

Original Article

Patient satisfaction and perceptions regarding obstetrics ultrasound scan services in a tertiary care hospital in Sri Lanka

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Abstract

Introduction

Obstetric USS has become integral to global antenatal care. Ensuring better obstetric care and achieving a high level of patient satisfaction are key priorities. Patient satisfaction serves as a crucial index for evaluating and enhancing healthcare services. We aimed to assess pregnant women's views on their care and satisfaction during obstetrics USS and to explore the correlation between demographic factors and level of satisfaction.

Methodology

A cross-sectional descriptive study was conducted at De Soysa Hospital for Women (DMH), Colombo, Sri Lanka. All pregnant women referred to the Radiology Department for antenatal USS in February 2021 were enrolled. Pre-validated self-administered questionnaires encompassing patient demographics and ordinal satisfaction scales for obstetric USS, were distributed to pregnant women prior to their USS appointments, with completed questionnaires collected post-USS. Kendall's tau-b correlation was used to compare the relationship between patient's demographic factors and their level of satisfaction.

Results

The analytical sample included 278 females, with 60.5% having secondary education or a university degree. Ages ranged from 14 to 44, with an average of 30.3 years. Overall satisfaction reached 84.6 % and satisfaction ratings above 80% were noted for all the indices of perception of care. 95.7% would recommend it to third parties, and 98.6 % considered their expectations were fulfilled. Level of education and age showed positive correlation with the satisfaction with $p < 0.05$. Ethnicity was independent of satisfaction.

Conclusion

Satisfaction with obstetric ultrasound scan services among pregnant women was high at 84.6%. Positive correlations were found between satisfaction and level of education and age. The study informs health policy and care improvements, emphasizing education and age's influence on satisfaction, suggesting targeted enhancements.

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Introduction

Sri Lanka offers healthcare services to all inhabitants free of charge. Its health care delivery system has achieved outstanding health parameters; however, there are some shortcomings affecting the quality and efficacy of the patient care delivered by the government hospitals.

Healthcare providers aim to offer the best possible care to patients, with the primary goal of ensuring high levels of patient satisfaction. The degree of satisfaction a patient experiences is a widely accepted measure that reflects the effectiveness and quality of services provided in hospitals [1].

Patient satisfaction is defined as the “degree to which the patient's desired hopes, goals, and/or preferences are met by the health care provider and/or service” [2,3]. “Satisfaction and dissatisfaction indicate patient's conclusion about the strength and weaknesses, respectively of the service, and women's perception with care often determines client's readiness to comply and continue with the service” [3].

Service providers play a crucial role in ensuring patient satisfaction and delivering high-quality medical care. This involves not only meeting but exceeding the expectations of people by consistently providing desirable and distinguished services [4]. This could be possible if staff of the hospital can recognize the patients' perceptions [4].

Several prior studies have utilized patient satisfaction as a quality development instrument for health service providers. Therefore, it is an essential index for assessment and upgrading of healthcare services [5].

Obstetric ultrasonography is a medical imaging technique used during pregnancy. It employs sound waves to generate real-time visual images of the developing embryo or fetus in the mother's uterus. Widely integrated into prenatal care in many countries, this procedure provides valuable information about the mother's health, the timing and advancement of the pregnancy, as well as insights into the health and development of the growing embryo or fetus [5].

Ultrasound technology has been employed for over 50 years in pregnancies, both in the United States and globally [6]. In the past three four decades, obstetrics ultrasound has expanded as a major part of antenatal care in Sri Lanka.

The main purpose for selecting obstetric sonography is that no former study has been conducted on prenatal mother's perception of care during obstetric USS in Sri Lanka. Existing literature shows a considerable gap regarding the evaluation of pregnant mothers' perception of care, which has been often ignored in experimental research. Numerous researchers have used this variable to assess patient satisfaction because antenatal care is one of the primary constituents in the healthcare sector that can be used to assess service delivery [4].

In previous decades, quality of healthcare is one of the rare topics which had been addressed in service studies in developing countries like Sri Lanka. The demand for improvements in healthcare quality presents challenges for service providers, making it a complex task for scholars, government policymakers, therapeutic specialists, and hospital administrators to meet client needs and enhance satisfaction [4]. Pregnant women opt for hospitals offering superior facilities, medical tests, thorough physical examinations, and informative consultations marked by friendly interactions with doctors [7,8]. Research indicates that satisfied patients exhibit greater compliance with treatment procedures, leading to continued use of medical care services and reduced tendencies to switch providers or hospitals [9].

