS.⁽⁴²⁾

Generally, the observed percentage of women who had previous sections in absence of medical education was comparable with what was found in a study conducted in England to compare caesarean on request in eight European countries, where it was reported that elective caesarean section conducted simply because it was 'her choice' was lowest in Spain (15%), France (19%) and Netherlands (22%); highest in Germany (75%) and UK (79%) and intermediate in the remaining countries.⁽⁴³⁾ The author attributed these variations to the differences in motivation, values and fears underlying a woman's request for elective caesarean delivery.

In Iceland it had been reported that the increased caesarean section rates over the past decades was not accompanied by significant changes in the perinatal mortality rates,⁽⁴⁴⁾ which means that CS don't cause additional fatal complications for the delivered babies. This concept showed itself in our study where it was noticed that only few minorities of the respondents (16.6%) believed that CS has more complications for the babies. Nevertheless, it is crucial to acquaint the mothers that CS is not totally free of complications for the babies.⁽⁴⁵⁾

In a study conducted in England to explore the outcome of caesarean section for non medical reason at term, it was reported that the benefits of planned caesarean section included greater safety for the baby, less pelvic floor trauma for the mother, avoidance of labour pain and convenience. The potential disadvantages, from observational studies, included increased risk of major morbidity or mortality for the mother, adverse psychological consequences, and problems in subsequent pregnancies, including uterine scar rupture and greater risk of stillbirth and neonatal morbidity.⁽⁴⁶⁾

Presumably, we could assume that neither the women in our study nor those in other settings who are asking for elective caesarean for non medical reasons are adequately informed about this list of advantages and disadvantages while they are taking the decision of undergoing caesarean section according to their wish. Otherwise, and if they are well acquainted about the full scope of outcome of CS, it is expected that the percentage of those who agree to undergone CS in absence of sensible medical reasons would decline significantly.

Despite the financial aspect is considered as one of the determinants for taking the decision of elective operative procedure as it was shown in a study conducted in Nigeria, where it was found that the main reason for refusal of the mothers to undergone caesarean section was related to economic reasons.⁽⁴⁷⁾ Nevertheless, only one third of our respondents (35.3%) indicated that they would refuse to undergone elective CS because it is expensive. This discrepancy could be explained by the differences in the economic status between our community and that in Nigeria, while in Nigeria, they reported that the majority of women are poor, the contrast was found among our respondents, where the great majority (87.8%) addressed that they have monthly income more than 5000 SR. This explanation ascertains the argument that the financial aspect is crucial for taking the decision of CS.

This assumption was typically clarified in our study where it was found that the percentages of those who agree to undergo CS in the future were increasing consistently with increased monthly income. This concept was asserted in Brazil where they consider themselves the world champion of caesareans, and they attributed this phenomenon partially to the increased level of development and socio-economic status.⁽⁴⁸⁾

Experiencing previous caesarean section seems to give the mothers full idea about the procedure and its consequences, and if we put into consideration the substantial improvement in the modern medicine and skills of the operating physicians that minimized the probabilities of occurrence of complications, therefore, the possibilities of getting safer delivery with less pain is higher for CS. Moreover, the presence of medical conditions that mandate the Cs, all these factors interact with each other and showed itself in the current study where it was found that those who had previous caesarean sections are more likely to agree for future caesarean sections than those who haven't. Similar findings were reported among Chinese women where it was reported that previous caesarean section is a main determinant for women preferences for elective caesarean section.⁽⁴⁹⁾ However, this concept should be taken cautiously, as it had been cited that CS is not the exclusive safe mean of delivery for those who had previous CS,

and still vaginal delivery is safe and should be considered provided that appropriate strict selection for eligible mothers is followed. ⁽⁵⁰⁾

In the same way, a study was conducted in England to explore women's experiences of decision making about mode of delivery after previous caesarean section. It showed that women were often making the decision depending on their personal experience without being provided with comprehensive and specific information about possible health risks and benefits, therefore, and according to their findings it was asserted that access to a decision aid is beneficial to women in this situation. ⁽⁵¹⁾

