

## PREVALENCE AND ATTITUDE OF WOMEN REGARDING CESAREAN SECTION IN DUHOK CITY-KURDISTAN REGION

JINAN NORI HASAN, MBChB, FICOG\*  
AVEEN MUNIB MAHMOUD, MBChB, HDGO, MSc UG\*\*  
LAYLA AREF HAJI, MBChB, CABOG\*\*\*

*Submitted ..... December 2022; accepted ..... March 2023*

### ABSTRACT

**Background:** The decision of pregnancy delivery mode is important for both mother and fetus health. Although the advancement in surgical approach of cesarean section, the cesarean section has a negative impact on mothers and fetuses health.

**Objective:** To assess the rate of cesarean section in a sample of women in Duhok city and their attitudes toward cesarean section.

**Methodology:** Present study was a descriptive cross sectional that carried out in Obstetrical & Gynecological Clinics of Maternity Hospital, Primary Health Care Centers, Internally Displaced and Refugee Camps and Private Obstetrics Clinics at Duhok city-Kurdistan region/Iraq through duration period of one year from first of November, 2021, to 31st of October, 2022 on sample of four hundred pregnant women. The decision of previous cesarean section for studied women was done by Senior Obstetrician & Gynecologist according to different reasons (clinical or non-clinical).

**Results:** The history of previous cesarean section was positive in 39.8% of pregnant women, with a common frequency of one cesarean section (58.5%). Most pregnant women perceived that normal delivery is better, while 9% perceived that cesarean section is better. In the same way, 87% of pregnant women preferred normal delivery, while 13% preferred cesarean section. Only 20% of pregnant women believed that cesarean section is the normal way of delivery, while 68% of them thought that mother with a history of cesarean section has a normal delivery in the future. However, 79% of pregnant women believed that mother had a risk of death during cesarean section.

**Conclusions:** The cesarean section rate in Duhok city is higher than acceptable recommended rate, although the positive attitude of pregnant women toward normal vaginal delivery.

**Duhok Med J 2023; 18 (1): 8-20**

**Keywords:** Attitude, Delivery mode, Cesarean section.

The cesarean section (CS) is defined as delivery of a fetus by surgical incision of the uterine wall after the 28th week of pregnancy. Historically, the CS was implemented sporadically for pregnant women in the 20th century to save both

mothers and fetuses<sup>1</sup>. CS is the prevalent obstetrical surgical procedure all over the world [1]. According to the World Health Organization (WHO), the annual CS rate of 15% is acceptable among pregnant women in each country of the world. Till now, no

<https://doi.org/10.31386/dmj.2024.18.1.2>

\* Assist. Prof., Department of Public Health, College of Technical and Medical Techniques, Duhok Poly-technique University, Duhok, Kurdistan Region, Iraq

\*\* Assistant lecturer, Department of Clinical Pharmacy, College of Pharmacy, University of Duhok, Duhok, Kurdistan Region, Iraq.

\*\*\* Duhok Maternity Hospital, Duhok, Kurdistan Region, Iraq.

Corresponding author: phone number: 009647504505929 Email: jinan,nori@dpu.edu.krd,

scientific evidence has proven the advantages of CS for women or newborns in situations that are not in need for surgical intervention<sup>2</sup>. Despite this finding, elective cesarean section rates under women request are obviously increased globally<sup>2-4</sup>. In general, the global cesarean section annual rate is showing 4.4% increase is each year this annual increase in CS rate was the second highest among pregnant women of Asian countries<sup>5</sup>. The WHO revealed that annual CS rate of 19% and more among pregnant women in each country should be avoided as possible to prevent high rates of fetal and maternal morbidity and mortality<sup>6</sup>. Moreover, the high annual rates of unnecessary CS lead to poor outcomes at woman level, family level and national level in regard to women's health, health costs and national health system resources<sup>5, 7</sup>.

