



Determinants of Primigravida Preference Regarding Mode of Delivery

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Abstract

Background: Preferring between a vaginal delivery and caesarean section is a matter of critical importance for Primigravida woman. It is crucial to comprehend the determinants that contribute to this preference. **Aim:** To assess the determinants of primigravida preference regarding mode of delivery. **Design:** Descriptive design was used. **Setting:** The study was conducted at antenatal care clinic affiliated to Beni-sueif University Hospital, Egypt. **Sample:** Purposive sample of 100 primigravid women are participated in the study within three months from beginning July 2023 to end September 2023. **Tools:** two tools were used; **Tool (I):** Structured interviewing questionnaire. **Tool (II):** Determinants of delivery mode questionnaire. **Result:** The majority of the primigravida had satisfactory level of total knowledge regarding modes of delivery. More than two thirds of primigravida preferred caesarean section and nearly one third preferred normal delivery. Most of primigravida not preferred vaginal delivery due to reasons concerning; fear of severe pain at the time of childbirth, anxiety about expanding or tearing the opening of the vagina, fear of episiotomy. Almost all of primigravida chosen caesarean section due to reasons concerning; pregnant women should not wait for the onset of labor pain, using of analgesics and it is less painful. **Conclusion:** Primigravida overwhelmingly preferred caesarean section as their mode of delivery; several determinants had a positive impact on their preference due to the desire to avoid the intense pain associated with labor, shouldn't wait for the onset of labor pain, using of analgesics, fear of episiotomy (a surgical cut made during vaginal delivery to enlarge the vaginal opening) and anxiety about vaginal tearing. Almost all of women who preferred vaginal delivery that due to the nature of birth, rapid recovery and not performing abdominal surgery. The main influencers on the women's decision regarding preferred mode of delivery were obstetricians and women's husband **Recommendations:** Development of educational programs to improve the primigravida awareness regarding both mode of delivery.

Key words: *Determinants, Mode of Delivery, Preference, Primigravida.*

Introduction

Pregnancy and childbirth are seen as matters of utmost importance, with potential life and death consequences. The two main methods of delivery are normal vaginal delivery and cesarean section. Since the creation of Adam, God has blessed humans with the ability to give birth naturally through the vagina, ensuring the continuation of humanity through the birth of children. Vaginal delivery is a natural process that typically requires no intervention. However, in cases where natural delivery poses risks to the health and life of the mother and baby, a cesarean section is performed as a necessary measure (Khamehchian & Adib-Hajbaghery., 2020).



The World Health Organization (WHO) recommends that the rate of Cesarean sections (CS) in any population should be between 5-15%, with no justification for exceeding 10-15% of births. The International Federation of Gynecology and Obstetrics (FIGO) emphasizes that CS should only be performed for medical reasons, not based on maternal preference. However, maternal requests, particularly primigravida, are often cited as a factor contributing to the rising CS rates. This is driven by various factors such as fear of pain during vaginal delivery (VD), concerns about genital trauma, the availability of skilled surgical and anesthetic services, and the misconception that CS is safer for the baby (Ibrahim et al., 2021). There are concerns about the overuse and inappropriate use of cesarean sections (CS). This major surgery comes with many complications, combining the risks of surgery with those of childbirth. Women who undergo cesarean sections have a higher risk of maternal mortality compared to those who deliver vaginally. (Çankaya & Şimşek., 2021). The rise of CS use is not constrained to high- and middle-income countries but also extends to low-income countries. In low-income countries, the consequences of unnecessary CS use can be more severe. Substandard care and the lack of resources and skills to treat complications following CS place women and babies in these countries at a higher risk for mortality and morbidity (colomar et al., 2021).

The trend of choosing CS by primigravida women to escape the fear and pain of VD has had a notable effect on public health, resulting in higher expenses for families and communities. Moreover, CS carries more risks for both the mother and the baby when compared to vaginal delivery. Potential complications for the mother may involve bleeding, thromboembolism, premature labor, and an increased risk of mortality. As for the newborn, complications could include respiratory distress syndrome, pulmonary hypertension, and injuries like bruises or trauma (EL Malky et al., 2020).

Determinants of primigravida preferences include the fear of experiencing pain, the fear of losing control during delivery, the fear of uterine rupture, the fear of having to undergo an operative delivery, and the fear of having a baby with disabilities or stillbirth. Additionally, lack of knowledge, misconceptions, and incorrect attitudes and behaviors can also play a role in determining the mode of delivery, rather than relying on medical indications. Certain factors that predispose the primigravida women to fear childbirth include being young, having no previous childbirth experience, having preexisted psychological issues, lacking adequate social support, having a history of abuse, having a family history of difficult obstetric procedures, as well as the physical and psychological changes that occur in a woman's body during pregnancy (Osman et al., 2021).

The role of the nurse is serious in explaining the importance of counseling which aimed to strengthen women's self-confidence in giving birth and to reduce their fear and the number of CS on maternal request. Furthermore, the counseling ideally makes the birth experience as positive as possible. Intrapartum care should focus on provide a positive birth experience to women, such as being in control, receiving sufficient information and support, and involvement in decision making, but women with fear of childbirth often report deficiencies in these areas. One solution to achieve a reduction in caesarean sections and an increase the levels of birth satisfaction is to introduce midwifery continuity models of care (Hildingsson et al., 2019).

Maternity nursing focuses on practice-based recommendations that identified through antenatal and intrapartum interventions and practices that have been shown to be effective in reducing CS and promoting VD. These interventions and practices include various methods such as Induction of labour, continuous one-to-one intra-partum support, external cephalic version, standardized or individualized programs of additional social support for high-risk pregnant women, portogram use in low resource setting, hypnosis, and acupressure for pain management during labour, alternative institutional birth setting for low-risk women, and intensive group therapy (Smith et al., 2019).

Significance of the study:

Worldwide the global rate of CS continues to rise, leading to increased health service costs and risks of maternal and perinatal morbidity and mortality. The CS rate differs among countries (Western Europe, 24.5%; North America, 32%; and South America, 41%) and is related to socioeconomic conditions. Furthermore, the rates are higher in more-developed regions (27.2%) in comparison with those in extremely underdeveloped regions (6.0%) (Wahdan et al., 2022).



Caesarean sections now accounts for more than one fifth (21%) of all births. This number is expected to continue to increase over the next decade, with nearly a third (29%) of births expected to be delivered by Caesarean section by 2030. If this trend continues, by 2030 the highest rates are likely to be in Eastern Asia (63%), Latin America and the Caribbean (54%), Western Asia (50%), Northern Africa (48%), Southern Europe (47%), Australia and New Zealand (45%) (WHO., 2021).

In Egypt, the data of the Egypt Family Health Survey, announced by the Central Agency for Public Mobilization and Statistics (CAPMAS) showed that the rate of cesarean section reached 72% in 2021 compared to 52% in 2014 and the rates of cesarean section reached 84% in the urban northern regions of Egypt, compared to 70.6%, as well as in the urban southern regions of Egypt to 76%, compared to 50.2% in the 2014 survey (CAPMAS., 2021).

Egypt stands out among countries with the highest CS delivery rates in the world, as well as among the Arab countries at a rate of 52 percent, a recent study documented that Egypt ranked the 3rd among world countries followed by Brazil (55.6 %) and Dominican Republic (56.4%). A woman who is delivered by cesarean section has a higher maternal mortality rate than is a woman who delivers vaginally. Whereas approximately 2.1 per 100,000 women die during a vaginal birth, while the mortality rate is 5.9 per 100,000 for women who undergo an elective cesarean birth and 18.2 per 100,000 for women who undergo an emergency cesarean birth. In Egypt, cesarean section is considered the direct cause of 7% of maternal deaths according to the Egypt national maternal mortality study in 2000 (Osman et al., 2021).

The increased maternal request for CS especially in primigravida without medical rationales and justification, but due to fear of VD (Çankaya & Şimşek., 2021). So, the current study sought to shed light on the specific reasons behind primigravida's preferences for cesarean section or normal delivery.

