



## The Level of the Recipients' Satisfaction of Natural Childbirth and Caesarean Section Services in South of Iran in 2024

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### Abstract

**Introduction:** Maternity care is among the most frequently utilized health services, and maternal satisfaction with childbirth is a key indicator for assessing the quality of healthcare delivery. Evaluating patient satisfaction helps identify areas requiring improvement to enhance care programs. This study aimed to assess the satisfaction levels of women who had undergone natural childbirth and cesarean sections in the South of Iran in 2024.

**Methods:** The present study employed a cross-sectional design to assess the satisfaction levels of 250 pregnant women who received care at Hazrat Zainab Hospital in South Iran during the year 2024. Participants were selected using simple random sampling. Descriptive statistics were used to analyze the collected data. After receiving and compiling the relevant information through the questionnaire, the data were processed using ANOVA in Excel 2016, SPSS version 23.

**Results:** The results of this study indicated that patients were satisfied in the delivery department. The average satisfaction level for natural delivery services was 62%, with the highest satisfaction reported for doctors at 67% and the lowest for department cleanliness at 38%. The average satisfaction level for cesarean delivery services was 76%, where the highest satisfaction was also for doctors at 80%, while the lowest was for the training of pre-operative personnel at 40%. Additionally, education significantly influenced patient satisfaction ( $P \leq 0.05$ ).

**Conclusion:** The findings of this study indicated that training experienced personnel significantly enhanced patient satisfaction. This underscores the importance of investing in staff training and development to improve the overall patient experience.

**Keywords:** Satisfaction, Women, Childbirth, Health

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### Introduction

Childbirth occurs almost one day in every woman's life, and fertility is an essential aspect of women's life for reproduction and survival (1, 2). Pregnancy and childbirth are special and memorable periods in the lives of women and their families. During this period, mothers experience many emotional changes. The needs of mothers and their problems during labor and delivery, as well as the subsequent measures and interventions, carried out to solve these problems and meet these needs; all play a significant role in giving meaning to the fertility process. Therefore, the experience of childbirth and the satisfaction of clients with the quality of care they receive are crucial factors in maternity care (3, 4).

Today, the patient's satisfaction with the way the hospital provides medical services has been given special attention by researchers (5). The patient indicates the quality of services in various interpersonal, organizational, and technical fields. Therefore, its evaluation can be an essential source of information to identify the problems and hold appropriate programs in the field of providing medical services (6). Patient satisfaction, which is a perception and attitude that a consumer can have or her look at an overall healthcare experience, is a multidimensional aspect that is a critical key indicator for the quality of healthcare delivery (7). Patients' satisfaction is affected by many cultural, social, economic, personality, educational and demographic factors (8).

Various factors affect the patient's satisfaction with the way the treatment services are performed in the hospital; they include the way the doctors and nurses work, as well as the patient's satisfaction with the hospital complex, including the physical environment and its employees, prediction of the future interactions and behaviors of the patients during the treatment and even their discharge from the hospital; this will lead to the introduction of the hospital to others or the desire to return to the person in case of illness; on the other hand, the satisfaction obtained will create a deeper relationship with the health service providers, more compliance with the regimens, medicine and treatment decisions, and achievement of more favorable outcomes in the field of health (6).

On the other hand, lack of satisfaction causes patients to not participate in providing services, and this leads to feelings of inadequacy and unhappiness among the personnel. As a result, the efficiency of the health system decreases. Appropriate and rational decisions will be made to review health-treatment interventions and reforms. Satisfaction and understanding of deficiencies and quality of access to health services are the most important concerns of policymakers worldwide. Therefore, nowadays, managers and planners of healthcare systems are much more interested in improving the quality of services (9).

Maliki et al.'s study on pregnant women referred to Hajar Hospital in Shahrekord in 2023 showed that the average score of two dimensions of satisfaction with childbirth, i.e., mental pressure experienced during pregnancy and quality of care, was low. Childbirth and efforts to increase their average score can positively affect the overall satisfaction with childbirth (4). Kohestani et al.'s study (2020) entitled "Investigating the Level of Satisfaction of Pregnant Mothers with the Ease of Receiving Pregnancy Care and the Factors Affecting It during the first visit to the Midwifery Clinic of a Public Hospital in Tehran in 2017" showed that 70.2% of the pregnant mothers visiting the clinic were satisfied with receiving services and 29.8% were not satisfied. This level of satisfaction had a significant relationship with the number of pregnancies and the age of mothers, which decreased with the increase in the number of pregnancies and age. Also, in this research, the lowest level of satisfaction was related to busyness

and wasting time (3). The study by Paiz et al. found that women with higher education levels reported greater satisfaction with the quality of care received during childbirth (11). Similarly, Berhanu's study in Eastern Ethiopia indicated that over two-thirds of pregnant women expressed satisfaction with their childbirth care. Factors influencing this satisfaction included educational level, service waiting time, and previous childbirth experiences (12).

