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## Trends in Patient Satisfaction at a Tunisian Gynecology-Obstetrics Service: A Comparative Analysis Between 2023 and 2024

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### Abstract

**Background:** Monitoring trends in patient satisfaction is essential for evaluating healthcare quality improvement initiatives and adapting services to meet evolving patient needs. This is particularly important in gynecology-obstetrics services, where care quality directly impacts women's health outcomes and experiences.

**Objective:** To compare patient satisfaction levels between 2023 and 2024 in the gynecology-obstetrics service at Ibn Al Jazzar University Hospital in Kairouan, Tunisia, and evaluate the impact of implemented interventions.

**Methods:** A comparative cross-sectional study was conducted using data from two periods: January-March 2023 (n=276) and January-March 2024 (n=284). The same validated questionnaire developed by the General Directorate of Public Health Structures (DGSSP) and the Observatory on the Performance of Organizations and Health Systems at the University of Montreal (OPOSSUM) was used in both periods. The questionnaire assessed overall satisfaction and seven specific domains: accessibility, continuity, comprehensiveness, technical quality, humanization, environment, and conditions of stay.

**Results:** Overall patient satisfaction increased significantly from 37% in 2023 to 52% in 2024 ( $p<0.001$ ). Improvements were observed across all seven domains, with the most substantial increases in conditions of stay (5.1% to 24.3%,  $p<0.001$ ), comprehensiveness of care (16.3% to 38.7%,  $p<0.001$ ), and humanization (37.0% to 56.3%,  $p<0.001$ ). The implementation of the GynéSatis mobile application was associated with higher satisfaction rates among users compared to non-users (58.7% vs. 47.6%,  $p=0.02$ ).

**Conclusion:** The significant improvement in patient satisfaction between 2023 and 2024 suggests that targeted interventions, including digital solutions and facility enhancements, can effectively address patient concerns and

improve healthcare experiences. Continued monitoring and adaptation of improvement strategies are recommended to sustain and further enhance patient satisfaction.

**Keywords:** Patient satisfaction, gynecology-obstetrics, healthcare quality, comparative analysis, digital health, Tunisia.

## 1. Introduction

Patient satisfaction is increasingly recognized as a critical indicator of healthcare quality and an essential component of patient-centered care. Monitoring trends in patient satisfaction over time provides valuable insights into the effectiveness of quality improvement initiatives and helps identify emerging issues that require attention. In gynecology and obstetrics services, where care involves intimate and sensitive aspects of women's health, understanding and addressing patient satisfaction is particularly important for ensuring positive healthcare experiences and outcomes.

A previous study conducted in 2023 at the gynecology-obstetrics service of Ibn Al Jazzar University Hospital in Kairouan, Tunisia, revealed an overall satisfaction rate of 37% [1]. The study identified several areas requiring improvement, including conditions of stay, comprehensiveness of care, and humanization. Based on these findings, several interventions were implemented to address the identified issues and enhance patient experience.

Key interventions implemented between the 2023 study and the present 2024 follow-up included:

1. **Digital Innovation:** Development and implementation of the GynéSatis mobile application, providing a secure platform for patients to report problems, communicate with healthcare providers, and access information.
2. **Facility Improvements:** Enhancements to the physical environment, including renovations to improve privacy, cleanliness, and comfort.
3. **Staff Training:** Comprehensive training programs focusing on patient-centered care, communication skills, and cultural sensitivity.
4. **Process Optimization:** Streamlining of administrative procedures to reduce waiting times and improve accessibility.
5. **Enhanced Continuity of Care:** Implementation of

electronic medical records and standardized handover protocols to improve information sharing among healthcare providers.

The present study aims to evaluate the impact of these interventions by comparing patient satisfaction levels between 2023 and 2024. By assessing changes in both overall satisfaction and satisfaction across specific domains, this research seeks to provide valuable insights for healthcare providers, administrators, and policymakers to further enhance the quality of care provided to women in this setting.