Aim of the Study

The aim of the current study was to assess the determinants of primigravida preference regarding mode of delivery.

Research question:

The aim of the study was achieved through answering the following question:

- What are the Determinants of Primigravida Preference regarding Mode of Delivery?

Research design:

A Descriptive research design was utilized to achieve the aim of this study.

Setting:

The study was conducted at antenatal care clinic in outpatient clinics affiliated to Beni-sueif University Hospital, Egypt.

Sampling:

A purposive sample was utilized in this study. The sample size consisted of 100 primigravida women who participated in the study within three months from beginning July 2023 to end September 2023. The selection of women was done intentionally based on specific criteria as the following:

Inclusion Criteria:

- primigravida
- Age range from 20 to 35 years.
- Women with singleton, viable pregnancy morphologically normal by ultrasound.
- Pregnant women with gestational age > 28 weeks.

**Exclusion criteria:**

- ♦ Women with medical disorders such as: chronic hypertension, diabetes mellitus, kidney disease, gestational diabetes, cardiovascular disorders, thyroid problems, and microbial infections.
- ♦ Multiparous women are excluded.

Tools for data collection:

Two tools were used after reviewing the related literature putting into considerations the aim of the study and the data needed to be collected from the study subjects.

Tool I: A structured interviewing questionnaire:-

A structured interviewing questionnaire: it was developed by the researcher after reviewing the national and international literature (Alkhalil et al., 2021), (Osman et al., 2021) and modified by the researcher and it was designed in closed-end questions and wrote in Arabic form to avoid misunderstanding. It consisted of three parts:

Part (1): Demographic data for pregnant women: This part composed of (6) questions used to collect data related to age, residence, religion, level of education, Occupation, and age at marriage.

Part (2): Demographic data for husband: This part composed of (4) questions used to collect data related to age, level of education, husband occupation and monthly income.

Part (3): Health history: This part composed of two sections:-

Section (1): Current pregnancy history: This section composed of (4) questions aimed to collect data related to current health history of the primigravida women including date of last menstrual period, expected date of delivery, gestational age and planning for current pregnancy.

Section (2): Physical examination of the pregnant women: This section composed of (4) questions aimed to collect data related to blood pressure, weight, height, and body mass index.

Tool II: - Determinants of delivery mode questionnaire: it was designed by the researcher based on literature review from (Alkhalil et al., 2021), (Colomar et al., 2021), and modified by the researcher and it was written in simple clear Arabic language: It composed of three parts:-

Part (1):- Assessment of Factors Affecting the Preferred Mode of Delivery: To comprehensively assess the factors influencing the preferred mode of delivery, the study includes (9) questions related to various aspects of the participants' history, including duration of marriage, history of infertility, reason of infertility, health problem/cause of infertility for husband or for wife, duration of infertility and assisted reproductive technology usage, method and numbers of times used it.

Part (2): - Assessment the knowledge of primigravida regarding modes of delivery: It was designed in three closed-end questions aimed to assess the knowledge of primigravida regarding modes of delivery and primigravida women can choose one item or more. It composed of (3) questions which included: Information about normal labour (5 items), Information about cesarean section (5 items) and suggestions/available solutions to limit the spread of cesarean section (9 items).

Knowledge scoring system:

This part included 3 items, the minimum score is 0 and the maximum score is 3. These scores were summed and were converted into a percent score. The Total knowledge scores considered to be satisfactory level when $\geq 60\%$, while $< 60\%$ considered unsatisfactory knowledge level.

Part (3): - Assessment women reasons for preferring one mode of delivery more than another: It was designed in (closed-end questions), it was written in simple clear Arabic language aimed to assess primigravida's reasons for preferring cesarean section or normal delivery and primigravida can choose one item or more. It consists of three sections related to the mode of delivery preferences of primigravida women.

Section (1): This section includes two questions focused on the reasons why primigravida women prefer normal delivery (12 items) and the reasons why they do not prefer normal delivery (8 items). The items in this section aim to gather information about reasons such as pain, the natural process of delivery, quick recovery, anxiety and fear, and the perceived benefits and risks associated with normal delivery. **Section (2):** This section



also contains two questions, exploring the reasons why primigravida women prefer cesarean section (14 items) and the reasons why they do not prefer cesarean section (11 items). The items in this section aim to gather information about reasons such as pain management, concerns about the surgical procedure, perceived advantages and disadvantages of cesarean section, and recovery considerations. **Section (3):** This section consists of one question that examines the influences on primigravida women's decision regarding mode of delivery (8 items). The items in this section include obstetrician, mother, sisters, relatives, friends, husband, media, and internet as possible influences on their decision-making process.

Validity:

Revision of the tools for clarity, relevance, comprehensiveness, understanding, and applicability was done by panel of three expertise's in maternal and newborn health nursing department at Helwan University to measure the content validity of the tools and the necessary modifications were done accordingly (such as arrange and add questions in determinants questionnaire).

Reliability:

Reliability of tools was applied by researcher for testing the internal consistency of the tool, by administration of the same tools to the same subjects under similar condition on one or more occasion. Cronbach's alpha was 0.802 for total knowledge regarding modes of delivery and suggestion to limit the spread of cesarean section. 0.895 For reasons of preferring normal delivery, 0.816 reasons for not preferring normal delivery, 0.898 reasons for preferring cesarean section and 0.930 for reasons of not preferring cesarean Section.

Ethical considerations:

An official permission to conduct the proposed study was obtained from the scientific research ethics committee at Faculty of Nursing Helwan University. Participation in the study was voluntary and subjects were given complete full information about the study and their role before signing the informed consent (written consent). The ethical considerations included explaining the purpose and nature of the study, stating the possibility to withdraw at any time, confidentiality of the information, where they were not accessed by any other party. Ethics, values, culture, and beliefs were respected.

Pilot study:

After reviewing the tools by the experts, the researcher conducted a pilot study before administering the final questionnaire. The pilot study was conducted on 10% of the study subjects (10 primigravida women) to examine the clarity of questions and applicability of the study tools. No modifications were done so all primigravida women who share on the pilot study included in the studied sample.

Fieldwork:

- An official letter from the Dean of the Faculty of Nursing, Helwan University was directed to the administrator of Beni-sueif University Hospital for conducting study and ensure cooperation to obtain an official approval to carry out the study after explanation the aim of the study .This permission was obtained before the initiation of the study collection. It ensured confidentiality of the information obtained.
- An approval was obtained from a scientific, ethical committee of the Faculty of Nursing at Helwan University and the study subjects individually to give an informed consent to participate in the study.
- Data were collected through three months, from the beginning of July 2023 to end September 2023. The researcher visited the antenatal care clinic two days per week, specifically during morning hours from 9:00 am to 2:00 pm.
- Each primigravida woman was interviewed individually in the waiting area either before or after their examination by an obstetrician.
- The researcher introduced herself to the pregnant women and provided a brief explanation of the study's nature and purpose before their participation.
- Participants were informed about the voluntary nature of their involvement, their right to withdraw at any stage of data collection, and the need to maintain confidentiality of their identity.



- After explaining the purpose and procedures of the study, written consent was obtained from the participants.
- Data collection involved interviewing pregnant women to complete the data collection tools, which took approximately 30-45 minutes.
- The participants completed a questionnaire specifically focusing on the determinants of Primigravida Preference regarding the mode of delivery.
- Subsequently, the completed tools were collected and checked for completeness by the researcher.
- The researcher also ensured the implementation of protective and safety measures while collecting the data.

Statistical item:

The collected data were organized, analyzed using the Computer Statistical Package for Social Science (SPSS), version 25, and was also used to do the statistical analysis of data. Data were presented using descriptive statistics in the form of frequencies and percentages.

Results:

Table (1) demonstrates that the age of women, the nearly half of them (46%) had 20 to 25 years and the mean age (26.12 ± 3.7). In relation to place of residence more than half of women (52%) lived in urban areas and had secondary education. Three quarters of them (75%) were housewives and concerning age at marriage nearly two third of women (60%) were married at from 21 to 30 years.