Regarding physicians, the clinical indications of cesarean section should be considered in taking the decision of cesarean section. Nowadays, there was an increasing for non-clinical factors which unfortunately responsible in higher rates of unnecessary CS<sup>8</sup>. The common reported non-clinical factors that affect the physicians' decision were lower fees of vaginal delivery, legal responsibility of obstructed vaginal labor and women's insistence to perform the cesarean section<sup>9</sup>. Regarding pregnant women, they preferred caesarean section as they considered the vaginal delivery as more painful and risky choice, without taking in consideration the poor outcomes of unnecessary cesarean sections<sup>10</sup>. Additionally, high educational level and better economic status of pregnant women are related to are more likely to high request for caesarean section<sup>11, 12</sup>. Inversely, the illiteracy and low economic status of pregnant women are linked to poor

knowledge regarding disadvantages of caesarean section procedures<sup>13</sup> that is regarded as significant barrier to be involved in decision making regarding selecting birth mode<sup>10</sup>. For that, the health care providers especially the physicians are responsible in making decision of birth modes in low-income societies<sup>9, 10</sup>.

The physicians' decision regarding delivery mode is also various and depending mainly on the location of health facility. Physicians working in health public facility must followed the national guidelines regarding caesarean indications which mostly based on clinical factors, while physicians working in private facilities are highly thinking on cost-benefit in addition of fear from legal responsibility<sup>14, 15</sup>. This physician's attitude might be responsible for increasing caesarean rates especially in private health facilities. Generally, it was shown that the caesarean rate was 72% in the private sector, compared to 31% in the public sector<sup>16</sup>.

In Iraq, the annual cesarean section rate is higher than the recommended rate. It was shown that overall cesarean section rate for all births in Iraq was 24.4% in 2012, while in the Iraqi Kurdistan Region was (25.4%) and in the Center/South of Iraq was (24.3%). The public hospitals cesarean section rate in Iraq was 29.3%, while the cesarean section rate in Iraqi private hospitals was (77.9%). The annual CS rate in Iraq showed a rapid upward trend from years 2008 to 2012, especially in Kurdistan Region<sup>17</sup>. One Iraqi study showed that majority of primiparous women preferred the vaginal delivery, while the remaining women preferred the cesarean section due to lack of knowledge or fear from vaginal delivery<sup>18</sup>. Another study conducted in Erbil city-Kurdistan region revealed that women's decision-making on the mode of

delivery is dependable on their family and friends' opinions with little role of health care providers<sup>19</sup>. Elevated rates of unnecessary cesarean section rates in Iraq generally and Kurdistan region specifically and due to scarcity of literatures discussing this issue in Duhok city, this study was conducted which aimed to assess the rate of cesarean section in a sample of women in Duhok city and their attitudes toward cesarean section.

## METHODOLOGY

The current study design was a descriptive cross sectional that carried out in Obstetrical & Gynecological Clinics of Maternity Hospital, Primary Health Care Centers, Internally Displaced and Refugee Camps and Private Obstetrics Clinics at Duhok city-Kurdistan region/Iraq through duration period of one year from first of November, 2021, to 31st of October, 2022. The study population was all pregnant women attended the Obstetrical & Gynecological Clinics for antenatal care during study duration. Married pregnant women with age range (15-45 years) and history of previous labour were the inclusion criteria. Exclusion criteria were younger age women, primigravidity and refuse to participate in the study. The ethical considerations were implemented according Helsinki Declaration regarding ethical approval of Health authorities; oral informed consent and confidentiality of data. A convenient sample of four hundred pregnant women was selected after eligibility to inclusion and exclusion criteria.

