

A graphical analysis of performance patterns for evaluating patient satisfaction with nursing services in Jordanian intensive care units

WIJDAN AHMED ALTAMIMI

^a Department of Health, College of Nursing, University of Jordan, Jordan-Amman, Email: wijdantam226@gmail.com

* Corresponding Author

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ABSTRACT

Particularly in delicate settings like critical care units, patient satisfaction is a crucial metric for evaluating the caliber of nursing care. The purpose of the study was to examine patterns in patient satisfaction with nursing treatment in Jordanian intensive care units and to show how satisfaction levels changed over time. A descriptive analytical methodology was used in the study. Reports from patient satisfaction surveys were analyzed to find patterns and shifts in the caliber of nursing care. Despite several areas needing improvement, the results indicated a steady rise in patient satisfaction levels and notable gains in nurse performance. Trend analysis is a useful technique for comprehending how patient satisfaction with nursing services has changed over time. It also shows where improvements are still being made, which can be expanded upon to improve the standard of care in Jordan's intensive care units.

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1. Introduction

A key component that directly affects the standard of care given in intensive care units (ICUs) is nursing services, which are essential for enhancing patient outcomes and lowering rates of complications and death [1]. High nursing performance is required in the intensive care setting, and this is dependent on the skill of practitioners, the ability of nursing teams to respond quickly to patient demands, and the availability of technology and resources [2]. As a result, assessing nursing performance through patient satisfaction serves as a crucial gauge of the caliber and efficacy of the services rendered. It shows how well healthcare objectives are met and how well patients are treated in delicate and complicated situations [3].

However, the literature shows that few research relies on direct evaluation, especially in the intensive care unit (ICU) setting in Jordan, while many prior studies concentrate on quantitative and statistical assessment of patient satisfaction [4]. These studies offer useful visual insights that aid in trend identification and performance evaluation in an understandable and visible manner, which makes decision-making and service improvement planning easier [5].

For ICU managers and consultants, knowing trends in patient satisfaction with nursing services is crucial given the continuous changes in the healthcare system [6]. This application can pinpoint problem areas and efficiently and graphically evaluate the results of improvement projects. This

demonstrates the pressing need for research on trend analysis, especially in the setting of Jordan, where healthcare service quality is steadily improving [7].

In order to highlight advancements and raise the standard of nursing care in Jordanian intensive care units, this study intends to use graphical representations to examine trends in patient satisfaction with nursing services. This strategy is a step toward the use of visual assessment tools that help to enhance patient outcomes and their happiness with the care they receive by fostering a deeper understanding of performance and its gradual and flexible improvement.

1.1. Literature Review

The level of psychological reaction or happiness a patient displays with the medical care they get is known as patient satisfaction. A key metric for evaluating the quality of services is patient satisfaction, which shows how well the treatments satisfy the requirements and expectations of the patients. Numerous studies have demonstrated a direct correlation between improved treatment outcomes, increased patient confidence in the healthcare system, and improved healthcare processes and patient happiness. As a result, the patient and the nursing staff are more dedicated and work together better.

1.1.1. Evaluating Patient Contentment in Critical Care Units

Assessing patient satisfaction with nursing services in the intensive care unit has drawn more attention globally, according to a number of studies [8]. Different studies use different evaluation techniques. Some use statistical tools and multiple measuring techniques, while others rely on non-statistical data, including charts and graphs, which offer clear and simple visual insights. For instance, some studies have employed quantitative surveys to gather patient opinions, while other research have included graphs to show how patient satisfaction has changed over time [9].

1.1.2. Qualitative and quantitative evaluation models' distinctions

High accuracy in determining satisfaction levels is provided by the quantitative model, which is based on gathering numerical data and statistically evaluating it to produce objective and comparable conclusions. By examining trends and visual patterns, qualitative models—such as non-statistical graphic analysis—focus on gaining a deeper knowledge of patient experiences [10]. This helps to create a more flexible and fluid image, particularly in settings that call for quick and visual assessments. This method is distinguished by its capacity to examine broad trends and draw attention to temporal changes [11].