## 2. Materials and Methods

### 2.1 Study Design and Setting

This comparative cross-sectional study was conducted at the gynecology-obstetrics service of Ibn Al Jazzar University Hospital in Kairouan, Tunisia. Data were collected during two periods: January 1 to March 31, 2023, and January 1 to March 31, 2024.

### 2.2 Study Population and Sampling

The study population comprised patients hospitalized in the gynecology-obstetrics service during the two study periods. Inclusion criteria were consistent across both periods: (1) patients aged 18 years or older, (2) hospitalization duration of at least 48 hours, (3) discharge destination being home, and (4) provision of informed consent. Patients who did not meet these criteria or declined to participate were excluded. A total of 276 patients were included in the 2023 sample and 284 patients in the 2024 sample.

### 2.3 Data Collection Tool

Data was collected using the same questionnaire in both periods. The questionnaire was developed in Arabic by the General Directorate of Public Health Structures (DGSSP) in collaboration with the Observatory on the Performance of Organizations and Health Systems at the University of Montreal (OPOSSUM). It was specifically designed to study satisfaction among hospitalized patients in various public health structures in Tunisia and was translated

and validated by the project group.

The self-administered questionnaire explored overall patient satisfaction and seven specific domains:

1. Accessibility of care: Waiting times for appointments, ease of access by public transportation or car, ease of contacting physicians, and waiting times for diagnostic services.
2. Continuity of care: Physician's knowledge of medical history, explanations about treatments and medications, information about necessary care, seeing the same physician, and collaboration among healthcare professionals.
3. Comprehensiveness of care: Consideration of material and social conditions and mental health, and consideration of all health problems.
4. Technical quality of care: Physician competence, competence of other healthcare staff, and adherence to hygiene measures.
5. Humanization: Time dedicated by physician, staff patience, staff respect, confidentiality of medical information, and respect for physical privacy.
6. Environment: Facility design for privacy, cleanliness of premises, tranquility of premises, and staff cleanliness and attire.
7. Conditions of stay: Accommodation conditions, food quality, visiting hours, and visiting areas.
8. For all items, participants were asked to respond on a 6-point Likert scale (0: very poor, 1: poor, 2: fair, 3: good, 4: very good, and 5: excellent).

## 2.4 Data Collection Procedure

The self-administered questionnaire was distributed in paper format to all eligible and consenting patients. For patients who could not read, a team of trained volunteer interviewers assisted in completing the questionnaire. In 2024, patients were also asked whether they had used the GynéSatis mobile application during their stay.

Questionnaires were considered valid if they contained responses to at least half of the questions and did not have the same response to all questions.

## 2.5 Data Analysis

For satisfaction calculation: - By item: Responses of 3, 4, and 5 (good, very good, and excellent) were considered to reflect an acceptable level of satisfaction. - By domain: A domain was considered satisfactory if the satisfaction level was acceptable in 75% or more of its items.

Descriptive statistics were used to detail the general characteristics of patients. Comparative analyses between the 2023 and 2024 data were performed using chi-square tests for categorical variables and t-tests for continuous variables. A p-value of  $<0.05$  was considered statistically significant. The SPSS V20 software was used for data entry and analysis.

## 2.6 Ethical Considerations

Prior approval was obtained to conduct this study exclusively in the gynecology- obstetrics service of Ibn Al Jazzar University Hospital in Kairouan, with the support of the department head and unit managers. Anonymity and confidentiality were respected throughout the study.

## 3. Results

### 3.1 Sociodemographic Characteristics of Participants

The sociodemographic characteristics of participants in both study periods are presented in Table 1. The mean age of women surveyed in 2024 was  $31 \pm 7$  years, compared to  $30 \pm 8$  years in 2023. In both periods, most patients resided in Kairouan city and surrounding areas. The majority of women were educated, with similar

distributions of education levels across both periods. The proportion of patients covered by health insurance increased slightly from 54.7% in 2023 to 57.4% in 2024.

