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Exploring the Perspectives of Single Young Women in Jordan on Vaginal Birth and Cesarean Section: A Cross-Sectional Study

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Abstract

Aim: To explore the perceptions, knowledge, and attitude of unmarried Jordanian women towards vaginal birth (VB) and CS, as well as discovering their preference, and their predominant source of information regarding the two modes of birth. Methodology: This is a cross-sectional survey. Data was collected through face-to-face interviews. The questionnaire consists of 30 questions. The study sample included any unmarried Jordanian woman aged between 18 and 25 years who agreed to participate in this study. No married women, or women who had previously been pregnant, were included in the study. Results: A total of 1019 participants were included. Most of the participants agreed that VB was an acceptable mode of delivery. 75% believed that the mother recovers faster after VB. The majority of the single women held a positive perception towards good maternal health after VB. 90.9% held the view that the mother feels happier when seeing her baby soon after VB. 76.2% (n=776) of the participants thought that VB establishes a beautiful emotional connection between the mother and her baby. In addition, 756 (74.2%) women stated that they believed vaginal birth pains to be annoying. Conclusion: Women's choices of delivery mode are related to individual preferences, knowledge, level of education, and socioeconomic status. Findings of this study revealed that single women in Jordan favor VB over CS. For those who showed a preference for CS, that choice was most often based on lack of some knowledge, and/or fear of pain during a VB. The number of clinically unnecessary CS births can be reduced through a concerted effort to improve women's knowledge, and spreading cultural awareness using targeted mass media to inform young women of the pros and cons of having a VB.

Keywords: *Vaginal Birth, Cesarean Section, Single Women.*

Introduction

Childbirth is one of the many miracles God has given us [1]. On occasion, mothers and their babies encounter complications which necessitate cesarean section (CS). The rate of CS births is increasing in Jordan, following a trend which is a cause of global concern [2]. Using CS as an intervention when it is not clinically indicated does not yield great benefits, and can even cause

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harm [3]. Amarin et al stated that in The national maternal mortality ratio for Jordan the incidence of CS has increased markedly during the last few decades; about 1 out of 3 women are delivering via CS, although it is associated with a higher number of complications when compared with vaginal delivery, as well as increased immediate and delayed morbidity and mortality rates [4]. Two studies on the prevalence of C-sections concluded that the increased CS rates in low risk patients may be explained by a number of non-medical indications [.[5,6 Furthermore, around of Jordanian obstetricians reported that they would opt for an elective non-medically %7 .indicated CS delivery for their own wives [7] ,Many researchers have studied the attitudes knowledge, and preference of mode of delivery, comparing VB with CS, in pregnant women and those who were already mothers [1,8,9,10,11,12]. Our study is unique in that it focuses on the .attitudes, knowledge, and preferences of single women Their perspectives could help in the formulation of educational programs that aim to guide future mothers to decide on the most appropriate mode of delivery, and also help healthcare providers to implement essential strategies to reduce unnecessary CS deliveries.

Materials and Methods

Our study is a cross-sectional survey, focusing on unmarried Jordanian women between the ages of 18 and 25. Approval was obtained from the Institutional Review Board (IRB) (10/2023/31962) at both The University of Jordan and Jordan University Hospital prior to data collection.

We adopted a structured questionnaire from previously conducted studies which was translated into Arabic by native speakers of the Arabic language to assess knowledge, attitude, preference, sources of information and factors influencing their choice regarding VB compared to CS. Demographic characteristics were added.

An online survey was designed and distributed via university groups, social media platforms, and online forums frequented by the targeted demographics which are young single Jordanian women . Participants accessed and completed the survey at their convenience from February1, to April 30, 2024.

The survey comprised of two domains , encompassing a total of 40 questions. The first domain of the questionnaire focused on sociodemographic charcteristics , such as age , marital status , family monthly income status , governorate , educational level and their source of information regarding modes of delivery. In the second domain , contained questions that explored the level of knowledge towards modes of delivery (normal vaginal delivery and CS).