Lastly, non-statistical data and visualizations must be used to examine nursing performance in intensive care units and aid in decision-making, particularly in the Jordanian setting. This method offers a clear visual representation of patient satisfaction and performance improvement over time [12]. As a result, the literature analysis demonstrates that integrating qualitative and quantitative methods—especially with non-statistical visual aids—is a contemporary trend that enhances performance comprehension and helps create more adaptable and successful service development plans [13].

2. Method

In order to analyze changes and trends over a given time period, a descriptive analytical technique was used, concentrating on examining visual data and graphic pictures gathered from patient satisfaction assessment surveys.

2.1. Data Collection

Questionnaires intended to gauge satisfaction with nursing services were used to gather data from patient satisfaction evaluation reports that were accessible from intensive care units (ICUs) in Jordanian hospitals. These reports cover a five-year period, from the start of 2021 to the end of 2025, which enables examination of trends and annual and seasonal variations in satisfaction [14]. To guarantee patient privacy and data confidentiality, ethical permissions were acquired from the appropriate authorities, such as the Jordanian Ministry of Health's Ethics Committee.

2.2. Participants' Sample

Among the data was a survey that was administered to 1,200 patients who were admitted to intensive care units. 52% (624 patients) of these were men, and 48% (576 patients) were women. The median age was 55, with a range of 20 to 85 years. In order to represent the variety of age groups and case types getting nursing services in various facilities, this distribution is thought to be balanced.

2.3. Collection and Analysis Tools

Data on satisfaction was presented in an understandable manner using a variety of graphical tools, which showed how the data changed over time. Charts displaying average monthly or annual satisfaction ratings were periodically affixed to indicate patterns in improvement or correction. Additionally, visual image analysis was used to capture interpretive observations and notes. These notes, which varied from rising satisfaction rates in some periods to falling rates in others, made it easier to evaluate the variables that caused these shifts.

3. Results and Discussion

The results showed that patient satisfaction with nursing services in intensive care units gradually increased over the years studied, from January 2021 to December 2025. The satisfaction rate started at approximately 65% at the beginning of 2021 and rose steadily to reach a peak of 88% at the end of 2025, as shown in Fig. 1.

For example, at the beginning of the study (January 2021), the satisfaction rate was 65%. After implementing a series of improvements in early 2023, such as training and developing the work environment, it began a gradual increase in January 2023, reaching 72% at the beginning of the same year and continuing to rise to 78% in June 2023. The growth continued until the rate reached 88% in December 2025, reflecting a positive response to the ongoing improvements [15].

The data was divided into quarters, as the cumulative average satisfaction rates fluctuated significantly between quarters, suggesting a response to the improvements throughout the year. It was noted that the second quarter of 2022 (April-June) saw an average satisfaction rate of 70.5%, while the fourth quarter of 2023 (October-December) reached approximately 79%, as shown in Fig. 2.

The data indicates that the quarters that coincide with the beginning of the implementation of interventions and improvements, such as the second quarter of 2023, recorded significant increases. The satisfaction rate remained high and stable after 2024, with an average exceeding 85% in all quarters, confirming that improvement efforts had a positive and sustainable impact on patient satisfaction [16].

