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Investigating the Factors Influencing the Preference for Cesarean Section among First-Time Pregnant Women Visiting Comprehensive Health Service Centers

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ABSTRACT

Background: For numerous women, the selection of a childbirth method presents a significant decision, often shaped by a multitude of factors, notably those of a social and familial nature. In light of this, researchers undertook an investigation into the determinants influencing the choice of cesarean section among women experiencing their first pregnancy and utilizing comprehensive health service centers in Yazd City.

Methods: The present study utilized a descriptive-cross-sectional design. The collection tool was a standard questionnaire with 34 items (psychological, environmental, cultural-social factors, obstetric conditions factors, and birth outcomes) in the form of a five-point Likert scale. The results of the analysis of the data collected by SPSS software version 26 were used to describe and analyze the obtained data using descriptive indices (such as standard deviation, mean, etc.) and Spearman's correlation coefficient.

Results: Based on the results, no significant relationship was observed between the factors influencing the tendency to cesarean with age, education, and occupation. Among the dimensions of cultural-social factors, it has the highest average (29.20 ± 6.36), followed by psychological factors in the second place (26.97 ± 6.46). The lowest average was related to environmental factors (16.42 ± 4.28).

Conclusion: Considering the significant impact of existing cultural and social influences, it is essential for the media to assume an educational responsibility by engaging knowledgeable and compassionate experts to raise public awareness. This goal should be achieved through identifying, correcting, and improving women's perceptions and beliefs regarding natural childbirth.

Introduction

Pregnancy is a natural physiological phenomenon, and childbirth can be considered one of the most wonderful moments in a woman's life, as it symbolizes the beginning of maternal identity. However, it can also be a stressful reality in which medical complications may interrupt the normal course of labor, making vaginal delivery impossible. In such cases, cesarean section may serve as a necessary medical intervention[1]. According to the World Health Organization, the acceptable rate for cesarean sections in any region is considered to be 10-15%, yet the rates are rising in many countries[2]. Over the past decade, cesarean deliveries have significantly increased, reaching over 50% in some areas of the world [3].

According to the latest statistics, currently 18.6% of deliveries worldwide are via cesarean section, ranging from 6% to 27.2% in developed and less developed regions. For instance, in South America and the Caribbean, the rate is 40.5%, in North America, 32.3%, in Europe, 25%, in Asia, 19.2%, and in Africa, 7.3%. An analysis of data from 121 countries between 1990 and 2014 indicated that cesarean rates increased from 7.6% to 19.1%[4]. In our country, approximately 52% of deliveries are cesarean, with a legal requirement to reduce this rate by 5% annually to align with global standards, which recommend a maximum of 15% for cesarean births[5]. Thus, our country is experiencing an increase in unnecessary cesarean interventions[6].

The prevalence of natural childbirth and cesarean sections among pregnant women is a key indicator of maternal health program performance. An increase in unnecessary cesarean sections accompanied by a decrease in natural births indicates suboptimal performance within the healthcare system[3]. Maternal preference for cesarean section represents a significant reason for its high prevalence in Iran and worldwide[7], often due to a lack of awareness about cesarean risks and negative perceptions of natural childbirth[2]. This trend reflects broader issues within the healthcare system that need to be addressed to promote safer birthing practices[2]. The most significant finding is that cesarean section rates are consistently increasing worldwide, particularly in middle- and low-income countries. This rise exceeds the threshold recommended by the WHO (10-15%)[8]. Studies indicate that the consequences of cesarean section are a contributing factor to reduced fertility rates among women, leading to various social, economic, and health-related issues. The economic burden and cultural and social implications of cesarean sections are greater than those associated with natural childbirth. The rise in cesarean rates results in wasted time and imposes various economic pressures on families and society[6]. Additionally, financial costs associated with cesarean sections, including hospitalization, medications, and possible complications, are significantly higher compared to natural childbirth [9]. In Yazd City, the cesarean rate has been reported at 44.5%, of which 73.58% were elective cases[3].