The data were collected by the researcher from pregnant women directly and fulfilled in a prepared questionnaire. The questionnaire was designed by the researcher. The questionnaire included the

following information: general characteristics of pregnant women (age, educational level, occupation, residence, gravidity history, parity history and blood groups), Cesarean section history (Cesarean section, frequency of cesarean section, complications during caesarean section, willing of women to repeat CS, permission of CS and husband support during CS) and attitude of pregnant women regarding cesarean section (What mode of delivery is better?, What mode of delivery you prefer?, Is caesarean section a normal way of delivery?, Will a mother with history of caesarean section have normal delivery?, Does the mother have risk of death in caesarean section procedure?). The decision of previous cesarean section for studied women was done by Senior Obstetrician & Gynecologist according to different reasons (clinical or non-clinical). The data collected were analyzed statistically by Statistical Package of Social Sciences software version<sup>22</sup>. Chi square and Fishers exact tests were applied for categorical variables accordingly. Level of significance (p value) was regarded statistically significant if it was 0.05 or less.

## RESULTS

This study included four hundred pregnant women presented with mean age of (27.8 years) and range of 15-45 years; 15% of women were in age group <20 years, 48.8% of them were in age group 20-29 years, 29% of them were in age group 30-39 years and 7.2% of them were in age group of 40 years and more. The educational level was distributed as followings; illiteracy (31%), primary (15.5%), secondary (13%), high school (19%), college (7.5%) and postgraduate (14%). Employed women represented 50.8% of them, while unemployment was represented by 49.8%

of them. The residence of pregnant women was urban for 50.8% of them rural for 9% of them and in camps for 40.2% of them. Gravidity history included history of 2-4 gravida for 67.5% of women and 5 and more gravid for 32.5% of them. Parity history of pregnant women included history of 1-4 para in 77% of them and 5 and more para in 23% of them. Blood groups of pregnant women were commonly A+ve (29.5%), O+ve (27.5%), B+ve (14.8%), AB+ve (10.3%), etc. (Table 1).

**Table 1: General characteristics of pregnant women.**

Variable	No.	%
<b>Age groups</b>		
<20 years	60	15.0
20-29 years	195	48.8
30-39 years	116	29.0
40-45 years	29	7.2
<b>Educational level</b>		
Illiteracy	124	31.0
Primary	62	15.5
Secondary	52	13.0
High-School	76	19.0
College	30	7.5
Postgraduate	56	14.0
<b>Occupation</b>		
Employed	201	50.3
Non-employed	199	49.8
<b>Residence</b>		
Urban	203	50.8
Rural	36	9.0
Camp	161	40.2
<b>Gravidity</b>		
2-4 gravida	270	67.5
≥5 gravida	130	32.5
<b>Parity</b>		
1-4 para	308	77.0
≥5 para	92	23.0

Variable	No.	%
<b>Blood groups</b>		
A+	118	29.5
B+	59	14.8
AB+	41	10.3
O+	110	27.5
A-	34	8.5
B-	17	4.3
AB-	3	0.8
O-	18	4.5
<b>Total</b>	<b>400</b>	<b>100.0</b>

The history of previous cesarean section was positive in 39.8% of pregnant women, with common frequency of one cesarean section (58.5%). Complications of CS were reported in 35.8% of pregnant women; however, 52.2% of them has willing to repeat CS. The permission of CS was done mainly by husband (59.6%) and very good support for women during cesarean section was from husband (83.6%). (Table 2 and Figure 1)

**Table 2: Cesarean section history**

Variable	No.	%
<b>Cesarean section</b>		
Yes	159	39.8
No	241	60.2
<b>Total</b>	<b>400</b>	<b>100.0</b>
<b>Frequency of cesarean sections</b>		
One CS	93	58.5
Two CSs	50	31.4
≥3 CSs	16	10.1
<b>Complications during caesarean section</b>		
Yes	57	35.8
No	102	64.2
<b>Willing of women to repeat CS</b>		
Yes	83	52.2

Variable	No.	%
No	76	47.8
<b>Permission of CS</b>		
Doctor	50	31.1
Husband	96	59.6
Woman	15	9.3

Variable	No.	%
<b>Husband support during CS</b>		
Very Good	133	83.6
Good	25	15.8
Bad	1	0.6
<b>Total</b>	<b>159</b>	<b>100.0</b>