A pilot sample of 100 participants (»10%) were given the questionnaire to test for the internal consistency of the questionnaire. The reliability of the questionnaire was found to be acceptable with a Cronbach's alpha = 0.856 for the 30 items assessing the participants' perceptions. No item modifications were deemed necessary. The questionnaire's content validity was assessed and approved by experts in the fields.

A total of 1051 single women participated in the survey. However, 1019 completed questionnaires were included in the analysis. 32 were excluded due to the participants not meeting the age group criteria.

All collected data was stored securely and in compliance with data protection regulations. Participants' identities were kept anonymous and each questionnaire was coded to maintain confidentiality. Access to data was restricted to authorized personnel involved in the research

project. Confidentiality and anonymity of the participants were strictly maintained throughout the data collection and analysis process. Consent was obtained in written form through the Google Form itself. Participants were required to check a box that explicitly stated, "I have read and understood the information provided and agree to participate in this study." Only those who provided consent were able to proceed to the survey questions

Statistical Analysis

The statistical analysis was done using the Statistical Package for the Social Sciences (IBM SPSS) version 27.0. The qualitative variables, including the participants' demographic data and their responses were reported as frequencies and percentages. Tables and graphs are used to present responses where appropriate. Associations between the participants' demographics and their perceptions were analyzed using Pearson's Chi Squared test or Fisher's exact test. A P-value of less than 0.05 was considered significant.

RESULTS

Most of the included sample were concentrated in the central region of Jordan (n=930, 93.1%). The age of the participants ranged from (18-25) years old. The majority had received some higher education (n=985, 96.7%), while only 34 (3.3%) had an education level of high school or below. The sample was found to have a medium to high socio-economic status. The participants' socio-demographic characteristics are shown in Table 1.

Variable	**n (%)**
Educational Level	
Higher education	985 (96.7)
High school or below	34 (3.3)
Monthly household income	
Less than 700 JDs	254 (24.9)
700-1000 JDs	363 (35.6)
More than 1000 JDs	402 (39.5)
Region	
Northern	64 (6.3)
Central	930 (91.3)
Southern	25 (2.5)
JDs: Jordanian Dinars (»1.41USD)	

Table 1: Participants' Demographic Characteristics(Jordan, 2024)

Most of the participants (n=987, 96.9%) agreed that VB was an acceptable mode of delivery with over three quarters of them believing that mothers recover faster after VB (n=773, 75%). The majority had a positive perception towards the health outcomes of VB (n=898, 88.1%). 76% (n=774) of participants considered VB to be better for long -term health than CS. 774 (76%) of the participants also believed that VB involved less complications and 625 (61.3%) believed that it is a safer option. According to 90.9% (n=926), the mother feels happier seeing her baby soon after VB, with 776 (76.2%) thinking that VB establishes a beautiful emotional connection

between mother and baby. More than half of the participants expressed the opinion that VB is less risky (n=625, 61.3%), has less complications (n=774, 76%), leaves no scars (n=620, 60.8%), incurs shorter hospital stays (n=906, 88.9%), ambulation is faster after birth (n=846, 83.0%), costs less (n=832, 81.6%), and most importantly, babies born via VB are healthier than those born by CS (n=626, 61.4%).

When asked about the suggested reasons for preference of some women for CS, 65.4% (666) and 562 (55.2%) of the participants agreed that lack of knowledge regarding VB and fear of childbirth respectively were important factors. In addition, 756 participants (74.2%) believed that VB pains are annoying and the delivery position is embarrassing (n=601, 59.0%).

On the other hand, most of them (n=706 ,69.3%) were aware that delivery via CS poses a higher risk of infection. 849 women (83.3%) saw delivery via CS as being the best option if the fetus was not in the appropriate position, and 541 (53.1%) saw that CS upon request was more likely after one CS. However, only 281 (27.6%) of the participants were aware that tubal ligation can be performed during CS.