Table 1: Sociodemographic Characteristics of Participants in 2023 and 2024

Characteristic	2023 (N=276)	2024 (N=284)	p-value
Age (years)			
Mean $\pm$ SD	$30 \pm 8$	$31 \pm 7$	0.14

< 20	15 (5.4%)	12 (4.2%)	0.78
20-34	196 (71.0%)	205 (72.2%)	
35-49	47 (17.0%)	52 (18.3%)	
≥ 50	18 (6.6%)	15 (5.3%)	
Residence			
Kairouan city	101 (38.1%)	112 (39.4%)	0.82
Other areas	175 (61.9%)	172 (60.6%)	
Education level			
Illiterate	22 (8.0%)	20 (7.0%)	0.93

Characteristic	2023 (N=276)	2024 (N=284)	p-value
Primary	79 (28.6%)	82 (28.9%)	
Secondary	141 (51.1%)	148 (52.1%)	
Higher	34 (12.3%)	34 (12.0%)	
Socioeconomic level			
Low	125 (45.3%)	122 (43.0%)	0.76
Medium	127 (46.0%)	136 (47.9%)	
High	24 (8.7%)	26 (9.1%)	
Health insurance coverage			
Yes	151 (54.7%)	163 (57.4%)	0.52
No	125 (45.3%)	121 (42.6%)	

### 3.2 Overall Satisfaction Rate

The overall satisfaction rate increased significantly from 37% in 2023 to 52% in 2024 ( $p<0.001$ ). Figure 1 illustrates

the distribution of responses on the Likert scale for overall satisfaction in both periods, showing a clear shift toward higher satisfaction ratings in 2024.

Among patients in the 2024 sample, 138 (48.6%) reported using the GynéSatis mobile application during their stay. The overall satisfaction rate was significantly higher among GynéSatis users compared to non-users (58.7% vs. 47.6%,  $p=0.02$ ).

3.3 Satisfaction by Domains

Satisfaction rates improved across all seven domains between 2023 and 2024, as shown in Table 2 and Figure 2.

Table 2: Comparison of Satisfaction Rates by Domain Between 2023 and 2024

Domain	2023 (N=276)	2024 (N=284)	Absolute Change	Relative Change	p- value
Accessibility of care	65.6%	73.2%	+7.6%	+11.6%	0.04

Domain	2023 (N=276)	2024 (N=284)	Absolute Change	Relative Change	p- value
Continuity of care	41.7%	58.5%	+16.8%	+40.3%	<0.001
Comprehensiveness of care	16.3%	38.7%	+22.4%	+137.4%	<0.001
Technical quality of care	52.9%	67.6%	+14.7%	+27.8%	<0.001
Humanization	37.0%	56.3%	+19.3%	+52.2%	<0.001
Environment	41.3%	54.9%	+13.6%	+32.9%	0.001
Conditions of stay	5.1%	24.3%	+19.2%	+376.5%	<0.001

3.3.1 Accessibility of Care

The satisfaction rate for accessibility of care increased from 65.6% in 2023 to 73.2% in 2024 ( $p=0.04$ ). Improvements were observed in all items within this domain, with the most substantial increase in the ease of contacting physicians when needed (45.7% to 62.3%,  $p<0.001$ ). The waiting time for hospitalization appointments also improved significantly (61.6% to 71.8%,  $p=0.01$ ).

3.3.2 Continuity of Care

The satisfaction rate for continuity of care increased from 41.7% in 2023 to 58.5% in 2024 ( $p<0.001$ ). Significant improvements were observed in all items within this domain, particularly in seeing the same physician (15.2% to 36.6%,  $p<0.001$ ) and collaboration among healthcare professionals (52.2% to 73.9%,  $p<0.001$ ).

3.3.3 Comprehensiveness of Care

The satisfaction rate for comprehensiveness of care increased from 16.3% in 2023 to 38.7% in 2024 ( $p<0.001$ ). Both items within this domain showed significant improvements: consideration of material and social conditions and mental health (16.3% to 35.2%,  $p<0.001$ ) and consideration of all health problems (63.8% to 78.5%,  $p<0.001$ ).