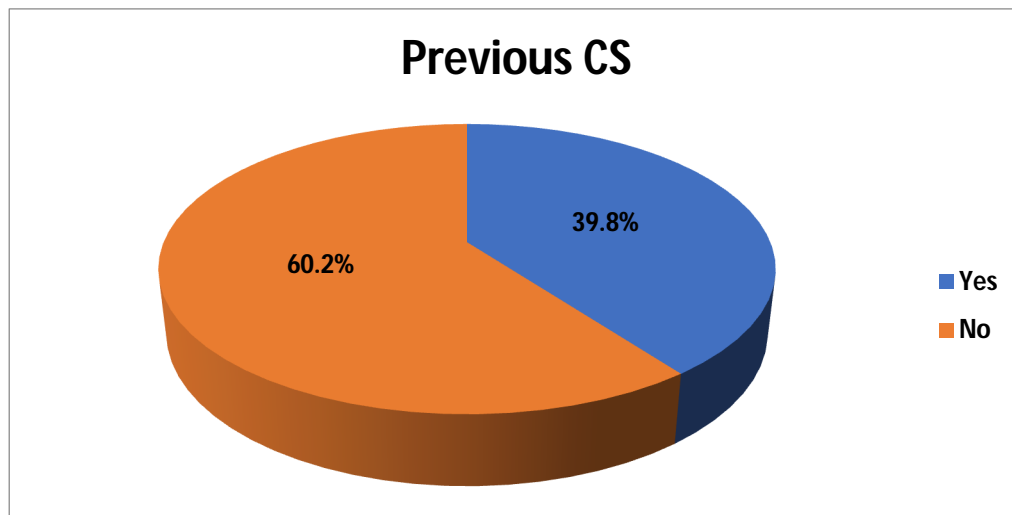


Figure 1: History of previous cesarean section.

Most of pregnant women perceived that normal delivery is better, while 9% of them perceived that CS is better. In same way, 87% of pregnant women preferred normal delivery, while 13% preferred CS. Only 20% of pregnant women believed that cesarean section is normal way of delivery, while 68% of them thought that mother with history of CS has a normal delivery in future. However, 79% of pregnant women believed that mother had risk of death during CS. (Table 3 and Figure 2).

Table 3: Attitude of pregnant women regarding cesarean section.

Variable	No.	%
<b>What mode of delivery is better?</b>		
Normally	364	91.0
Caesarean	36	9.0

Variable	No.	%
<b>What mode of delivery you prefer?</b>		
Normally	348	87.0
Caesarean	52	13.0
<b>Is caesarean section a normal way of</b>		
Yes	80	20.0
No	320	80.0
<b>Will a mother with history of caesarean</b>		
Yes	272	68.0
No	128	32.0
<b>Does the mother have risk of death in</b>		
Yes	316	79.0
No	84	21.0
<b>Total</b>	<b>400</b>	<b>100.0</b>