Less than half of the participants (n=392, 38.5%) thought that CS may prevent pelvic floor muscle relaxation, may prevent uterine and vaginal prolapse (n=400, 39.3%), prevent genital disfigurement (n=499, 49.0%), and can avoid sexual dysfunction (n=299, 29.3%).

Furthermore, most of the participants disagree that CS is a better option for couples who can afford it financially (n=715, 70.2%),however , they agree that it is easily available for those with high socio-economic status (n=537, 52.7%), and is a good option if it is covered by medical insurance (n=548, 53.8%). Unfortunately, only a minority (n=237, 23.3%) were aware that a woman who delivers via CS has a greater risk of postnatal bleeding and the majority (n=559 ,54.9%) didn't know.

Statement	**Agree (%)**	**Disagree (%)**	**DK (%)**
VB is an acceptable mode of delivery	987 (96.9)	10 (1.0)	22 (2.2)
Seeing the child after VB pleases the mother	926 (90.9)	21 (2.1)	72 (7.1)
Mother recovers faster after VB	773 (75.9)	120 (11.8)	126 (12.4)
VB is more comfortable than CS	610 (59.9)	242 (23.7)	167 (16.4)
VB creates an emotional bond between the baby and the mother	776 (76.2)	90 (8.8)	153 (15.0)
VB avoids general anesthesia	604 (59.3)	227 (22.3)	188 (18.4)
VB is better on the long-term health	898 (88.1)	30 (2.9)	91 (8.9)
VB leaves no scars	620 (60.8)	230 (22.6)	169 (16.6)
VB is less risky than CS	625 (61.3)	170 (16.7)	224 (22.0)
VB has less complications than CS	774 (76.0)	86 (8.4)	159 (15.6)
VB has shorter hospital stays than CS	906 (88.9)	40 (3.9)	73 (7.2)
After VB ambulation is faster than CS	846 (83.0)	56 (5.5)	117 (11.5)
VB costs less than CS	832 (81.6)	26 (2.6)	161 (15.8)
VB pains are annoying	756 (74.2)	86 (8.4)	177 (17.4)

CS babies are healthier than VB babies	58 (5.7)	626 (61.4)	335 (32.9)
The position during VB is embarrassing for the mother	601 (59.0)	199 (19.5)	219 (21.5)
CS is a better option for the financially capable	148 (14.5)	715 (70.2)	156 (15.3)
CS allows for tubal ligation	281 (27.6)	152 (14.9)	586 (57.5)
CS prevents pelvic muscles laxity	392 (38.5)	162 (15.9)	465 (45.6)
CS prevents the prolapse of the uterus and vagina	400 (39.3)	163 (16.0)	456 (44.7)
CS prevents genital disfigurement	499 (49.0)	172 (16.9)	348 (34.2)
CS is available for those with high socio-economic status	537 (52.7)	247 (24.2)	235 (23.1)
CS is a good option if covered by insurance	548 (53.8)	248 (24.3)	223 (21.9)
Fear of childbirth is one of the reasons to do CS	562 (55.2)	329 (32.3)	128 (12.6)
Lack of knowledge about VB is one of the reasons to do CS	666 (65.4)	211 (20.7)	142 (13.9)
CS has higher infection risk	706 (69.3)	76 (7.5)	237 (23.3)
Requests to do another CS are more likely after doing one CS	541 (53.1)	122 (12.0)	356 (34.9)
CS increases the risk for vaginal bleeding	237 (23.3)	223 (21.9)	559 (54.9)
CS is better if the position of the child is not appropriate	849 (83.3)	33 (3.2)	137 (13.4)
Women prefer CS to avoid sexual dysfunction caused by VB	299 (29.3)	87 (8.5)	633 (62.1)
DK: I don't know, VB: Vaginal delivery, CS: Caesarean section. Answers were reported as frequencies (percentages).			