Table (2) provides that the information about the duration of marriage among primigravida women, their history of infertility, and the reasons behind infertility. According to the table, less than half of the pregnant women (47%) had been married for duration of 1 to 5 years. In terms of infertility, a significant majority (80%) had never experienced infertility, while one-fifth of them (20%) had previously faced infertility issues. The table also highlights that the main cause of infertility among the minority of women (13%) was attributed to the wife, specifically due to Polycystic Ovary Syndrome (PCOS). On the other hand, a smaller percentage (7%) attributed infertility to the husband, primarily due to varicocele. Focusing on the duration of infertility, the majority of women (16%) who experienced infertility for 1 to 2 years did not utilize assisted reproductive technology. However, a minority (4%) used Intracytoplasmic Sperm Injection (ICSI), while an equal percentage (2%) of women utilized ICSI for the same duration.

Table (3) illustrated that regarding knowledge about modes of delivery, nearly all (96% & 90%) of primigravida had correct knowledge concerning normal labor and cesarean section. Meanwhile almost all of them (94%) had not knowledge about available solutions to limit the spread of the phenomenon of caesarean section.

Figure (1) demonstrates that the total knowledge about modes of delivery, the majority of the primigravida (87%) had satisfactory level of total knowledge with mean 1.92 ± 0.46 .

Figure (2) illustrates that concerning for the preferences of women regarding their mode of delivery. It shows that more than two-thirds of women (70%) expressed a preference for a cesarean section, while nearly one-third (30%) preferred a normal labor and delivery.

Figure (3) identifies that the reasons for preferring normal delivery almost all of women (100%) choose (yes for normal delivery) due to reasons concerning; the nature of birth, because of the rapid recovery and not performing abdominal surgery and more than half (53.3%) of them prefers normal delivery as it is less painful after delivery. On the other hand, no woman (0%) of them chosen to do not know answer.

Table (4) reveals that the reasons for not preferring normal delivery nearly all of women (100%, 95.7% and 95.7%) not choose normal delivery due to reasons concerning ; fear of severe pain at the time of childbirth, anxiety about expanding or tearing the opening of the vagina which may affect sexual life afterwards and fear of episiotomy respectively and nearly less than three quarters of them (71.4%) choose reasons concerning to normal labor may cause deformities in the perineum or reproductive system which can lead to negative labor

experience and fear of severe pain after childbirth respectively.

Figure (4) mentions that all women (100%) who opted for a cesarean section reported doing so for specific reasons. These reasons include the belief that pregnant women should not wait for labor pain to give birth, as cesarean sections allow for the use of analgesics and anesthesia, making the process less painful. Additionally, nearly three-quarters of them (71.4%) chose cesarean sections because it allowed the mother to have a predetermined date for giving birth. However, it is important to note that 40% of women did not choose cesarean sections based on the aforementioned reasons.

Table (5) provides insight into the reasons why all of the women (100%) who did not prefer a cesarean section made that choice. These reasons include concerns about the mother's extended hospital stay for recovery following a cesarean section, increased post-operative pain compared to a normal delivery, alteration in abdominal shape and the visibility of scars from the cesarean section incision, longer recovery time and healing of the surgical wound, as well as the fear of being unable to have a natural birth in the future. Furthermore, a significant majority (80%) of these women expressed fear of potential harm to neighboring organs, such as the bladder, during the surgical procedure.

Figure (5) presents data on the factors influencing primigravida's decision regarding their mode of delivery and the odds of preferring a normal delivery. According to the figure, more than two-thirds (67%) of the women in the study were influenced by their obstetrician when making their decision. Additionally, half (50%) of the women reported being influenced by their husbands. Interestingly, the figure indicates that none of the studied women were influenced by mass media in their decision-making process regarding the mode of delivery.

Table 1. Distribution of the studied women according to their demographic characteristics (n=100).

Item	No	%
Age		
20 to 25 years	46	46
26 to 30 years	41	41
31 to 35 years	13	13
Mean± SD	26.12±3.71	
Place of residence		
Urban	52	52
Rural	48	48
Occupation		
Housewife	75	75
Working mother	25	25
Age at marriage (years)		
15 to 20	38	38
21 to 30	60	60
31 or more	2	2
Education level		
Secondary education	52	52
Higher education	48	48

Table 2. Distribution of factors affecting on the preferred mode of delivery among studied women (n=100).

Item	No	%
Duration of marriage		
Less than a year	39	39
Between 1 to 5 years	47	47
More than 5 years	14	14
Have been infertile		
Yes	20	20
No	80	80
If the answer is yes, the reason of infertility (20 case).		
• Husband(7 case)	7	7
▪ Varicocele	6	6
▪ Oligospermia	1	1
• Wife (13 case)	13	13
▪ Polycystic ovarian disorder	7	7
▪ Endometriosis disease	6	6
Number of infertility years		
Between 1 to 2 years	16	16
Between 3 and 5 years	4	4
Assisted reproductive technology used.		
Intra cytoplasmic sperm injection	4	4
Numbers of Times were assisted reproductive technology used.		
Once	2	2
Twice	2	2

Table 3. Distribution of Primigravida Knowledge regarding Modes of Delivery among Studied Women (n=100)

Items	Knowledge	
	Incorrect	Correct
Knowledge about normal labor.	4	96
Knowledge about cesarean section.	10	90
Knowledge about the available solutions to limit the spread of the phenomenon of caesarean section.	94	6

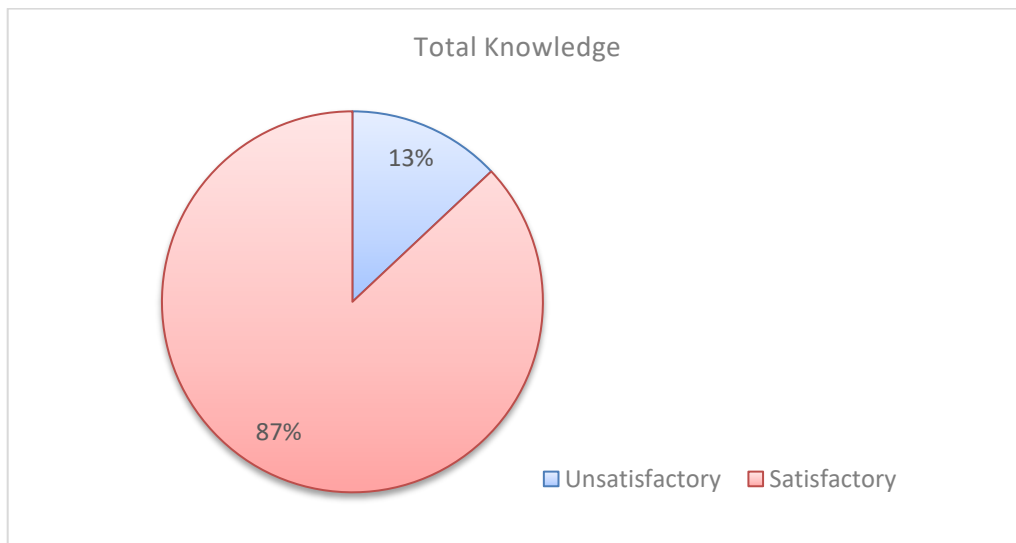


Figure 1. Percentage distribution of total knowledge regarding modes of delivery among primigravida Studied Women (n=100).