This study was conducted to assess pregnant women's views on their care and satisfaction during obstetrics USS and to explore the correlation between demographic factors and level of satisfaction.

Methods

Setting and study design

The study was a descriptive, cross-sectional, and prospective research conducted at the Radiology Department of the De Soysa Hospital for Women, (DMH), Colombo, Sri Lanka. All pregnant mothers referred to the Radiology Department of DMH for antenatal ultrasound scan from 01st February 2021 to 28th February 2021 were enrolled in the survey. Critically ill patients and ICU patients were excluded from the study.

Study instruments

A self-administered structured questionnaire was designed to study numerous aspects of hospital care in relation to obstetric ultrasound scanning. The study questions were formulated by reviewing existing literature on the topic. The questionnaires were translated into the Sinhala and Tamil (local languages) using clear, concise, and simple language avoiding technical jargon or complex terminology that could be unfamiliar to some respondents. It was also ensured that the translations were accurate and culturally sensitive. A pilot test was conducted with a small sample representing the target respondents. This helped identification of potential issues with comprehension and allowed refinement of the questionnaire before full-scale implementation, as well as aided assessing content validity. The contact information was included in the questionnaires for clarification. Respondents were also encouraged to reach out if they had questions or needed further explanation. This was particularly beneficial for participants who had no formal education.

The questionnaire was structured into four distinct sections, which consisted of patient's demographics (Part A), patient's satisfaction on the care provided by USS operator (Part B), patient's satisfaction on general services (Part C) and patient's general impression about the care given by the department (Part D). Pregnant mother's level of satisfaction was assessed by fifteen well-structured questions. All queries were made using the "Likert scale", which comprised of five points Likert scale items, with 1 and 5 indicating the lowest and highest levels of satisfaction, respectively.

Ethical considerations

The study obtained ethics clearance from the Ethics Review Committee at the Faculty of Medicine, University of Colombo, prior to its commencement (EC-20-058). Written informed consent was obtained from the patients before their participation in the study and the questionnaires were distributed only to the patients who wished to participate in the study. Self-administered questionnaires were distributed to the patients prior to the obstetric USS and the filled questionnaires were collected after ultrasound scanning. The confidentiality of both patients and their records was consistently upheld throughout the study.

Sample size and sampling technique

The estimated sample size required for a 95% confidence level, assuming a standard deviation of 0.5 and a margin of error of $\pm 6\%$ and accepting 10% inflation of sample size to deal with incomplete responses and non-responses was 293. Since all the pregnant women who fell into inclusion criteria were enrolled into the study, sampling method was not used.

Analysis

SPSS software version 21.0 was used for analysis. Descriptive statistics were carried out on the socio demographic data. In the analysis, participants who chose "very dissatisfied" and "dissatisfied" were categorized as dissatisfied, while those who selected "satisfied" and "highly satisfied" were considered satisfied. To compare the relationship between patient's demographic factors (age, level of education) and their level of satisfaction, Kendall's tau-b correlation was used. Chi-square test was used to assess the relationship between patient ethnicity and patient's general impression about the care given by the department. p value < 0.05 was considered statistically significant.

Results

A total of 310 questionnaires were distributed. 32 (10.3%) were dropped due to missing data. The analytic sample consisted of 278 females.

The age of the respondents ranged from 14 to 44 years, with an average age of 30.3 years. Table 1 shows that 52.2% of the respondents were in the age group of 25-34 years. The majority (92.1%) of the participants were married. More than half (59%) were secondary school leavers. 6.5% had no formal education. Primary school leavers represented 23% of the participants, while 11.5% had attended a tertiary institution. No participant had acquired postgraduate qualification. The majority (68.4%) of the respondents were Sinhalese. Tamil and Moor participants represented 16.5% and 15.1% respectively.