Table 2: Participants' Perceptions Towards the Modes Of Delivery(Jordan , 2024)

Regarding the influence of educational level on the participants' perceptions, those who had a higher educational level were more likely to report that VB has faster recovery (p-value = 0.015), faster ambulation (p = 0.008), leaves no scars (p = 0.006), and costs less (p = 0.011).

When considering the economic status of the participants, the extremes (>1000 JDs and <700 JDs monthly income) agree that VB creates an emotional bond between the mother and the baby (p = 0.035), and seeing the baby soon after VB pleases the mother (p = 0.032).

The high-income group showed greater agreement with the statement that those who undergo CS are more likely to undergo a subsequent CS (p = 0.002). Notably, while the higher-income group reported that CS allowed for tubal ligation (p < 0.001) and prevented genital disfigurement (p = 0.002), they did not know if it can prevent pelvic organ prolapse (p < 0.001).

According to our results; the higher-income group tended to have negative perceptions towards CS and agree that VB babies are healthier, while CS is a better option for those who can afford

it financially (p = 0.001 and < 0.001, respectively). They were also more aware that CS delivery carries a greater risk of vaginal bleeding (p = 0.003).

The middle- and lower-income groups were more likely to agree that VB is better in the long run (p = 0.003), less likely to agree that VB helps the mother avoid general anesthesia (p = 0.026), and less likely to consider VB pains to be annoying (p < 0.001).

Further information regarding the association between educational level, income, and the participants' perceptions can be found in Tables (3) and (4).

Table 3: Association between the participants' educational level and their perceptions(Jordan, 2024)

Statement	Educational level		p-value[0]
	Higher education	High school or below	
VB is an acceptable mode of delivery			
Agree	953	34	1.000*
Disagree	10	0	
I don't know	22	0	
Seeing the child after VB pleases the mother			
Agree	893	33	0.760*
Disagree	21	0	
I don't know	71	1	
Mother recovers faster after VB			
Agree	754	19	0.015^
Disagree	114	6	
I don't know	117	9	
VB is more comfortable than CS			
Agree	590	20	0.328
Disagree	231	11	
I don't know	164	3	
VB creates an emotional bond between the baby and the mother			
Agree	750	26	1.000
Disagree	87	3	
I don't know	148	5	
VB allows the mother to avoid general anesthesia			
Agree	587	17	0.493
Disagree	217	10	
I don't know	181	7	

VB is better on the long run			
Agree	869	29	0.662*
Disagree	29	1	
I don't know	87	4	
VB leaves no scars			
Agree	607	13	0.006^
Disagree	215	15	
I don't know	163	6	
VB is less risky than CS			
Agree	603	22	0.880
Disagree	164	6	
I don't know	218	6	
VB has less complications than CS			
Agree	749	25	0.624
Disagree	84	2	
I don't know	152	7	
Shorter hospital stays with VB than CS			
Agree	878	28	0.166
Disagree	39	1	
I don't know	68	5	
Ambulation is faster after VB than CS			
Agree	823	23	0.008^
Disagree	50	6	
I don't know	112	5	
VB costs less than CS			
Agree	802	30	0.011^*
Disagree	23	3	
I don't know	160	1	
VB pains are annoying			
Agree	732	24	0.914
Disagree	83	3	
I don't know	170	7	
CS babies are healthier than VB babies			
Agree	57	1	0.493
Disagree	602	24	
I don't know	326	9	
The position during VB is embarrassing for the mother			
Agree	582	19	0.810
Disagree	193	6	
I don't know	210	9	

