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Frequency and evaluation of the perceptions towards caesarean section among pregnant women attending public hospitals in Pakistan and the implications

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Abstract

Objective: There is increasing prevalence of caesarean sections (CS) worldwide; however, there are concerns about their rates in some countries including potential fears. Consequently, we aimed to determine the frequency of CS, and explore patient's perception towards CS attending public hospitals in Pakistan, to provide future guidance. Methods: A two-phased study design (retrospective and cross sectional) was adopted. A retrospective study was conducted to assess the frequency of CS over one year among four public hospitals. A cross sectional study was subsequently conducted to determine patients' perception towards CS attending the four tertiary care public hospitals in Quetta city, Pakistan, which is where most births take place. Results: Overall prevalence of CS was 13.1% across the four hospitals. 728 patients were approached and 717 responded to the survey. Although 78.8% perceived CS as dangerous, influenced by education ($p=0.004$), locality ($p=0.001$) and employment status ($p=0.001$), 74.5% of patients were in agreement that this is the best manner to save mother's and baby's lives if needed. 62% of respondents reported they would like to avoid CS if they could due to post operative pain and 58.9% preferred a normal delivery. There was also a significant association with education ($p=0.001$) and locality ($p=0.001$) where respondents considered normal vaginal delivery as painful. Conclusion: The overall frequency of CS approximates to WHO recommendations, although appreciable variation. When it comes to perception towards CS, women had limited information. There is a need to provide mothers with education during antenatal period, especially those with limited education, to accept CS where needed.

1.0 Introduction

Caesarean delivery, also known as a C-section (CS), is a surgical procedure used to deliver a baby through incisions in the mother's abdomen (1). When there is a significant risk of an undesirable effect for the mother or infant if labour starts or continues, a CS is clinically indicated (2). The literature reports that approximately 30% of CSs or higher are repeat CS after a primary CS, 30% are performed for dystocia, 11% are performed for breech presentation and 10% are performed for fetal

distress (3-8). In terms of non-clinical determinants of CS, physician' practice patterns including the hospital type and mothers' choices are commonly reported alongside issues of financial considerations in some countries (9-14). Since 1970, an increased frequency of CS has been reported among both high and low income countries (8,12,14-16). However, the frequency of CS in many countries is now more than the World Health Organization (WHO) recommended range (8,12,14,16-18).

According to WHO, a CS rate between 10%–15% of total deliveries is optimal, and rates above 15% may well be unnecessary, inappropriate, and not reflective of better health outcomes (18). Nevertheless, the rate of CS has considerably increased in developed countries in recent years, with an even steeper rise in some underdeveloped and developing countries (16). CS rates have increased by up to 50% or more in both developed and developing countries during the past decades (8,12,16,19,20). CS accounted for 2% of all births in United Kingdom in 1953; however, by 2010 this had increased to 24.8% (21-23-19). In Germany, CS accounted for 15.3% of all newborn births in 1991 rising to 31.7% in 2012 (12). Overall in Northern Europe, average rates of CS rose from 11.1% in 1990 to 22.4% in 2014 with similar rates for Western Europe (14.8% to 24.5%) (16). In the United States, nearly 3 in 10 births were delivered by caesarean in 2004, increasing to 34% in 2009 (24,25). There have also been appreciable increases in CS rates in some south Asian countries in recent years (26), with an average CS rate of 27% among four South East Asian countries in 2005 (27). In Western Asia, CS rates have also increased in recent years from 6.3% to 28.1% between 1990 and 2014 (16). CSs were one of the most frequent obstetric procedures performed in Pakistan. CS rates have ranged from 17%-28% among all hospital deliveries in Pakistan (28,29). This increased frequency of CS is not only becoming a burden for hospitals but it is also leading to hospital acquired infections to both the mother and her baby (30-32).

Additional to the healthcare related issues, CSs can also lead to emotional difficulties and negative thoughts about the knowledge of CS and childbirth among women (11,33). The most common fears among mothers relate to a potential fatal injury, fear of death or a genital tract injury (34).

