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Research Article

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Factors Involved in Selecting The Birth Type among Primiparous Women

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ABSTRACT

Normal vaginal delivery is more preferable mode of delivery than the surgical caesarean section, and cesarean section (C-section) should be restricted to the cases which have no possibility of natural childbirth, or it is accompanied by severe risk to women's or baby's life according to the known rules and regulations. It appears reasonable to investigate the factors involved in deciding the type of childbirth to reflect that on the planned strategies to reduce the rate of operative delivery. To assess the factors implicated in choosing the birth type among primiparous women.

Cross sectional study conducted in Aljala hospital, included all primigravida who had delivered during time interval from 1st January to 20th October 2021. The data was collected by a researcher-designed questionnaire, analized by SPSS version 16.

Among 138 primipara women aged from 18 to 45 years, on assessing the mean age group was 28.30 ± 6.06 SD. Regarding the educational level of participants, the most frequent level was high school which accounts 34.8% (48 participants) followed by less than high school 29% (40 participants), the relationship between birth type preference and educational level by using the chi square, the results revealed statistical significant relationship (*P*- value = 0.003). Regarding the birth type, 59.42% (82 participants) had delivered by cesarean section. 80.4% of the participants are house owners and accommodation is significantly associated with the choice of birth type (*P*- value =0.022). 43.48% are employed and employment is not significantly associated with the birth choice (*P*-value =0.083). Economically 84.06% of the participants have moderate income, however, it is not significantly associated factor with the birth choice. The level of awareness is significantly associated with the birth choice (*P*-value =0.005).

The present study revealed that the key factors involved in preferring caesarean delivery are education, accommodation and the level of awareness. As a result of maternal request to caesarean delivery is increasing, adequate knowledge and awareness related to birth type is now very important to minimize caesarean section. The results of this study might be used in evidence based practices to promote normal vaginal birth and perhaps maternal health index.

Keywords- *Antibiotic Resistance*; *Escherichia coli*; *Al-Nokhba Medical Clinic*.

INTRODUCTION

Normal vaginal delivery is more preferable mode of delivery than the surgical caesarean section, and cesarean section (C-section) should be restricted to the cases which have no possibility of natural childbirth, or it is accompanied by severe risk to women's or baby's life according to the known rules and regulations.[1] Surgical childbirth is indicated, when either mother's or fetus' health is at jeopardy. However, there has been an increasing rate of cesarean for non-indicated cases.[2,3] The rate of C-section has enormous differences globally and has continuously rise. It has increased from 6.7% in 1990 to 19.1% in 2014.[4] In countries, where the prevalence of cesarean section is about 20%–30%, many efforts have been made to reduce it. In many countries, the prevalence of this mode of childbirth is reaching a maximum of one-fourth.[8]

The Cesarean section is associated with undesired outcomes for the woman and her child's health. The maternal mortality rate of cesarean reaches about 2–3 times as high as natural childbirth and the rate of complications is 5–10 times as high. The major causes for the mortality related to cesarean section are sepsis, hemorrhage, preeclampsia and thromboembolisms.[9] On the contrary, research has demonstrated that cesarean section reduces the reproductive function and the ability to conceive.[10] Greater efforts should be made to minimize the rate of C-section. It appears reasonable to investigate the factors involved in deciding the type of childbirth to reflect that on the planned strategies to reduce the rate of operative delivery. Despite recently many researches have been focused on Caesarean section and its underlying associated factors, it yet demands additional studies for different purposes. There is limited number of researches have studied that factors

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involved in the selected type of delivery. The results of this limited body of research have been varying for several reasons: different tools, sociodemographic features of the target women population, cultural issues, psychological, and social characteristics of the participants. Therefore, the factors associated with women's decision to choose the birth type needs to be studied in depth. Then, the design of conducted research will be able to demonstrate the factors influencing women's decision to decide the type of childbirth. Consequently, the current research objectives were to examine the important factors involved in primiparous women's choice of the type of birth.

Giving birth is a blessing for human kind that aid in the preservation of people on earth, the birth giving process is natural and it does not need health interventions.[11]

The process of delivery these days is accomplished in two approaches: vaginal delivery and caesarean section. Despite the vaginal route of birth which is the natural delivery is considered the best delivery method, the prevalence of caesarean section delivery has been risen considerably in the last years.[12] Caesarean section is the procedure in which the baby is taken out through an abdominal incision.[13] World health organization (WHO) recommends that the rate of caesarean section should not surpass 15% of all deliveries.[14]

Overview of labor

Labor is the process in which a fetus and placenta are expelled from the uterus via the vagina. Labor process in humans divides into three separate stages. The first stage is further divided into two distinct phases. Successful labor is dependent on three factors: maternal pushing and uterine contractions, fetal factors, and pelvic diameter. This triad is traditionally referred to as the passenger, power, and passages.[10]

Obstetricians typically use multiple methods to observe labor. Serial vaginal examinations are adopted to monitor cervical dilation, effacement, station and fetal position. Fetal cardiac activities are monitored nearly continuously by continuous cardiotocography (CTG) to assess fetal condition for the duration of labor. Additionally, Cardiotocography (CTG) is useful to monitor the rhythm and strength of uterine contractions. Medical professionals use the information they obtain from monitoring and cervical examinations to confirm the patient's stage of labor and to follow labor progress.[10]

Presentation of Labor

Women will usually present to obstetrician triage with concern for the onset of labor. Common symptoms include painful uterine contractions, vaginal bleeding, bloody show, and fluid leakage from the vagina. Labour is defined as regular, painful and significant uterine contractions associated with cervical dilation and/or effacement.[10] When women first present to the labor and delivery ward, vital signs, including temperature, heart rate, oxygen saturation, respiratory rate, and blood pressure, must be measured and reviewed for any abnormal findings. The patient should have a continuous cardiotocography (CTG) monitoring to ensure fetal condition and wellbeing. The patient's antenatal records, including obstetric history, surgical history, medical history, laboratory, and ultrasound data, should undergo evaluation and review. Finally, a history of the present illness, analysis of systems, and physical examination, including a sterile speculum examination, will need to take place.

