



Research article

Factors influencing decision-making to accept elective caesarean section: A descriptive cross-sectional study

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ABSTRACT

Elective caesarean sections (CS) that have medical indications contribute to better pregnancy outcomes but women have to consent for the procedure to be performed within reasonable time limits for the desired outcomes. This study aimed to determine the factors that influence women's decision-making and the duration of the decision-making process to accept primary or repeat elective CS in a district hospital in Ghana.

A descriptive cross-sectional study was conducted among 163 purposively-sampled postnatal women in a hospital, who had experienced a CS. A questionnaire was used to collect data after the women gave their consent to participate. Data was analyzed using SPSS version 25.0 and presented using appropriate descriptive statistics. Chi-square test of independence was done to determine the association between any two categorical variables.

Major factors that influenced women's decision-making to accept elective CS were support from their husband/partner/relatives (39.3 %), their baby's life being at risk (24.5 %), history of previous CS and knowledge about the procedure (19.6 %). Age and parity had significant relationship with the influencing factors. However, age was only significant for the influence of husband/partner/relative in the decision-making to accept CS ($p < 0.01$). Age ($R^2 = 0.19$, $p < 0.001$); previous CS ($R^2 = 0.14$, $p < 0.001$) are the major predictors of the duration of the decision-making process.

Women's decision-making in consultation with relatives is the main influencer to accept elective caesarean section. There is the need to involve relatives during the antenatal care period in order for younger women in particular to be readily supported to make timely decisions to avoid preventable complications and allay client's fears.

1. Introduction

High rates of caesarean sections (CS) are being recorded [1, 2], and globally the rates increased from 6.7 % in 1990 to 19.1 % in 2014 with less developed countries having the largest increase from 6.3 % to 20.9 % [3]. In Ghana, an average of 12.8 % of deliveries is by CS [4]. The increasing rates are being driven by medical and non-medical factors [5]. Caesarean section is usually performed when vaginal birth is deemed hazardous either to the foetus or the mother [6]. Major clinical indications for this include foetal distress, failure to progress in labour, previous caesarean sections, breech presentation, among others [7]. Since healthcare delivery is profoundly affected by decisions made jointly by patients and their healthcare providers [8], it is important to consider what influences the decisions for CS.

Panda and colleagues [9] in a systematic review of 34 studies identified from the clinician's point of view that the clinician's personal beliefs, health care systems and clinician's characteristics which includes confidence, skills and convenience influence their decisions to recommend a CS. Some women still react with fear and shock when informed about the need for CS and this can affect their decision-making [10]. Findings from studies in Nigeria and Ghana indicate that some traditional women are unwilling to have CS because of the general belief that abdominal delivery is reproductive failure on their part, and for fear of mockery [11, 12, 13]. Lawani and colleagues [13] found in Nigeria that 5.5 % (24/344) of study participants at the antenatal clinic had declined CS due to perceptions of being seen by peers as reproductive failure. It is important that women receiving maternity care who need an elective CS are made aware of the benefits and risks so they can provide informed consent [6].

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The decision-making process for the woman involves a multiplicity of factors which include knowledge of the CS process, finances and family support [10, 14]. Osamor and Grady [15] in an integrative literature review of studies in Africa, South and Central Asia observed that women's decision-making regarding their healthcare seems not to be fully autonomous. Their low decision-making power is attributed to sociocultural and gender norms [16] and this can result in delays in accessing health care, which contributes to high maternal mortalities [17]. In some African cultures, family members including husband and mothers-in-law are entrusted with the decision-making regarding the woman's pregnancy and childbirth [18, 19, 20]. Litorp and colleagues [10] found in Tanzania that where relatives, community members and some community beliefs influence the decision-making process, this can frustrate health providers because of the possibility of CS refusal by the women. Delays in women's decision-making to accept an elective CS which has medical indications needs to be addressed since timely CS may prevent maternal deaths from haemorrhage and obstructed labour [21]. This study therefore aimed to determine the factors that influence women's decision-making and the duration of the decision-making process to accept primary or repeat elective CS when they were advised by the clinician of the need for the operation.

2. Materials and methods

A descriptive cross-sectional study was conducted in a district hospital in Ghana. The hospital provides services in Medicine, Surgery, Child health, Public health, Obstetrics and Gynaecology among others. The reproductive health services provided include antenatal care, labor and delivery, family planning, and adolescent friendly services. A total of 3210 deliveries were conducted in 2015, out of which 568 were CS [22]. At the time of the study, the hospital had a staff strength of 210, including 95 nurses, 14 midwives at the maternity unit, 2 full-time Obstetrician Gynaecologists [23]. The hospital receives referrals from private hospitals, health centres and maternity homes. Ethical approval for the study was obtained from an ethics committee of a university (CHRPE/AP/175/16). Administrative approval was given by the hospital management before the women were contacted. Ethical principles of informed consent, autonomy, privacy, confidentiality and voluntary participation were adhered to in conducting the study. Participants' data were accessible only to the researchers involved in the study.