Cesarean sections can lead to serious complications and adverse outcomes, such as postpartum depression, infections, anesthesia-related issues, respiratory problems in newborns, and reduced fertility[10]. The global incidence of cesarean-related complications ranges from 25% to 50%, and maternal mortality has been reported at 1.1 to 2.1 percent[11]. Misconceptions about the superiority of cesareans, lack of awareness regarding their harmful effects, and negative attitudes toward natural childbirth contribute to this trend[10]. Understanding the factors influencing mothers' choices regarding childbirth methods is essential, and various studies emphasize the importance of educating pregnant women and their partners about selecting the appropriate childbirth method [7].

Cultural and social conditions often influence patients' requests for cesarean

delivery, even when medical indications suggest a natural birth. The choice of childbirth method among first-time mothers is particularly significant, as those who undergo cesarean sections for their first childbirth often face medical reasons that prevent them from having subsequent natural births. Previous studies have primarily focused on first-time mothers, making them the subject of this research. Given the importance of this issue in healthcare systems and the potential consequences of cesarean deliveries, the current study examines factors influencing the preference for cesarean sections (including psychological, environmental, socio-cultural, obstetric conditions factors, and birth outcome factors) among first-time pregnant women visiting comprehensive health service centers in Yazd City.

Materials and Methods

Study design

The present study is descriptive and cross-sectional.

Study population

The study included 22 comprehensive health service centers in Yazd City, of which 7 were selected through simple random sampling. Questionnaires were administered to 186 first-time pregnant women visiting these centers. Women who had medical indications necessitating a cesarean section were excluded from participation.

The sample size was calculated using the standard formula bellow, where n represents the minimum required sample size, Z is the standard normal deviate corresponding to the desired confidence level (set at 1.96 for a two-sided Type I error of α=0.05α=0.05), S^2 is the estimated population variance (adopted as 0.435 from previous studies[4], and d denotes the margin of error (acceptable precision), which was defined as 0.05, equivalent to the Type I error rate (α). The Type II error rate was set at β=0.20, providing 80% statistical power. Substituting these values into the formula yielded an initial sample size of 155 participants. To account for potential missing or incomplete questionnaires, a 20% attrition rate was factored in, resulting in a final required sample size of 186 participants.

$$n = \frac{z^2 S^2}{d^2}$$

Study Instrument

Data collection utilized a standardized questionnaire titled "Factors Influencing the Preference for Cesarean section," which was developed based on the research by Mohammadzadeh and Afradi Asbaghrani[6]. The questionnaire consisted of multiple sections: the first addressed demographic information such as age, education level, and employment status; the second examined factors related to cesarean section preference through 34 items using a five-point Likert scale[4].

Statistical analysis

Data analysis was conducted using descriptive and analytical methods, including the Kruskal-Wallis test and Spearman's correlation coefficient, through SPSS version 26.

Results

According to the findings, presented in Table 1, the highest frequency distribution of samples by education level consisted of those with a diploma or secondary education, while the lowest group comprised individuals with a bachelor's degree. For age distribution, the majority of participants were between 20 and 30 years old, with the lowest number being those over 40 years old. Regarding employment status, most participants were homemakers, while self-employed individuals represented the smallest category.

According to Table 2, the age group that most strongly influenced the preference for cesarean section was 20-30 years, whereas individuals over 40 years had the least influence. The highest educational level associated with cesarean preference was a bachelor's degree, while the lowest was observed among those with a diploma or secondary education. Students represented the occupational group most commonly associated

with cesarean choice, while self-employed individuals were the least represented.

According to Table 3, the results of the Kruskal-Wallis test indicated no significant relationship between occupation and the factors influencing the choice of cesarean section, as all p-values were above 0.05.