At the time of sterile speculum exam, the obstetrician should look for signs of rupture of membranes as amniotic fluid collection in the posterior vaginal fornix. A sterile gloved examination should be undertaken to determine the degree of cervical dilation and effacement. While the state of cervix is examined, confirmation of the fetal presentation is also mandatory. Additionally, ultrasound can be beneficial to confirm the presentation and position of the fetus. Particular comment should be noted in the case of breech presentation due to the increased risks in terms of fetal morbidity and mortality when compared with the cephalic presenting fetus.[10]

Management of Normal Labor

Labor is a natural process, however, it can have disruption by some complicating features, which at times entail clinical interventions. The management of low-risk labor is a subtle balance between allowing the natural process of vaginal birth to proceed while restricting any potential hazards.[12]

In labor, cardiotocography monitoring is frequently employed to record uterine contractions and fetal heart rate over time. Obstetricians evaluate fetal heart tracings to investigate for any signs of fetal distress that would indicate intervention as well as efficiency of uterine contractions. Vital signs of the mother are obtained at regular intervals and whenever concerns arise regarding a clinical condition. Laboratory testing usually comprises the hemoglobin, hematocrit, and platelet count and in some occasions repeated following delivery if significant bleeding takes place. Cervical examinations are performed every 2 to 3 hours except for concerns arise and need more frequent exams. Women should be allowed to move about freely and change positions if desired.[12] An intravenous line is typically inserted in case it is required to administer medications or fluids. Analgesia is provided in the form of intravenous opioids, inhaled nitrous oxide, and neuraxial analgesia in those who demand it.[13] Rupture of membranes or amniotomy is deemed necessary for fetal scalp insertion or labor augmentation, Oxytocin may be commenced to augment uterine contractions when found to be inadequate.[12]

Stages of labor

First Stage of Labor

The first stage of labor commences with the onset of uterine contractions and ends with full cervical dilation to 10 centimeters.[10] Labor often starts spontaneously or may be induced medically or surgically for different

maternal or fetal indications.[14] Methods of inducing labor comprise cervical ripening with prostaglandins, membrane sweeping, amniotomy, and intravenous oxytocin.[14] Even though sharply determining when labor commences may be imprecise, labor is normally defined as the beginning of strong and regular contractions that comes at approximately every 3 to 5 minutes.[10] Pregnant women may experience unpleasant painful contractions throughout pregnancy that do not lead to cervical dilation or effacement, known as false labor or Braxton hicks contractions. Consequently, definition of the onset of labor often depends on retrospective or subjective data. Friedman et al. was the first one to investigate labor progress and clarified the beginning of labor as starting when patient felt significant and regular rhythmic contractions.[15] He drew a graphic of cervical dilation over time and determined that normal labor has a sigmoidal shape, he suggested that labor is divided into three divisions. First, an initial preparatory stage characterized by slow cervical dilation, with huge biochemical and structural changes. This is recognized as the latent phase of the first stage of labor. Second, a considerably shorter and rapid dilatational phase is known as the active phase of the first stage of labor.[15]

The presenting part of the fetus begins the process of engagement into the pelvis during the first stage. During the first stage of labor, serial cervical examination are carried out to check the position of the fetus, cervical dilation, and cervical effacement. Cervical effacement means the cervical length or thickness. When the cervix is entirely thinned out, and no length is left, this is known as 100 percent effacement.[10] Throughout the active phase, the cervix considerably dilates at a rate of 1.2 to 1.5 centimeters per hour. Multiparas tend to have more rapid cervical dilation than primiparous.[10] The lack of cervical changes for more than 4 hours in the presence of adequate and sufficient strength uterine contractions or six hours with inadequate contractions is considered the arrest of labor and may justify clinical interventions.[16]

Second Stage of Labor

The second stage of labor starts with full cervical dilation to 10 centimeters and ends with the delivery of the new born. This was additionally, defined as the pelvic division phase by Friedman. After cervical dilation is completed to 10cm, the fetus descends into the vaginal birth canal with or without maternal pushing efforts. The fetus progresses through the birth canal by 7 movements. The movements include the following: engagement, descent, flexion, internal rotation, extension, external rotation, and expulsion.[10] In delivering women without anesthesia, the second stage of labor duration lasts less than three hours in nulliparous women and less than two hours in multiparous women. In women who receive anesthesia, the second stage of labor lasts less than four hours in nulliparous women and less than three hours in multiparous women.[10] The second stage is considered prolonged, if the second stage of labor duration lasts longer than the above parameters. Several factors may control the duration of the second stage of labor, these comprises: fetal elements such as fetal size and position, or maternal elements such as pelvis size, the proportions of expulsive efforts, conditions such as hypertension or diabetes, age, and history of previous deliveries.[17]

Third Stage of Labor

The third stage of labor begins when the fetus is delivered and ends with the delivery of the placenta and membranes. Spontaneous expulsion of the placenta commonly takes about 5 to 30 minutes.[10] If the placenta is retained greater than 30 minutes there will be a higher risk of postpartum hemorrhage and might be an indication for manual removal or other intervention.[10] Management of the third stage of labor includes placing traction on the umbilical cord with simultaneous suprapubic pressure to enhance a quicker placental delivery.