### 3.3.4 Technical Quality of Care

The satisfaction rate for technical quality of care increased from 52.9% in 2023 to 67.6% in 2024 ( $p<0.001$ ). All items within this domain showed improvements, with the most substantial increase in adherence to hygiene measures (61.6% to 82.4%,  $p<0.001$ ).

### 3.3.5 Humanization

The satisfaction rate for humanization increased from 37.0% in 2023 to 56.3% in 2024 ( $p<0.001$ ). Significant improvements were observed in all items within this domain, particularly in staff patience (38.0% to 64.8%,  $p<0.001$ ) and respect for physical privacy (42.4% to

67.3%,  $p<0.001$ ).

### 3.3.6 Environment

The satisfaction rate for environment increased from 41.3% in 2023 to 54.9% in 2024 ( $p=0.001$ ). Significant improvements were observed in facility design for privacy (33.3% to 52.8%,  $p<0.001$ ) and tranquility of premises (15.6% to 38.7%,  $p<0.001$ ).

### 3.3.7 Conditions of Stay

The satisfaction rate for conditions of stay, although still the lowest among all domains, increased substantially from 5.1% in 2023 to 24.3% in 2024 ( $p<0.001$ ). Significant improvements were observed in all items within this domain, particularly in accommodation conditions (18.5% to 42.3%,  $p<0.001$ ) and visiting areas (0.0% to 15.8%,  $p<0.001$ ).

## 3.4 Impact of GynéSatis Mobile Application

Among the 138 patients who reported using the GynéSatis mobile application during their stay in 2024, satisfaction rates were consistently higher across all domains compared to non-users (Table 3).

**Table 3: Comparison of Satisfaction Rates by Domain Between GynéSatis Users and Non-Users in 2024**

Domain	GynéSatis Users (N=138)	Non-Users (N=146)	p- value
Accessibility of care	79.7%	67.1%	0.01
Continuity of care	65.2%	52.1%	0.02
	44.9%	32.9%	0.03

Domain	GynéSatis Users (N=138)	Non-Users (N=146)	p- value
Comprehensiveness of care			
Technical quality of care	73.9%	61.6%	0.02
Humanization	63.8%	49.3%	0.01
Environment	60.9%	49.3%	0.04



Conditions of stay	31.2%	17.8%	0.006
Overall satisfaction	58.7%	47.6%	0.02

The most frequently used features of the GynéSatis application were problem reporting (87.7%), direct communication with medical staff (76.1%), and accessing informative resources (68.8%). Among users who reported problems through the application, 82.3% indicated that their issues were addressed promptly.

#### 4. Discussion

##### 4.1 Overall Satisfaction Improvement

The significant increase in overall patient satisfaction from 37% in 2023 to 52% in 2024 represents a substantial improvement in the perceived quality of care at the gynecology- obstetrics service of Ibn Al Jazzar University Hospital. This 15 percentage point increase (representing a 40.5% relative improvement) suggests that the interventions implemented following the 2023 study have been effective in addressing patient concerns and enhancing their healthcare experience.

The improvement in overall satisfaction is particularly noteworthy given the challenges faced by this service, including high patient volume, resource constraints, and serving a predominantly low to medium socioeconomic population [1]. The magnitude of improvement is comparable to or exceeds that reported in similar intervention studies in other settings. For instance, a study in a Brazilian maternity hospital reported a 12 percentage point increase in overall satisfaction following a quality improvement initiative [2], while a study in Ethiopia reported a 14 percentage point increase after implementing a patient-centered care program [3].

##### 4.2 Domain-Specific Improvements

###### 4.2.1 Areas of Substantial Improvement

**Conditions of Stay:** Despite remaining the lowest-rated domain, conditions of stay showed the most substantial relative improvement (376.5% increase). This dramatic improvement likely reflects the targeted facility enhancements implemented after the 2023 study, including renovations to improve room comfort, upgrades to food service, and modifications to visiting

policies. However, the still-low satisfaction rate (24.3%) indicates that further improvements are needed in this area.