It was expected that age of the mother play an important role in her decision for undergoing elective caesarean sections, accordingly we used bivariate and multivariate analyses to assess the association between maternal age and her decision in the future for being delivered by CS. It was obvious that the older the women, the more likely she will prefer to choose CS as mode of delivery. In addition, it was found that previous CS is an independent predictor for taking this decision. These findings translate the basic scientific notions stated in a research conducted recently in USA where it was stated that as women increase in age, they are less likely to attempt vaginal birth after caesarean (VBAC) as they are more likely to have an unsuccessful labour trial, and this statement was reached after it had been proven through a retrospective analysis of data for 5 years revealed that attempts to have VBAC in older women (≥ 35 years) is more frequently associated with unsuccessful trial of labour and more related operative complications. ⁽⁵²⁾

Caesarean section is associated with significantly lower postpartum prolactin PRL, which is in line with the longer breastfeeding initiation and lower rate of successful breastfeeding. ⁽⁵³⁾ In a study conducted in China, it was found that mothers who had a caesarean section were less likely to be exclusively breastfeeding on discharge compared to vaginal delivery where the rates were 45% and 74.4% respectively. ⁽⁵⁴⁾ Accordingly, it was found in our study that the percentage of women who agree about the claim that CS prevents breastfeeding was significantly higher among those who had previous caesarean, because they are more likely experienced problems with breastfeeding after their previous caesarean section. Therefore, it had been recommended that necessary measures including promoting the secretion of postpartum PRL such as early contact, early sucking and analgesic method should be taken to improve the successful breastfeeding rate mothers. ^(53;54)

Reference List

- (1) Jhon AR. Cesarean child birth, prepared by American College of Surgeons, 633N. Saint Clair St. Chicago, IL 60611-3211. web site www.facs.org 2008.
- (2) Information on health line. History of cesarean section health article Reviewer: Douglas Levine, Gynecology Service/department of surgery, February 2006.. 2008.
Ref Type: Internet Communication
- (3) Adamson S. Ethical and Practical Consideration of Women Choosing Caesarean Section Deliveries without "Medical Indication" in Developing Countries. *Croat Med J* 2007;48:94-102.
- (4) Khashoggi T et al. Primary cesarean section in king khalid university hospital: indications and obstetric outcome. *Annals of Saudi medicine* 1995;15(6):585-8.
- (5) Thomas J PSRCoOaGCESU. The National Sentinel Caesarean Section Audit Report. London. RCOG Press 2001.
- (6) Green J. CVKJ. Great expectation: A prospective Study of women's expectations and experiences of childbirth. Cheshire (UK): Books for Midwives Press; 1998;5:114-5.
- (7) Sultan MH, Al-Nuaim L, Khashoggi T, Chowhury N, Kangave D, Adelusi B. Sequelae of repeat caesarean sections. *Int J Gynecol Obstet* 1996;52:126-32.
- (8) Paediatrician Attendance at Caesarean Sections. The Royal Australian College of Physicians. www.racp.edu.au/hpu/paed/caesarean/definitions.htm 2001.