Table 1. Frequency Distribution of Samples According to Demographic Variables

Variable		Frequency	Percentage
Education	Diploma and Under-diploma	109	56.6
	Bachelor's Degree	53	28.5
	Master's Degree	24	12.9
Age	Under 20 Years	35	18.8
	30-20	96	51.6
	40-30	46	24.7
	Over 40 Years	9	4.8
Occupation	Housewife	62	33.3
	Employee	40	21.5
	Free(non-Employee)	35	18.8
	Student	49	26.3
Total		186	100

Table 2. Mean and Standard Deviation of Factors Affecting the Choice of Cesarean Section According to Demographic Characteristics

Variable		Mean	SD
Education	Diploma and Under-diploma	110.02	18.97
	Bachelor's Degree	113.16	17.23
	Master's Degree	110.75	16.54
Age	Under 20 Years	108.51	18.97
	30-20	112.62	18.77
	40-30	109.95	16.86
	Over 40 Years	106.66	15.37
Occupation	Housewife	109.14	14.88
	Employee	112.02	17.11
	Free(non-Employee)	108.42	17.84
	Student	114.00	22.61

Table 3. Study of the Dimensions of Factors Affecting the Choice of Cesarean Section According to Demographic Characteristics

Variable	Psychological factors	Environmental factors	Sociocultural factors	Obstetric conditions factors	Factors related to birth outcomes
Occupation	0.14	0.52	0.95	0.27	0.50
Age	0.85	0.22	0.30	0.16	0.95
Education	0.35	0.10	0.50	0.88	0.38

Similarly, no significant relationship was observed between age groups and the factors influencing cesarean preference, as all p-values exceeded 0.05. Additionally, no significant relationship was found between education level and the factors influencing cesarean choice, with all p-values remaining above 0.05.

Prioritizing the factors influenced cesarean choice among first-time pregnant women visiting comprehensive health service centers in Yazd City, based on the average scores reported in 2024 (Table 4), reveals that cultural-social factors (29.20 ± 6.36) had the greatest influence, followed by psychological factors (26.97 ± 6.46), childbirth outcomes (21.88 ± 6.39), and birth-related factors (16.45 ± 4.21), while environmental factors had the least influence (16.42 ± 4.28).

Table 4. Mean and S.D of the Factors Affecting the Choice of Cesarean Section

Factors	Mean	SD
Sociocultural factors	29.20	6.36
Psychological factors	26.97	6.46
Factors related to birth outcomes	21.88	6.39
Obstetric conditions factors	16.45	4.21
Environmental factors	16.42	4.28

Discussion

This study examined 186 first-time pregnant women, half of whom were aged between 20 and 30 years. The majority had a high school diploma, and most participants were homemakers. The results indicated that among the factors related to the preference for cesarean section, cultural-social factors exhibited the highest average score (29.20 ± 6.36), followed by psychological factors (26.97 ± 6.46), while environmental factors showed the lowest average score (16.42 ± 4.21).

The findings align with those of Pakniat and Akbari[4], who also identified cultural-social factors as having the greatest influence on cesarean choice, particularly concerning education level, although their results differ from the current study's findings. This discrepancy highlights the need for further exploration into how various factors impact cesarean preferences among different populations. Based on the findings of Mohammadzadeh and Afradi Asbaghrani[6], the highest mean was related to "factors concerning birth-related factors," followed by "environmental factors," while cultural-social factors had the least influence on the preference for cesarean section. This contrasts with the current study's results, where cultural-social factors were found to have a significant impact. One possible reason for this discrepancy could be the differing research environments between the current study and previous ones. Understanding these contextual differences is crucial for interpreting results and developing targeted interventions to address cesarean rates effectively.

According to Moeini et al.[12], 49.4% of pregnant women reported cultural-social factors as a reason for choosing cesarean section, while 36% cited the lack of pain (psychological factors). Increased maternal education, employment, age, and being a first-time mother contributed to a higher demand for cesarean deliveries (p-value < 0.05), a finding that does not align with the current study. The differing research environments may explain this inconsistency. In contrast, the findings from Sharghi et al.[13] showed that cesarean section was the most chosen method at 58.6%, with physician recommendations being the most influential factor at 36.6%, aligning with the current study's results regarding cultural-social influences. According to the findings of Payman and Jonaidy[14], variables such as age, education level, and occupation did not show significant differences between the groups preferring cesarean section and those preferring natural childbirth. In the natural childbirth group, fear of anesthesia and surgery, along with the desire to see the newborn immediately, were the primary reasons for their preference. Conversely, among the cesarean group, the fear of labor pain (psychological factors) and physician recommendations (cultural-social factors) were the main reasons, which do not align with the current study's results. In contrast, Shahoei et al.[3] identified that fear, previous negative experiences, and social encouragement (psychological factors) were the main reasons influencing cesarean preferences among first-time mothers, which also did not match the current data. One potential reason for these discrepancies could be the different sampling methods; while previous studies used interviews with participants in healthcare facilities or their homes, the current study utilized a questionnaire format.