Understanding patient satisfaction and dissatisfaction and identifying weaknesses and shortcomings in the service delivery system can provide valuable insights for managers. This knowledge enables them to recognize gaps and develop strategies to enhance service delivery methods. By analyzing patient feedback, healthcare providers can pinpoint specific areas needing improvement, ultimately leading to a more effective and responsive healthcare system. Addressing these issues improves patient experiences and fosters better health outcomes. Satisfaction has been investigated in some areas and many hospitals, but most existing studies have investigated the satisfaction of general patients. This consideration extended beyond just the patients in the maternity ward, and few studies have been conducted on patient satisfaction in the delivery environment. Therefore, the current study was conducted to determine the level of satisfaction of the recipients of natural childbirth and cesarean delivery services. Sampling for the study was conducted at Hazrat Zainab Hospital in South Iran in 2024.

### Methods

The study was sampled at Hazrat Zainab Hospital in Shiraz, a key medical center in southern Iran. Shiraz is recognized for its advanced healthcare services and plays a significant role in the region's medical landscape. The city has numerous specialized hospitals and healthcare facilities, providing various medical services, including advanced surgeries and treatments for various health conditions. This cross-sectional study was conducted in 2024 on 250 pregnant women referred to Hazrat Zainab Hospital.

### Sampling

The average number of natural births is 134 per month, and the average number of cesarean sections is 142 per month in Hazrat Zainab

Hospital. According to Cochran's formula, the sample size was estimated at 250 subjects. Sampling was done using simple random sampling. The inclusion criteria were being willing to participate in the study and being hospitalized in the midwifery department. The exclusion criteria were an unwillingness to participate in the study and incomplete filling out of questionnaire forms. The researcher collected the data in person after explaining the issue to the patients; the questionnaires were distributed on paper among the patients and filled out by the researcher for illiterate people. Confidentiality was considered, and no personal information was collected from the patient. In this study, 290 questionnaires were randomly distributed among the participants. However, 40 questionnaires were excluded from the analysis due to incomplete information. As a result, 250 completed questionnaires were included in the final study sample.

### *Study Tools*

The researcher used two questionnaires to collect the data. They were prepared in two sections, which included demographic information (age, education, number of births, place of residence) and questions related to mothers' satisfaction, which included questions about doctors and midwives. The items were scored using a 4-point Likert scale, with "very good," "good," "moderate," "weak," and "very weak" options.

Questionnaires were designed by reviewing texts and asking the experts some questions. The researcher's questionnaire for cesarean section included 7 questions and three dimensions of doctor (1 question), nurse (4 questions), and comfort facilities (2 questions). The researcher's questionnaire for natural birth included 17 questions and three dimensions: doctor (4 questions), nurse (5 questions), and comfort facilities (8 questions).

the validity of the questionnaire was evaluated in terms of face, content, and construct validity. Its reliability was evaluated based on internal consistency and stability (Cronbach's alpha and Intra-class Correlation Coefficient). To investigate the qualitative face validity, the designed items were reviewed by 20 specialists of obstetrics and gynecology nursing managers.

Content validity ratio (CVR) is a widely accepted quantitative method of determining

the CVR. The questionnaire was reviewed by 20 specialists with sufficient experience in the abovementioned areas. Then, the CVR was calculated to determine the importance of each item. The value of CVR is 0.42. To calculate the content validity index (CVI), the experts were required to evaluate each item in terms of "relevance," "clarity," and "simplicity". The items with CVIs above 80% were accepted. To assess the construct validity of the questionnaire based on exploratory factor analysis, the sample adequacy was examined using the Kaiser-Meyer-Olkin (KMO) method. The sample adequacy was acceptable if the KMO value was more than 0.6. The reliability of the questionnaire was evaluated based on internal consistency and stability. Stability was evaluated by the test-retest method. This method gave a test to a group of subjects more than once under the same conditions. To evaluate the reliability of this method, the questionnaire was first distributed among 30 patients, and then the retest was done in the same group after 7 days. The value of the intraclass correlation coefficient was 0.82. The most common method of evaluating the internal consistency of a tool is Cronbach's alpha coefficient. Cronbach's alpha values above 0.7 are considered optimal.