CS is a better option for the financially capable			
Agree	141	7	0.564
Disagree	692	23	
I don't know	152	4	
CS allows for tubal ligation			
Agree	274	7	0.277
Disagree	149	3	
I don't know	562	24	
CS prevents pelvic muscles laxity			
Agree	378	14	0.614
Disagree	155	7	
I don't know	452	13	
CS prevents the prolapse of the uterus and bladder			
Agree	388	12	0.844
Disagree	158	5	
I don't know	439	17	
CS prevents genital disfigurement			
Agree	480	19	0.734
Disagree	167	5	
I don't know	338	10	
CS is available for those with high socio-economic status			
Agree	517	20	0.718
Disagree	239	8	
I don't know	229	6	
CS is a good option if covered by insurance			
Agree	530	18	0.733
Disagree	238	10	
I don't know	217	6	
Fear of childbirth is one of the reasons to do CS			
Agree	548	14	0.240
Disagree	314	15	
I don't know	123	5	
Lack of knowledge about VB is one of the reasons to do CS			
Agree	644	22	0.549
Disagree	202	9	
I don't know	139	3	
CS has higher infection risk			
Agree	681	25	0.343

Disagree	72	4	
I don't know	232	5	
Requests to do another CS are more likely after doing one CS			
Agree	527	14	
Disagree	115	7	0.196
I don't know	343	13	
CS increases the risk for vaginal bleeding			
Agree	227	10	
Disagree	216	7	0.709
I don't know	542	17	
CS is better if the position of the child is not appropriate			
Agree	824	25	
Disagree	31	2	0.276
I don't know	130	7	
Women prefer CS to avoid sexual dysfunction caused by VB			
Agree	286	13	
Disagree	83	4	0.337
I don't know	616	17	
º: Pearson's chi squared test, ^: significant at p-value < 0.05, *: Fisher's exact test			

Table 4: Association between participants' household income and their perceptions(Jordan,2024)

Statement	**Household Income**			**p-value⁰**
	<700 JDs	**700-1000 JDs**	**>1000 JDs**	
VB is an acceptable mode of delivery				
Agree	242	352	393	
Disagree	3	5	2	0.317*
I don't know	9	6	7	
Seeing the child after VB pleases the mother				
Agree	232	317	377	
Disagree	6	11	4	0.032^
I don't know	16	35	21	
Mother recovers faster after VB				
Agree	185	267	321	0.201

Disagree	35	46	39	
I don't know	34	50	42	
VB is more comfortable than CS				
Agree	153	229	228	
Disagree	59	77	106	0.455
I don't know	42	57	68	
VB creates an emotional bond between the baby and the mother				
Agree	206	261	309	
Disagree	15	34	41	0.035^
I don't know	33	68	52	
VB allows the mother to avoid general anesthesia				
Agree	136	205	263	
Disagree	64	85	78	0.026^
I don't know	54	73	61	
VB is better on the long run				
Agree	231	330	337	
Disagree	10	7	13	0.003^
I don't know	13	26	52	
VB leaves no scars				
Agree	153	216	251	
Disagree	52	85	93	0.515
I don't know	49	62	58	
VB is less risky than CS				
Agree	157	216	252	
Disagree	39	61	70	0.720
I don't know	58	86	80	
VB has less complications than CS				
Agree	202	272	300	
Disagree	17	34	35	0.605
I don't know	35	57	67	
Shorter hospital stays with VB than CS				
Agree	233	320	353	
Disagree	8	14	18	0.556
I don't know	13	29	31	
Ambulation is faster after VB than CS				
Agree	212	298	336	
Disagree	14	22	20	0.968
I don't know	28	43	46	
VB costs less than CS				
Agree	208	295	329	0.274

Disagree	11	7	8	
I don't know	35	61	65	
VB pains are annoying				
Agree	164	264	328	
Disagree	32	38	16	<0.001^
I don't know	58	61	58	
CS babies are healthier than VB babies				
Agree	14	24	20	
Disagree	134	218	274	0.001^
I don't know	106	121	108	
The position during VB is embarrassing for the mother				
Agree	152	217	232	
Disagree	44	73	82	0.809
I don't know	58	73	88	
CS is a better option for the financially capable				
Agree	56	55	37	
Disagree	153	245	317	<0.001^
I don't know	45	63	48	
CS allows for tubal ligation				
Agree	59	83	139	
Disagree	41	48	63	<0.001^
I don't know	154	232	200	
CS prevents pelvic muscles laxity				
Agree	104	127	161	
Disagree	31	57	74	0.084
I don't know	119	179	167	
CS prevents the prolapse of the uterus and bladder				
Agree	102	142	156	
Disagree	22	53	88	<0.001^
I don't know	130	168	158	
CS prevents genital disfigurement				
Agree	121	169	209	
Disagree	28	65	79	0.002^
I don't know	105	129	114	
CS is available for those with high socio-economic status				
Agree	134	168	235	
Disagree	56	101	90	0.012^
I don't know	64	94	77	