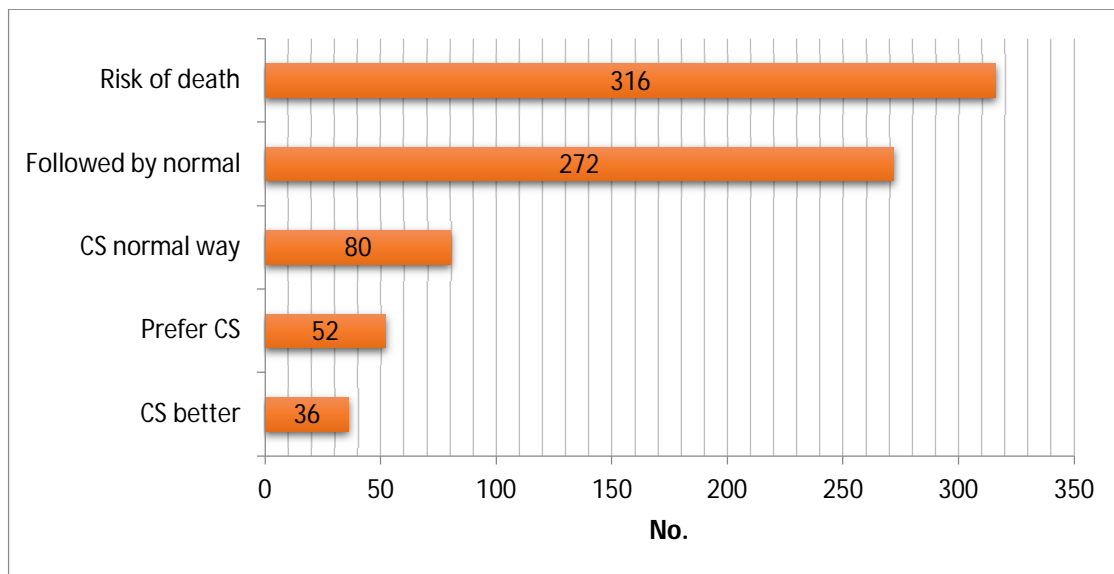


Figure 2: Attitudes of pregnant women regarding CS.

No significant differences were observed between pregnant women with positive CS history and pregnant women with negative CS history regarding age ( $p=0.1$ ), occupation ( $p=0.3$ ), residence ( $p=0.06$ ), gravidity ( $p=0.7$ ) and blood groups ( $p=0.06$ ). There was a significant association between high educational level of pregnant women and positive CS history ( $p=0.03$ ). A highly significant association was observed between high parity history and positive CS history ( $p<0.001$ ). (Table 4).

A highly significant association was observed between perception of CS as better delivery mode and positive CS history ( $p<0.001$ ). There was a highly significant association between preference of CS by women and positive CS history ( $p<0.001$ ). No significant differences were observed between pregnant women with positive CS history and pregnant women with negative CS history regarding normality of CS ( $p=0.06$ ) and CS risk of death ( $p=0.15$ ). There was a significant association between believe of normal delivery following CS in future by pregnant women and positive CS history ( $p=0.005$ ). (Table 5)

Table 4: Distribution of general characteristics according to history of CS.

Variable	Previous CS				P
	Yes		No		
	No	%	No	%	
<b>Age</b>					0.1
<20 years	17	10.	43	17.	NS
20-29	76	47.	11	49.	
30-39	55	34.	61	25.	
40-45	11	6.9	18	7.5	
<b>Educational level</b>					0.03
Illiteracy	39	24.	85	35.	S
Primary	25	15.	37	15.	
Secondary	23	14.	29	12.	
High-	27	17.	49	20.	
College	13	8.2	17	7.1	
Postgradua	32	20.	24	10.	
<b>Occupation</b>					0.3
Employed	75	47.	12	52.	NS
Non-	84	52.	11	47.	
<b>Residence</b>					0.06
Urban	92	57.	11	46.	NS
Rural	12	7.5	24	10.	
Camp	55	34.	10	44.	
<b>Gravidity</b>					0.7
2-4	10	68.	16	66.	NS
≥5 gravida	50	31.	80	33.	

Variable	Previous CS				P
	Yes		No		
	No	%	No	%	
Parity					<0.001 <sup>S</sup>
1-4 para	85	53.	22	92.	
≥5 para	74	46.	18	7.5	
Blood groups					0.06 <sup>---</sup>
A+	54	34.	64	26.	
B+	23	14.	36	14.	
AB+	17	10.	24	10.	
O+	44	27.	66	27.	
A-	5	3.1	29	12.	
B-	7	4.4	10	4.1	
AB-	0	.0	3	1.2	
O-	9	5.7	9	3.7	