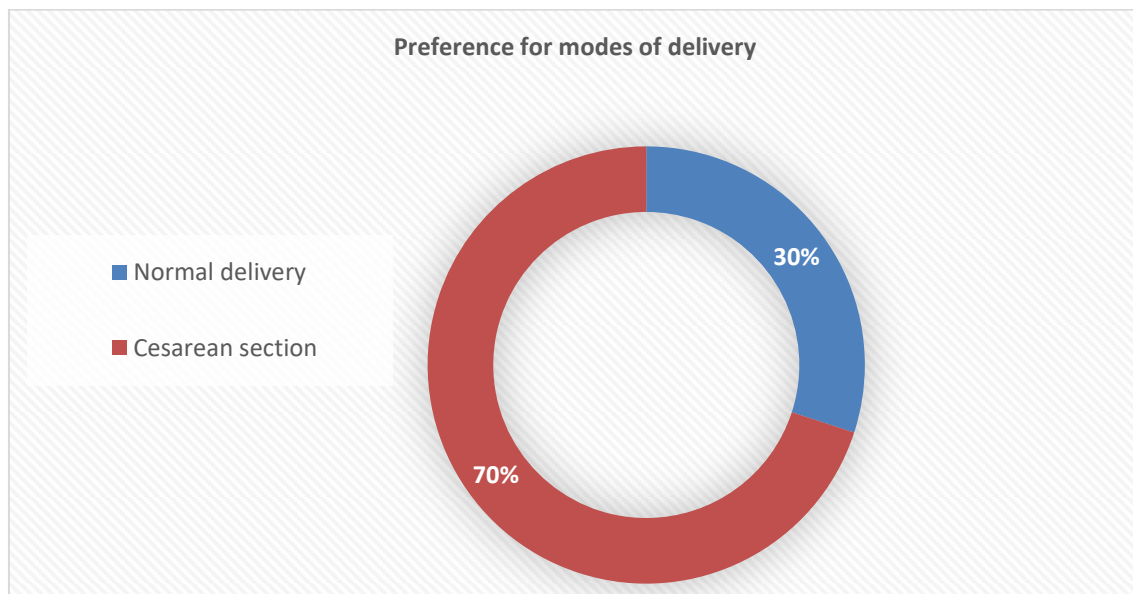


Figure2. Percentage distribution for preferring one mode of delivery more than another among primigravida Studied Women (n=100).

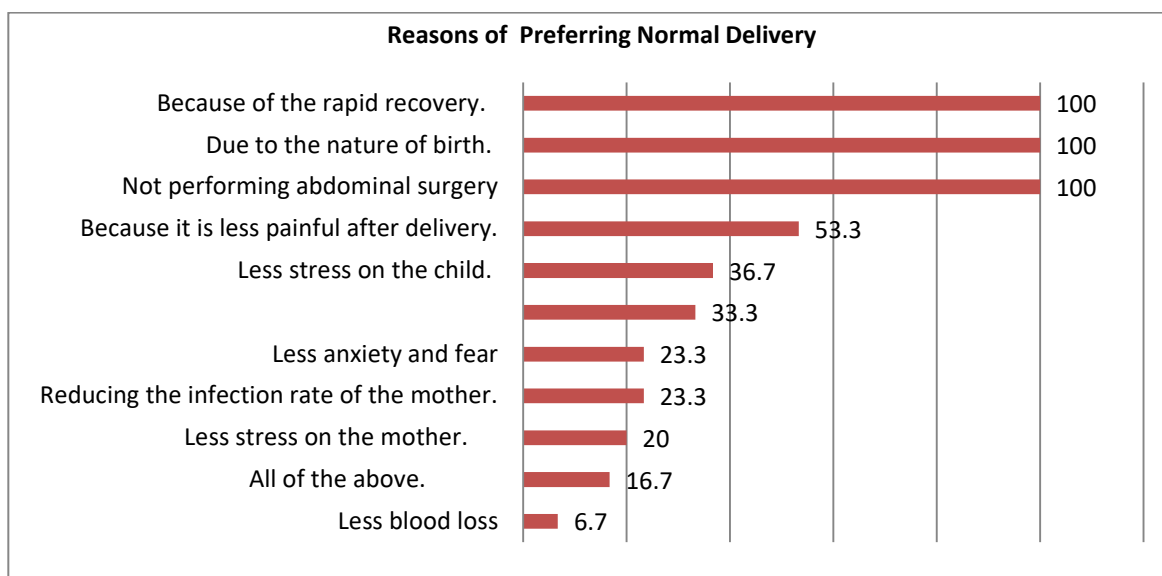


Figure3. Percentage distributions for Reasons of Preferring normal delivery among Studied Women (n=30).

Table 4. Distribution for Reasons of Not Preferring Normal Delivery among Studied Women (n=70).

Item	Yes	%
Normal labor may cause deformities in the perineum or reproductive system which can lead to negative labor experience.	50	71.4
Fear of episiotomy.	67	95.7
Anxiety about expanding or tearing the opening of the vagina, which may affect sexual life afterwards.	67	95.7
Fear of severe pain at the time of childbirth.	70	100.0
Fear of severe pain after childbirth.	50	71.4
Fear of complications for the child at birth.	22	31.4
All of the above.	29	41.4
I do not know.	1	1.4

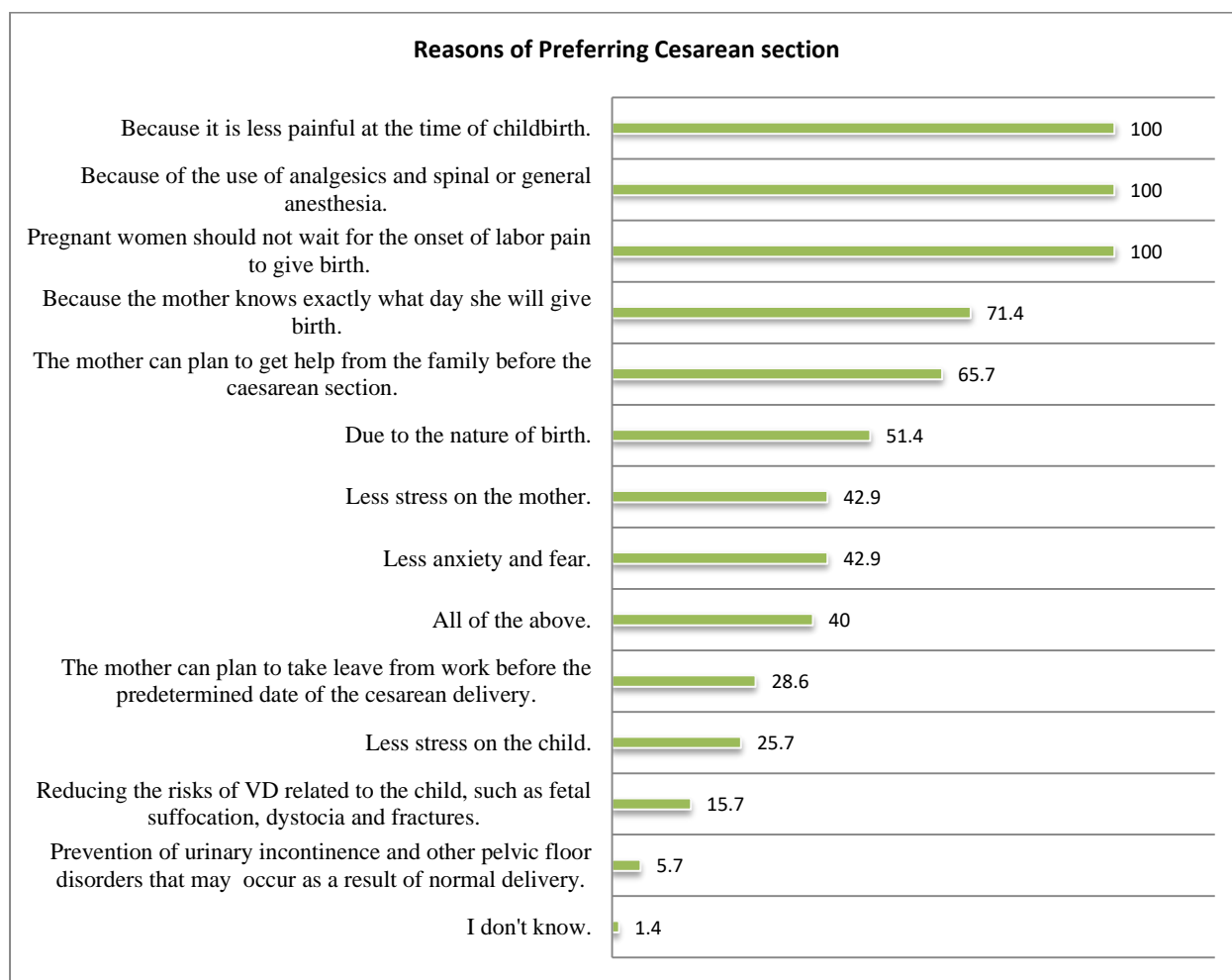


Figure 4. Percentage distribution of reasons for Preferring Cesarean Section among Studied Women (n=70).