### *Data Analysis*

In line with the study's objectives, descriptive statistics were used to express the research results and analyze the data. After receiving and collecting the relevant information through the designed forms, we analyzed the data using the ANOVA statistical test in Excel 2016 software and SPSS version 23.

### *Ethical Consideration*

We obtained ethical approval from the Shiraz University of Medical Sciences Research Vice-Chancellor (IR.SUMS.NUMIMG.REC.1403.048). The confidentiality of the participants' information was guaranteed because the data collection tool contained no identifiable information. To ensure anonymity, we used codes instead of names, and no personal information unrelated to the project was received from individuals. The individuals participated in the study with full consent, and no fee was charged for participating in the study. Also, the ethics committee of the Vice-Chancellor of Research and Technology approved the study.

## Results

Most of the patients were in the age group of 26 to 30 years. 62% had a diploma or under diploma, 18% had a university education, and 20% were illiterate. 12% of the patients were foreigners. 48% of them lived in Shiraz, 22% in Fars province, and 30% in other provinces. Research examining satisfaction with demographic factors indicated that gestational age ( $P=0.10$ ), citizenship ( $P=0.16$ ), and residence location ( $P=0.071$ ) did not significantly influence the patients' satisfaction levels. In contrast, the level of education ( $P=0.03$ ) was found to have a significant impact on patients' satisfaction (Table 1).

To determine the construct validity by exploratory factor analysis, the sample adequacy was first investigated based on the KMO statistic, which was 0.74. The KMO and Bartlett tests are techniques employed to assess the suitability of the chosen sample in exploratory factor analysis. The KMO value explicitly measures the adequacy of the selected sample.

The value of Bartlett's sphericity test was also 546.70, which was significant at  $P<0.025$ . Based on the resulting correlation matrix, factor analysis could be done in the study sample.

The 2 abovementioned criteria were significant indicators to approve the sample adequacy and the possibility of factor analysis. The results of the KMO statistic and Bartlett's sphericity test have been presented in Table 2.

The level of patient satisfaction with the natural delivery department is shown in Table 3. The rate of patient satisfaction with the natural childbirth services provided by the doctor was 67%, which was the result of satisfaction with the provision of sufficient explanations by the doctor (68%), the introduction of the doctor in charge of each shift to the patient (73%), and the timely presence of the doctor at the patient's bedside (59%). The doctor's kind behavior with the patient was reported to be 69%. The level of satisfaction of patients with natural childbirth services provided by midwives was 63%, which included providing adequate explanations for injections and drugs (69%), helping to breastfeed the baby in the first hour (60%), providing the necessary training for breastfeeding the baby and prevention of infection (71%), having respectful behavior toward the patients by the staff, (54%) and providing response and timely presence of midwives at the patient's bedside (62%).

**Table 1:** Demographic information of study participants

Age Group	Number	Percent	P value
20-15	13	5%	0.100
25-21	36	14%	
30-26	67	27%	
35-31	52	21%	
40-36	48	19%	
41-45	27	11%	
Age 46 and above	7	3%	
<b>Education</b>			
Illiterate	49	20%	0.030
High school	63	25%	
Diploma	92	37%	
Associate Degree	11	4%	
Bachelor's degree and higher	35	14%	
<b>Address</b>			
Fars province	54	22%	0.071
Shiraz	120	48%	
Other provinces	76	30%	
<b>Nationality</b>			
Iranian	220	88%	0.016
Foreign national	30	12%	

**Table 2:** KMO sampling adequacy index and Bartlett's sphericity test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.74
Bartlett's Test of Sphericity	Chi-square	546.70
	Degree of freedom	249
	Sig	$P<0.025$

**Table 3:** The level of satisfaction with the services of the natural childbirth department

Axis	Question	Satisfaction percentage	Overall satisfaction percentage
Doctor	Providing sufficient explanation about the reason for hospitalization and the process of the intended actions	68%	67%
	The doctor in charge of each shift introduced herself	73%	
	Timely presence of the doctor at the patient's bedside	59%	
	The doctor's kind behavior with the patient	69%	
Nurse	Provide sufficient explanation and permission before performing any action (serum injection, drug administration, etc.)	69%	63%
	Help to breastfeed the first hour	60%	
	Providing the necessary training to prevent infant infection and how to breastfeed	71%	
	Respectful and friendly behavior of the personnel upon entering the delivery room	54%	
	Timely presence of a midwife in cases of need at the patient's bedside	62%	
Welfare amenities	Respect for cultural and religious values	70%	56%
	No movement restrictions in the delivery room, and teaching movements and positions	50%	
	Satisfaction with non-pharmacological pain relief methods (massage, hot water bag, hot tub, etc.)	42%	
	Satisfaction with the use of pharmaceutical pain reduction methods (analgesic gas, lumbar anesthesia)	56%	
	Respecting privacy in the maternity ward	70%	
	An explanation was given about the possibility of being accompanied by the same sex	55%	
	Satisfaction with the cleanliness of the maternity ward, sanitary services, clothes and sheets	38%	
	Satisfaction with the condition of the room, bed, temperature, and ventilation, and the noise of the delivery ward	62%	

