



Socio-demographic-related Factors Associated with Types of Cesarean Sections among Mothers

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Abstract: This study aimed to investigate the socio-demographic-related factors associated with types of cesarean sections among mothers in Karbala city/Iraq. The descriptive analytical study was conducted among two types of caesarian section (elective and emergency) in Gynecology and Obstetrics Hospital in Karbala Governorate for the period of October 1st 2023 to February 20th 2024. The current research is centered on a cohort of mothers who have undergone caesarean sections, utilizing a non-probability sampling methodology. The study encompasses a total of 270 mothers. Data were collected through interviews and analyzed by applying descriptive and inferential statistical analysis. The findings indicate 80.7% of mothers aged over 20, 83% with an education, and 83.4% unemployed. Monthly income was sufficient for 77.8%. Body mass index (BMI) showed 70.7% with a normal BMI and 29.3% classified as obese. The research found a significant correlation between maternal age and elective caesarean section, with mothers under 20 having a higher likelihood [OR=5.983; 95%CI; p=.000]. Education level also played a role, with uneducated mothers having a twenty times greater likelihood of elective caesarean section [OR=20.477; 95%CI; p=.000]. The research highlights the crucial stance of maternal age the likelihood of elective caesarean section delivery, particularly among mothers under 20 and the uneducated mothers having a higher chance. Policy makers and healthcare providers should be involved in creating intervention and education programs that can enhance pregnant women's decision-making on maternal healthcare.

Keywords: Socio-demographic Factors, Cesarean Sections, Types Cesarean Sections

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Introduction

Cesarean sections (CS) are on the increase in present-day obstetric practice, and rates of CS differ between regions [1]. The decision-making process about the exact type of cesarean section that should be chosen for a specific mother is a very complex and multidimensional process that is based on medical, social, and demographic factors [2]. The number of cesarean sections has seen a dramatic rise globally, having also been previously a medical emergency only. The global rate of cesarean section delivery has doubled from 6.7% in 1990 to 21.1% in 2015, according to the World Health Organization (WHO) [3, 4]; this has sparked concerns of overuse and the associated health implications for both mother and the child. Cesarean section rates were reported to differ in Iraq at a regional

level and through urban-rural divides [5]. Among the factors that promote the Cesarean section include medical reasons, maternal request, access to health facilities, and influence of health professionals.

Medical reasons and socio-demographical factors play a role in the decision of choosing between elective and emergency cesarean sections. Despite the fact that medical indications such as fetal distress or maternal complications are important aspects in the decision making, socio-demographic factors including maternal age, education, socioeconomic status and parity are of great importance in the overall decision [7,8]. The maternal age is one of the leading socio-demographic factors that is linked with cesarean section types [9]. Research has shown that younger women have an increased probability of cesarean sections, which may be because of a higher prevalence of medical conditions or maternal preferences for planned deliveries [10, 11]. The educational background and socioeconomic status of mothers has a great influence on the type of cesarean section they have. Studies have shown that women with low education levels and socioeconomic status are more likely to choose a cesarean section as an elective, and factors such as improved health literacy and increased access to healthcare resources often drive this decision [12]. Knowledge of the social and demographic-related factors of different types of cesarean sections is paramount to the development of more targeted interventions aimed at the promotion of ideal maternal health outcomes. Therefore, this study aimed to investigate the socio-demographic-related factors associated with types of cesarean sections among mothers in Karbala city/ Iraq.

Materials and Methods

Study Design

The descriptive analytical study was conducted among two types of caesarian section (elective and emergency) for the period of October 1st 2023 to February 20th 2024.

Study Setting and Participants

The current research is centered on a cohort of mothers who have undergone caesarean sections, utilizing a non-probability sampling methodology. The study encompasses a total of 270 mothers receiving care at the Gynecology and Obstetrics Hospital in Karbala Governorate.

Study Instruments

Data for this study were gathered through a comprehensive questionnaire that delved into various demographic factors, including the age of mothers, their educational background, occupation, monthly income, as well as weight and height. This information was meticulously compiled for two distinct groups: mothers who experienced elective caesarean sections and those who underwent emergency procedures.

Data Collection

The researcher interviewed the participants who undergo emergency or elective caesarian section, explained the instructions, answered their questions regarding the form, urged them to participate and thanked them for the cooperation. The interview techniques was used on individual bases, and each interview (15-20) minutes after taking the important steps that must be included in the study design.

Statistical Analysis

Statistic analysis was carried out by IBM SPSS 20.0 software. There was ranking of variables with mean and standard deviations used to describe continuous variables thoroughly by statistics. For group comparison analysis, The odds ratio (OR) is a measure of association between an exposure and an outcome. It is commonly used in elective and emergency groups. The level of significance of 0.05 was considered for all statistical analyses.