CS is a good option if covered by insurance				
Agree	142	191	215	0.797
Disagree	55	90	103	
I don't know	57	82	84	
Fear of childbirth is one of the reasons to do CS				
Agree	142	213	207	0.250
Disagree	76	109	144	
I don't know	36	41	51	
Lack of knowledge about VB is one of the reasons to do CS				
Agree	164	242	260	0.560
Disagree	50	69	92	
I don't know	40	52	50	
CS has higher infection risk				
Agree	173	246	287	0.346
Disagree	20	34	22	
I don't know	61	83	93	
Requests to do another CS are more likely after doing one CS				
Agree	123	175	243	0.002^
Disagree	40	48	34	
I don't know	91	140	125	
CS increases the risk for vaginal bleeding				
Agree	53	67	117	0.003^
Disagree	66	76	81	
I don't know	135	220	204	
CS is better if the position of the child is not appropriate				
Agree	200	299	350	0.073
Disagree	9	13	11	
I don't know	45	51	41	
Women prefer CS to avoid sexual dysfunction caused by VB				
Agree	79	100	120	0.151
Disagree	19	24	44	
I don't know	156	239	238	

JD: Jordan Dinar (» 1.41 USD), º: Pearson's chi squared test, ^: significant at p-value < 0.05, *: Fisher's exact test

Regarding the single women's sources of information, family and friends were the leading source (n=498, 48.9%), followed by physicians (n=279, 27.4%). On the other hand, primary healthcare centers and colleagues both ranked the lowest with 21 participants (2.1%) reporting

each source, while the media accounts for 149 (14.5%). More details regarding the sources of information can be seen in Figure 1.

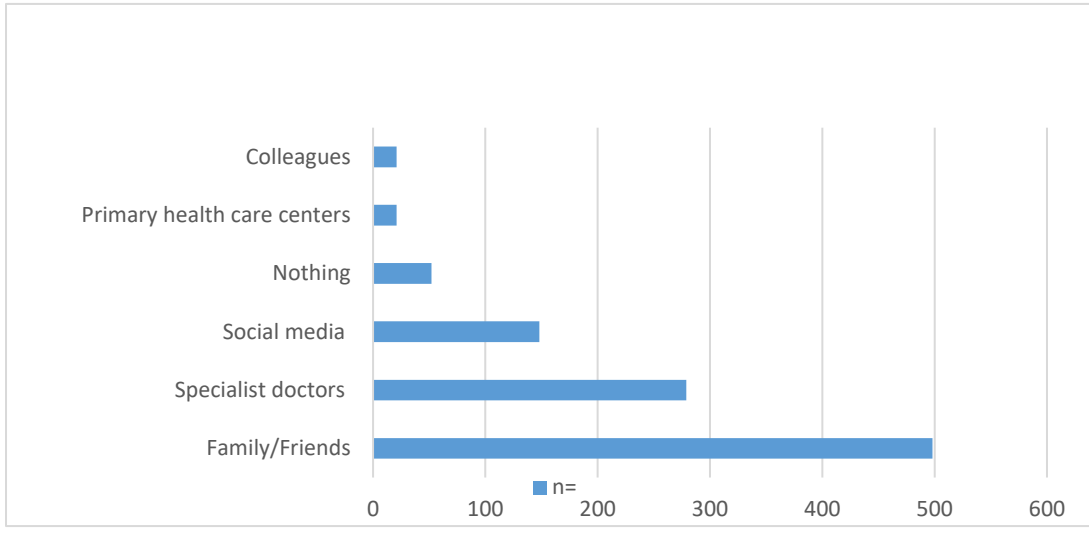

Figure 1: Sources of Information for Jordanian Single Women Regarding Modes of Birth

Discussion

The rising rates of females' preference for having a cesarean delivery without any medical indications is of major concern, so this study aims to explore the perceptions of young single females in Jordan towards normal vaginal delivery and CS, and assess their attitude and knowledge towards these modes of delivery.