Complications of labor

Complications may occur during any of the stages of labor to result in abnormal progress of labor. Through the first stage, women may have arrest of labour, indicating caesarean section, which may impact greater maternal and fetal risk. In second stage complications may include a number of complications due to the trauma of the birth process to either the neonate or the mother. The fetus can suffer asphyxia, shoulder dystocia, fractures, nerve injuries, scalp hematomas, and hypoxic brain injuries. Comparably, the mother could develop traumatic complications such as uterine rupture, vaginal laceration, cervical laceration, uterine hemorrhage, amniotic fluid embolism, and death. The third stage of labor might develop complications from hemorrhage, retained placenta, or incomplete removal of the placenta.[14]

Multidisciplinary team during labor

The stages of labor delineate a complex physiological process that begins when labor starts and ends with the birth of the fetus and placenta. Labor is usually followed clinically with multiple methods by an inter-professional team. The process of labor could progress as generally expected with basic events and constant time parameters or otherwise could encounter complications and delays, which may require diagnosis and medical intervention.[21]The duty of the inter-professional team in following and caring for women during labor is critically essential in keeping women safe and enhancing good outcomes during the birth process.[21] A wide range of medical professionals such as nurses, midwives, pharmacists, family physicians, anesthesiologists, and obstetrician/gynecologists might be involved in a labor process. Communication is required between the professionals to help create an environment of safety and patient-focused care. Midwives often deal with labor and delivery and work with physicians when complications exist, necessitating physician intervention, like Caesarian section or operative delivery. Each labor is unique, however an inter-professional attitude prenatally and during labor can be used to enhance good patient

outcomes and provide patient-focused care, as each provider works in team collaboratively to guarantee communication lines remain open between different specialties on the health care system.[21] A Canadian retrospective cohort study on 1238 women showed that an interprofessional team attitude to obstetrical care was revealed to provide superior patient outcomes by minimizing the rate of caesarean sections and decreasing the length of hospital stays for women.[21]

Caesarean section

Caesarean section (CS) is a lifesaving procedure carried out when a critical obstetric condition prevents vaginal delivery.[22] The CS rate is generally considered an important global measure for measuring acquisition of obstetric services and safe and timely care for mothers and newborns.[23] Ensuring accessibility to CS is an important strategy to achieve the goals of reducing maternal deaths to less than 70 per 100 000 live births by 2030.[24] Because the CS is a surgical procedure and CS is related to increased risk of maternal complications, including postpartum haemorrhage, blood transfusion, hysterectomy and even death. The uterine scar could increase the risk of uterine rupture, placenta praevia or placenta accreta will also exist in subsequent pregnancies.[25-27] These complications are highest in settings that deficient in safe surgery and/or the capacity to handle and treat complications safely. In contrast with vaginal birth, CS also demands more health personnel and necessitates higher costs both for hospitals and for society.[28] Additionally, over the past 30 years CS rates have raised steadily in many countries, especially in middle-income and high income countries, and it becomes a major public health concern.[29,30] In 1985, the WHO stated that "There is no justification for any region to have a caesarean section rate higher than 10%–15%". Many studies have analyzed the relationship between the CS rate and maternal and neonatal mortality and morbidity, in an attempt to know the optimal limit associated with minimum maternal and perinatal risks.[32-35] However the numbers of limitations in each of these strategies have limited the explanation of results.36 In 2015, a new WHO policy statement replacing the earlier one did not recommend any specific rate as 'optimal', alternatively recommending that 'Every effort should be made to provide caesarean sections to women in need, rather than striving to achieve a specific rate'.[22]

However, the above-mentioned health and socioeconomic impact as well as the unknown ecological and intergenerational consequences of the worldwide trend of increasing CS rate mean that it continues to be a widespread concern. The rise in CS deliveries is yet seen not only in high-income and middle-income countries, but also in low-income ones. Besides, the increase has not been symmetrically distributed across income or residency class; in lowincome countries, inequity are aggravated by the unnecessary overuse of CS in or among some facilities, settings or patients groups alongside others where the lack of access to the procedure leads to high levels of maternal and perinatal mortality.[37] Attempts have been made to work out effective strategies and plans to reduce non-indicated CS. In order to better face this challenge, it is essential to study the population of women who undergo CS, to identify high-risk groups for poor outcomes and to investigate the reasons for these trends in different groups and settings.[38] For many years, the lack of a standard and internationally accepted CS classification system made it difficult to fully understand the growing trend and act on it. The 10-group Robson classification system now recommended by WHO and the International Federation of Gynecology and Obstetrics for assessing, monitoring and comparing CS rates within healthcare facilities over time as well as between them is simple, clinically relevant, accountable, replicable and verifiable, all critical characteristics for such a system.[39-40]

The majority of women must be able to experience childbearing and birth as a positive incident in their life that have a little adverse consequence. According to the previous studies the most common reason for choosing caesarean section by primiparous woman is the fear of child birth. In the current situation, it seems that strategies should be planned by investigating and designing programs to promote women's health. This can only be achieved by studying and analyzing the factors associated with primipara women attitude towards the mode of delivery. Therefore in this study we aimed to investigate the key factors involved in primiparous women's choice of the type of delivery.

Objectives

This research is conducted among the primiparous women who had given birth in Aljala hospital and the results will be hoped to help planning to prepare mothers to welcome natural childbirth and decrease the rate of cesarean.

MATERIALS AND METHODS

Study design and participants

Method of study: This study was descriptive/analytical research which designed as a cross-sectional study.