**Table 4:** Level of satisfaction with cesarean section services

Axis	Question	Satisfaction percentage	Overall satisfaction percentage
Doctor	The degree of satisfaction with the way the doctor interacts with the patient	80%	80%
Nurse	The level of satisfaction with the interaction between operating room and anesthesia personnel	92%	66%
	The level of satisfaction with pre-operative training in the inpatient department (complications and preparations, etc.)	40%	
	The level of satisfaction with breastfeeding the baby in recovery	66%	
	The level of satisfaction with skin-to-skin contact during the birth of the baby	66%	
Welfare amenities	The level of satisfaction with the length of waiting for surgery after admission to the operating room	78%	72%
	The level of satisfaction with the explanations provided during the filing of the operating room case in the clinic	66%	

The level of satisfaction with the comfort facilities in the natural childbirth department was 56%, which included respect for the patient's cultural and religious values (70%), lack of movement restrictions and the provision of necessary training (50%), use of non-pharmacological pain relief methods (42%), reduction of drug pain (56%), respect for privacy (70%), explanation about the possibility of same-sex companionship (55%), cleanliness of the clothes and sheets (38%), and satisfaction with cooling and heating and relaxing atmosphere (62%). The highest level of satisfaction with natural childbirth services was

related to the services received from the doctor, reported by 67%, followed by nursing services and welfare facilities, respectively (Table 3).

The rate of patient satisfaction with the cesarean section services provided by the doctor was 80%, which was the result of satisfaction with the interaction between the doctor and the patient. The rate of patient satisfaction with the cesarean section services provided by the operating room personnel was 66%, which included satisfaction with the interaction of the operating room personnel (92%), the pre-operative training (40%), and breastfeeding the

baby during recovery (66%). Satisfaction with skin-to-skin contact after the birth of the baby was 66%. The level of satisfaction with the welfare facilities in the cesarean section was 74%, which included the waiting time after admission for surgery (81%) and the explanations provided during the filing of the room file (66%). The highest level of satisfaction with cesarean section services was related to the services received from the doctor, which was reported to be 80%, followed by the services of welfare facilities and operating room personnel, respectively (Table 4).

Regarding patients' willingness to return to the Hazrat Zainab Hospital maternity ward, 185 people (74%) said they would return to this center if needed.

### Discussion

This study was conducted to measure the satisfaction level of the recipients of natural delivery and cesarean section services. The present study's findings indicated patients' satisfaction with natural delivery and cesarean section services. 74% of the patients said they would return to this center if needed. Average satisfaction was reported in 62% of natural childbirth services and 76% of cesarean section services. The findings are in line with Pridija's research conducted in India, which reported a satisfaction rate of 79.2% for cesarean delivery services and 68.7% for natural delivery services (13). Franco's study was conducted in northwest Ethiopia. In this study, satisfaction with natural childbirth services was higher than that of the cesarean section. About 65.6% of the mothers who gave birth naturally and 57.2% through cesarean delivery were satisfied with the delivery care services (14). The level of satisfaction of patients admitted to the maternity ward in hospitals in the northwest of Iran was average, and the average satisfaction with maternity services was about 60% (15). In Sehti et al.'s study, the satisfaction rate of cesarean section services was 87.5 (16).

The findings showed that the highest satisfaction with childbirth was related to satisfaction with the doctor, which was reported in the cesarean section (80%) and the natural delivery section (67%). The level of patients' satisfaction with the doctors was reported to be on the rise, which indicates the patients' satisfaction with the doctors of Hazrat Zainab Hospital. In a study conducted in Ermia, the most satisfactory part of childbirth was

related to the doctor (69.7), the midwife team (77), and the environment and services (54.4) (1). The lowest level of satisfaction in the natural delivery department was related to the cleanliness of the delivery department, sanitary services, clothes, and sheets, which was reported at 38%. Also, in the study of Amed Mikkel et al., the highest level of dissatisfaction (42.3%) was related to the cleanliness and access to the toilet (17). In Kenya, a lack of satisfaction with the health environment of the delivery department was observed (18). The lowest level of satisfaction in the cesarean section was related to pre-operative training regarding complications and preparations, etc., which was necessary for patients. Education on important issues should be of vital importance for the hospital. In Mokambi's study, 49.8% of patients were dissatisfied due to insufficient education (19). About 46% of the patients in the natural delivery department were dissatisfied with the behavior of the staff, which can be increased by training the staff and improving their communication skills. The medical staff's friendly behavior and intimate relationships, along with their expertise, are crucial factors in creating patients' satisfaction (20).