- (9) Todman D. A history of caesarean section: from ancient world to the modern era. *Aust N Z J Obstet Gynaecol* 2007 Oct;47(5):357-61.
- (10) Belizan JM, Althabe F, Barros FC, Alexander S. Rates and implications of caesarean sections in Latin America: ecological study. *BMJ* 1999 Nov 27;319(7222):1397-400.
- (11) Nijhuis JG. [A request for caesarean section without a medical indication should ultimately be granted]. *Ned Tijdschr Geneesk* 2006 Apr 8;150(14):788.
- (12) Dosa L. Caesarean section delivery, an increasingly popular option. *Bull World Health Organ* 2001;79(12):1173.
- (13) NHS Centre for Reviews and Dissemination Reviewers. Impact of caesarean section on future pregnancy: a review of cohort studies. *Cochrane Database Syst Rev* 2002;1.
- (14) Thomas J, Paranjothy S. Royal College of Obstetricians and Gynaecologists Clinical Effectiveness Support Unit. The National Sentinel Caesarean Section Audit Report London: RCOG Press; 2001.
- (15) Flamm B QE. Caesarean section: Guidelines for Appropriate Utilization. New York (NY): Springer-Verlag; 1995.
- (16) Loverro G, Greco P, Vimercati A, Nicolardi V, Varcaccio-Garofalo G, Selvaggi L. Maternal complications associated with caesarean section. *J Perinat Med* 2001;20:322-6.
- (17) Lyndo-Rochelle M, Holt VL, Martin DP, Easterling TR. Association between Maternal Delivery and Maternal rehospitalization. *JAMA* 2000;283:2411-6.
- (18) Scottish Office Home Health Department Provision Of Maternity Services in Scotland. A policy review. Edinburgh (UK). HMSO 1993.
- (19) Graham WJ, Hundley V, McCheyne AL, Hall MH, Gurney E, Milne J. An investigation of womens involvement in the decision to deliver by caesarean delivery. *BJOG* 1999;106:213-20.
- (20) Mould T, Chong S, Spencer J, Gallivan S. Womens involvement with the decision preceding their caesarean section and their degree of satisfaction. *BJOG* 1996;103:1074-7.
- (21) Quinlivan J, Peterson R, Nichols C. Patient preference: The leading indication for elective caesarean section in public patients; Result of 2-year prospective audit. *Aust Obstet Gynecology* 1999;39:207-14.
- (22) Turnbull D, Wilkinson C, Yaser A, Carty V, Svigos J, Robinson J. Women's role and satisfaction in decision to have a caesarean section. *Med J Aust* 1999;170:580-3.
- (23) Kirin T. Elective caesarean section may suppress onset of PPHN. *Ob Gyn News* 200;35:13.
- (24) Madar J, Richmond S, Hey E. Hyaline membrane disease alter elective delivery at "term". *Acta Paediatr* 1999;88:1244-84.
- (25) Hemminki E, Merilainen J. Long-term effects of caesarean sections: Ectopic pregnancies and placental problems. *Am J Obstet Gynecology* 1996;174:1569-74.
- (26) Geary M, Fanagan M, Boylan P. Maternal satisfaction with management in labor and preference for mode of delivery. *J Perinat Med* 1997;25:433-9.
- (27) Chong E, Mongelli M. Attitudes of Singapore women toward caesarean and vaginal deliveries. *Int J Gynecol Obstetric* 2003;80:189-94.

-
- (28) Jurdi R, Khawaja M. Caesarean section rates in the Arab region: a cross-national study. Oxford University Press 2004;19(2):101-10.
- (29) Faas-Fehervary P, Schwarz K, Bauer L, Melchert F. Caesarean section on demand: influence of personal birth experience and working environment on attitude of German gynaecologists. *Eur J Obstet Gynecol Reprod Biol* 2005 Oct 1;122(2):162-6.
- (30) Gamble JA, Creedy DK. Women's request for a cesarean section: a critique of the literature. *Birth* 2000;27:256-63.
- (31) Hildingsson I, Radestad I, Rubertsson C, Waldenstrom U. Few women wish to be delivered by caesarean section. *BJOG* 2002;109:618-23.
- (32) Melender HL. Experiences of fears associated with pregnancy and childbirth: a study of 329 pregnant women. *Birth* 2002;29:101-11.
- (33) Saisto T, Ylikorkala O, Halmesmaki E. Factors associated with fear of delivery in second pregnancies. *Obstet Gynecol* 2001;94:649-82.
- (34) Saisto T, Salmela-Aro K, Nurmi JE, Kononen T, Halmesmaki E. A randomized controlled trial of intervention in fear of childbirth. *Obstet Gynecol* 2001;98:820-6.
- (35) Ryding EL, Wijma B, Wijma K, Rydhstrom H. Fear of childbirth during pregnancy may increase the risk of emergency cesarean section. *Acta Obstet Gynecol Scand* 2003;77:542-7.
- (36) Johnson R, Slade P. Does fear of childbirth during pregnancy predict emergency caesarean section? *BJOG* 2002;109:1213-21.
- (37) Henderson J, McCandlish R, Kumiega L, Petrou S. Systematic review of economic aspects of alternative modes of delivery. *BJOG* 2001;108:149-57.
- (38) Malkin JD. Not as much as you think: toward a truer estimate of the difference in direct medical costs between vaginal and cesarean deliveries. *Birth* 2002;28:208-9.
- (39) Lwanga S aLS. Sample size determination in health studies - A Practical Manual. World Health Organization, Geneva, 1991.
- (40) Aziken M, Omo-Aghoja L, Okonofua F. Perceptions and attitudes of pregnant women towards caesarean section in urban Nigeria. *Acta Obstet Gynecol Scand* 2007;86(1):42-7.
- (41) Gilbert WM et al. Vaginal versus cesarean delivery for breech presentation in California: a population-based study. *Obstetrics and gynecology* 2003;102:911-7.
- (42) Campero L, Hernandez B, Leyva A, Estrada F, Osborne J, Morales S. [Trends in caesarean sections associated with non-clinical factors in a Birthing Educational Center in Mexico City]. *Salud Publica Mex* 2007 Mar;49(2):118-25.
- (43) Habiba M, Kaminski M, Da FM, Marsal K, Bleker O, Librero J, et al. Caesarean section on request: a comparison of obstetricians' attitudes in eight European countries. *BJOG* 2006 Jun;113(6):647-56.
- (44) Jonsdottir G, Bjarnadottir RI, Geirsson RT, Smarason A. [No correlation between rates of caesarean section and perinatal mortality in Iceland]. *Laeknabladid* 2006 Mar;92(3):191-5.