***The setting*:** Aljala hospital.

The sample size: 138 primipara women collected from postnatal ward. Mothers' medical files studied, those who met the inclusion criteria was selected and invited to take part in the research. The inclusion criteria were age range from 18 to 45 years, primiparity, and consent to participate. Exclusion criteria were placental problems, diagnosis with multiple pregnancy, contracted pelvis, pregnancy diabetes, and history of hypertension.

***Study period*:** From 1st January to 20th October 2021.

***Instruments*:** The data was collected by a researcher-designed questionnaire

***Data analysis*:** After the data collection is completed, they was entered SPSS ver. 16 (IBM Company, Armonk, NY,

USA) for statistical analyses and described through mean and standard deviation. *T*-test and Chi-squared test will be used to analyze the data. The significance level was be set at $P < 0.05$

***Ethical consideration*:** Informed written consent was obtained from all the participants and the data collected from women were anonymous with maintained confidentiality throughout the study results. This study was approved by university of Tripoli medical sciences ethics board, health authority. Additionally, it was approved by the local committee in Aljala hospital.

RESULTS

Demographics and sociodemographic factors

***Age group*:**

Among 138 primipara women aged from 18 to 45 years, on assessing the mean age group was 28.30 ± 6.06 SD, minimum age was 18 years, maximum age was 41 years and the most frequent age group were ranged from 32 to 38 years which accounts 34.78% (48 participants) (Figure 1).

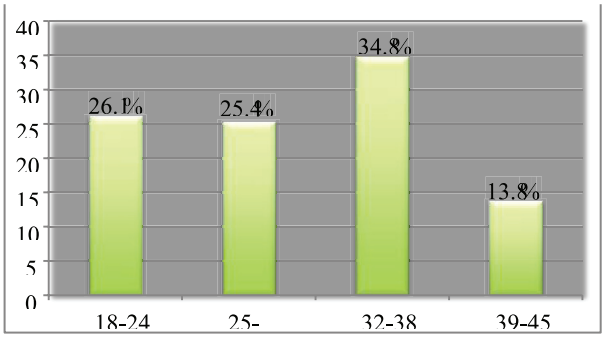

Figure 1: Demonstrate age group among primipara women who had delivered

in Aljalah hospital during 2021, Tripoli, Libya.

Regarding the relationship between birth type and age show statistical insignificant results (*P*- Value = 0.974)

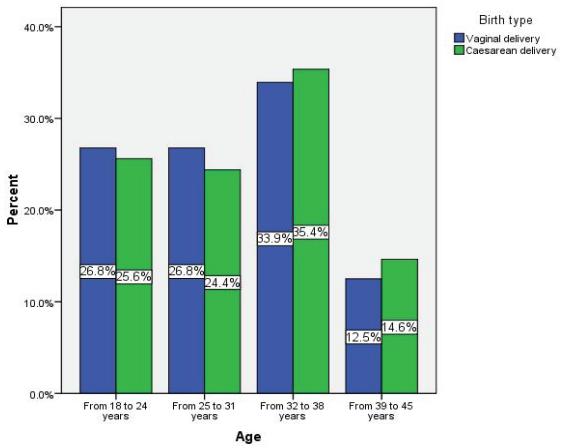

Figure 2: Demonstrate the relationship between the preference of the type of birth and age among primipara women who had delivered in Aljalah hospital during 2021, Tripoli, Libya.

2-Education level:

Regarding the educational level of the participants, the most frequent level was high school which accounts 34.8% (48 participants) followed by less than high school 29% (40 participants), as shown (Table 1).

Table 1: Illustrate educational level among primipara women who had delivered in Aljalah hospital during 2021, Tripoli, Libya.

(Variables (N=138	Frequency	Percentage
None	37	26.8%
Less than High school	40	29.0%
High school	48	34.8%
University	**13**	**9.4%**

Table 2: Illustrate educational level of their primipara partners who had delivered in Aljalah hospital during 2021, Tripoli, Libya.

Variables (N=138)	Frequency	Percentage
None	34	24.6%
Less than High school	46	33.3%
High school	40	29.0%
University	**18**	**13.0%**

The relationship between educational level and birth type preference:

On evaluating the relationship between birth type preference and educational level by using the chi square, the results revealed statistical significant relationship (*P*-value = 0.003) (Figure 3).

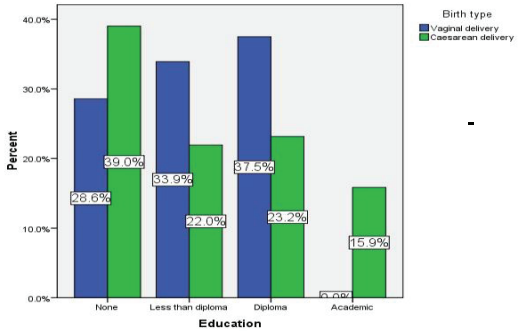

Figure 3: Illustrate the relationship between birth type preference and educational level among primipara women who had delivered in Aljalah hospital during 2021, Tripoli, Libya.

3-Occupation status:

Regarding the occupational status 56.52% (78 participants) were unemployed while 43.48% (60 participants) were employed.

