

## A PLURALITY OF FACTORS AND PREFERRED DELIVERY MODES AMONG PREGNANT WOMEN IN DUHOK CITY

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(Received: August 30, 2022 ; Accepted for Publication: December 13, 2022)

### ABSTRACT

**Background:** In many regions of the world, the rate of cesarean sections is increasing. In the absence of clear medical indications, an increase in women's requests for cesarean sections is cited as a potential reason. The study aimed to find out the factors that contribute to choosing the mode of delivery.

**Methods:** A cross-sectional descriptive study design was applied to 600 pregnant women who visited the Duhok Obstetrics and Gynecological Hospital in the Kurdistan region of Iraq from 1st October 2021 to 30th March 2022. A consecutive sampling method was used to select them. For data collection, a questionnaire was used that consisted of the women's socio-demographic information, obstetric data, and the factors influencing the choice of delivery mode. Descriptive data analysis was used to determine the sociodemographic and obstetrical characteristics, and the baby's, maternal, and social factors by frequency and percentage.

**Results:** The favorite mode of delivery was vaginal delivery (94.2%), and the common factors affecting the choice of vaginal delivery were "health of the newborn" (99.6%) as a baby factor, followed by "fewer complications" (98.7%) as a maternal factor. The common factors that affected their choosing Cesarean section were "fetal distress" (57.1%) as a baby factor, maternal factors "worry about tearing of the perineum" (97.1%), and "fear of labor pain" (94.2%). Family members and friends were the main sources of information about vaginal delivery (97.5%) and cesarean section (82.8%)

**Conclusion:** The prevalence of unnecessary cesarean sections can be decreased by increasing women's participation in childbirth education programs, and promoting and using new low-pain vaginal delivery techniques.

**KEYWORDS:** Mode of Delivery, Pregnant Women, Baby Factors, Maternal Factors, Social Factors.

### INTRODUCTION

To ensure survival, throughout pregnancy, childbirth, and the postpartum period, every woman has the right to the best possible care. Despite the fact that these deaths are preventable, almost a million women suffer prenatal complications annually, and more than half of them die (WHO, 2013).

The pregnant woman must choose between the two available delivery methods. This decision will be influenced by friends, the media, effective antenatal care, health professionals, and the stability between the mother's preferences, afraid of labor and delivery, its consequences to her child during labor, the potential dangers of a repetitive operating condition, as well as the uncertainty of

labor on the strength of the old scar (Yilmaz *et al.*, 2013).

In general, a cesarean section is indicated when the baby's or mother's life is in danger, unexpected events during labor necessitate the decision to have a cesarean section, including an abnormal fetal heart rate, fetal presentation, hydrocephalus or spina bifida, genital infection of the mother, multiple pregnancies, placental abruption or placenta previa, and umbilical cord prolapse (Ahmed *et al.*, 2013).

A prospective cohort study was conducted to assess the women's preferences and mode of delivery in public and private hospitals, indicating that whether or not they fear pain, they should remember that recovery is significantly more hurtful than vaginal birth. Furthermore, women who have a cesarean section will require assistance from relatives

during the newborn's first days of life, whether for daily tasks or newborn care. At the delivery time, both the future infant as well as the mother's well-being must be considered (Mazzoni *et al.*, 2016).

Due to the disadvantages of cesarean section compared to vaginal delivery (VD), including an increased risk of negative outcomes in subsequent pregnancies, delayed recovery for women, rising complications rates such as organs injury, infection, and death, as well as medical costs, many mothers continue to reject Cesarean section (CS) (Lumbiganon *et al.*, 2010).

In recent years, more cesarean deliveries have occurred due to technological advances and their incorporation into reproductive health care. The results are significantly decreased neonatal and maternal morbidity and morbidity also increased in the preferred mode of administration for mothers (Mone *et al.*, 2014).

A study was conducted to find out the trends and the changes in the CS rates in Iraq between 2011 and 2018 and determine the factors associated with increased rates. The CS rate in Iraq is significantly higher than the recommended rate. The rates are higher in the Kurdistan Region, while the whole country has witnessed a remarkable increasing trend from 2011 to 2018 (Shabila, 2021).

It makes sense to determine the factors that affected the decision to perform the mode of delivery in addition to identifying the main sources of information regarding delivery mode.

## METHODS

A cross-sectional descriptive study was applied to pregnant women who visited the Duhok Obstetrics and Gynecological Hospital in the Kurdistan region of Iraq. The study period started from 1<sup>st</sup> October 2021 to 30<sup>th</sup> March 2022.