One key reason for negative feelings towards CS appears to be poor awareness about the process itself. It is a common observation that women in Pakistan are unwilling to undergo CS because of the universal credence of normal delivery being safe and preventive of further complications. This also applies to other similar countries. However, little is actually know about the perception and attitude of pregnant women in Pakistan towards CSs. We hypothesize that pregnant women in Pakistan are not fully aware of the issues surrounding a CS due to the lack of knowledge and understanding of the procedure. Consequently, this study aimed to determine the frequency of CS and explore patient's perception towards CS among different public hospitals in Pakistan. Subsequently, use the findings to guide future educational activities if needed to address concerns.

2.0 Methods

2.1 Study design and settings

A two-phased study design (retrospective and cross sectional) was adopted. A retrospective study was conducted to assess the frequency of CS over one year. A cross sectional study was subsequently conducted to determine patients' perception towards CS. The CS rate was defined as the number of caesarean deliveries over the total number of normal live births, and was expressed as a percentage.

The study was carried from January 2015 to December 2015 among four tertiary care public hospitals in Quetta. Quetta city was chosen as it is a representative city in Pakistan. The one year data was collected from labour rooms, the operating theatres and postnatal wards among four government hospitals, i.e. Sandeman Provincial Hospital (SPH), Bolan Medical Complex Hospital (BMCH), Sheikh Khalifabin Ziyad Hospital (SKBZH) and Mohtarrma Shaheed Benazeer Hospital (MSBH). Whilst there are private hospitals in Quetta city, people typically prefer to approach public hospitals due to issues of affordability and other factors. For instance in public hospitals, Pakistan Rupees (Pk. Rs.) 5 (US \$ 0.047) is charged for an OPD admittance slip. Fee charges for the operation theatre are Pk. Rs. 300 (US \$ 2.86) per CS, delivery charges are Pk. Rs. 50 (US \$ 0.48) and post-operative charges are Pk. Rs. 5 (US \$ 0.047). These are small charges when compared with the fees in private healthcare facilities. Home birth has also been a common procedure in the city and suburbs. However, with the advancement in healthcare, people prefer to consult the public institutes in case of birth and

pregnancy related issues. Consequently, we chose public hospitals for this initial research. We are aware that CS rates may well be higher on average in private versus public hospitals similar to other countries (14); however, for the reasons already stated we have kept to public hospitals for this initial study.

These four hospitals were chosen as they are the biggest government hospitals in Quetta city and provide access to the general population. The Obstetrics and Gynaecology (O&G) departments are well established in these public hospitals, and all facilities and modern machinery are available. However, there are certain differentiations based on location of the four institutes which may impact on subsequent CS rates. MSBH is situated in a sensitive area of city where security is on high alert. Only people who have a valid permission card and permit for their transport are allowed through by the security agencies; consequently, not everybody is permitted to enter. The labour room is only functional in the morning and at times handles only emergency CS cases. SKBZH is located far away from the city centre and also handles emergency CS cases. The other two hospitals take all mothers. Consequently, these four hospitals provide a diverse sample for this initial study. However, comparisons were also made just for SPH and BMCH to address concerns with potential bias.

2.2 Study tool

A validated data collection form was used to collect one year retrospective data for each hospital focusing on the total number of CS, the total number of repeated CS, the total number of Breech presentation, the total number of Dystocia (Obstructed labour, long labour, failed induction of labour), the total number of Fatal Distress cases (fatal distress, cord prolapsed), as well other indications and the total number of normal deliveries. The later part of the study was conducted to evaluate patients' perception towards CS whereby a self-administered questionnaire was used for data collection via face-to-face interviews. The questionnaire items were developed by focusing the perception of pregnant women towards CS, their wish for a CS and the request for a CS in the absence of medical indications.

2.3 Tool translation, validation and reliability

The data collection form and the questionnaire were developed in English language by the first author and validated (face & content) by senior specialists in qualitative research and by two O&G specialists. The data collection form used was in English as the first author is a registered pharmacist and fluent in the English language. However, the questionnaire was subsequently translated into Urdu (National language of Pakistan) by a linguistic expert if Urdu was needed to conduct the study. The questionnaire was back translated into English by another expert to avoid discrepancies in the two versions. The questionnaire was subjected to pilot analysis comprising 30 participants. The questionnaire was declared reliable with an acceptable alpha value of 0.771 consequently used for the full study.

2.4 Study population, inclusion criteria and sampling technique

All pregnant women who were planned to undergo CS or had delivered a baby through CS were targeted for the study. Normally delivered and aborted women, as well as those mothers not willing to participate, those cannot read or write Urdu (official language of Pakistan) and immigrants, were excluded from the study.