Table 5. Distribution for Reasons of not Preferring Cesarean Section among Studied Women (n=30)

Item	Yes	%
Because of the mother's need for a longer stay in the hospital to recover after a cesarean section.	30	100.0
Pain is more after a cesarean section compared to a normal delivery.	30	100.0
A change in the shape of the abdomen due to the caesarean section wound and the appearance of its scar on the abdomen.	30	100.0
Complications of the caesarean section wound may occur after childbirth, such as infection.	25	83.3
The need for a longer recovery time from the cesarean section and the healing of the surgical incision.	30	100.0
Fear of harming neighboring organs at the time of surgery, such as the bladder.	24	80.0

Fear that the mother will be exposed in the following births to the risk of miscarriage, placental abruption, or placenta adhesion, which may cause hysterectomy after childbirth.	7	23.3
Fear of not being able to have a natural birth after that.	30	100.0
Fear of respiratory difficulties that may face the fetus immediately after birth.	2	6.7
All of the above.	6	20.0
I do not know.	0	0.0

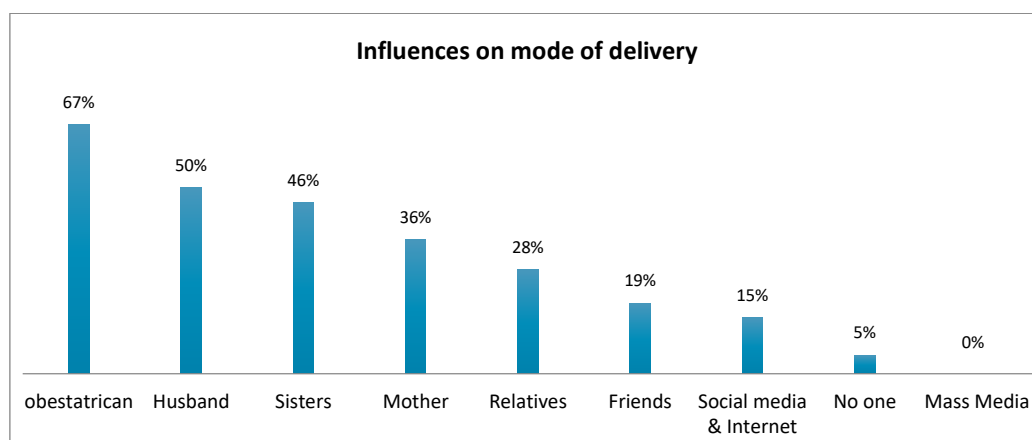


Figure 5.The Influences on primigravida Decision regarding mode of delivery and encouraging women to make this decision among Studied Women (n=100).

Discussion:

Pregnant women in Egypt have a variety of options for facility-based health practitioner-supported birth, with the two most common methods being spontaneous vaginal delivery (SVD) and cesarean section (CS). SVD is traditionally seen as the preferred method, while CS is typically reserved for cases with medical or obstetric determinants. Health authorities generally advise women to plan for SVD unless there is a specific medical indication for a CS. It is important for women to fully understand all factors involved before deciding on preferred mode of delivery (*Anaman-Torgbor et al., 2022*).

So, the aim of the current study was to assess the determinants of primigravida preference regarding mode of delivery. To fulfill this aim one research question were stated as following:

- What are the determinants of primigravida preference regarding mode of delivery?

In relation to primigravida according to socio-demographic characteristics, the finding of the current study revealed that, the nearly half of the studied primigravida were aged 20 to 25 years. This study was in the same line with *Dkalyan et al., 2024* in India who conducted study about “Preferences and factors determining preferences for mode of delivery among primigravida mothers” who revealed that ,the half of the studied primigravida were aged 20 to 26 years. In relation to place of residence, the present study represented that, more than half of women lived in urban areas, from the researcher point of view, this could be related to that; Beni Suef university hospital, located in an urban area, so it serves the residents around it in its region. This finding was supported by *Adu-Bonsaffoh et al., (2022)*. In Ghana who conducted study entitled “Preferred mode of childbirth among women attending antenatal clinic at a tertiary hospital” and found that majority of the studied women were from urban. Also, this study was on the same line with *Welay et al., (2021)*. Which



conducted a study entitled “Delivery mode preference and associated factors among pregnant mothers in Harar regional state, Eastern Ethiopia” and revealed that most of the studied pregnant mothers were from urban area.

The current study revealed that, more than half of the studied women had secondary education, from the researcher point of view; this may be due to the association between their educational level and their choices for cesarean section which result from lack of education and awareness about CS indication and adverse effects. This result was supported with the study done by *Silva et al., (2020)*. In Brasil which conducted a study entitled “Factors associated with normal and cesarean delivery in public and private maternity hospitals” and represented that more than half of the studied women had secondary education. Contrariwise, this finding was similar to *Wagaw et al., (2023)* in Ethiopia who conducted study entitled “Preferred mode of delivery and its associated factors in pregnant women with a previous cesarean scar at a tertiary care hospital” and found that more than one quarter of the studied women had secondary school.

The present study reported that, three quarters of the studied women were housewives, from the researcher point of view; this might be related to that, more than half of the studied women had secondary education so that the opportunity to have a job may be limited for them. This result was on the same line with *Elgzar et al., (2023)*. In Najran, Saudi Arabia who conducted study entitled “Mode of delivery preferences: The role of childbirth fear among nulliparous women” and found that more than half of the studied women were housewives. On the other hand, this finding was disagreed with *Verma & Baniya, (2022)* in western Rajasthan which conducted a study entitled “Maternal factors for requesting planned caesarean section” and mentioned that less than one quarter of the studied women were housewives.

Regarding factors affecting on the preferred mode of delivery among Studied Women, the current study found that, less than half of pregnant women their duration of marriage between 1 to 5 years. This result was disagreed with *Ali et al., (2021)* which conducted at King Abdul-Aziz University Hospital, Jeddah, Saudi Arabia which study entitled “The preferred mode of delivery among primigravida Middle Eastern women” and reported that more than half of the studied women were married from 1 year and more.

The present study reported that, four fifths of pregnant women had not ever been infertile meanwhile one fifth of them had ever been infertile before. This finding disagreed with *Kumaraswamy, (2019)* in India who found that infertility treated has an important role in determining mode of delivery as infertility treated women had a higher risk of caesarean section.

The current study represented that, the minority of women which had infertility, the infertility reason was wife and polycystic ovarian disorder is the main cause of infertility for them. This study was supported by *Zhuang et al., (2022)* in china which conducted a study entitled “The relationship between polycystic ovary syndrome and infertility” and mentioned that polycystic ovarian disorder is the most common cause of infertility. Also, this finding was on the same line with *Gupta & Deshpande, (2019)* which conducted in Mumbai, Maharashtra, India, which conducted a study entitled “Causes and prevalence of factors causing infertility in a public health facility” and revealed that less than one quarter of the studied women had infertility and polycystic ovarian disorder was the cause of infertility.

Regarding the reason of infertility, the present study found that, the minority was husband and almost had varicocele. This result was supported by *Napolitano et al., (2022)* in Naples, Italy who conducted study about "The management of clinical varicocele: Robotic surgery approach” and represented that Varicocele is identified in minority of healthy men and more than one third of men with primary infertility.