Table 3: The occupation of the participants

Occupation	(Number (No	(%) Percentage
Employed	60	43.48%
Unemployed	78	56.52%
Total	138	100%

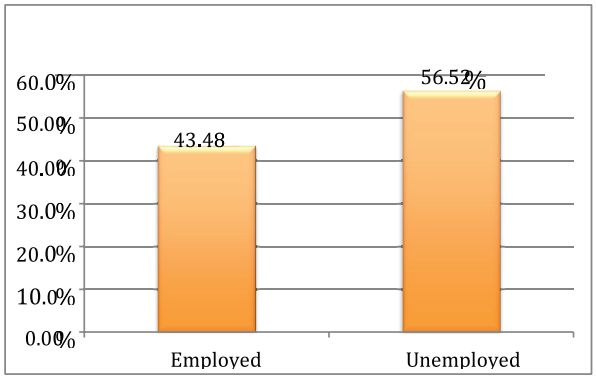

Figure 4: Demonstrate the employment among the study population

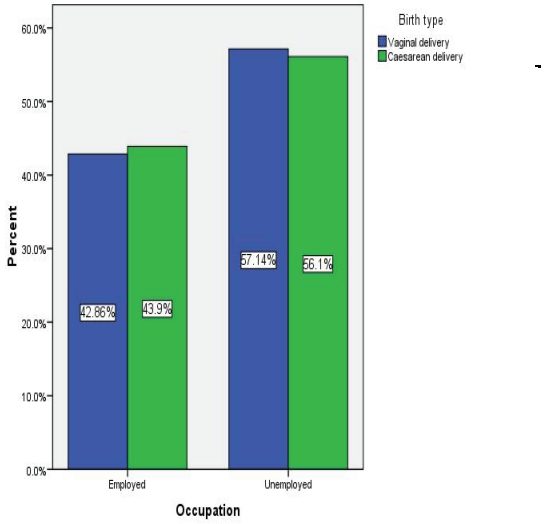

Figure 5: Demonstrate the relationship between birth type choice and occupation among primipara women who had delivered in Aljalah hospital during 2021, Tripoli, Libya.

The result is statistically non-significant on the relationship between birth type and occupation (*P*- value = 0.903).

4-Economic status:

On evaluation of the economic status, most of the participant were moderate economically

84.06% (116 participants), (Figure 6).

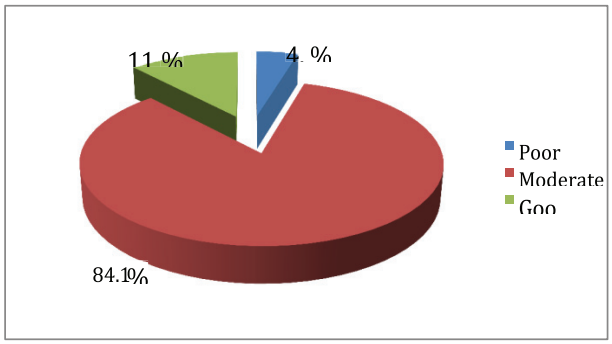

Figure 6: Illustrate economic status among primipara women who had delivered in Aljalah hospital during 2021, Tripoli, Libya.

The relationship between the economic status and birth type preference:

There is no statistically significant relationship between birth type preference and economic status (*P*- value = 0.083) (Figure 7).

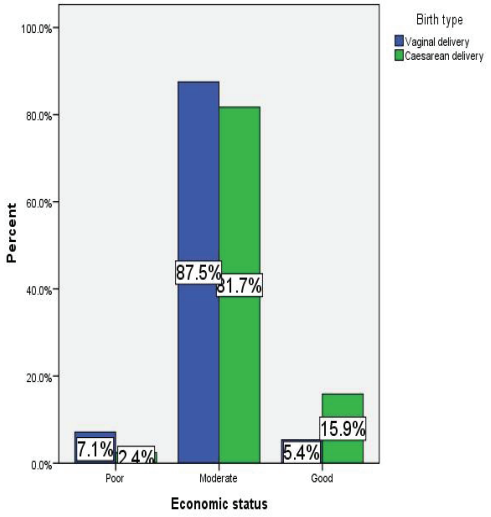

Figure 7: Demonstrate the relationship between birth type and economic status among primipara women who had delivered in Aljalah hospital during 2021, Tripoli, Libya.

5-Accommodation:

On assessing the accommodation and level of living, 80.4% (111) are house owner and with a good level of living which accounts for most of participants.

Table 4: Demonstrate the participants who are house owners

Accommodation	Number (No)	Percentage (%)
House owner	111	80.4%
Non-house owner	27	19.6%
Total	**138**	**100%**

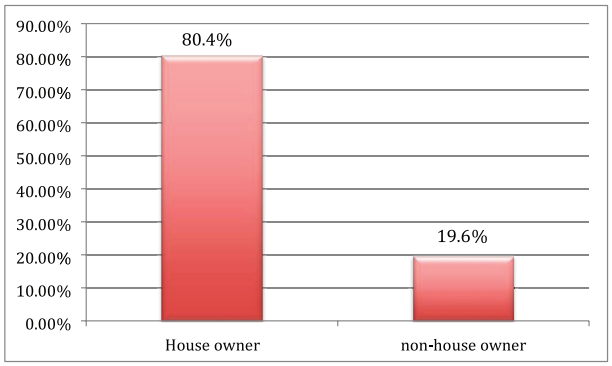

Figure 8: The percentage of owners of accommodation

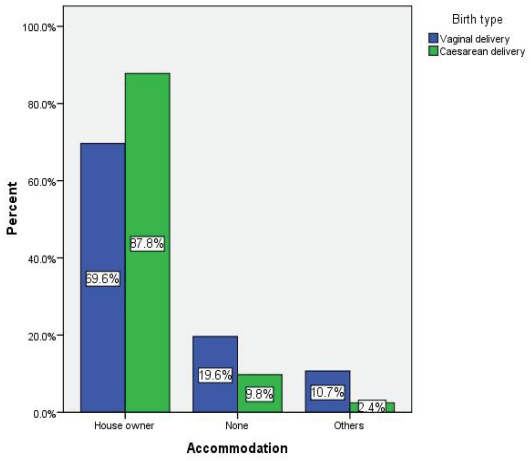

Figure 9: Demonstrate the relationship between birth type preference and accommodation among primipara women who had delivered in Aljalah hospital during 2021, Tripoli, Libya.