By using a proportion based method through a double design effect, seven hundred and twenty eight respondents were targeted for the study (35). The figure (n=728) was based on 95% confidence interval, 5% margin of error and 10% of dropout added to the final sample. Data collection process was stopped once the calculated sample size was achieved.

2.5 Data analysis

The questionnaire was coded and analyzed by using IBM Statistical Package Social Science v. 20.0. The KS test was used for normality assessment and non-parametric tests were used accordingly. Frequency and percentages were used to describe demographic characteristics. The Chi Square test was used to cross tabulate the study variables. Where significant associations were reported, the interpretation was performed using Phi/Cramer' V constant. P value of less than 0.05 was taken significant. Additionally, the strength and directions were assessed using Cohen' criteria, i.e. small = 0.10, medium = 0.30 and large = 0.50.

2.6 Ethical approval

Institutional Ethical Committee, Faculty of Pharmacy and Health Sciences, University of Balochistan approved the study. Permission from the respective medical superintendents was also taken into consideration. Additionally, written consent from the participants was also taken whereby participants were informed about their rights of participation in the study and could decline to participate. They were also told that a refusal would not affect their subsequent care.

3.0 Results

3.1 Prevalence of CS at four public institutes of Quetta, city

Table 1 shows the frequency rate of CS at the four targeted hospitals. The total number of deliveries in the year 2015 at SPH were 10959 with CS comprising 1895 (17.2%) of the total deliveries. The frequency of CS at BMCH was 8.90% with 1090 CS compared with total of 12238 total deliveries. The frequency of CS at SKBZH was 21.6% and at MSBH was 83.7%. Overall, the frequency of CS at all four hospitals was 13.1% (Table 1).

Table 1: Prevalence of CS at four public institutes of Quetta, city: One year retrospective analysis

Institutes	Total deliveries	Total CS	Previous CS	Reasons of CS						
				Dystocia			Breech presentation	Fetal distress		Others
				Obstructed labour	Long labour	Failed induction of labour		Fetal distress	Cord prolapsed	
SPH	10959	1895 (17.2%)	711 (37.5%)	273 (23.0%)	15 (1.2%)	45 (3.8%)	60 (5.0%)	24 (2.8%)	20 (1.6%)	747 (63.0%)
BMCH	12238	1090 (8.90%)	447 (41.0%)	116 (18.0%)	7 (1.0%)	50 (7.7%)	64 (9.9%)	48 (7.4%)	22 (3.4%)	336 (52.2%)
SKBZH	106	23 (21.6%)	11 (47.8%)	4 (33.3%)	0 (0.0%)	0 (0.0%)	2 (16.6%)	0 (0.0%)	0 (0.0%)	6 (50.0%)
MSBH	43	36 (83.7%)	23 (63.8%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	13 (100.0%)
Total	23236	3044 (13.1%)	1192 (39.1%)	393 (21.2%)	22 (1.1%)	95 (5.1)	126 (6.8%)	72 (3.8%)	42 (2.2%)	1102 (59.5%)

SPH = Sandeman Provincial Hospital, BMCH = Bolan Medical Complex Hospital, SKBZH = Sheikh Khalifa bin Ziyad Hospital, MSBH = Mohtarrma Shaheed Benazeer Hospital

3.2 Patient's perception towards CS

The demographic characteristics of the study respondents are presented in Table 2. Seven hundred and seventeen women responded to the survey with a response rate of 98.4%. The majority of the respondents (n=385, 53.7%) were aged between 26-35 years and 446 (62.2%) had no formal education. Four hundred and thirty four (60.5%) had previous experience of CS. Additionally, 390 (54.4%) were urban residents and 648 (90.4%) received CS-related information from their physicians.