Results and Discussion

Table 1. Socio-Demographic Characteristics

<i>Characteristics</i>	<i>Characteristics</i>	<i>N</i>	<i>%</i>
<i>Age/ years</i>	<i><20</i>	52	19.3
	<i>>20</i>	218	80.7
<i>Education level</i>	<i>Uneducated</i>	46	17.0
	<i>Educated</i>	224	83.0
<i>Occupation</i>	<i>Employed</i>	42	15.6
	<i>Unemployed</i>	228	84.4
<i>Monthly income</i>	<i>Insufficient</i>	60	22.2
	<i>Sufficient</i>	210	77.8
<i>BMI</i>	<i>Normal</i>	191	70.7
	<i>Obese</i>	79	29.3

N. Number; %= Percentage

The table is a conceptualization of the socio-demographic characteristics of the study participants, which includes the frequencies and percentages in focus. In the ongoing research of our centre, which is concentrated on caesarean section, the majority of the 270 mothers, that is 80.7%, are above the age of 20, while the smaller part, 19.3%, is below this age limit. As far as educational backgrounds are concerned, the data illustrates clearly a certain tendency with 83% of the sample being educated and the 17% of the sample being uneducated. Occupational status has indicated that a large portion of the population were unemployed, to the extent of 83.4%, as compared to the 15.6% who were employed. In terms of monthly income, the existing research reports a generally satisfactory financial situation among participants, with 77.8% of them stating that they are content and 22.2% stating that they are not. In regards to body mass index (BMI), the most common (70.7%) were of normal BMI, while the others (29.3%) were obese.

Table 2. Socio-demographic-related Factors Associated with Types of Caesarean Sections among Mothers

Factors	Class	Type of C/s		Total	OR (CI 95%)	Sig.
		Elective	Urgent			
Age/ years	<20	40	12	52	5.983	.000
		76.9%	23.1%	100.0%		
	>20	78	140	218		
		35.8%	64.2%	100.0%		
Education level	Uneducated	42	4	46	20.477	.000
		91.3%	8.7%	100.0%		
	Educated	76	148	224		
		33.9%	66.1%	100.0%		
Occupation	Employed	18	24	42	0.014	.904
		42.9%	57.1%	100.0%		
	Unemployed	100	128	228		
		43.9%	56.1%	100.0%		
Monthly income	Insufficient	26	34	60	0.981	.948
		43.3%	56.7%	100.0%		
	Sufficient	92	118	210		
		43.8%	56.2%	100.0%		
BMI	Normal	82	109	191	0.899	.691
		42.9%	57.1%	100.0%		
	Obese	36	43	79		
		45.6%	54.4%	100.0%		

OR= Odds Ratio; CI= Confidence Interval; Sig.= Significant Level

The research findings indicate a significant relationship between maternal age and the likelihood of elective caesarean section delivery. Specifically, mothers under the age of 20 demonstrate a higher propensity for elective caesarean sections compared to those aged 20 or older [OR= 5.983; 95%CI; p= .000]. Additionally, the study reveals a noteworthy relationship between education level and the types of caesarean section. Notably, an uneducated mother exhibits a substantially greater likelihood of giving birth via elective caesarean section, being twenty times more at risk compared to an educated mother [OR= 20.477; 95%CI; p= .000].

Discussion

The socio-demographic conditions of the study participants have a vital meaning in understanding the development of caesarean section prevalence. The major participants in our current study (270 mothers) were above the age of 20, as 80.7% of them were, highlighting that most women who undergo caesarean sections are in the adult age group. This result is consistent with the findings of a previous research, which indicate a higher probability of the caesarean section as the mother gets older [10]. It is likely that the cause would be related to issues like mother's health or medical advice for later in life.

The other considerable part of the socio-demographic profile is the education background. There is a significant pattern, as 83% of participants said they have a background in education, while 17% of them indicated they are uneducated. This enables the education in maternal health decisions to become of importance and may influence awareness and decision-making processes that deal with delivery methods [13]. Collateral, the educational background of the individual is another factor that can highly influence his or her decision-making processes, specifically in regard to maternal health. Educated people can be more competent in critical evaluations of medical information, considering potential risks and benefits, and in participating in the dialogues on healthcare with the professionals. This is in sharp contrast to people who have no formal education who will find it a bit challenging to understand the complex healthcare information and make good choices [14].