There is statistically significant result on the relationship between birth type choice and accommodation (*P*- value = 0.022).

Birth and its outcome

1-Type of birth:

Regarding the birth type or the mode of delivery 59.42% (82 participants) had delivered by cesarean section (Figure 3).

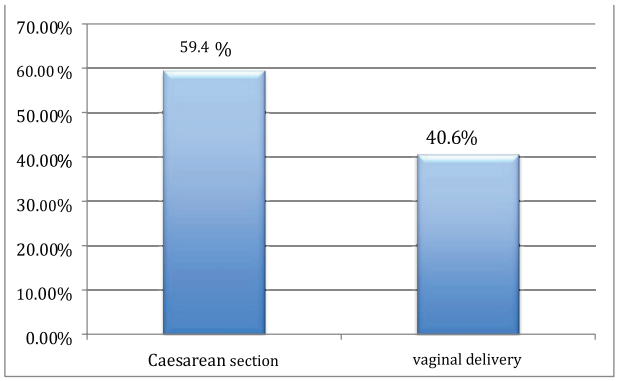

Figure 10: Demonstrate the type of birth (delivery) among primipara women who had delivered in Aljalah hospital during 2021, Tripoli, Libya.

2-Baby gender:

And nearly half of delivered newborn were female which accounts 50.7% while 49.3% of primipara women had delivered male.

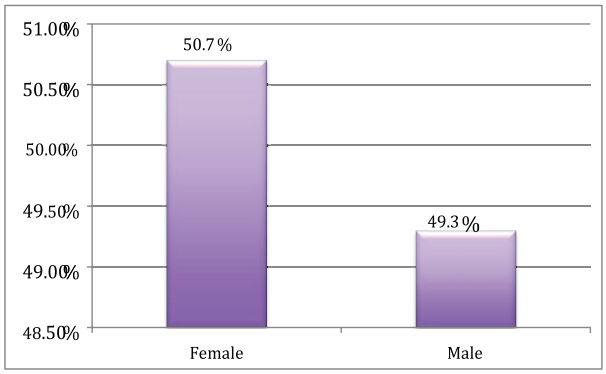

Figure 11: The baby gender in the study group

3-Baby birth weight:

On evaluating the birth weight, the mean birth weight was 3.28 ± 0.648 SD which is considered within normal range (Figure 12).

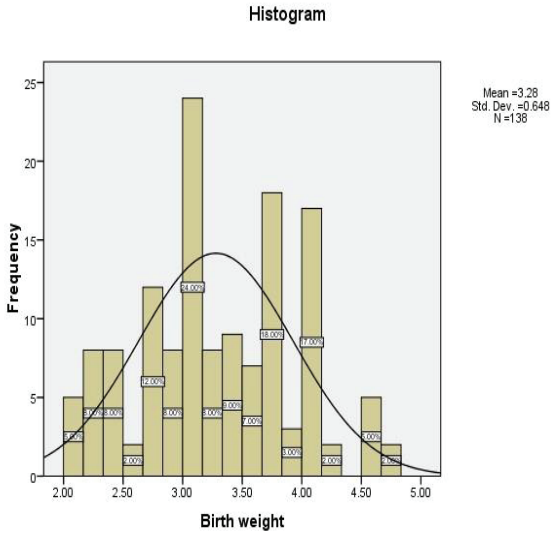

Figure 12: Demonstrate the birth weight among primipara women who had delivered at Aljalah hospital during 2021, Tripoli, Libya.

Awareness level

On assessing the level of awareness and knowledge among primiparous women regarding the birth type and differences between vaginal delivery and caesarean section C/S the findings were as demonstrated on the tables below (Table 5, 6).

1-Knowledge and awareness about vaginal delivery

Table 5: Demonstrate the knowledge and awareness about the vaginal delivery among primipara women who had delivered in Aljalah hospital during 2021, Tripoli, Libya.

Variables (N=138)	Yes (Frequency/ percentage)	No (Frequency/ percentage)
Do you think that vaginal delivery is safe?	99 (71.7%)	39 (28.3%)
Do you think that vaginal delivery less bleeding?	99 (71.7%)	39 (28.3%)
Do you know that vaginal delivery fast recovery?	118 (85.5%)	20 (14.5%)
Do you know vaginal delivery need anesthesia sometimes?	46 (33.3%)	92 (66.7%)
Do you know anesthesia complications?	62 (44.9%)	76 (55.1%)
Do you know that vaginal delivery is associated with severe pain?	112 (81.2%)	26 (18.8%)
Do you know that vaginal delivery is associated perineal damage?	88 (63.8%)	46 (33.3%)
Do you know the cost in vaginal delivery?	70 (50.72%)	68 (49.28%)

2-Knowledge and awareness about caesarean section

Table 6: Demonstrate the knowledge and awareness about the cesarean section among primipara women who had delivered in Aljalah hospital during 2021, Tripoli, Libya.