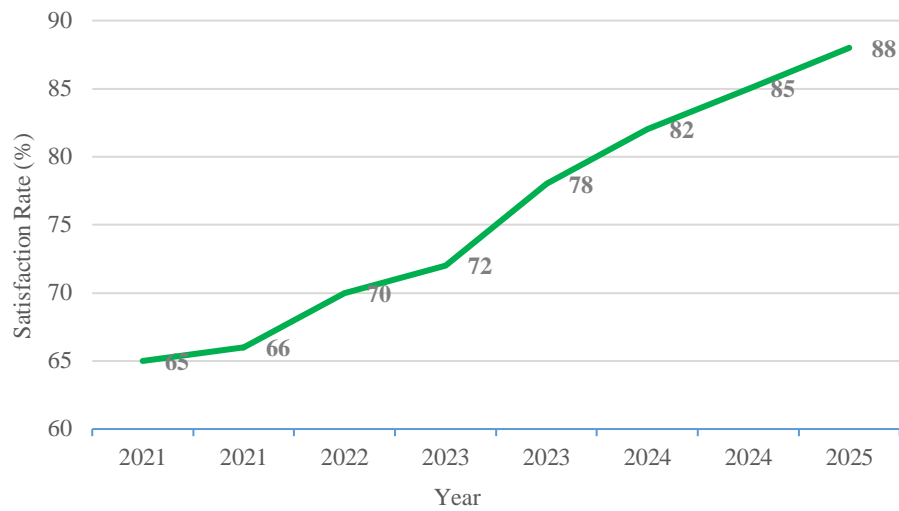


Fig. 1. Annual satisfaction rates

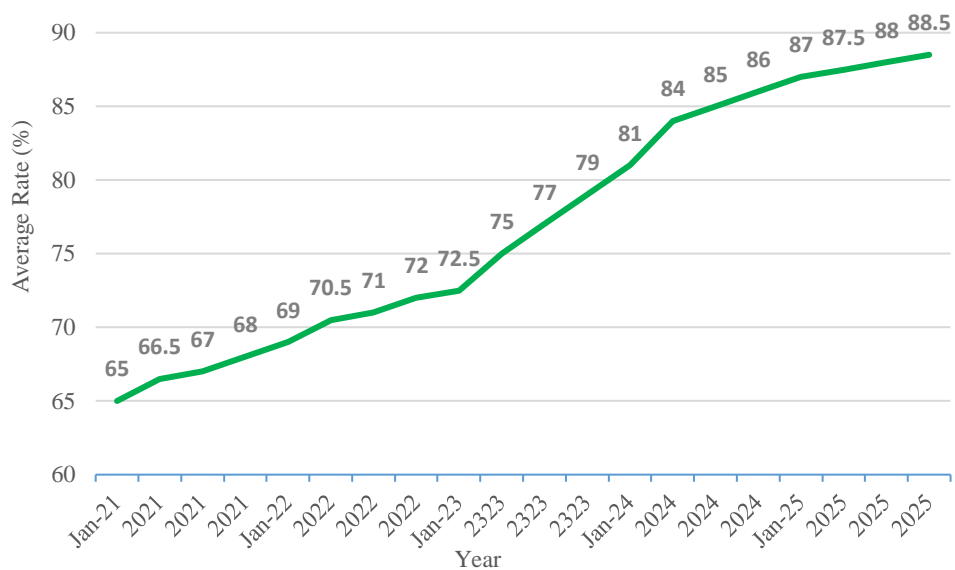


Fig. 2. Average patient satisfaction per quarter

The results show that the quality of nursing care received has significantly improved, as seen by the rising trends in satisfaction levels [17]. This is attributable to continuous enhancements in nursing education, improved resource management, and heightened nurse consciousness on the significance of delivering superior service [1].

4. Conclusion

The study's findings, taken together, show that evaluating patient satisfaction with nursing services in Jordanian critical care units offers a compelling and unambiguous picture of how nursing

care quality has improved over time. The findings emphasize how crucial it is to keep an eye on trends and evaluate performance using a variety of general indicators. The steady rise in satisfaction levels suggests that service quality is continuously improving, which raises the standing of the nursing profession and highlights the necessity of ongoing professional development, bettering the workplace, and putting patient experience-enhancing tactics into practice.

Additionally, by emphasizing the usefulness of utilizing visual aids in a quality assessment methodology—particularly in environments with limited resources or where a rapid and visual evaluation of performance trends is required—the study contributes both scientific and practical value. The findings demonstrate that using visual data can be a useful tool for improving our comprehension of satisfaction levels, making decisions about improvements based on clear insights, and more precisely gauging the effectiveness of improvement activities.