Several studies have shown the importance of early skin-to-skin contact because it reduces the level of maternal anxiety and depression in the 48 hours after birth, improves the initial adaptation of infants to breastfeeding, and increases the level of satisfaction with childbirth. Contact with the baby is considered one of the most critical factors for the mother's health after birth. Women attached special value to bonding with their babies, cared about their safety and wanted the baby to be fed successfully with breast milk (21). In our study, patients were concerned about various aspects of the service, especially the measures taken to ensure their privacy during the physical examination and the length of waiting time to receive healthcare, and were often satisfied. In several internal studies abroad, the importance of maintaining the patient's privacy has been emphasized (13, 17, 22, 23).

In natural delivery and cesarean sections, there was a significant relationship between the level of education and satisfaction with different hospital services ( $P \leq 0.05$ ); with the increase in education, the level of satisfaction with the services decreased. According to a study conducted in Rasht, educated people had more

expectations about how to provide services, and there was a meaningful relationship between the level of satisfaction with childbirth and people's education (24). In Turkzahrani's study, it was found that by raising the level of awareness of mothers, it is possible to raise the level of their expectations in the field of how to provide care, which will motivate improving the quality of services following people's expectations. The results of this study showed that with the increase in education, people's expectation level also increased, and their satisfaction was low (20). In the study of Seyyed Waleed, it was shown that, according to the educational status of the participants, less educated mothers were more satisfied than educated ones. 48% of the illiterate respondents were more satisfied compared to 22.25% who had a university education (25). Nikpur's study is not in the same line with the findings of our study; women with higher education levels were more satisfied with the provision of maternity services (26). This difference is related to how services are provided and the characteristics of the population under the study.

In the Department of Natural Delivery and Cesarean Section, no statistically significant relationship was found between age and the level of satisfaction with services ( $P > 0.05$ ). In Sharami's study, which was conducted in Rasht, it was shown that there was no relationship between age and satisfaction with childbirth (24). However, in his research, Maskalova showed that the relationship between age and service satisfaction was significant, and younger women reported lower satisfaction scores than older ones (27). The satisfaction level was insignificant in people living in different places ( $P > 0.05$ ). However, Nikpour stated in his study that distance from the road causes dissatisfaction in women (26). In Gitbo's research, there was no difference between the satisfaction of rural and urban people (18).

In our study, there was no significant difference in the level of satisfaction of Iranians and Afghans in the cesarean section and natural delivery section ( $P > 0.05$ ). In a study conducted in the southeast of Spain, no significant relationship between mothers' satisfaction and their ethnicity was observed (21).

One of the uses of patient satisfaction surveys is to pay attention to the strengths and weaknesses of the hospital, which the managers and officials

should consider.

### *Limitations of the Study*

Overcrowding in the delivery department and fatigue caused by delivery affect the accurate response of the patient. Distrust and negative suspicion towards answering and concern regarding the change in the treatment process in the case of telling the truth and real satisfaction are among the limitations of this project. Cultural differences caused contradictions in the answers to the questionnaire.

### **Conclusion**

The findings of the present study indicated the average satisfaction of the recipients of delivery services at Hazrat Zainab Hospital in the South of Iran.

Training experienced personnel increases the patients' satisfaction, which requires more attention from managers.

In future research, a community-based and multicultural study may shed more light on cultural beliefs and their impact on satisfaction. A focus group discussion or in-depth interview could also be conducted in further studies to ensure clarification of women's responses. Officials and managers should evaluate and adjust the strengths and weaknesses of their systems based on the quality of services and customer satisfaction levels. This approach is essential for ensuring that the services provided meet the expectations and needs of customers, ultimately enhancing overall satisfaction.

### **Author's Contribution**

All authors have contributed equally to writing and revising the draft.

### **Ethical Approval**

The project received ethical approval from the Shiraz University of Medical Sciences Research Vice-Chancellor (IR.SUMS.NUMIMG.REC.1403.048).

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### **Conflict of Interest**

There are no conflicts of interest.

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