*S=Significant, NS=Not significant.*

**Table 5: Distribution of women's attitude regarding CS according to history of CS.**

Variable	Previous CS				P
	Yes		No		
	No.	%	No.	%	
What mode of delivery is better?					<0.001 <sup>S</sup>
Normally	129	81.1	235	97.5	
Caesarean	30	18.9	6	2.5	
What mode of delivery you prefer?					<0.001 <sup>S</sup>
Normally	124	78.0	224	92.9	
Caesarean	35	22.0	17	7.1	
Is caesarean section a normal way of					0.06 <sup>NS</sup>
Yes	39	24.5	41	17.0	
No	120	75.5	200	83.0	
Will a mother with history of					0.005 <sup>S</sup>
Yes	121	76.1	151	62.7	
No	38	23.9	90	37.3	
Does the mother have risk of death					0.15 <sup>NS</sup>
Yes	120	75.5	196	81.3	
No	39	24.5	45	18.7	

*S=Significant, NS=Not significant.*

## DISCUSSION

Despite advancement in surgical techniques and fair safety of cesarean section that lead in decreasing overall rates of surgical complications in last decade, the cesarean section is still accompanied with higher rates of maternal and fetal complications<sup>20</sup>. The current study showed that 39.8% of studied pregnant women had positive history of cesarean section. This CS rate is higher than CS rate of (35.77%) reported by Ahmed and Ghanim cross sectional study<sup>21</sup> in Erbil city/Kurdistan region-Iraq. Our study CS rate of (39.8%) is also higher than results of Mohammed cross sectional analytic study<sup>22</sup> in Sulaimani on 790 pregnant women which reported that 34.6% of them undergone cesarean section. In Mosul city/Northern Iraq, a cross sectional study conducted by Fadhl et al<sup>23</sup> which found that rate of cesarean section in Al-Batool public hospital was (36.7%). However, our study rate of cesarean section was lower than results of Muhei and Jamil cross sectional study 24 in Baghdad city/Iraq which reported that rate of cesarean section was (47.1%). In general, our study cesarean section rate is much higher than recommended rate for each country by WHO of (10-15%)<sup>3</sup>. A mixed methods-systematic review study in Iran by Shirzad et al<sup>25</sup> stated that prevalence of cesarean section among Iranian women was (40.7%). In Turkey, a study carried out by Eyi and Mollamahmutoglu<sup>26</sup> reported cesarean section incidence rate of (49.8%). In United States of America, the incidence of cesarean section rate was increased from (20.7%) at 1996 to (32%) at 2015<sup>27</sup>. Other than population growth, many factors play a major role in increasing cesarean section rates which including clinical factors and non-clinical factors 28. Our study showed that rate of primary cesarean section was

(58.5%). This rate of primary CS is higher than results of Fahad and Makhdoom retrospective study<sup>29</sup> in United Arabian Emirate which found that rate of primary CS was (15.4%). Our study found that 35.8% of women undergone cesarean section had postoperative complications. This finding is higher than results of Akther et al<sup>30</sup> cross sectional study in Bangladesh which found that cesarean section lead to complications in (19%) of women undergone the surgical procedure. Unfortunately, 52.2% of studied women are willing to repeat the CS. Similarly. Gholami et al<sup>31</sup> cross sectional study in Iran reported that (80.5%) of women undergone CS preferred to repeat the CS and main causes of this preference were high educational level and physician advice.

The present study found that most of pregnant women perceived that normal delivery is better, while 9% of them perceived that CS is better and 87% of pregnant women preferred normal delivery, while 13% preferred CS. These findings are in agreement with results of Nasir and Amir study<sup>32</sup> study in Baghdad/Iraq which revealed that most of pregnant women had good knowledge and positive attitude toward normal vaginal delivery, while the minority had positive attitude toward cesarean section. In current study, only 20% of pregnant women believed that cesarean section is normal way of delivery, while 68% of them thought that mother with history of CS has a normal delivery in future and 79% of pregnant women believed that mother had risk of death during CS. These findings are better than results of Ahmed study 19 in Erbil city-Kurdistan region/Iraq which found lower knowledge of women and positive attitude toward cesarean section and their decision regarding birth mode was dependable on

family and physicians preferences. This difference might be attributed to discrepancy in educational level, socioeconomic status and culture between women in two studies. Generally, although to positive attitude toward normal vaginal delivery in present study, the studied women selected the cesarean section as mode of birth which indicated the role of physicians in decision making for delivery mode in Duhok city. These findings are consistent with results of Al-asadi et al<sup>18</sup> study in Baghdad city/Iraq which documented high preference of CS among pregnant women that influenced by physician advice.