The recruited women were all pregnant women aged 18–45 years old in the third trimester, primigravida or multigravida, not medical workers, did not have any complications indicating cesarean section after counseling the obstetrician and gynecologist and were willing to participate in the study.

### Sample size

In large populations, the sample size is calculated by using Cochran's formula to determine the sample size calculation. The Cochran formula is:

$$n_0 = \frac{Z^2 pq}{e^2},$$

According to the estimated population of the Duhok governorate in Iraqi Kurdistan in 2020, the Duhok governorate had a population of 1,648,611 (KRSO, 2015). Based on the Cochran formula, the Cochran sample size estimate for this study was 385 people. However, the author increased the sample size in order to obtain a more representative sample of the target population and to account for any missing data. A total of 600 women were interviewed to fulfill the questionnaire. A consecutive (purposive) sampling method was used according to the mentioned criteria.

A questionnaire format was prepared by the researcher after reviewing the related studies (Torloni *et al.*, 2013; Habib *et al.*, 2011; Ibtisam, 2018), and it was composed of three sections. The overall nine items of the first section included data relating to women's socio-demographic and obstetric information (age, occupation, level of education, residence, gravidity, previous mode of delivery, a favorite mode of delivery, and complications from the previous delivery, and Socioeconomic status (SES) was classified as low, moderate, and high according to (Omer & Al Hadithi, 2017). The second section lists the factors affecting the choice of each type of delivery, and it is divided into three parts. For VD, the baby's factors (4 items), the maternal factors (4 items), and the social factors (5 items). For CS, the baby's factors (7 items), the maternal factors (8 items), and the social factors (4 items) are assessed.

In order to determine the tool's validity, ten experts in maternal and community health were given access to it. They were instructed to assess the items' legibility, difficulty, and readability. Accordingly, the necessary modifications were made to the questionnaire. For reliability, Cronbach's alpha was estimated as the correlation coefficient of the internal consistency of the study's contents. It was estimated to be (0.7), confirming the test's dependability.

### Data collection and analysis:

Data were collected in the Obstetrics and Gynecology Hospital, where pregnant women are available (at the consultation clinic, waiting for an ultrasound, and at the antenatal unit). The women were interviewed directly (face-to-face) by using a structure-validated questionnaire. The information was gathered over three days while working in the hospital—three hours per day and about ten to thirteen women. The interview with

the woman lasted about ten minutes. The data were entered into a statistical package for social sciences (SPSS version 23 IBM). The method used to determine the outcome was a descriptive data analysis (frequency and percentage).

The permission was obtained with the ethical approval of the Duhok General Director of Health and the Ethical Committee of the College of Nursing at the University of Duhok. Oral consent was obtained from all participants before starting the interview.

## RESULTS

### 1. Socio-Demographic characteristics

A total of 600 pregnant women were interviewed. More than one-third of women (38.2%) aged 25–31 years, about (90.3%) were unemployed, (49.5%) living in urban areas, and (47.2%) of women had a moderate economic level, as noted in Table 1.

### 2. Obstetrical characteristics

More than half of women were multigravida. The common previous mode of delivery was vaginal delivery (46%); the favorite mode of delivery was VB (94.2%); more than two-thirds (69.2%) of women had no complications from the previous delivery, as noted in Table 2.

### 3. Distribution of Factors contributing to Choosing Vaginal Delivery

Nearly one hundred of the baby factors that affected the choice of vaginal delivery were "Health of the newborn", followed by "Fewer complications" (98.7%) as a maternal factor. In the response to social factors, "doing housekeeping as soon as possible" was reported as the main factor (91.1%) according to Table 3.

### 4. Distribution of Factors Contributing to Choosing Cesarean Section

One of the most common baby factors that affected their choosing CS was "fetal distress" (57.1%). In the maternal factors, "worry about tearing of the perineum" (97.1%) and "have fear of labor pain" (94.2%) were reported. "had a right to choose CS" in terms of social factors was (62.8%).

### 5. The source of information and mode of delivery

The main sources of information about vaginal delivery were family members and friends (97.5%), followed by previous birth experience (63.3%). Regarding CS, family members and friends more than two third (82.8%) were noted as the main sources of information as shown in Table 5.