The results of this study revealed that the majority of the participants (96.9%) had a positive perception towards the proper health outcomes after VB, which is similar to the findings of two cross-sectional studies by Joshi et al. [13], and Aali et al. [14], where the overall positive attitude towards VB was 93% and 96.5% respectively. Other studies reported rates of positive perceptions regarding VB as 80%, 69.2%, 71%, 87.5%, and 80%, respectively [3,15,16,17,18].

One of the main reasons for this positive attitude is that 76.2% of the participants believe that VB creates an emotional bond between the mother and the baby, and 90.9% believed that seeing the child after VB pleases the mother. That was also mentioned in studies by Torloni et al. [15] and Varghese et al. [10], where 80% and 82% of the participants, respectively, preferred to deliver vaginally so that they did not miss the first hours of the baby's life which would mean that they did not have the opportunity to develop an immediate affectionate maternal bond with the baby.

In our study, participants were aware of the positive health outcomes of VB. 75.9% of the single women agreed that the mother recovers faster, and 88.9% reported the belief that VB leads to a shorter hospital stay. 69.3% of them agreed that CS had a higher risk of infection, and 64% saw CS as requiring a longer recovery period. These factors all contribute to the positive attitude

towards VB and these findings are consistent with those of other studies. Loke et al. [11] found that 92.7% of the women in their study agreed that VB leads to a shorter hospital stay and 98.4% believed that women who had a VB recovered faster after delivery. Li et al. [19] also stated that most women prefer VB for a shorter hospital stay.

One of the reasons why some women prefer CS is fear of VB pain. Our study found that 55.2% of the single women were afraid of VB pains and 74.2% of them felt that those pains would be annoying. Similar findings were reported in several other studies, where the percentages varied from (79.5%), (77%), (34.8%), (45.7%), respectively [15,11,17,18].

Non-pharmacological pain relief measures in childbirth offer a range of options to support women in managing labor pain, improving maternal satisfaction, and minimizing the need for pharmacological interventions [20].In the study by Hodnett et al it was mentioned that non-pharmalogical methods such as breathing techniques hydrotherapy and massage can enhance comfort during labor potentially influencing a woman's preference for vaginal delivery over cesarean sections [21]. Also continuous labor support by doula or midwife might affect the women's preference of childbirth , the information provided by doulas may help women feel more confident in their ability to manage labor without the need for major interventions like cesarean sections [22]. And that was mentioned in the study by Gruber et al which stated that the rates of cesarean birth were higher for nondoula-assisted mothers [23]. In Jordan, childbirth has traditionally been medicalized, with epidural analgesia and opioid pain medications being the standard pain relief methods in most hospitals, particularly in private healthcare . However , non-pharmacological pain relief measures in childbirth are becoming more recognized in Jordan.

Two studies by Al-Rifai [5] and Yaqoub et al. [12] showed that poor knowledge and awareness of maternal complications (78.4% and 45.4%, respectively), were associated with positive attitude towards CS. In our study, 54.9 % of the participants were not aware of the increased risk of vaginal bleeding with CS.

A negative trend in the participants' knowledge regarding CS was noted in our study. This aligns with the study by Joshi et al. [13], which stated that 75.8 % of the single women held overall negative attitudes toward CS. 69.3 % of our participants were aware that CS delivery was associated with negative health consequences, such as greater likelihood of infection. 64% agreed that CS required a longer recovery period than VB. These findings differ from those of Maharlouei et al. [9], which showed better attitudes toward CS due to poor knowledge regarding maternal and fetal complications.