The study population consisted of postnatal women who had an elective CS based on the doctor's advice at the District Hospital. Using an estimated 50 % of the 2015 CS of the hospital to be elective CS, a sample size of 105 was needed for the study period of 6 months [24]. Purposive sampling was used to contact 166 women on the postnatal ward who had elective CS at the hospital and 163 accepted to participate in the study. The inclusion criteria were women of any parity who were 18 years and above, had an elective CS and gave consent to participate. They should be able to read and write in English or be able to speak Twi. Exclusion criteria was those who had emergency CS or elective CS on maternal request.

A questionnaire with 36 items was developed by the researchers based on literature review of factors influencing health behavior, elective caesarean section; and the decision-making process [15, 25, 26]. The questionnaire covered respondents' demographic characteristics, previous CS for the multiparous women, their source of information and knowledge on CS, the indications for their elective CS, their initial reaction when they were informed of the need for the CS, duration and the factors which influenced their decision-making to accept the procedure. The questionnaire was developed in English, translated into Twi (the widely spoken local language in the research setting) and was translated back into English to ensure consistency in the use of terms and the interpretation of questions and responses. The content validity of the instrument was established by it being critically reviewed by midwives with academic and professional qualifications in the subject; and the reliability was done through pre-testing [27]. The questionnaire was

pretested in 20 women in another hospital which had similar characteristics like the study setting. Necessary revision of the instrument was done to eliminate any ambiguity in questions and responses to ensure respondents' understanding.

Postnatal women at the hospital were approached by two research assistants who were trained in administering the questionnaire in both English and Twi, having been involved in the back translation of the questionnaire. A participant information leaflet that detailed the purpose of the study, what was expected of participants, potential risks and benefits was explained to the women. Assurance was also given for confidentiality of the data and no personal identifier was linked to them. The questionnaires were administered to the 163 women who had given written or verbal consent to participate [28]. For those who could read and write, the questionnaire was self-administered. For those who could not do this on their own, research assistants translated the questions into the local language and asked the questions and the participants provided their responses which the research assistants documented on the questionnaire.

Data was managed and analyzed using the Statistical Package for Social Sciences (IBM SPSS Version 25.0, USA). Descriptive statistics of respondents' demographic and obstetric characteristics was conducted and presented using frequencies and percentages. Pearson Chi-square test was done to determine the association between the factors that facilitated the respondents' acceptance of CS and their demographic characteristics, as well as between the factors that facilitated the respondents' acceptance of CS and decision-making duration (days). Linear regression was also performed to determine the independent predictors of the decision-making time to accept the CS. Statistical significance was set at $p < 0.05$.

3. Results

3.1. Demographic and obstetric background of respondents

Table 1 presents the demographic and obstetric history of the respondents. Most of the respondents were in the age range of 21–25 years (40.5 %), with a few above 40 years (3.1 %). Most of them were married (77.3 %), had at least Junior High School education (82.2 %) and were in a gainful employment (74.2 %). For the majority, that was their first or second delivery and four of them had a parity between five and seven (Table 1). Out of the total respondents, 55 (33.7 %) had a previous CS and with the remaining 108 (66.3 %), it was their first CS. Forty-five (81.8 %) of the women who had previous CS had the current CS as their second whilst for 10 (18.2 %) it was their third CS.

3.2. Factors influencing acceptance of elective CS

Factors which influenced the respondents' decision to undergo the CS were assessed. The top five influencing factors were husband/partner/relatives, perceived risk to the baby's life, respondent's trust in God for safe delivery, not having an alternative to the CS, and respondent's experience with previous caesarean section (Table 2).

The association between demographic characteristics and the influencing factors to accept CS was assessed, with age and parity found as significant factors. However, age was only significant for the influence of husband/partner/relative ($p < 0.01$). Three influencing factors were significantly related to the parity of the respondents. These were those who accepted the CS because they felt they did not have an alternative to the CS ($p < 0.005$), because they had previous CS and were no longer afraid ($p < 0.001$) and those who consented because they felt their life was at risk ($p < 0.035$).

3.3. Factors which influenced the decision-making time

The respondents were requested to indicate how many days it took them to make a decision in accepting to undergo the CS after the doctor informed them of the need for the procedure. The decision-making

Table 1. Demographic and Obstetric background of respondents.