## DISCUSSION

The decision of mode of delivery is explained as preferring either the vaginal or cesarean section delivery (Belizán, *et al.*, 2007). It's important for the pregnant woman to choose between the two modes of delivery. Some factors will affect this decision like friends, media, health professionals, effective antenatal, and fear of childbirth (Yilmaz, *et al.*, 2013)

The most commonly cited sources of information about vaginal delivery were family members or friends. In a mixed-methods study on factors that influence women's decisions about birth, with the view that women's decision-making about birth can affect the use of cesarean surgery, nearly three-quarters of respondents said women's best friends, family members, or work colleagues were helpful in determining the type of birth they desired (Regan, *et al.*, 2013).

Obstetricians were without a doubt the most influential factor in women's preferences, followed by family and friends. This highlights the significance of obstetricians in determining a woman's preferred mode of delivery (Torloni *et al.*, 2013).

The present study found that more than one-third of participants cited healthcare providers as a source for choosing vaginal delivery. Observations from a qualitative study by Fenwick indicate that even though the majority of women desired a vaginal delivery prior to actually having a cesarean section, plenty of others did feel that vaginal birth was risky and impossible to implement following their first cesarean section and noted that their doctor suggested a cesarean section as the best choice for them, thereby reinforcing their decisions; Surprisingly, husbands or partners haven't had much of an effect on how Italian women choose to have their babies. The researcher pointed out the importance of health centers as educators and trainers; centers have an important role in increasing awareness as well as positive pregnancy outcomes (Fenwick *et al.* (2006).

An analysis revealed that safety concerns, which heightened women's perceptions of the risks associated with childbirth, were the primary factors influencing decisions regarding childbirth (McCourt *et al.*, 2007; Weaver, 2004). Nearly one hundred women in the current study preferred vaginal delivery due to fewer complications and faster recovery. In agreement

with the researchers, Torloni *et al.* (2013) and Habib *et al.*, (2011) who found that the main reasons for preferring a vaginal delivery were not wanting to miss the first months of the baby's life, a shorter hospital stay, and a quicker postpartum recovery. The researcher indicated that the similarity of the study sample and the experience of previous childbirth modes affected their desire for the current pregnancy to be terminated vaginally.

The present study reported that more than half of the participants preferred CS due to fetal distress and previous CS being the primary cause. This result is consistent with the findings of the studies that carried out in the United Kingdom, Pakistan, and Iran (Riberio 2005; Ahmad & Mahboob, 2007; Moni *et al.*, 2007), in which they reported fetal distress followed by the history of C-section as the main medical reason, respectively. The researcher concluded that the frequency of cesarean sections is more affected by the factors of the previous delivery than by non-medical reasons.

The majority of participants of the present study preferred the cesarean section due to fear of labor pain as a maternal factor. The result agreed with a systematic review and meta-analysis to find out the prevalence and causes of cesarean section in Iran, indicating that women who are ready to undergo CS have a greater fear of labor pain (Azami-Aghdash *et al.*, 2014). The fear of pain and the ability to schedule the delivery with greater ease, in addition to the perception that it would be less traumatic for the baby, were the primary reasons for choosing a CS (Torloni *et al.*, 2013). The most notable way to reduce this delivery method is by reducing the pain, which is the primary reason for CS's popularity, and it's better to put more effort into planning classes for women who are more afraid of labor pain. This could be a good way to help them feel less afraid.

The finding of the current study revealed that a social factor influencing the choice of vaginal delivery, most pregnant women agreed with the freedom to choose vaginal delivery, as it is considered a right to have a positive pregnancy experience during the antenatal, intranatal, and postnatal periods. In a study conducted in Baghdad by Ibtisam (2018), more than half of the women reported that their choice was primarily influenced by their prior experience with the mode of delivery. In addition, 55.6% of them stated that their decision depended on that of their husband or family. While (44.3%) of

mothers chose their preferred method of delivery based on what family members or close friends told them. Because of the close customs and traditions in the society, the concept is similar to the current study.

Faced with many different factors that increase the probability of a cesarean section, some consideration should be given to reducing unneeded instances of this delivery mode, such as educating families, particularly pregnant women, about the advantages and disadvantages of various modes of delivery; encouraging women to overcome fears of labor pain through mass media and health care providers; promoting and utilizing new low-pain techniques of a vaginal birth; and empowering women's participation in childbearing programs.

## CONCLUSION

The majority of multiparous women interviewed for the research preferred vaginal delivery as a result of the previous type of delivery, while the women who preferred a cesarean section were due to fear of labor pain. Health education is playing an important role in raising awareness about vaginal delivery and increasing women's participation in programs that could be effective in lowering the rate of unnecessary cesarean sections.