In the study conducted by Alimohamadian et al.[9], it was found that 71% of mothers requested elective cesarean sections for unjustified reasons, such as fear of labor pain (psychological factors). Additionally, 65% of specialists attributed unnecessary cesareans to cultural and social factors. The study also

indicated that higher maternal education, employment status, and being a first-time mother significantly increased the demand for elective cesareans, which is inconsistent with current findings. The differences in results may stem from variations in research environments or methodologies. For instance, whereas the current study utilized questionnaires, previous research often involved interviews or different sampling methods. This highlights the need for further investigation into the factors influencing cesarean requests across diverse contexts. In the study by Hassanzadeh et al.[15], it was found that out of 140 cesarean deliveries performed, 46.5% were conducted without medical recommendations. The main reasons cited included fear of vaginal pain (psychological factors) and concerns regarding the safety and health of the fetus (childbirth outcomes), which do not align with the current study's findings. Differences in economic and social factors, as well as a lack of adequate facilities and standards for natural childbirth, may explain these discrepancies. A study by Erdősová[16] et al showed that the most common reason for mothers' requests for caesarean section is the fear of childbirth and the associated pain; this was not consistent with the results of the present study because the fear of childbirth and its pain was not among the high-priority factors. In this regard, the results of the study by Sorrentino et al.[17] also showed that many women ask for a caesarean section because they are afraid of giving birth, because they have had a negative birth experience. Limitations of the study include the following: due to its cross-sectional design, a cause-and-effect relationship between factors and the tendency towards cesarean section cannot be established. Because self-report questionnaires were used, responses may be influenced by response bias, social desirability bias, or recall error. Another limitation is the exclusion of individuals who did not attend or who received care at private centers.

Conclusion

The current research highlights the necessity for further exploration into the underlying reasons for cesarean requests, considering the varied contexts and conditions influencing maternal choices across different studies. According to the findings, cultural and social factors significantly influence women's preference for cesarean sections.

Practical Suggestions

- Develop targeted educational programs and counseling sessions that specifically address cultural beliefs and social influences related to childbirth. These programs should also integrate psychological support to alleviate anxieties and build confidence in natural birth.
- Utilize media platforms to disseminate accurate information about the benefits and safety of natural childbirth. These campaigns should leverage knowledgeable and compassionate experts to identify and correct misconceptions.
- Design health education materials and antenatal classes that are particularly relevant and accessible to women in the 20-30 age range, as this group shows the highest preference for cesarean section. Information should be presented in a clear, engaging, and easily digestible format.
- Provide specialized educational support for women with diplomas and secondary education, as this group, despite having a lower preference for cesarean. This support could involve simplified explanations of childbirth options and benefits.
- Develop specific antenatal support programs for homemakers, who constitute the majority of the sample. These programs could address potential isolation, provide practical information, and foster a supportive community environment.
- Reinforce the Benefits of Natural Childbirth: For all demographic groups, emphasize the positive outcomes and benefits of natural childbirth

Conflict of Interest

The authors declare that there are no conflicts of interest.

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Ethical Considerations

To adhere to ethical principles in this study, approval was obtained from the Ethics Committee under reference number (IR.SSU.SPH.REC.1402.130). Data collection was conducted with the permission of the faculty and in coordination with the health centers.

Author's Contribution

Conceptualization, H.J, M.K.R, and N.A; Methodology, H.J, F.Gh; Data collection and analysis, H.J, N.A and F.Gh; Drafting of the manuscript, H.J. All authors have read and approved the final manuscript.