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References

- [1] Alhusban, M. A., & Abualrub, R. F. (2009). Patient satisfaction with nursing care in Jordan. *Journal of Nursing Management*, 17(6), 749–758. <https://doi.org/10.1111/j.1365-2834.2008.00927>
- [2] Mosleh, S., Alja'afreh, M., & Lee, A. J. (2015). Patient and family/friend satisfaction in a sample of Jordanian critical care units. *Intensive & Critical Care Nursing*, 31(6), 366–374. <https://doi.org/10.1016/j.iccn.2015.04.004>
- [3] Alasad, J. A., Abu Tabar, N., & Ahmad, M. M. (2015). Patients' experience of being in intensive care units. *Journal of Critical Care*, 30(4), 859.e7–859.e11. <https://doi.org/10.1016/j.jcrc.2015.03.021>
- [4] Bani Hani, D. A., Alshraideh, J. A., & Alshraideh, B. (2022). Patients' experiences in the intensive care unit in Jordan: A cross-sectional study. *Nursing Forum*, 57(1), 49–55. <https://doi.org/10.1111/nuf.12650>
- [5] Al-Hammouri, F., Hamdan, K. M., Haymour, A. M., Ibrahim, M. O., Malkawi, A., Al-Hiary, S. S., ... Shaheen, A. M. (2024). Quality of nursing care: Predictors of patient satisfaction in a national sample. *Nursing Open*, 11(8), e2252. <https://doi.org/10.1002/nop2.2252>
- [6] Al-Zaru, I. M., & Al-Dwairi, H. R. (2023). Relationship between illness perception, perceived social support and patient satisfaction with nursing care quality among coronary heart disease patients in Jordan. *The Open Nursing Journal*, 17, Article e18744346269665. <https://doi.org/10.2174/0118744346269665231110063210>
- [7] Al-Mnaizel, E. A. M. (2023). The relationship between nursing job satisfaction and missed nursing care in critical care units. *The Open Nursing Journal*, 17. MISSCARE, NWSQ).
- [8] Al-Saidat, H. M., & colleagues. (2022). Patients' perception of quality nursing care and services in Jordanian health sectors.
- [9] Al-Awamreh, K., et al. (2019). Patients' satisfaction with the quality of nursing care in Jordanian hospitals.
- [10] Delgado-Hito, P., et al. (2023). Satisfaction of intensive care unit patients linked to clinical variables and nursing care. *Journal (article on ICU patient satisfaction, 2023)*.

- [11] Heyland, D. K., Ricker, G. M., Dodek, P. M., et al. (2002). Family satisfaction with care in the intensive care unit: Results of a multiple-center study. *Critical Care Medicine*, 30(7), 1413–1418. FS-ICU.
- [12] Wall, R. J., Engelberg, R. A., Downey, L., Heyland, D. K., & Curtis, J. R. (2007). Refinement, scoring, and validation of the Family Satisfaction in the Intensive Care Unit (FS-ICU) survey. *Journal of Critical Care*, 22(3), 271–279.
- [13] Thomas, L. H., McColl, E., Priest, J., et al. (1996). Newcastle Satisfaction with Nursing Scales: An instrument for quality assessments of nursing care. *Journal/Report on NSNS*.
- [14] Min, J., et al. (2018). Survey of family satisfaction with intensive care units: A multicenter Asian study. *BMC Emergency Medicine*.
- [15] Smerat, H., et al. (2025). Patient satisfaction with the quality of nursing care in critical care settings: A regional evaluation. *PLOS ONE*.
- [16] Mir-Tabar, A., et al. (2024). Patient satisfaction with nursing care in an intensive care context. *Enfermería Intensiva / Intensive Nursing* (Elsevier), Available online 23 March 2024.
- [17] Karaca, A., & Durna, Z. (2019). Patient satisfaction with the quality of nursing care: A systematic/regional perspective.
- [18] Obaidi, A. (2025). Comparison of patient satisfaction across wards and hospitals: Implications for ICU nursing quality assessment.