The current study revealed that, almost of pregnant women that had infertility between 1 to 2 years and minority of them were not used assisted reproductive technology before and the minority was used Intra Cytoplasmic Sperm Injection and had an equal time for used it. This finding was in accordance with *Sönmez et al., (2021)* in Turkey which conducted a study entitled “Prevalence and predictors of the usage of



complementary alternative medicine among infertile patients” and found that more than one quarter of the studied women used complementary alternative medicine rather than using assisted reproductive technology.

In relation to primigravida knowledge regarding modes of delivery, the present study reported that, nearly all of the studied primigravida had correct knowledge concerning normal labor and cesarean section. Meanwhile almost all of them had not knowledge about available solutions to limit the spread of the phenomenon of caesarean section, from the researcher point of view this might be related to that, their satisfactory knowledge regarding normal labor and cesarean section; this might be related to the experiences of surrounding women in their family and friends, social media, and internet. While their poor knowledge regarding how to limit the spread of the phenomenon of caesarean section, this could be related to that, they weren't think that caesarean section bad phenomenon but it's good for reducing their pain and time during labor so they didn't had concern to limit the spread of caesarean section. Also, this shed the light on the importance of strengthen the primigravida women with proper health education about CS indication and adverse effects during antenatal period.

This study agreed with *Rashed et al., (2023)* was conducted at antenatal care clinics in health care centers at comprehensive health insurance in Port Said city, Egypt who conducted study about “Effectiveness of childbirth education on primigravida Women's' knowledge about childbirth preparation” and reported that more than three quarters of the studied women had satisfactory knowledge regarding normal labor. On the other hand, this finding disagreed with *Kamal et al., (2021)* in the Antenatal Outpatient Clinic at South Valley University, Egypt which carried out a study entitled “Effect of video assisted teaching guidelines on knowledge and anxiety level among primigravida mothers undergoing caesarian section” and found that majority of the studied women had unsatisfactory knowledge level regarding cesarean section. Also, this study results were disagreed with *Wali et al., (2020)* in Egypt which conducted a study entitled “Awareness, knowledge, and attitude of Egyptian women toward cesarean delivery” and mentioned that the studied women's knowledge regarding different modes of delivery is defective. Most of them do not regret delivery by CS.

Regarding total knowledge regarding modes of delivery among primigravida studied women, the current study revealed that, the majority of the primigravida had good total knowledge with mean 1.92 ± 0.46 , in the researcher point of view, this might be related to that; women in third trimester had high concern regarding modes of delivery and make comparisons between them for make their choice.

This result was similar to *Zainab et al., (2023)* in Pakistan which conducted study entitled “Knowledge of pregnant women regarding the mode of delivery among the primary Gravida” and reported that the knowledge of pregnant women about the mode of delivery was good. Contrariwise, this finding was dissimilar to *Alkalash et al., (2021)* in Egypt which conducted a study entitled “Cesarean sections rate and maternal knowledge and attitude towards the mode of delivery in Egypt” and found that more than one quarter of the studied women had satisfactory knowledge regarding mode of delivery.

Concerning preferring one mode of delivery more than another among primigravida studied women, the present study reported that, more than two thirds of women did not prefer normal labor and preferred cesarean section and nearly one third of them did prefer normal labor. This study was in accordance with *Heydari et al., (2019)* in shiraz, Iran, which carried out a study entitled “Selection of delivery method and its related factors in pregnant women of Shiraz in 2016” and represented that pregnant women more than half of them were decided to give birth through CS, more than two fifths of them were decided to give birth through standard VD, and minority of them in water. On the other hand, this result was in congruence with *Wu et al., (2022)* in china that conducted a study entitled “The inconsistency between women's preference and actual mode of delivery in China” and revealed that majority of the studied women were preferred vaginal delivery than cesarean section. From the researcher point of view this might be related to fear of women from pain during normal labor which is consider major concern for all women “labor free from pain”. Women may develop a feeling of fear from normal labor due to the experiences of their mothers, sisters, or friends, or from witnessing a difficult labor at a young age without understanding what was happening. This fear can also be



present in women who have been victims of assault or rape, as the normal labor may bring back painful memories of their trauma. This can also be attributed to societal factors, such as the emphasis on beauty and the desire to prevent body deformities. There are many misconceptions surrounding normal labor, including the belief that being overweight after normal labor, increasing in abdomen circumference or can lead to deformities in the perineum if an episiotomy is required, changes in lifestyle, intolerance to labor pain, followed by worry about fetal health, and fear of reproductive system rupture during vaginal delivery.

In relation to reasons of preferring normal delivery among studied women, the current study represented that, all of the studied women choose (yes for normal delivery) due to reasons concerning; the nature of birth, because of the rapid recovery and not performing abdominal surgery and more than half of them prefers normal delivery as it is less painful after delivery. From the researcher point of view, primigravida Women who chose to have normal delivery viewed it as a personal accomplishment and a source of pride, seeing sacrifice and pain as necessary steps in becoming a mother. For these women, having the choice and control over their birthing experience was crucial, and the idea of "natural labor" became a significant aspect of their gender identity. Primigravida also chose vaginal birth for cultural reasons, such as religious beliefs or a sense of selfless motherhood that was seen as morally superior, even if it meant sacrificing their own autonomy. Additionally, the financial burden and emotional stress of a cesarean section led many women to prefer normal delivery.

This finding was consistent with *Perrotta, et al., (2022)* in their study entitled "Women's mode of birth preferences and preparedness of hospitals to support vaginal birth in the public health sector in Argentina" and found that majority of the studied women were preferred normal labor because faster recovery, more natural delivery, less pain after birth, less time in the hospital, and more autonomy after labour to look after themselves and the newborn. Conversely, this study was disagreed with *Ibrahim et al., (2021)* which studied "Preference of mode of delivery among women in childbearing period in Egypt and factors affecting it" and mentioned that more than one third of the studied women preferred vaginal delivery for many reasons as no scare, less painful, birth is not a surgery.

Regarding reasons of not preferring normal delivery among studied women, the present study revealed that, nearly all of women not choose normal delivery due to reasons concerning; fear of severe pain at the time of childbirth, fear of episiotomy and anxiety about expanding or tearing the opening of the vagina, which may affect sexual life afterwards and nearly less than three quarters of them choose reasons concerning to normal labor may cause deformities in the perineum or reproductive system which can lead to negative labor experience and fear of severe pain after childbirth. This result was supported by *Özcan et al., (2019)* in turkey which conducted a study entitled "Deliver preference and influencing factors in women giving birth" and represented that more than three quarters of the studied women were not preferred vaginal delivery for pain and bleeding after birth. Also, this finding was agreed with *Zewude et al., (2022)* in Southern Ethiopia which found that less than two thirds were not preferred vaginal delivery for fear of episiotomy or tear.

In relation to reasons for preferring cesarean section among studied women, the current study found that, all of women chosen cesarean section due to reasons concerning; pregnant women should not wait for the onset of labor pain to give birth, because of the use of analgesics and spinal or general anesthesia and because it is less painful at the time of childbirth. Nearly less than three quarters of them chosen cesarean section because the mother knows exactly what day she will give birth. This study was in accordance with *Shirzad et al., (2021)* in Iran which studied "Prevalence of and reasons for women's, family members', and health professionals' preferences for cesarean section in Iran" and revealed that most of the studied women preferred cesarean section than vaginal delivery related to pain which less in cesarean section. Also, this study results were agreed with *Adu-Bonsaffoh et al., (2022)* in Ghana which mentioned that minority of the studied women were preferred cesarean section than vaginal related to no reason. By contrast, this result was conflicted with *Konlan et al., (2019)* in Ghana which revealed that more than one quarter of the studied women planned for the mode of delivery before birth day. From the researcher point of view, sometimes primigravida women requested for CS without medical reasons, their requests are often influenced by factors such as the quality of



care, the ability to schedule the delivery date, concerns about lack of support if delivered by normal labor, positive views of primigravida on CS hinged on qualities associated with better organization and control of birth process and cultural beliefs regarding modes of delivery in addition to the reasons of preferring CS which mentioned in the current study.