Socio-economic environment around caesarean sections is an important factor influencing occupational stratification. The research proffers a shocking disparity where 83.4% of participants are unemployed and only 15.6% are employed. The disparity of this nature highlights the possible effects of socio-economic issues on the healthcare accessibility and the decision-making processes. Another prominent study purported the

existence of relationship between employment and selectivity of caesarean section, thus suggesting that being an employee may help one have informed decisions on their delivery methods [15].

Monthly incomes with good socio-economic balance enhance the analysis, showing the socio-economic landscape of the study participants. The statistics indicate that 77.8% of mothers spelt out that they could earn enough money to provide for their families, which is an encouraging sign of economic stability. Nevertheless, the shortage of 22.2% still facing financial limitations suggests a vulnerable group of people at the bottom of the economic ladder. Such economic inequalities may demonstrate powerful consequences for healthcare decision-making, as people with limited financial resources may fatally face accessing certain medical treatments. Nonetheless, such constraints can be evident in the decision of delivery methods which can consequently be detrimental to the maternal and infant health outlook [16].

A BMI (body mass index) is a fair health measure in regards to caesarean sections. Three fourth of participants (70.7%) presented normal BMI, while the remaining 29.3% were obese. This is consistent with what is published in the past, which shows that the possibility of caesarean sections increases among obese women due to the co-morbid health risks [17].

The observed association between maternal age and the probability of elective caesarean section delivery highlighted in the findings can be considered as a significant factor of maternal healthcare management. The study finds a statistically significant relation between the younger maternal age and a higher chance of choosing an elective caesarean section. The study found that the odds ratios (OR) reported in it were 5.983, which means that women under the age of 20 are five times more likely to select elective caesarean sections than women 20 years and older. The results of this study are in line with previous researches studies that examined the factors determining the choice of delivery methods by various age group of mothers [18, 19].

Several factors that may be responsible for the higher likelihood of elective caesarean sections among women of 20 years old and below may exist. Young mothers may face socio-economic, cultural and psychological factors, which are unique to them and influence their choices related to childbearing [20, 21]. Hence, the findings of the research are consistent with the general debates on the growing rate of elective caesarean sections all over the world and its effect on maternal and neonatal health outcomes.

The understanding of the reasons why the younger moms prefer caesarean sections to normal labor is critical for the development of specific interventions and support systems.

The results of the study provide a number of important clues concerning maternal age and the chances of elective caesarean section delivery. The increased risks, which are found in mothers, who are under 20, is a call for special attention to the factors that shape childbirth decisions in this age group. Moreover, additional research is needed in order to understand the underlying reasons for this relation and to create better strategies for improving women's and newborn's health outcomes.

It is observed the relationship between the education level of women and the types of caesarean section, reveal the complex interplay between the socioeconomic variables, and the choice of maternal healthcare. The observation that women with no education are by far the largest group of mothers who go for elective caesarean sections is a cause for concern. The association is statistically significant and robust as shown by the odds ratio (OR) of 20.477 (95% CI) [22, 23].

The large difference in the risk of non-emergency caesarean section between a mother who is uneducated and a mother who is educated suggests the possibility of inequality in health literacy, access to information, or decision making autonomy. It can be argued that more educated mothers might have the knowledge of the risks and benefits of different modes of delivery thus become better informed to make choices. This supports existing literature focusing on the impact of education on health-related behavior [24, 25].

The study's findings also invoke the need for a more encompassing society-wide evaluation of the broader societal implications of such gaps. Caesarean sections, though, are elective and may be medically indicated but are still associated with more healthcare costs and potential long-term health implications for both mother and child [26]. Identifying the determinants of a higher secondary Caesarean section among mothers with low education is essential for developing specific interventions and educational programs that will improve maternal healthcare decision making among the vulnerable population.

Although the strong association in the study is a significant point, it is fundamental to recognize the possibility of confounding factors that can affect the relationship between education level and caesarean section types [27-29]. Social status, cultural beliefs, and healthcare availability may be among the factors that bring about the observed differences. More detailed

studies on these variables might help obtain a more comprehensive view of the issues involved.

The study finding of a strong association between the educational level and the probability of choice caesarean sections calls for a comprehensive approach toward the elimination of disparities in health care. Through the identification and the elimination of the influencing factors of the maternal healthcare choices, policy makers and health care providers can help to ensure equitable access to the information and smart decision-making in a variety of populations.

Conclusion

The research highlights the crucial stance of maternal age the likelihood of elective caesarean section delivery, particularly among mothers under 20 and the uneducated mothers having a higher chance. Policy makers and healthcare providers should be involved in creating intervention and education programs that can enhance pregnant women's decision-making on maternal healthcare.

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