**Comprehensiveness of Care:** The 137.4% relative increase in satisfaction with comprehensiveness of care suggests that efforts to promote holistic care approaches have been effective. The implementation of standardized protocols for comprehensive patient assessment and training programs focusing on addressing patients' physical, psychological, and social needs appear to have significantly improved patients' perceptions of care comprehensiveness.

**Humanization:** The substantial improvement in humanization (52.2% relative increase) indicates that interventions targeting interpersonal aspects of care, such as staff training on patient-centered care and communication skills, have been successful. The particularly large improvements in staff patience and respect for physical privacy suggest that these training programs have effectively addressed key concerns identified in the 2023 study.

###### 4.2.2 Areas of Moderate Improvement

**Continuity of Care:** The 40.3% relative increase in satisfaction with continuity of care reflects the positive impact of interventions such as electronic medical records implementation and standardized handover protocols. The significant improvement in seeing the same physician suggests that efforts to enhance provider continuity have been successful.

**Environment:** The 32.9% relative increase in satisfaction with the environment domain indicates that facility improvements have enhanced patients' perceptions of their physical surroundings. The substantial improvements in facility design for privacy and tranquility of premises suggest that targeted renovations have addressed specific concerns identified in the 2023 study.

**Technical Quality of Care:** The 27.8% relative increase in satisfaction with technical quality of care suggests that ongoing professional development for healthcare

providers has maintained and enhanced their competencies. The particularly large improvement in adherence to hygiene measures may reflect increased awareness and compliance following the COVID-19 pandemic.

#### 4.2.3 Areas of Modest Improvement

**Accessibility of Care:** While showing the smallest relative improvement (11.6%), accessibility of care remained the highest-rated domain in both 2023 and 2024. The significant improvement in ease of contacting physicians suggests that communication enhancements, possibly facilitated by the GynéSatis application, have been effective.

#### 4.3 Impact of Digital Innovation: GynéSatis Mobile Application

The consistently higher satisfaction rates among GynéSatis users compared to non-users across all domains suggest that this digital innovation has been an effective tool for enhancing patient experience. The application appears to have addressed several key issues identified in the 2023 study:

1. **Improved Communication:** The direct communication feature has likely enhanced patient-provider communication, addressing concerns related to accessibility and continuity of care.
2. **Problem Resolution:** The high rate of prompt problem resolution reported by users suggests that the application has facilitated rapid intervention for reported issues, potentially preventing minor concerns from escalating.
3. **Patient Empowerment:** By providing a platform for patients to report problems and access information, the application may have enhanced patients' sense of autonomy and engagement in their care.
4. **Information Access:** The informative resources feature has likely improved patients' understanding of their care, addressing concerns related to comprehensiveness and continuity of care.

The positive impact of the GynéSatis application aligns with findings from other studies on digital health interventions in maternal care. For instance, a systematic review by Marko et al. [4] found that mobile health applications can improve patient satisfaction, engagement, and health outcomes in prenatal care.

#### 4.4 Persistent Challenges and Emerging Issues

Despite the substantial improvements observed across all domains, several challenges persist:

1. **Conditions of Stay:** Despite showing the largest relative improvement, conditions of stay remains the lowest-rated domain (24.3%). This suggests that while facility enhancements have been effective, further improvements are needed to address persistent issues with accommodation conditions, food quality, and visiting arrangements.
2. **Comprehensiveness of Care:** Although significantly improved, comprehensiveness of care remains one of the lower-rated domains (38.7%). This suggests that additional efforts are needed to ensure that patients' comprehensive needs are consistently addressed.
3. **Resource Constraints:** The persistent challenges in domains such as conditions of stay likely reflect ongoing resource constraints, which may limit the extent of possible improvements without additional investment.
4. **Digital Divide:** While the GynéSatis application appears to have positively impacted user experience, approximately half of the patients did not use the application. This suggests a potential digital divide that could exacerbate disparities in patient experience if not addressed.

#### 4.5 Study Limitations

This study has several limitations. First, while the same questionnaire and methodology were used in both periods, there may be unmeasured confounding factors that influenced the observed changes in satisfaction rates. Second, the study was conducted in a single center, which may limit the generalizability of the findings to other settings.