The more highly educated participants in our study held positive attitudes toward VB, with the majority agreeing that, in the long term, it is better for both mother and baby (p-value 0.003), has faster recovery (p-value 0.015), ambulation is better (p-value 0.008), and it leaves no scars (p-value 0.006). VB enables the mother to see the baby quickly after birth, which pleases the mother (p-value 0.032) and is seen to help in creating an emotional bond (p-value 0.035). VB also means that the mother avoids general anesthesia (p-value 0.026), and it costs less than CS (p-value 0.011). These findings are similar to those of a study by Loke et al. [11] where they stated that women with higher levels of education are more likely to opt for VB (p-value 0.016). Studies by Torloni et al. [15] and Li [19] found that women with a high education level selected VB at rates of 87.6% and 71.57%, respectively. Conversely, Welay et al. [17] noticed that increasing maternal educational is linked to CS preference (p-value 0.030). However, Habib et al. [18] showed that educated mothers are more aware of the real medical indication of CS, and are more likely to play an active role in decision-making regarding the unnecessary, non-medical indication of CS.

Our study revealed that 48.9% of participants primarily received their information from family and friends, whereas in a study by Varghese et al. [10], that figure stood at 63%. Al Nisar et al. [24] reported that 59.8% of Pakistani women participants gained their information about birthing modes from relatives. Our study showed that 27.4% of the women got their information from specialists, in comparison to Darsareh et al. [25] where 88% identified their healthcare providers as their first source of information. Loke et al. [11] reported that 61.4% of their sample stated that the obtained their guidance from their obstetrician. The low percentage of women who received their information from specialists in the current study can be explained by the fact that our participants were all unmarried and therefore had not had need of regular visits to an obstetrician.

The preference for mode of delivery is not merely a personal choice but is shaped by cultural, social and economic factors . In many cultures vaginal birth is considered the natural and ideal mode of delivery and any deviation from this is not preferred and is considered unnatural , however other cultures prefer CS because they view it as a symbol of modernity and medical advancement . According to the results of our study 96.9% of the participants agree that vaginal birth is an acceptable mode of delivery and that might be influenced by different cultural and traditional factors.

Limitations

The study relies heavily on self-reported data which might be subject to recall and social desirability bias. Additionally, the sample recruited comprised solely of single women who had no experience of marriage, pregnancy, or childbirth. Thus, their knowledge of this subject is necessarily limited. The primary data collection tool was a closed-ended questionnaire, which does not give respondents an opportunity to expand on their replies. Also the means of data collection was an online form , and only better-off women have access to the internet. The majority of the sample comprised reasonably well-educated women living in the capital city of Jordan, Amman. This may make it difficult to generalize the results with regard to women of a lower educational level residing in other regions of Jordan. We recommend that future studies involve samples with more extensive educational variations, and residents of different geographical areas in Jordan. Also, it would be beneficial to use an open-ended or qualitative questionnaire.

Strengths

The current study is the first to explore knowledge, attitude, and source of information of young, single, nulli gravida women in Jordan.

Conclusion

Women's choices of delivery mode are related to individual preferences, knowledge, level of education, and socioeconomic status. This study revealed that single women in Jordan favor VB over CS. It was also found that the two major reasons behind a stated preference for CS were lack of some knowledge and fear of pain during VB. A reduction in the number of clinically unjustified CS deliveries can be achieved by efforts to improve young women’s knowledge about the two modes of birth. Cultural awareness can be raised using targeted mass media campaigns to educate about the pros and cons of VB(eg, lower risk of infection, shorter hospital stay and fear of labor pains) and CS (eg, higher risk of infections , longer recovery period and avoidance of labor pains), as well as workshops targeting future expectant mothers. It is essential that steps be taken to ensure the privacy of the mother during VB, and making sure that she is offered effective strategies for pain relief.

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