Table 2: Demographic characteristics of the study respondents

Characteristics	Frequency	Percentage
<i>Age group (years)</i>		
16-25	240	33.5
26-35	385	53.7
> 36	92	12.8
<i>Education</i>		
No formal education	446	62.2
Primary	75	10.5
Secondary	135	18.5
Tertiary	61	8.5
<i>Employment status</i>	78	10.9
Employed	639	89.1
Unemployed		
<i>Locality</i>	390	54.4
Urban	327	45.6
Rural		
<i>Past caesarean history</i>	434	60.5
Yes	283	39.5
No		
<i>Reason for CS</i>	681	95.0
Medically indicated	36	5.0
Non medically indicated		
<i>Source of information regarding CS</i>	5	0.7
TV	7	1.0
Internet	1	0.1
Newspaper	56	7.8
Family/Friends	648	90.4
Physician		

Table 3 contains the responses following the study questionnaire. Whilst 565 (78.8%) of the respondents reported that CS is a dangerous procedure, 534 (74.5%) thought CS is the best way to save a mother's and baby's life. Four hundred and twenty two (58.9%) preferred normal delivery over CS and 450 (62.0%) stated that they will avoid future CS if they can because of post operative pain. Five hundred and two respondents (70%) agreed to opt for CS when it is medically indicated or when it is recommended by the physician and 339 (47.3%) agreed that they do not have enough knowledge towards CS.

Table 3: Responses to items in questionnaire

Items in questionnaire	Yes	No	Do not know
Do you consider that caesarean section is dangerous?	565 (78.8)	121 (16.9)	31 (4.3)
Do you prefer planned caesarean section?	336(46.9)	336(46.9)	45(6.3)
Would you like to undergo caesarean section if indicated?	502 (70.0)	173 (24.1)	42 (5.9)
Would you like to undergo caesarean section if not indicated?	187 (26.1)	492 (68.6)	38 (5.3)
Do you think caesarean section can result in death?	411 (57.3)	245 (34.2)	61(5.3)
Do you think normal vaginal delivery can lead to death?	371 (51.7)	278 (38.8)	67 (9.3)
Do you prefer caesarean section for better health?	326 (45.5)	321 (44.5)	69 (9.6)
Would you like to have caesarean section on Physician's recommendation?	503 (70.2)	139 (19.4)	75 (10.5)
Do you think you have enough knowledge about caesarean section?	297 (41.4)	339 (47.3)	81 (11.3)
Do you think normal vaginal delivery is painful?	390 (54.4)	262(36.5)	65 (9.1)
Do you think caesarean section is better than normal vaginal delivery?	226 (31.5)	422 (58.9)	69 (9.6)
Do you think caesarean section should be avoided due to postoperative pain?	450 (62.8)	192 (26.8)	75 (10.5)
Do you think caesarean section is the best way to save mother and baby's life?	534 (74.5)	119 (16.6)	64 (8.9)
Do you think caesarean section can result in infertility?	173 (24.1)	389 (54.3)	155 (21.6)
Do you think caesarean section is associated with previous caesarean section?	292 (40.7)	298 (41.6)	127 (17.7)
Do you think caesarean section is safer than normal vaginal delivery?	200 (27.9)	427 (59.6)	89 (12.4)

Table 4 presents the association between study variables and demographic characteristics. When participants were asked about CS being dangerous, a significant association was reported for education ($p = 0.004$), locality ($p = 0.001$) and employment status ($p < 0.001$). Additionally, a significant association was reported between 'CS can lead to death', knowledge towards CS and all demographic variables ($p < 0.05$). Education ($p = 0.023$) and employment status ($p = 0.030$) were reported to have significant association with preference towards a planned CS. Educational status (< 0.001) and locality (< 0.001) was associated with normal vaginal delivery being painful and CS is safer than a normal vaginal delivery, while education alone was related to the question that normal delivery can lead to death ($p = 0.008$). Although the relationship between significant variables and demographics was positive in direction, the overall magnitude ranged from small to medium (0.10 – 0.30) as mentioned in Table 4.

Table 4: Cross tabulation analysis (demographic characteristics and study items)