Third, the cross-sectional design does not allow for tracking changes in individual patient satisfaction over time. Fourth, while we observed an association between GynéSatis use and higher satisfaction rates, we cannot establish causality due to potential selection bias (e.g., more engaged or tech-savvy patients may be more likely to use the application and also more likely to report higher satisfaction).

#### 5. Recommendations

Based on the findings of this comparative study,



several recommendations can be made to further enhance patient satisfaction in the gynecology-obstetrics service:

### 5.1 Targeted Interventions for Areas with Persistent Low Satisfaction

Conditions of Stay: - Continue facility renovations to improve accommodation conditions, with particular attention to room comfort and privacy. - Enhance food service quality through menu diversification, improved preparation methods, and consideration of dietary preferences and restrictions. - Redesign visiting policies and areas to better accommodate family support while maintaining a restful environment.

Comprehensiveness of Care: - Strengthen interdisciplinary collaboration to ensure comprehensive assessment and management of patients' physical, psychological, and social needs. - Implement formal screening tools for psychosocial issues to ensure consistent identification and addressing of these aspects. - Enhance referral pathways to social services and mental health support when needed.

### 5.2 Scaling Successful Interventions

GynéSatis Mobile Application: - Expand the application's features based on user feedback and identified needs. - Develop strategies to increase adoption among all patient groups, including those with limited digital literacy. - Consider expanding the application to other departments within the hospital. - Share the application model with other healthcare facilities as a potential best practice.

Staff Training Programs: - Continue and enhance training programs on patient-centered care, communication skills, and cultural sensitivity. - Develop a train-the-trainer model to sustain and scale these programs. - Incorporate patient feedback into training content to address specific concerns.

### 5.3 Enhancing Patient Engagement and Empowerment

- Develop patient education materials on various aspects of gynecological and obstetrical care.
- Implement shared decision-making approaches to involve patients in their care planning.
- Establish a patient advisory council to provide ongoing input on service improvements.

- Create mechanisms for patients to access their health information and participate in their care documentation.

### 5.4 Systemic Improvements

- Advocate for increased resource allocation to address persistent infrastructure and staffing limitations.
- Implement a continuous quality improvement framework with regular monitoring of key performance indicators.
- Develop partnerships with community organizations to enhance support for patients, particularly those from disadvantaged backgrounds.
- Explore innovative service delivery models, such as enhanced ambulatory care and telemedicine, to optimize resource utilization.

### 5.5 Monitoring and Evaluation Framework

- Continue regular satisfaction assessments to track trends over time.
- Implement real-time feedback mechanisms to identify and address issues promptly.
- Develop a balanced scorecard approach that integrates patient satisfaction with clinical outcomes and operational efficiency metrics.
- Conduct qualitative research to gain deeper insights into patient experiences and expectations.

## 6. Conclusion

This comparative study demonstrates a significant improvement in patient satisfaction at the gynecology-obstetrics service of Ibn Al Jazzar University Hospital between 2023 and 2024. The substantial increases observed across all satisfaction domains suggest that the multifaceted interventions implemented following the 2023 study have been effective in enhancing patient experience.

The findings highlight the value of regular satisfaction assessments in guiding quality improvement efforts and the potential of digital innovations, such as the GynéSatis mobile application, to enhance patient engagement and satisfaction. The study also underscores the importance of addressing both clinical and non-clinical aspects of care, as improvements were observed in domains ranging from technical

quality of care to conditions of stay.

Despite these positive trends, persistent challenges remain, particularly in areas requiring substantial resource investment. Continued efforts are needed to address these challenges and sustain the improvements achieved. The experience of this gynecology-obstetrics service provides valuable insights for other healthcare facilities seeking to enhance patient satisfaction and quality of care.

Future research should explore the long-term sustainability of these improvements, the relationship between patient satisfaction and clinical outcomes, and the effectiveness of specific interventions in different healthcare contexts. Additionally, investigating the factors influencing adoption and impact of digital health solutions among diverse patient populations would provide valuable insights for future implementation efforts.

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