In present study, there was a significant association between high educational level of pregnant women and positive CS history ( $p=0.03$ ). This finding coincides with results of Ardic study 33 in Turkey which found that preference of cesarean section as birth mode was higher among highly educated pregnant women. Our study showed a highly significant association between high parity history and positive CS history ( $p<0.001$ ). This finding is parallel to results of Al Rowaily et al 34 retrospective cohort study in Saudi Arabia which stated that high gravidity and parity history of pregnant women are the common predictors of high CS rate.

In current study, a highly significant association was observed between perception of CS as better delivery mode and positive CS history ( $p<0.001$ ). This finding is close to results of Naa Gandau et al 35 study in Ghana which reported that high perception of safety for CS among pregnant women which lead to higher CS rates. Our study found a highly significant association between preference of CS by women and positive CS history ( $p<0.001$ ). This finding is similar to results of Panda et

al 36 review study in Ireland which stated that preference of women for cesarean section is regarded as the main reason for high cesarean section rate. In present study, there was a significant association between believe of normal delivery following CS in future by pregnant women and positive CS history ( $p=0.005$ ). These findings are close to results of Ashimi et al 1 study in Nigeria which reported that sometime wrong knowledge of women regarding birth modes lead to wrong decision making and high CS rate.

In conclusion, the cesarean section rate in Duhok city is higher than acceptable recommended rate, although the positive attitude of pregnant women toward normal vaginal delivery. The common factors related to positive cesarean section history are high educational level, high parity history, perception of CS as better delivery mode, preference of CS by women and believe of normal delivery following CS in future by pregnant women. This study recommended the application of clinical guidelines of delivery mode in public and private hospitals, in addition to efforts for educating pregnant women for advantages and disadvantages of each birth mode during antenatal period. Moreover, further national multi-centers large sized studies on rate of CS must be supported.

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## بلاوبوونهوه و ههلوێستی ژنان سهبارته به نهشتهرگهري قهستهره له شاري دهوك-ههريمي كوردستان

### پوخته

**پێشینه:** بریاردان لهسهر شێوازی مندالبوون گرنگه بۆ تهنڤروستی دایک و کۆڕپهله. سههرای پێشکووتنی نهشتهرگهري له نهشتهرگهري قهستهره، قهستهره کاریگهري نهڕینی لهسهر تهنڤروستی دایک و کۆڕپهله ههیه.

**نامانج:** ههلسهنگاندنی رێژهی نهشتهرگهري قهستهره له نۆ نموونهیهک له ژنانی شاری دهوک و ههلوێستیان بهرامبهر به قهستهره.

میتۆدۆلۆژیا: لیکۆلینهوهکهی ئیستا بر گهییهکی وهسفکهر بوو که له کلینیکهکانی مندالبوون و ئافرهتان له نهخۆشخانهی مندالبوون، ناوهندهکانی چاودێری تهنڤروستی سههرتایی، کهمپهکانی ئاوارهکان و پهنا بهران، و کلینیکه تایبهتهکانی مندالبوون له شاری دهوک-ههريمي كوردستان/عێراق له ماوهی یهک سالدا ئهنجامدرا ماوهی له 1 ی تشرینی دووهمی 2021 تا 31 ی تشرینی یهکهمی 2022 لهسهر نمونهی چوار سهده ژنی دووگیان. بریاری ئهنجامدانی نهشتهرگهري قهستهرهی پێشوو لهو ژنانهی که لیکۆلینهوهیان لهسهر کراوه له لایهن پزیشکی مندالبوون-ژنان به پێی هۆکاری جیاوازی (کلینیکی یان ناکلینیکی) دراوه.