(Variables (N= 138	Yes (Frequency/per-(centage	No (Frequency/percent-(age
Do you think that CS is ?less painful	(65.2%) 90	(34.8%) 48
Do you know that CS has anesthesia complica-?tions	(48.6%) 67	(51.4%) 71
Do you know that CS has ?risk of bleeding	(49.3%) 68	(50.7%) 70
Do you know CS is associated with wound pain ?and infection risk	(75.4%) 104	(24.6%) 34
Do you know that CS takes longer time for ?recovery	(75.4%) 104	(24.6%) 34
Do you know that the CS ?is more expensive	(50.72%) 70	(49.28%) 68

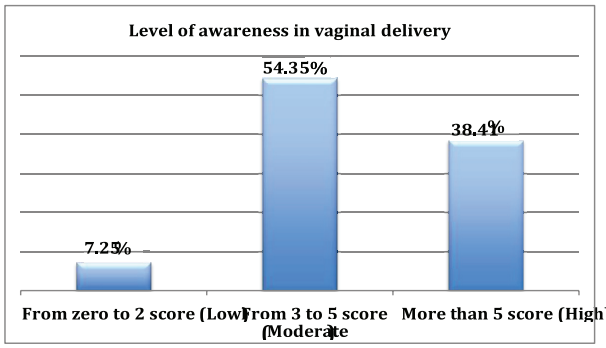

Figure 13: Level of awareness in vaginal delivery (*P*- value = 0.000) statistical significant.

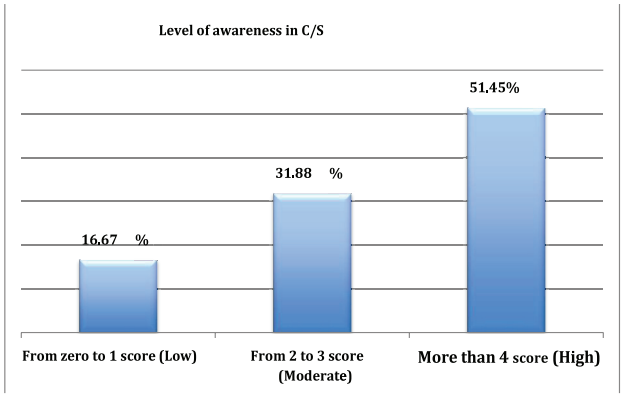

Figure 14: Level of awareness in cesarean section (*P*- value = 0.000) statistical significant.

In determining the statistical association between birth type preference and the level of awareness about the mode of delivery the results revealed statistically significant association (*P*- value = 0.005).

4.4 Preference of the mode of delivery

Prefer	Prefer vaginal delivery	Prefer CS
Yes	66 (48%)	72 (52%)
No	72 (52%)	66 (48%)
Total	138	138

DISCUSSION

Childbearing is a significant incident in women's life, and fear of vaginal delivery is very worrying for mothers. There are many factors affect the women decision regarding the mode of delivery, which often lead to the request of caesarean section. In the current study we investigated the relationship of age, education, occupation, economic status, accommodation and finally the level of awareness among primiparous women who delivered in Aljalah hospital. Among 138 primipara women aged from 18 to 45 years, on assessing the mean of age was 28.30 ± 6.06 SD, the most frequent age group were ranged from 32 to 38 years and that accounts for

34.78% (48 participants), this age group is the frequent age of childbearing in Libya. The results of our study showed nonsignificant relationship between the women's age and birth type preference, we found that the age factor is not a predictor for preference of birth type, a number of studies have indicated that caesarean section is higher in older women. Zhang et al, in his study he showed that the overall prevalence of caesarean section among women more than 35 years was two times more than that of mothers younger than 20 years.[41]

Moosavi et al, in his study found that the older women during their pregnancy the higher would be the caesarean section rate.[42] As older women are more prone to pregnancy related complications which necessitate delivery by caesarean section the rate of caesarean section delivery is higher among older women.[43] On the other hand other studies argued that the trend to caesarean section was higher in younger than 20 years of age.[44] These divergences could be explained by that the younger the women's age the less adequate awareness, less experience and more sensitivity to caesarean complications. Education and boosting women's awareness of the disadvantages of caesarean section and advantages of natural childbirth is essential in all ages. Additionally, it is advisable that healthcare providers educate and encourage the community not to postponed pregnancy to old age. Regarding the educational level of the participants in the current study, the most frequent level was high school which accounts

34.8% (48 participants) followed by less than high school 29% (40 participants).

In the present study, we found significant relationship between birth type preference and educational level by using the chi square (*P*- value = 0.003). Many studies have revealed that the mother's high level of education is one of the important factors associated with a higher inclination to ward caesarean section.[45] Tang et al also reported a significant relationship between preference for caesarean section and the level of women's education.[46] In contrast, other studies by Alimohamadian et al, Ziaghm et al and leone et al. revealed no significant correlation between education and the choice of birth type.[47-49] It can be concluded that those with lower education had less awareness and knowledge about complications of caesarean section. The differences between studies can be attributed to different social, cultural and geographical aspects. Another reason why educated women are more likely to choose caesarean delivery is that they are usually employed, and can often afford the expenses more easily. Additionally, the educated people are not targeted by health educators when it comes to raising awareness about the advantages and disadvantages of different modes of delivery. If this debate is true, it is very critical to focus on chances to train those educated people. However, a study conducted in Iran by Safari et al, showed that the tendency to CS delivery is inversely related to the level of education of pregnant women that is due to people with lower levels of education are more likely to have less knowledge and awareness about complications of CS delivery.[50] On assessing the economic status of the participants in this study we found that most of the primipara women were having a moderate income 84.1% which may represent the majority of Libyan population. The relationship between birth type choice and economic status among primipara women who had delivered in Aljalah hospital were non-significant *P*-value 0.083, this means there is association between the birth type choice and the economic status. Some studies showed that the higher the income the more would be the tendency to caesarean section.[51] Omani et al in his study that was a cross sectional study found that the economic status of the participants was associated with an increased tendency to caesarean section.[51]Klemetti et al, found that household income was a strong predictor of caesarean section delivery in rural China.[52] A number of studies have reported that women with high socioeconomic status prefer to caesarean delivery.[53,54] The financial resources that the women have play an important role in her choice of the mode of delivery, because here women can pay the expenses of caesarean delivery. Having a higher socioeconomic level is always associated with modern style of life, and caesarean section is considered a character of higher social status. Therefore, this kind of mentality dominance significantly inhibits the efforts to reduce the rate of caesarean section.