Items in questionnaire	P-Value*			
	Age	Education	locality	Employment
Do you consider caesarean section is dangerous?	0.846	0.004	0.001	0.001
	N/A	$\Phi_c = 0.115$	$\Phi_c = 0.135$	$\Phi_c = 0.154$
Do you prefer planned caesarean section?	0.891	0.023	0.282	0.030
	N/A	$\Phi_c = 0.101$	N/A	$\Phi_c = 0.099$
Would you like to undergo caesarean section if indicated?	0.517	0.058	0.408	0.141
Would you like to undergo caesarean section if not indicated?	0.996	0.266	0.202	0.499
Do you think caesarean section can result in death?	0.033	0.001	0.044	0.006
	$\Phi_c = 0.098$	$\Phi_c = 0.128$	$\Phi_c = 0.093$	$\Phi_c = 0.119$
Do you think normal vaginal delivery can lead to death?	0.784	0.008	0.124	0.808
	N/A	$\Phi_c = 0.102$	N/A	N/A
Do you prefer caesarean section for better health?	0.163	0.173	0.338	0.645
Would you like to have caesarean section on physician's recommendation?	0.396	0.058	0.385	0.001
	N/A	N/A	N/A	$\Phi_c = 0.142$
Do you think you have enough knowledge about caesarean section?	0.020	0.001	0.006	0.333
	$\Phi_c = 0.103$	$\Phi_c = 0.127$	$\Phi_c = 0.120$	N/A
Do you think normal vaginal delivery is painful?	0.847	0.001	0.001	0.406
	N/A	$\Phi_c = 0.135$	$\Phi_c = 0.190$	N/A
Do you think caesarean section is better than normal vaginal delivery?	0.042	0.007	0.005	0.133
	$\Phi_c = 0.095$	$\Phi_c = 0.111$	$\Phi_c = 0.122$	N/A
Do you think caesarean section should be avoided due to postoperative pain?	0.624	0.394	0.075	0.441
Do you think caesarean section is the best way to save mother and baby's life?	0.307	0.022	0.508	0.028
	N/A	$\Phi_c = 0.102$	N/A	$\Phi_c = 0.100$
Do you think caesarean section can result in infertility?	0.385	0.003	0.467	0.109
	N/A	$\Phi_c = 0.117$	N/A	N/A
Do you think caesarean section is associated with previous caesarean section?	0.240	0.045	0.001	0.004
	N/A	$\Phi_c = 0.095$	$\Phi_c = 0.156$	$\Phi_c = 0.123$
Do you think caesarean section is safer than normal vaginal delivery?	0.356	0.006	0.011	0.138
	N/A	$\Phi_c = 0.113$	$\Phi_c = 0.122$	N/A

*Chi square test, N/A = Not applicable, Φ_c = Cremer constant

4.0 Discussion

4.1 Frequency of CS

The results from the current study reveal that CS rates for one year among the four tertiary care hospitals in Quetta city when combined was within the acceptable range, especially at BMCH at 8.9% and SPH at 17.3% (Table 1). However, there are concerns in the two smaller hospitals (MSBH and SKBZH) with appreciably higher rates of CS. This compares with an increase in the frequency of CS reported from other parts of Pakistan. A study conducted at Agha Khan Hospital in Karachi (2011-2012) reported a frequency of 31.2% for CS (36). High CS rates have also been reported in other local studies in Pakistan (37-39). However, these studies typically included mothers with high income and education as compared with our study (Table 2), and other studies have reported higher CS rates among private hospitals where incomes are higher (14). In our study, being a less educated area, it is a common myth among the population that normal vaginal delivery is natural and the population as a whole do not accept CS as a usual procedure. CS is a helpful procedure in certain medical conditions but this is generally unknown to the population in our study. This may help explain why physicians in the two larger hospitals appear to adhere to this societal norm whenever possible and hence rates of CS appeared lower as compared to other parts of Pakistan. However, further research is needed before any definitive statements can be made and the findings potentially transferable to other countries with similar populations and beliefs.

The frequency of CS at the two smaller hospitals (SKBZ& MSBH) was 21.69% and 78.26% respectively. This is perhaps not surprising as these two institutes are located far from the population centre, there are security concerns in one, and access to these institutes is not within easy reach. Consequently, almost all patients that attend these hospitals are typically of emergency in nature where a CS may be performed in an urgent situation. Additionally, patients themselves prefer SPH and BMCH because of their ease of reach, which could be one reason for low CS rates in these hospitals as patients only contact the other two in case of emergency only. However, further research is again needed before any definitive statements can be made.

4.2 Perception towards CS

In the current study, the majority of the respondents perceived a CS as dangerous and hence preferred a normal vaginal delivery (Table 3). Similar findings were reported by Qazi et al where 32.1% of respondents were unlikely to accept a CS in Pakistan (40). Our findings were also similar to studies conducted in other countries whereby the majority of women preferred a normal vaginal delivery over CS (41-44).

Further interpretation of the relationship among demographics variables and the study items (Table 4) revealed that employed, educated women belonging to urban residencies prefer a CS over a vaginal delivery because of the fear of labour pain, easier mode of delivery and convenience. Our observations are in line with the findings of Ajeet et al in Nagpur, India, where 87.7% of their respondents preferred a CS for better health (41).