## LIMITATIONS

The result cannot be generalized to all women in Duhok City because it was conducted in a government hospital only.

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## TABLES

**Table (1):** Distribution of women's socio-demographic characteristics

Items	No. (%)
<b>Age (years)</b>	
18-24	201 (33.5)
25-31	229 (38.2)
32-38	141 (23.5)
39-44	29 (4.8)
<b>Level of Education</b>	
Illiterate	106 (17.7)
Read and Write	76 (12.7)
Primary School Graduate	156 (26.0)
Intermediate School Graduate	103 (17.2)
High School Graduate	95 (15.8)
University Graduate & High Education	64 (10.7)
<b>Occupation</b>	
Unemployed	542 (90.3)
Employed	58 (9.7)
<b>Residency</b>	
Rural	212 (35.3)
Urban	297 (49.5)
Refugee	91 (15.2)
<b>Economic levels</b>	
Low	242 (40.3)
Moderate	283 (47.2)
High	75 (12.5)
<b>Total</b>	600 (100)

**Table (2):** Distribution of women's Obstetrical characteristics

Items	No. (%)
<b>Gravidity</b>	
Primigravida	185 (30.8)
Multigravida	341 (56.8)
Grand multi gravida	74 (12.3)
<b>Previous mode of delivery</b>	
No previous delivery	188 (31.3)
Vaginal delivery	276 (46.0)
Cesarean section	55 (9.2)
Vaginal delivery and Cesarean section	81 (13.5)
<b>Favorite mode of delivery</b>	
Vaginal delivery	565 (94.2)
Cesarean section	35 (5.8)
<b>Have complications from the previous delivery</b>	
No	415 (69.2)
Vaginal delivery	50 (8.3)
Cesarean section	135 (22.5)
<b>Total</b>	600 (100)

**Table (3):** Factors affecting the choice of vaginal delivery

<b>Fetal factors</b>	<b>No. (%)</b>
The health of the newborn	563 (99.6)
Birth trauma to the newborn	450 (79.6)
Respiratory trauma to the newborn	361 (63.8)
Fetal presentation	400 (70.7)
<b>Maternal factors</b>	<b>No. (%)</b>
Maternal health	552 (97.6)
Previous birth experience	498 (88.1)
Fewer complication	558 (98.7)
Faster recovery	555 (98.2)
<b>Social factors</b>	<b>No. (%)</b>
Lower cost	354 (62.6)
Better planning for maternity leave	430 (76.1)
Going back to work	232 (41.0)
Doing housekeeping as soon as possible	515 (91.1)
Have the right to choose	550 (97.3)
<b>Total</b>	<b>565 (100)</b>

**Table (4):** Factors affecting the choice of cesarean section

<b>Fetal factors</b>	<b>No. (%)</b>
Fetal distress	20 (57.1)
Birth trauma to the newborn	5 (14.2)
Respiratory trauma to the newborn	9 (25.7)
Fetal presentation	9 (25.7)
Meconium excretion	12 (34.2)
Large baby (macrosomia)	3 (8.5)
Multiple gestations	5 (14.2)
<b>Maternal factors</b>	<b>No. (%)</b>
Fear of labor pain	33 (94.2)
Previous C-section	20 (57.1)
Intention for tubal ligation	8 (22.8)
Fear of pelvic organ damages	18 (51.4)
History of infertility	6 (17.1)
Loss of previous pregnancy (recurrent abortion)	7 (20.0)

Worry about tearing of the perineum	34 (97.1)
Possible better sexual satisfaction	16 (45.7)
<b>Social factors</b>	<b>No. (%)</b>
Certainty about the timing of the delivery	9 (25.7)
Better planning for maternity leave	2 (5.7)
Having a personal home caregiver	2 (5.7)
Have the right to choose	22 (62.8)
<b>Total</b>	<b>35 (100)</b>

**Table (5):** The source of information and modes of delivery

<b>Items</b>	<b>Vaginal delivery No. (%)</b>	<b>Cesarean Section No. (%)</b>
Family members and Friends	551 (97.5)	26 (82.8)
Television/ books/ magazine	148 (26.1)	18 (51.4)
Mass media/ internet	191 (33.8)	23 (65.7)
Health care providers	229 (40.5)	3 (8.5)
Previous birth experience	358 (63.3)	22 (62.8)
<b>Total</b>	<b>565 (100)</b>	<b>35 (100)</b>