Regarding occupation, our participants showed 43.48% employment status, however, the result is statistically non-significant on the relationship between birth type and occupation (*P*- value = 0.903). We found no effect of mother's employment on the choice of the mode of delivery. Our result regarding occupation agrees with Ghahfarokhi et al, who demonstrated no relationship between mother's occupation and birth choice.[55] Additionally, this finding was consistent with that of Eynsheykh et al, this can be explained by that the employed women are likely to be exposed to more information and knowledge that give them more awareness about the delivery modes, this divergence may be attributed to the different populations socially and geographically.[56] On assessing the accommodation and level of living in the current study, 80.4% (111) are house owner and with a good level of living which accounts for most of participants. The findings are statistical significant result on the relationship between birth type and accommodation (*P*- value = 0.022).

This study revealed that most of our participant have moderate to high awareness about deliver modes. 54.35% of the participants have moderate awareness in vaginal delivery and 51.4% have high awareness in caesarean section delivery. However, many other studies have confirmed the effect of mother's knowledge and education about modes of delivery in reducing the caesarean section rates.[57,58] As a consequence, it is substantially important to support women to boost their knowledge about delivery modes and to gain accurate advice in this regard. On evaluating the rate of birth type, 59.42% had delivered by C/S which is considered high in comparison to Latin

America and the Caribbean region that reported globally as the highest CS rate 42% followed by North America 32%, Oceania 31%, Europe 25%, Asia 19% and Africa 7%.[59] Our results cannot be considered appropriate as the sample size is restricted and it represents Aljala hospital data. The rising caesarean delivery rate is accompanied by reports on increasing maternal morbidity due to pathological placentation, peripartum hysterectomy and massive obstetric bleeding.[59,60] The extent to which caesareans on maternal request has contributed to this increase has long been a matter of debate. Caesareans on maternal request are reported in rates of 1–48% of caesareans in the public sector and 60% in the private sector.[61,62] Controversy exists regarding the definition of 'maternal request', the differences in hospitals' and obstetricians' attitude to perform a CS on maternal request in the absence of medical indication, and the high rate of such operations in high-income urban areas and private hospitals as compared to rural areas and public health-care systems.[61,62] In contrast, more than 90% of pregnant women claim that they want to give birth in a natural way, according to a Swedish study.[63] Although several studies conclude that cesarean delivery causes certain outcomes, the patients and clinicians should be aware that cesarean delivery is associated with long-term risks for the baby and for subsequent pregnancies and a reduced risk of urinary incontinence and pelvic organ prolapse for the mother. The significance that women attribute to these individual risks is likely to vary, but it is imperative that clinicians take care to ensure that women are made aware of any risk that they are likely to face it.[63] On evaluation the significance of pelvic pain following delivery, on our study 81.2% had considered that the vaginal delivery is causing severe pain while 65.2% considered that the caesarean delivery were less painful on comparing with two studies investigated pelvic pain.

There was no statistically significant association of mode of delivery with pelvic pain 33/2,449 cesarean delivery versus 313/15,512 vaginal delivery; OR 0.74, 95% confidence intervals 0.54 to 1.00, $P = 0.05$, I2 = 0%).[64,65] On assessing the birth weight of newborn, the mean birth weight was 3.28 ± 0.648 SD which consider within normal, as reported studies that Compared with vaginal delivery, cesarean delivery was associated with increased odds of childhood overweight (3,221/39, 866 cesarean delivery versus 9,792/147, 282 vaginal delivery; OR 1.22, 95% confidence intervals 1.06 to 1.41, $P = 0.007$; 4 studies; I2 = 47%).[66,67] However, there was no statistically significant association between previous mode of delivery and preterm labor, small for gestational age, low birth weight (<2,500 g) or neonatal death.[68-72]

The limitation on this study was the small sample size. Also the study was single centered and may be liable to selection bias as Aljalah hospital is one of most important maternity hospitals in Tripoli and many of pregnant women may had knowledge about the selecting type of labor for this reason our results could not be generalized and further studies are recommended with larger sample size. The strength of the study that the mode of collecting the sample was randomly and the sample taking universally from one of most crowded maternity hospital with different characteristics of pregnant women.

CONCLUSION

The present study revealed that the key factors involved in preferring caesarean delivery are education, accommodation and the level of awareness. As a result of maternal request to caesarean delivery is increasing, adequate knowledge and awareness related to birth type is now very important to minimize health related risks and complications from inappropriate use of caesarean section. The results of this study might be used in evidence based practices to promote normal vaginal birth and perhaps maternal health index.

RECOMMENDATIONS

1- We recommended further studies in different centers rural and urban to assess and determine the way of selecting the birth type in relation to patient and doctors characteristics.

2- Empowering women to overcome the fear of natural childbirth.

3- Strategies for reducing the rate of caesarean delivery and interventions in child birth should focus on primiparous as a priority.

4- Boosting awareness among pregnant women about the disadvantages of caesarean section through mass media and the medics themselves to minimize the health risks related to caesarean section and their complications and to reduce unnecessary operative delivery.

5- Planning and implementing childbirth preparation programs.

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