Table 1: Socio-demographic characteristics of the Respondents

Socio demographic characteristic	Characteristic frequency	Percentage
Age group		
14-24	56	20.1 %
25-34	145	52.2 %
35-44	77	27.7 %

Marital status		
Married	256	92.1 %
Single	22	7.9 %
Educational level		
None	18	6.5%
Primary education	64	23.0%
Secondary education	164	59.0%
University/ college degree	32	11.5%
Postgraduate	0	0.0%
Ethnicity		
Sinhala	190	68.4%
Tamil	46	16.5%
Moor	42	15.1%

Table 2 shows the patient's ratings of the different aspects of care related to USS operator during obstetric US scan. It was seen that 82.4%, 83.5%, 86.4% and 84.9% of the respondents were either satisfied or very satisfied with the time dedication, conveying information, behavior, and scientific knowledge of the USS operator respectively.

Table 2: Patient's rating of different aspects of care related to USS operator during USS.

Aspect of care	Very dissatisfied (%)	Dissatisfied (%)	Undetermined (%)	Satisfied (%)	Very satisfied (%)	Total (%)
The time dedicated by the USS operator	16.9%	0.7%	0.0%	28.8%	53.6%	100%
The information conveyed by USS operator. (The steps, purpose, and any relevant findings of scan)	12.2%	2.2%	2.2%	28.8%	54.7%	100%
Behavior of the USS operator (professionalism, communication, patient comfort etc.)	13.7%	0.0%	0.0%	24.5%	61.9%	100%
Scientific knowledge of the USS operator	13.7%	0.7%	0.7%	28.1%	56.8%	100%

Table 3 demonstrates patient's ratings of the general aspects of care related to obstetric USS. The level of communication and dealing with the chaperon by the non-medical staff reached satisfied-very satisfied level of 85.7% and 83.5%. Handling the patients' needs and respect given by the staff demonstrated satisfied-very satisfied level of 83.5% and 85.6% respectively. Satisfaction regarding waiting time before USS and time taken to issue the report was 84.1% and 84.9%. It was seen that 86.4%, 84.9% and 84.2% of the respondents were either satisfied or very satisfied with accessibility, cleanliness, and adequacy of seating facility.

Table 3: Patient's rating of different aspects of care generally during obstetric USS

Aspect of care	Very dissatisfied (%)	Dissatisfied (%)	Undetermined (%)	Satisfied (%)	Very satisfied (%)	Total (%)
Level of communication by the non-medical staff	12.9%	0.7%	0.7%	31.7%	54.0%	100%
The way of dealing with chaperone or relatives by the non-medical staff	12.2%	0.7%	3.6%	33.1%	50.4%	100%
The mechanism of collaboration regarding handling the patient's needs	12.2%	0.7%	1.4%	26.6%	59.0%	100%
Respect shown by the staff	13.7%	0.7%	0.0%	28.8%	56.8%	100%
Accessibility to the premises	12.9%	0.7%	0.0%	31.7%	54.7%	100%
Cleanliness of the premises	13.7%	0.7%	0.7%	27.3%	57.6%	100%
Adequacy and comfort of seating facility	12.2%	0.7%	2.9%	30.2%	54.0%	100%
Waiting time before the USS	12.2%	2.9%	0.7%	30.9%	53.2%	100%
Quality and time taken to issue the report	12.9%	1.4%	0.7%	25.2%	59.7%	100%

To evaluate the overall satisfaction during obstetric USS, grades- satisfied and very satisfied were combined and it revealed a high percentage of pregnant mothers (84.6 %) were satisfied with the obstetric USS services obtained from the tertiary care hospital whereas only 15.4% were dissatisfied.

Almost all the respondents 274 (98.6%) accepted that their expectations were met regarding obstetric USS in the tertiary care hospital. Majority of the participants 266 (95.7%) would recommend the same radiology institution to a third party.

To determine the relationship between education level and patient satisfaction of different indices, Kendall's tau-b correlation was utilized, and the values are displayed in Table 4. There was a strong, positive correlation between education level and the level of satisfaction of all indices, which was statistically significant ($p < 0.005$).