Regarding the reasons of not preferring cesarean section among studied women, the present study represented that, all of women not chosen cesarean section due to reasons concerning because of the mother's need for a longer stay in the hospital to recover after a cesarean section, pain is more after a cesarean section compared to a normal delivery, a change in the shape of the abdomen due to the caesarean section wound and the appearance of its scar on the abdomen, the need for a longer recovery time from the cesarean section and the healing of the surgical incision and fear of not being able to have a natural birth after that. This finding was consistent with *Ibrahim et al., (2021)* in Egypt which found that more than half of the studied women were not prefer cesarean section for many reasons as vaginal delivery is shorter hospital stay than cesarean section, faster recovery, and unlimited number of children. Also, this result was agreed with *Schantz et al., (2021)* in France who carried out a study entitled "A caesarean section is like you've never delivered a baby": A mixed methods study of the experience of childbirth among French women" and mentioned that majority of women weren't preferred cesarean section by avoiding surgery and surgical scars.

On the contrary, this study presented findings that contradict the findings of *Wagaw et al. (2023)* in their study titled "Preferred mode of delivery and its associated factors in pregnant women with a previous cesarean scar at a tertiary care hospital in Ethiopia." According to this study, less than one quarter of the women studied did not prefer cesarean section but instead opted for vaginal delivery. From the researcher point of view; Their preference for vaginal delivery stemmed from several factors, including the lower risk of uterine rupture and bleeding compared to cesarean section, lower risk of complications related to surgery as infection, less pain after delivery, avoidance of potential complications associated with surgery and anesthesia, the opportunity for early activity, early caring to the newborn, early breast feeding and early recovery compared to caesarean section, and earlier discharge from the hospital.

Concerning assessment of who influences on the women's decision regarding mode of delivery and encourage her for this decision, the current study revealed that, more than two thirds of the studied women were influenced by obstetrician; half of them were influenced by their husband. On the other hand, all of the studied women were not influenced by mass media. This finding agreed with *Kosan et al., (2019)* in Turkey which conducted a study entitled "Delivery preferences of pregnant women: Do not underestimate the effect of friends and relatives" and found that majority of the studied women choose delivery mode by obstetrician recommendation. From the researcher point of view, which is may be due to trust and good relation between obstetrician and patient. Also, some women consider her doctor the only source for knowledge and information for her. Additionally, this result was agreed with *Alkalash et al., (2021)* in Egypt which represented that minority of the studied women their source of information related to modes of delivery were media. contradictorily, this study results disagreed with *Alkhazal et al., (2021)* in Kingdom of Saudi Arabia which conducted a study entitled "The preferred mode of delivery among primigravida Middle Eastern women" and mentioned that majority of the studied women their husbands were influence on their mode of delivery decision.

Conclusion:

Primigravida overwhelmingly preferred caesarean section as their mode of delivery; several determinants had a positive impact on their preference due to the desire to avoid the intense pain associated with labor, shouldn't wait for the onset of labor pain, using of analgesics, fear of episiotomy (a surgical cut made during vaginal delivery to enlarge the vaginal opening) and anxiety about vaginal tearing. Almost all of women who preferred normal delivery that due to the nature of birth, rapid recovery and not performing abdominal surgery. The main influencers on the women's decision regarding preferred mode of delivery were obstetricians and women's husband.



Recommendations:

Based on the findings of the present study, the following recommendations are suggested:

- Development of educational programs for empowering primigravida women with knowledge regarding both modes of delivery and promote a positive attitude toward vaginal delivery by incorporating educational sessions within Maternal and Child Health centers and antenatal care clinics.
- Improve the social awareness regarding modes of delivery advantages, indications, disadvantages and recognition of midwifery role and its benefit.
- Publish more evidences based stories about benefits to women and newborn which being cared by midwives.
- Positive strengthening on midwives professions as a care component for improving the health of women, reproductive health and newborn health.
- Future research should focus on the knowledge and attitudes of medical professionals as well as the effects of husband, family, peer intervention on the opinions and behaviors of women regarding mode of delivery preferences.
- Replication of the study on large sample to be able to generalize the study results.

References:

1. **Adu-Bonsaffoh, K., Tamma, E., & Seffah, J. (2022):** Preferred mode of childbirth among women attending antenatal clinic at a tertiary hospital in Ghana: A cross-sectional study. *African Health Sciences*, 22(2), 480-488. doi:10.4314/has.v22i2.56.
2. **Ali, B., Halawani, M. A., Alsaahbi, I. O., Abduljabbar, H. S. (2021):** The preferred mode of delivery among primigravida Middle Eastern women. A questionnaire-based study. *Clinical and Experimental Obstetrics & Gynecology*, 48(3), 567. doi:10.31083/j.ceog.2021.03.2384.
3. **Alkalash, S., El Kelany, O., & Zayed, M. (2021):** Cesarean sections rate and maternal knowledge and attitude towards the mode of delivery in Egypt. *Menoufia Medical Journal*, 34(2), 528. doi:10.4103/mmj.mmj_275_20.
4. **Alkhalazal, B. A., Halawani, M. A., Alsaahbi, I. O., & Abduljabbar, H. S. (2021):** The preferred mode of delivery among primigravida Middle Eastern women. A questionnaire-based study. *Clinical and Experimental Obstetrics & Gynecology*, 48(3), 567. doi:10.31083/j.ceog.2021.03.2384.
5. **Anaman-Torgbor, J. A., Konlan, K. D., Owusu, E., & Gbagbo, B. (2022):** Factors influencing preference of birth method among pregnant women: A descriptive cross-sectional study in a tertiary health facility in Ghana. *Journal of Global Health Science*, 4(1). doi:10.35500/jghs.2022.4.e11.
6. **Çankaya, S., Şimşek, B. (2021):** Effects of antenatal education on fear of birth, depression, anxiety, childbirth self- efficacy, and mode of delivery in primiparous pregnant women: A prospective study. *A Randomized Clinical controlled Nursing Research*.2020; Availableat: 18-7-2020. <https://doi.org/10.1177/1054773820916984>.
7. **Central Agency For Public Mobilization And Statistics (CAPMAS).(2021):**Egypt Family Health Survey. <https://www.capmas.gov.eg/>
8. **Colomar, M.(2021):**Opiyo, N., Kingdon, C., Long, Q., Nion, S., Bohren, M. A., & Betran, A. P. (2021). Do Women Prefer Caesarean Sections? A qualitative Evidence Synthesis of their Views and Experiences. *Plos One*, 16(5), e0251072.
9. **Dkalyan, S. S. G., Bhardwaj, G., Shafqat, N., & Verma, M. (2024):** Preferences and factors determining preferences for mode of delivery among primigravida mothers. *Journal of Family Medicine and Primary Care*, 13(4), 1517-1523. doi:10.21037/atm-22-714
10. **Elgzar, W. T., Alshahrani, M. S., & Ibrahim, H. A. (2023):** Mode of delivery preferences: The role of childbirth fear among nulliparous women. *Frontiers in Psychology*, 14. doi:10.3389/fpsyg.2023.1221133.
11. **EL-Malky, E., El-Homasy, S., Shehad, A. (2020):** Effectiveness of antenatal nursing intervention on childbirth's fears, Psychological - wellbeing and pregnancy outcomes in primipara's women. *Journal of Nursing Science*. 2018; 4(2):17-24. Availableat: <http://www.aascit.org/journal/jns>. Retrieved at: 28-3-2020.
12. **Gupta, A., & Deshpande, P. (2019):** Causes and prevalence of factors causing infertility in a public health facility. *Journal of Human Reproductive Sciences*, 12(4), 287. doi:10.4103/jhrs.jhrs_140_18.
13. **Heydari, S. T., Sarikhani, Y., Asadi, N., Kazemi, M., Kalateh Sadati, A., Zarei, S., & Bagheri Lankarani, K. (2019):** Selection of delivery method and its related factors in pregnant women of Shiraz in 2016. *Shiraz E-Medical Journal, In Press*(In Press). doi:10.5812/semj.81676.
14. **Hildingsson, I., Rubertsson, C., Karlström, A., & Haines, H. (2019):** A Known Midwife Can Make A Difference for Women with Fear of Childbirth-birth Outcome and Women's Experiences of Intrapartum Care. *Sexual & Reproductive Healthcare*, 21, 33-38.