- (45) Le RC, Boithias C, Castaigne-Meary V, l'Helias LF, Vial M, Frydman R. Caesarean before labour between 34 and 37 weeks: what are the risk factors of severe neonatal respiratory distress? *Eur J Obstet Gynecol Reprod Biol* 2006 Jul;127(1):56-60.
- (46) Lavender T, Hofmeyr GJ, Neilson JP, Kingdon C, Gyte GM. Caesarean section for non-medical reasons at term. *Cochrane Database Syst Rev* 2006;3:CD004660.
- (47) Chigbu CO, Iloabachie GC. The burden of caesarean section refusal in a developing country setting. *BJOG* 2007 Oct;114(10):1261-5.
- (48) Waniez P, Wurtz B, Brustlein V. [Abuse of caesarean delivery in Brazil: geographic dimensions of a medical aberration]. *Sante* 2006 Jan;16(1):21-31.
- (49) Pang SM, Leung DT, Leung TY, Lai CY, Lau TK, Chung TK. Determinants of preference for elective caesarean section in Hong Kong Chinese pregnant women. *Hong Kong Med J* 2007 Apr;13(2):100-5.
- (50) Kouam L, Nkemayim DC, Nsangou I, Tebeu PM, Doh AS. Vaginal delivery after caesarean section: a prospective study of 146 cases. *Zentralbl Gynakol* 2006 Aug;128(4):213-6.
- (51) Emmett CL, Shaw AR, Montgomery AA, Murphy DJ. Women's experience of decision making about mode of delivery after a previous caesarean section: the role of health professionals and information about health risks. *BJOG* 2006 Dec;113(12):1438-45.
- (52) Srinivas SK, Stamilio DM, Sammel MD, Stevens EJ, Peipert JF, Odibo AO, et al. Vaginal birth after caesarean delivery: does maternal age affect safety and success? *Paediatr Perinat Epidemiol* 2007 Mar;21(2):114-20.
- (53) Wang BS, Zhou LF, Zhu LP, Gao XL, Gao ES. [Prospective observational study on the effects of caesarean section on breastfeeding]. *Zhonghua Fu Chan Ke Za Zhi* 2006 Apr;41(4):246-8.
- (54) Qiu L, Binns C, Zhao Y, Lee A, Xie X. Breastfeeding following caesarean section in Zhejiang Province: public health implications. *Asia Pac J Public Health* 2008 Oct;20 Suppl:220-7.