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References

1. Movahed M, Enayat H, Ghaffarinasab E, Alborzi S, Mozafari R. Related factors to choose cesarean rather than normal delivery among Shirazian pregnant women [in Persian]. Journal of Advanced Biomedical Sciences 2012; 2(2): 78-83.
2. Attarian S, Feyzi Z, Jamali J, Firoozi M. The effect of motivation and ability to choice of delivery type on the labor self-efficacy in women with previous cesarean section [in Persian]. Iranian Journal of Women, Obstetrics and Infertility 2022; 25(2): 44-51.
3. Shahoei R, Rostami F, Khosravi F, Ranayi F, Hasheminasab L, Hesami K, et al. Women lived experience of choice of cesarean delivery: a phenomenology study [in Persian]. The Iranian Journal of Obstetrics, Gynecology and Infertility 2014; 17(104): 1-10.
4. Pakniat H, Akbari R. Effective factors to select cesarean-section [in Persian]. Tehran Univ Med J 2018; 76(7): 484-91.
5. Agency TN. Cesarean section has more pain, the statistics of cesarean sections in Iran are more than 3 times the world standard. Available at: https://wwwtasnimnewscom/fa/news/1401/10/03/2825809/[cited 2023sep 18 [in Persian]
6. Ali Mohammadzadeh K, Afradi Asbaghrani P. The effective determinants in willingness to cesarean section (The case of pregnant women in Tehran) [in Persian]. Woman in Development & Politics 2015; 13: 357-7.
7. Asadi ZS, Solhi M, Taghdisi MH, Moghadam Hoseini V, Javan R, Hashemian M. The effect of educational intervention based on Theory of Reasoned Action (TRA) on selected delivery method, for selective cesarean section in pregnant women [in Persian]. The Iranian Journal of Obstetrics, Gynecology and Infertility 2014; 17(109): 1-8.
8. Betran AP, Moller YJ, A, Souza JP, Zhang J. Trends and Projections of Caesarean Section Rates: Global and Regional Estimates. BMJ Global Health 2021; 6(6): e005671.
9. Alimohamadian M, Shariat M, Mahmoodi M, Ramezanzadeh F. The influence of maternal request on the elective cesarean section rate in maternity hospitals in Tehran, Iran [in Persian]. Payesh J 2003; 2(2): 137-42.
10. Rafati F, Rafati SH, Madani A, Mashayekhi F, Pilevarzadeh M. Related factors to choose cesarean section among Jiroft pregnant women [in Persian]. J Prevent Med 2014; 1(1): 23-30.
11. Janati S, Montazeriyan M, Kassani A, Kianmanesh S. Women's knowledge and attitude towards mode of delivery in Ganjavian Hospital in Dezful [in Persian]. Navid No 2022; 24(80): 66-74.
12. Moeini B, Allahverdipour H, Mahjoub H, Bashirian S. Assessing pregnant women's beliefs, behavioral intention and predictive factors for cesarean section in Hamadan [in Persian]. The Iranian Journal of Obstetrics, Gynecology and Infertility 2011; 14(3): 37-44.

13. Sharghi A, Kamran A, Sharifirad G. Factors influencing delivery method selection in primiparous pregnant women referred to health centers in Ardabil, Iran [in Persian]. Journal of Health System Research 2011; 7(3): 364-72.
14. Peyman N, Jonaidy E. Relationship between pregnant women's knowledge about pain reducing methods and cesarean section [in Persian]. Journal of Medical Science of Islamic Azad University of Mashhad 2010; 6: 201-8.
15. Hassanzadeh H, Faraji Lamouki H, Khatty Dizabadi F, Yazdani Charati J. Comparing the factors associated with selecting normal vaginal delivery or caesarian section in nulliparous women [in Persian]. J Mazandaran Univ Med Sci 2019; 29(174): 53-63.
16. Erdősová A, Gašparová P, Ballová Z, & Dosedla E. Caesarean section on request - a controversial request or the patient's right?. Ceska gynekologie 2024; 89(3): 245–52.
17. Sorrentino F, Greco F, Palieri T, Vasciaveo L, Stabile G, Carlucci S, Laganà A. S, Nappi L. Caesarean Section on Maternal Request-Ethical and Juridic Issues: A Narrative Review. Medicina (Kaunas, Lithuania) 2020; 58(9): 1255.