Variables	Category	N (%)
Age (years)	18–20	3 (1.8)
	21–25	66 (40.5)
	26–30	56 (34.4)
	31–35	28 (17.2)
	36–40	5 (3.1)
	Above 40	5 (3.1)
Marital Status	Single	6 (3.7)
	Co-habiting	31 (19.0)
	Married	126 (77.3)
Educational status	No Formal education	3 (1.8)
	Primary	26 (16.0)
	Junior High School	74 (45.4)
	Secondary	38 (23.3)
	Tertiary/Commercial	22 (13.5)
Occupation	Public sector	7 (4.3)
	Private sector	8 (4.9)
	Trader	64 (39.2)
	Artisan	42 (25.8)
	Unemployed	42 (25.8)
Religion	Christianity	95 (58.3)
	Islamic	68 (41.7)
Parity	1	50 (30.7)
	2	69 (42.3)
	3	36 (22.0)
	4	4 (2.5)
	>4	4 (2.5)
Indications for respondents' CS [†]	Big baby	33 (20.2)
	Abnormal presentation e.g. breech presentation	39 (23.9)
	Poor obstetric history e.g., pre-eclampsia	25 (15.3)
	Previous caesarean section	33 (20.2)
	Multiple gestation	12 (7.4)
	Post-date	21 (12.9)

[†] CS-Caesarean section.

period for the respondents varied between the same day and within one week. Eighty-four (51.5 %) made their decisions on the same day, and the rest decided between the next 1–3 days and 4 days–1 week. Factors that had significant influence on decision-making time were; previous CS and being informed of a repeat CS, trust in God for a safe procedure; and receiving support from husbands/partners/relatives (Table 3).

Respondents' background characteristics that influenced the duration of the decision-making process to accept the caesarean section were determined and they predicted the levels of variation in the duration of the decision as shown in Table 4. The differences were significantly related to the respondents' age, experience with previous CS and the parity. Women with tertiary education made the decision of accepting CS in a shorter period than those without formal education ($p < 0.05$). Similarly, traders and artisans ($p < 0.03$; $p < 0.01$) respectively had a higher chance of a shorter decision-making period compared to those who were unemployed.

4. Discussions

The aim of this study was to determine the factors that influence women's decision-making to accept elective CS and the duration of decision-making from the period they were informed of the need for the surgery. Fifty-five (33.7 %) of the respondents had previous CS and of those women, 20.2 % had repeat CS, a finding consistent with earlier researches [29], and the fore-knowledge of the possibility of a repeat CS

influenced their decision-making [30, 31]. This was however contrary to findings from Ghana by Afaya et al. [12] where respondents with previous CS were reluctant to have another CS because of fear of death and mockery, which contributed to women preferring vaginal delivery.

In the current study, most of the respondents depended on social support (husband/partner/relatives) and made their decisions between the first and seventh day with few making the decision the same day they were informed of the need for the elective CS. In developing countries especially, women's decision-making regarding their health is not fully autonomous and is influenced by socioeconomic background, culture, family and community involvement [15, 18, 32] and delays in timely decision-making can have detrimental effects. Delay in seeking care for obstetric conditions has been attributed to the underestimation of the gravity of the complications, cultural beliefs and customs [33]. Danna and colleagues' [34] reported from a review of several studies on delays in accessing maternal health services that in some low and middle-income countries, the decision to access care is often the prerogative of the husband or of the mother-in-law. Some women with CS express concerns about mobility limitations, and frustration at the need for assistance [35]. Others [36] found long-term postpartum fatigue and inadequate help from husbands as influencing factors in women with post-traumatic stress syndrome (PTSS) after emergency caesarean section. This could be because family members were not prepared for the situation since it was an emergency. Family support is reassuring and the lack of it can have detrimental effects during the postnatal period. An elective CS provides a good opportunity for health professionals to prepare relatives for their role before and during the postnatal period.

The respondent's age and parity were significantly related to the factors that influenced the respondents' decision to accept the CS and the decision-making time. Similarly, respondents' characteristics that made significant differences in the decision-making time for the CS were age (19 %), previous CS (14 %) and parity (8 %). Younger women were significantly influenced by family members whilst those having their delivery for the first time felt they had no alternative to the CS so had to accept it. Women's participation in decisions on their healthcare increases with increase in their age, with the husband and mother-in-law being more influential in decision-making for teens and young adults as compared to older women in the utilization of maternal healthcare services [37, 38]. Additionally studies have documented that some women may not be convinced of the need for CS but had to accept it [10, 39] and the cues to this action include advice from health care professionals, relatives and friends [40] hence family support is important in making this critical decision. Having a previous CS and being informed and educated by health professionals prepares women and reduces their fears. Yilmaz and colleagues [41] found that 36.2 % of their study participants who had previous CS for their last birth were well informed about CS and this helped to significantly prepare them to accept the procedure. This reiterates the need for health professionals to have a targeted education for the different categories of women based on their background characteristics. There is also the need to intensify their

Table 2. Factors that influenced respondents' decision to accept caesarean section.