Table 4: Kendall's tau-b Approx sig value (p-value) for different indices of satisfaction with level of education and age of the patient

Different indices of satisfaction (Aspect of care)	Kendall's tau-b Approx sig value with level of education	Kendall's tau-b Approx sig value with age
The time dedicated by the USS operator	0.000	0.026
The information conveyed by USS operator	0.005	0.012
Behavior of the USS operator	0.000	0.008

Scientific knowledge of the USS operator	0.000	0.049
Level of communication by the non-medical staff	0.001	0.048
The way of dealing with chaperone or relatives by the non -medical staff	0.005	0.026
The mechanism of collaboration regarding handling the patient's needs	0.005	0.184
Respect shown by the staff	0.000	0.041
Accessibility to the premises	0.001	0.127
Cleanliness of the premises	0.005	0.096
Adequacy and comfort of seating facility	0.004	0.030
Waiting time before the USS	0.001	0.243
Quality and time taken to issue the report	0.000	0.042

A Kendall's tau-b correlation was again used to assess the relationship between age and patient satisfaction of different indices at $p < 0.05$. There was a positive correlation between age and the level of satisfaction of all indices except for accessibility, cleanliness of premises, waiting time before USS and the mechanism of collaboration regarding handling the patient's needs as shown in Table 4. ($p < 0.05$).

Chi square test was used to assess the association between the patient ethnicity and their recommendation of the same radiology institute. There was no statistically significant relationship between the ethnicity and their recommendation of same institution ($p = 0.25$). Similarly, no relationship was observed between ethnicity and fulfillment of their expectations at the tertiary care hospital. ($p = 0.16$)

Discussion

The present study aimed to evaluate the satisfaction of expectant mothers with different aspects of obstetric care offered at a tertiary care hospital in Colombo, Sri Lanka. The findings indicate that most of the participants expressed satisfaction with the care they received. Although there is a higher rate of overall satisfaction, a small but significant percentage (15.4%) displayed dissatisfaction generally and in relation to different aspects. The fact that there are dissatisfied participants in the study implies that the administration, USS operators and other non-medical staff need to do more towards improving obstetric services in the Radiology Department.

The overall satisfaction during obstetric USS, in the current study came out as 84.6 %, which is lower than that reported in the Nigerian study (97.2%) by Joseph D et al. [10]. Other than the way that the services are delivered, variations in the study populations with regard to social economic status, personality, expectations, level of literacy rates could affect the satisfaction levels [11]. In addition to that differences in the research methodology could explain some of the differences [11]. This demands cautiousness when comparing our results with prior studies.

Average satisfaction ratings above 80% was observed for all the indices in the present study, in which the figures were significantly higher than the comparable study by Anthony C Ugwu et al. [12]. However, it was detected that the time dedicated by the USS

operator scored the lowest ratings (82.4%) of all indices. It was also observed that there is a maximum number of patients they book per day including the ward patients in the department. More quality time dedication by USS operator regarding obstetric USS scanning is one of the areas which need to be improved.

In the current study women with higher education level were more satisfied both generally and with all the aspects of care ($p < 0.005$) received at the radiology department. Comparable study conducted by Ricci P et al, 2014 in USA revealed similar findings of significant association between the level of education and the satisfaction of care [13]. This disagrees with the research by Alqahatani et al, 2012 in Saudi Arabia [14]. Their result showed that "the satisfaction level of primary school leavers was higher than the graduates". This was assumed to be due to the high level of exposure of the graduates [14]. However, it was not so in the present study despite most of the study population at least attending secondary school.

Older women were more likely to report being highly satisfied than younger women with regard to most of the indices in this study. This agrees with the findings of Ricci P et al. [13]. However, the Nigerian study showed that level of satisfaction was not depended on the age [10].

Conclusion

Overall, the study presented a high level of satisfaction (84.6 %) of pregnant mothers with services gained from this tertiary care center. Average satisfaction ratings above 80% were noted for all the indices. Statistically significant strong, positive correlation was seen between education level and the level of satisfaction. Increasing age was associated with a higher level of satisfaction in many aspects of care. The study provides valuable insights for health policy and care improvement by highlighting the importance of educational level and age in influencing patient satisfaction, suggesting targeted strategies to enhance care quality.

Limitations

This study was conducted at a tertiary care hospital only but the level of patient satisfaction with different types of health providers could have given more understanding into different aspects of factors linked to patient satisfaction.

This study was conducted among pregnant women of varying educational levels, including those without any formal education. The use of self-administered questionnaires in such a diverse educational environment may represent a limitation of the study. In future studies, employing interviewer-administered questionnaires could be a better option.

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