**دهرهناجمهکان:** میژووی نهشتهرگهري قهستهرهی پێشوو له 39.8% ی ژنانی دووگیاندا پۆز هتیف بووه، لهگهڵ یهک نهشتهرگهري قهستهره دووباره بوونهوهی باو (58.5%). زۆربهی ئافرهتانی دووگیان پێیان وایه له دایکبوونی سروشتی باشتره، لهکاتیکدا 9% پێیان وایه نهشتهرگهري قهستهره باشتره. به ههمان شێوه 87% ی ژنانی دووگیان مندالی سروشتیان پێ باشتره، لهکاتیکدا 13% یان به قهستهرمیان پێ باشتره. تهنها 20% ی ژنانی دووگیان پێیان وایه که نهشتهرگهري قهستهره رێگهی سروشتی مندالبوونه، لهکاتیکدا 68% یان پێیان وایه دایکێک که پێشینهی قهستهرمیی ههیهت له داهاتوودا به شێوهیهکی سروشتی مندالی دهیهت. بهلام 79% ی ژنانی دووگیان پێیان وایه که دایکهکه له کاتی نهشتهرگهري قهستهره مهترسی مردنی لهسهره.

**دهرهناجمهکان:** رێژهی قهستهره له شاری دهوک زیاتره له رێژهی پێشیارکراوی قبولکراو، سههرای ههلوێستی نهڕینی ژنانی دووگیان بهرامبهر به مندالبوونی سروشتی له رێگهی زییهوه.

## مدى انتشار واتجاهات النساء نحو الولادة القيصرية في دهوك، إقليم كردستان

### الخلاصة

**الخلفية:** إن قرار طريقة الولادة مهم لصحة الأم والجنين. على الرغم من التقدم الجراحي في العمليات القيصرية، إلا أن العملية القيصرية لها تأثير سلبي على صحة الأم والجنين.

**الهدف:** تقييم معدل الولادة القيصرية لدى عينة من النساء في مدينة دهوك واتجاهاتهن نحو الولادة القيصرية.

**المنهجية:** كانت الدراسة الحالية عبارة عن مقطع عرضي وصفي تم إجراؤه في عيادات أمراض النساء والولادة في مستشفى الولادة ومراكز الرعاية الصحية الأولية ومخيمات النازحين والملاجئين وعيادات التوليد الخاصة في مدينة دهوك- إقليم كردستان / العراق خلال فترة سنة واحدة من الأول من نوفمبر 2021 إلى 31 أكتوبر 2022 على عينة مكونة من أربع مائة امرأة حامل. تم اتخاذ القرار بإجراء العمليات القيصرية السابقة للنساء محل الدراسة من قبل طبيب أمراض النساء والتوليد وفقاً لأسباب مختلفة (سريرية أو غير سريرية).

**النتائج:** تاريخ الولادة القيصرية السابقة كان إيجابياً في 39.8% من النساء الحوامل، مع تكرار شائع لعملية قيصرية واحدة (58.5%). ترى معظم النساء الحوامل أن الولادة الطبيعية أفضل، بينما ترى 9% أن الولادة القيصرية أفضل. وبنفس الطريقة، فضلت 87% من النساء الحوامل الولادة الطبيعية، بينما فضلت 13% الولادة القيصرية. 20% فقط من النساء الحوامل يعتقدن أن الولادة القيصرية هي الطريقة الطبيعية للولادة، بينما 68% منهن يعتقدن أن الأم التي لديها تاريخ ولادة قيصرية ستلد طبيعياً في المستقبل. ومع ذلك، فإن 79% من النساء الحوامل يعتقدن أن الأم معرضة لخطر الوفاة أثناء العملية القيصرية.

**الاستنتاجات:** معدل الولادة القيصرية في مدينة دهوك أعلى من المعدل الموصى به المقبول، على الرغم من الموقف الإيجابي للنساء الحوامل تجاه الولادة المهبلية الطبيعية.