Influencing Factors	Frequency (N)	Percentage (%)
My husband/partner/relatives encouraged me	64	39.3 %
My baby's life was at risk	40	24.5
I trusted God for safe delivery	34	20.9
I do not have an alternative to the CS	33	20.2
I had previous CS and was no longer afraid	32	19.6
The Health professional's education	25	15.3
My life was at risk	25	15.3
I had previous CS and was informed I will have CS again	17	10.4

[†] CS-Caesarean section.

Table 3. Relationship between decision-making time and factors influencing acceptance of CS.

Influencing Factors		Decision-making time (Days)			χ^2	P-value
		Same day	1–3 days	4 days–1 week		
My husband/partner/relatives encouraged me	Yes	13	40	11	42.53	0.001**
	No	71	25	3		
I do not have an alternative to the † CS	Yes	16	12	5	2.28	0.32
	No	68	53	9		
I trusted God for safe delivery	Yes	8	23	3	14.85	0.001**
	No	76	42	11		
Because I had previous CS and was no longer afraid	Yes	29	2	1	24.48	0.001**
	No	55	63	13		
Because I had previous CS and was informed I will have CS again	Yes	16	0	1	14.41	0.001**
	No	68	65	13		
The Health professional's education helped me	Yes	17	8	0	4.55	0.103
	No	67	57	14		
My life was at risk	Yes	10	14	1	3.41	0.182
	No	74	51	13		
My baby's life was at risk	Yes	19	18	3	0.59	0.745
	No	65	47	11		

NB: **p < 0.001.

† CS-Caesarean section.

Table 4. Respondents' background characteristics as predictors of decision-making time (days) to accept caesarean section.

Variables	Category	Unstandardized coefficient (B)	Standard error	Df	R ²	P-value
Age (years)	Constant (18–20)	1.00	0.19	4	0.19	0.001**
	21–25	0.83	0.19			0.001**
	26–30	0.27	0.07			0.001**
	31–35	0.12	0.05			0.023*
	Above 35	0.06	0.04			0.142
Education	Constant (Tertiary)	1.73	0.10	3	0.05	0.06
	SHS	-0.06	0.06			0.32
	Basic	-0.31	0.16			0.06
	No formal	-0.10	0.04			0.02*
Parity	Constant (Parity 1)	1.78	0.09	4	0.08	0.02*
	2	-0.13	0.06			0.03*
	3	-0.14	0.05			0.01*
	4	-0.13	0.08			0.11
	Above 4	-0.04	0.07			0.50
Occupation	Constant (Unemployed)	1.81	0.10	4	0.05	0.07
	Civil servant	-0.24	0.26			0.36
	Private sector	-0.22	0.12			0.08
	Trader	-0.09	0.04			0.03*
	Artisan	-0.10	0.04			0.01*
Previous †CS	Constant (No previous CS)	1.74	0.06	1	0.14	0.001**
	Had previous CS	-0.50	0.100			

**p < 0.001, *p < 0.05.

† CS-Caesarean section.

education on the procedure together with reassurances; and involve significant others/relatives early in the process to enhance the woman's social support, especially for younger women.

A strength of this study is the adequate sample size used, indicating it was sufficiently powered and lends support to the findings which can be replicated in similar settings. Additionally, it elicits the key factors that influence women to make decisions in a timely manner to accept elective CS. This will prevent complications and reduce maternal mortality associated with delayed decision-making. The study however had limitations such as the use of only one health facility and a third of the respondents had previous CS which had effect on their decision-making

time and factors that influenced this hence should be noted when generalizing the findings. Further research is needed to develop social support systems for women who will have elective caesarean section.

5. Conclusion

A previous caesarean section, the perceived risk associated with pregnancy and having family support are major factors that influence women to accept elective CS. Most women in this study in the absence of a previous CS will make decisions within a week's duration based on consultation with relatives. This can affect the outcome of the pregnancy

if the decision is not timely made. There is the need to involve relatives at the time when information is given about CS in order for women to be readily supported to make the decision for elective CS early to avoid any complications and allay their fears. This will afford families the time to plan for the needed support for the woman and enhance the woman's postnatal experience.

Declarations

Author contribution statement

Victoria Bam: Conceived and designed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Alberta Yemotsoo Lomotey: Conceived and designed the experiments; Analyzed and interpreted the data; Wrote the paper.

Abigail Kusi-Amponsah Diji: Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

Hayford Isaac Budu: Analyzed and interpreted the data; Wrote the paper.

Dorothy Bamfo-Ennin and Georgina Mireku: Conceived and designed the experiments; Performed the experiments.

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Data availability statement

Data will be made available on request.

Declaration of interests statement

The authors declare no conflict of interest.

Additional information

No additional information is available for this paper.

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