Woman's' education level and employment status are identified as key components whereby women who are knowledgeable about their medical condition are able to participate better in decision making, and have a greater role in selecting a CS over a normal vaginal delivery (14,16,45-48). Moreover, a significant association was also reported in our study among education and locality when asked about vaginal delivery being painful (Table 3). This could be another reason for preferring a CS, i.e. avoiding labour and post-labour pain, which is consistent with other studies (16,49-51). This compares with unemployed respondents with low education who typically prefer a vaginal delivery to a CS as seen in other countries (52,53).

These findings emphasize that educating women about the risk and complications of both procedures is needed so that women will have a clear understanding of the methods of delivery and can make appropriate decisions when needed. Our recommendations are supported by Klein et al whereby the authors reported that regardless of the type of care provider for women in Canada, many reported uncertainties about the benefits and risks of common procedures used at childbirth (54). This is similar to our study, where a large proportion of women stated that they do not have enough information regarding a CS to make an informed decision.

Currently, only limited information about CS is available to mothers in government hospitals in Pakistan. Following subsequent discussion, and personal observation among the co-authors, it seems that electronic/print media, publications and healthcare centres in the country are not performing their role in providing adequate information about CS to the general public including mothers to be. In order to have a thorough overview of CS, mothers and their support network should be provided with up-to-date information and realistic statistics about CS, i.e. its benefits, drawbacks, short and long term risks and potential complications for the baby and mother, particularly those with low education who are under pressure from others around them. Ajzen explained that individuals are pressurized by social, cultural and subjective norms to perform or not to perform a particular behaviour. This is dependent on one's beliefs and opinions about the exacting behaviour (55). Supporting Ajzen's assumptions, our study showed that mothers seemed bound to some subjective norms and their belief towards CS, i.e. not as beneficial for the mother (and/ or foetus) as a normal vaginal delivery, leading to unfavourable attitudes towards CS. Few women that underwent CS reported during the interviews that CS was a compulsion and they were bound to follow the decisions of obstetricians. Otherwise they had no desire to undergo a CS. Within this context, Quetta city, like other similar cities in Pakistan, appears still bound to tribal mythologies and ethics, and there is social pressure that women should give birth in the normal method. Societal forces indirectly criticize women that undergo a CS either clinically or non-clinically. This belief shapes the behaviour whereby a CS is perceived as an unacceptable procedure during pregnancy, which is supported by the postulates of the theory of planned behaviour (55). This is particularly true in the two large general hospitals within easy reach of the mothers.

Consequently, we urge healthcare practitioners and social workers to disseminate appropriate knowledge about CS during pregnancy and to make sure that any myths regarding CS are adequately addressed. We will be introducing such activities in our studied hospitals in the future, and will be monitoring the developments in future research. We also believe our findings apply to other lower and middle income countries where there are concerns with a CS due to lack of knowledge.

5.0 Conclusion

Overall among the four hospitals combined, the frequency of CS was within the ranges proposed by the WHO, certainly for easy access hospitals. However, there was an appreciable difference between them. CS was perceived as dangerous by a number of the respondents, particularly those with limited education attending the two large government hospitals in easy reach of their homes. Respondents typically did not want to undergo CS unless absolutely essential. This is because mothers' generally had less knowledge about CS and had their own beliefs about the procedure. We believe that such beliefs can be refined or altered by providing detailed information about CS during pregnancy to help improve the care of mothers and their children. Obstetricians should educate women about the modes of deliveries, the advantages and the consequences during the antenatal period to prepare them for a CS if needed. This is particularly important with women with limited or no formal education subject to tribal beliefs. In our study, only 8.5% of women were highly educated and 10.5% were primary educated whilst 62.2% had no formal education. Additionally, the need for birth preparedness and complication readiness is crucial to influence the perception of women in this setting towards CS addressing some of the myths. This is also applicable in other countries and settings with similar populations

6.0 Limitations

We are aware that the study was conducted in only public health facilities and in one region of Pakistan. However, we believe the findings are generalizable to other provinces in Pakistan with public hospitals as well as other similar countries. Future research will expand on this, including potentially private healthcare facilities.

7.0 Disclosure

The authors have no conflict of interest to declare. No funding was received for this study.

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