15. **Ibrahim, R., Khalil, R., Ehab, R., Osama, R., Mohammed, A., & Hetler, W. (2021):** Preference Of Mode Of Delivery Among Women In Childbearing Period In Egypt And Factors Affecting it. *GinPolMedProject*, 3(61), 001-007. Retrieved from <https://www.ginekologiaipoloznictwo.com/articles/preference-of-mode-of-delivery-among-women-in-childbearing-period-in-egypt-and-factors-affecting-it.pdf>.
16. **Khamehchian, M., Adib-Hajbaghery, M. (2020):** Primiparous women's experiences of normal vaginal delivery in Iran: a qualitative study. *BMC Pregnancy Childbirth*, 20(1): 259. Available from: 10.1186/s12884-020-02954-4
17. **Konlan, K. D., Baku, E. K., Japiong, M., Konlan, K. D., & Amoah, R. M. (2019):** Reasons for women's choice of elective caesarian section in Duayaw Nkwanta hospital. *Journal of Pregnancy*, 2019, 1-7. doi:10.1155/2019/2320743.
18. **Kosan, Z., Kavuncuoglu, D., Calhkoglu, E. O., & Aras, A. (2019):** Delivery preferences of pregnant women: Do not underestimate the effect of friends and relatives. *Journal of Gynecology Obstetrics and Human Reproduction*, 48(6), 395-400. doi:10.1016/j.jogoh.2019.03.009.
19. **Kumaraswamy, R. (2019):** Factors influencing mode of delivery in primigravida in rural tertiary care hospital. *Indian Journal of Obstetrics and Gynecology Research*, 6(4), 466-468. doi:10.18231/j.ijogr.2019.101.
20. **Napolitano, L., Pandolfo, S. D., Aveta, A., Cirigliano, L., Martino, R., Mattiello, G., & Spirito, L. (2022):** The management of clinical varicocele: Robotic surgery approach. *Frontiers in Reproductive Health*, 4. doi:10.3389/frph.2022.791330.
21. **Osman, B., El-Adham, A., & Elrefaey, A. (2021):** Primigravida women's fear of childbirth and its effect on their decision regarding mode of delivery. *Tanta Scientific Nursing Journal*, 22(3), 76-100. doi:10.21608/tsnj.2021.196624.
22. **Özcan, H., Beji, N. K., & Akarsu, R. H. (2019):** Deliver preference and influencing factors in women giving birth. *Journal of International Health Sciences and Management*, 5(9), 95-106. Retrieved from <https://dergipark.org.tr/en/download/article-file/840762>.
23. **Perrotta, C., Romero, M., Sguassero, Y., Ingram, C., Righetti, N., Gialdini, C. & Ramos, S. (2022):** Women's mode of birth preferences and preparedness of hospitals to support vaginal birth in the public health sector in Argentina. *Reproductive, Female and Child Health*, 1(2), 111-121.
24. **Schantz, C., Pantelias, A., De Loenzien, M., Ravit, M., Rozenberg, P., Louis-Sylvestre, C., & Goyet, S. (2021):** 'A caesarean section is like you've never delivered a baby': A mixed methods study of the experience of childbirth among French women. *Reproductive Biomedicine & Society Online*, 12, 69-78. doi:10.1016/j.rbms.2020.10.003.
25. **Shirzad, M., Shakibazadeh, E., Hajimiri, K., Betran, A. P., Jahanfar, S., Bohren, M. A., & Abedini, M. (2021):** Prevalence of and reasons for women's, family members', and health professionals' preferences for cesarean section in Iran. *Reproductive Health*, 18(1). doi:10.1186/s12978-020-01047-x.
26. **Siedlecki, S.L. (2020):** Understanding Descriptive Research Designs and Methods. *Clinical Nurse Specialist*, 34(1), 8-12.
27. **Silva, T. P., DumontPena, E., Moreira, A. D., Camargos, B. A., Meireles, M. Q., Souza, K. V., & Matozinhos, F. P. (2020):** Factors associated with normal and cesarean delivery in public and private maternity hospitals: A cross-sectional study. *Revista Brasileira de Enfermagem*, 73(suppl 4). doi:10.1590/0034-7167-2018-0996.
28. **Smith, V., Gallagher, L., Carroll, M., Hannon, K., & Begley, C. (2019):** Antenatal and Intrapartum Interventions for Reducing Caesarean Section, Promoting Vaginal Birth, and Reducing Fear of Childbirth: an Over View of Systematic Reviews. *PLoS One*, 14(10), e0224313.
29. **Sönmez, S., Öztürk, M., Sönmez, F., Eraydın, E., Özer, M. C., Ünal, M. S., & Ceyhan, S. T. (2021):** Prevalence and predictors of the usage of complementary alternative medicine among infertile patients. *Journal of Gynecology Obstetrics and Human Reproduction*, 50(6), 102112. doi:10.1016/j.jogoh.2021.102112.
30. **Verma, K., & Baniya, G. C. (2022):** Maternal factors for requesting planned caesarean section in western Rajasthan. *The New Indian Journal of OBGYN*, 9(1), 155-160. doi:10.21276/obgyn.2022.9.1.29.
31. **Wagaw, A. C., Sendekie, A. K., Nigatu, S. G., & Mihretie, G. S. (2023):** Preferred mode of delivery and its associated factors in pregnant women with a previous cesarean scar at a tertiary care hospital in Ethiopia: Institutional-based cross-sectional study. *BMC Pregnancy and Childbirth*, 23(1). doi:10.1186/s12884-023-05891-0.
32. **Wahdan, M., Hakim, S., El Gaafary, M., Sos, D., Wassif, G., & Hussein, W. (2022):** Rising Trends in Delivery Mode in 6 Egyptian Governorates. *La Revue de Santé de la Méditerranée orientale*, 28(5-2022), 336.
33. **Welay, F. T., Gebresilassie, B., Asefa, G. G., & Mengesha, M. B. (2021):** Delivery mode preference and associated factors among pregnant mothers in Harar regional state, Eastern Ethiopia: A cross-sectional study. *BioMed Research International*, 2021, 1-7. doi:10.1155/2021/1751578
34. **World Health Organization. (2021):** Caesarean-Section-Rates-Continue-to-Rise-Amid-Growing-Inequalities- in [accessed.](https://www.who.int/news/item/16-06-2021-)
35. **Wu, J., Feng, L., Zhang, H., Guo, L., Pérez-Escamilla, R., & Hu, Y. (2022):** The inconsistency between women's preference and actual mode of delivery in China: Findings from a prospective cohort study. *Frontiers in Public Health*, 10. doi:10.3389/fpubh.2022.782784.
36. **Zainab, I., Saddique, H., & Jabeen, R. (2023):** Knowledge of pregnant women regarding the mode of delivery among the primary Gravida. *Pakistan Journal of Health Sciences*, 33-37. doi:10.54393/pjhs.v4i08.727.
37. **Zewude, B., Siraw, G., & Adem, Y. (2022):** The preferences of modes of child delivery and associated factors among pregnant women in Southern Ethiopia. *Pragmatic and Observational Research*, 13, 59-73. doi:10.2147/por.s370513.
38. **Zhuang, S., Jing, C., Yu, L., Ji, L., Liu, W., & Hu, X. (2022):** The relationship between polycystic ovary syndrome and infertility: A bibliometric analysis. *Annals of Translational Medicine*, 10(6), 318-318. doi:10.21037/atm-22-714