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ORIGINAL RESEARCH

Psychometric Properties of the Barriers to and Facilitators of Implementing the Sepsis Six Care Bundle (BLISS-1) Questionnaire

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Background: Sepsis, a severe medical condition caused by a dysregulated host response to infection, accounts for 20% of global fatalities. While simplifying early sepsis treatment with the Sepsis Six care bundle has been shown to reduce mortality by 46.6%, multiple barriers often prevent clinical nurses from adhering to sepsis care recommendations. Identifying these barriers is essential to eliminating them, and thus the Sepsis Six Care bundle (BLISS-1) questionnaire was developed to identify the barriers to and facilitators of nurses' implementation of the Sepsis Six care bundle while caring for sepsis patients. The current study assessed the psychometric properties of the BLISS-1 questionnaire to evaluate its validity and reliability.

Purpose: This study assessed the psychometric properties of the BLISS-1 questionnaire.

Methods: A total of 180 clinical nurses working in different critical care units at a selected University Hospital participated in a cross-sectional, descriptive study. Data were collected using the BLISS-1 Questionnaire, used to assess the perceived barriers to and facilitators of Sepsis Six performance. Descriptive statistics, Cronbach's alpha reliability analysis, and Promax rotation EFA were performed to assess the validity and reliability of the questionnaire.

Results: The BLISS-1 questionnaire has strong internal consistency, with Cronbach's alpha values of 0.978 for perceived barriers and 0.976 for perceived importance. Factor analysis revealed that key barriers included skepticism about the protocol's clinical efficacy and operational challenges such as limited training and insufficient resources.

Conclusion: This study revealed the BLISS-1 questionnaire to be highly reliable. Focused education, appropriate resource allocation, and supporting policies are needed to increase nurses' adherence to the Sepsis Six protocol and, hence, improve patient outcomes.

Keywords: sepsis, sepsis six, clinical nurses, barriers, BLISS-1 questionnaire, patient outcomes

Introduction

Sepsis, a life-threatening organ failure induced by a dysregulated host response to infection, kills 11 million people globally, roughly 20% of the total fatalities.[1] In addition, sepsis leads to significant morbidity, extended hospital stays, and increased healthcare expenses. Respiratory tract infection like pneumonia is the most common site of infection.[2] The prolong stay in ICU, increase number of elderly people, greater use of invasive procedure, use of immunosuppression drugs, antibiotics resistance and nosocomial infection these risk factors can increase mortality rate related to sepsis.[3] Also, delay recognition and initiate timely management of sepsis can lead to increase mortality rate related to sepsis.[4] Clinical settings must, therefore, manage sepsis quickly and effectively to avoid these consequences, since every hour of delayed treatment raises the mortality risk by 7.6%.[5] Daniels et al[6] developed the Sepsis Six care bundle to simplify sepsis treatment. The bundle includes six critical interventions that must be started within an hour of sepsis diagnosis: high-flow oxygen, blood cultures, intravenous antibiotics, fluid resuscitation, serum lactate and hemoglobin measurements, and urine output monitoring.[7] Studies suggest that the Sepsis Six bundle reduces mortality by 46.6% and hospital length of stay significantly.[6,8] However, despite the advantages of applying the Sepsis Six procedures, they are typically

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ignored due to a lack of sepsis knowledge, shortages in personnel and resources, and healthcare organizational issues.[9,10] Thus, sepsis treatment and patient outcomes must be optimized by targeting these barriers through education, appropriate resource allocation, and systemic changes. Adherence to the Sepsis Six bundle can save lives and reduce hospital stays and healthcare expenses.[11] Sepsis treatment requires a thorough awareness of these hurdles and the techniques needed to overcome them. Additionally, accurate and validated evaluation instruments like the BLISS-1 questionnaire are needed to examine nurses' perspectives and identify sepsis treatment barriers. These instruments can reveal multiple barriers to nurses' adherence to the Sepsis Six protocol, hence enabling the implementation of tailored interventions and policies to improve Sepsis Six performance and patient outcomes.[6]

The BLISS-1 Questionnaire

The BLISS-1 questionnaire was developed and validated in aim of analyzing the Sepsis Six care bundle implementation challenges and facilitators. Following semi-structured interviews with a purposive sample of healthcare workers, Roberts et al[12] created this tool using mixed methods. Content and framework analysis of the interviews yielded 64 belief statements across 14 theoretical areas. These assertions were then modified into a 51-item questionnaire and given to 261 stakeholders, yielding a 44.3% response rate. Many studies have used the questionnaire, identifying essential barriers such as inadequate audit and feedback systems, poor cooperation and communication, and limitations in resources like personnel and equipment.[12] The questionnaire's comprehensive approach to identifying and classifying barriers and facilitators makes it a powerful tool for assessing the application of sepsis care procedures in varied clinical settings.

The reliability and factorial structure of the BLISS-1 questionnaire must be assessed to ensure research credibility. Reliability is often assessed using Cronbach's alpha, with values over 0.70 indicating reliability.[13] Meanwhile, principal component analysis (PCA) and parallel analysis (PA) are often used to assess factorial structure and ensure that the questionnaire assesses the appropriate components.[14] According to McCaffery et al[15] and Burke et al,[16] the Sepsis Six bundle's efficacy depends on accurate compliance and barrier assessment. Extensive reviews of the BLISS-1 questionnaire's reliability and validity are therefore necessary for obtaining trustworthy study results that may inspire focused actions to enhance sepsis care. Hence, this study aimed to assess the psychometric properties of the BLISS-1 questionnaire.

Material and Methods

Study Design

The study employed a cross-sectional, descriptive design to assess clinical nurses' perceived barriers to and facilitators of Sepsis Six performance. This design was chosen as it allows for data collection at a single point, offering a comprehensive snapshot of current perceptions and practices, suitable for identifying prevalent issues and informing interventions.

Setting

The study was conducted at King Abdullah University Hospital, specifically in critical care units such as the coronary care unit (CCU), emergency room (ER), intensive care units (ICUs), and other specialized units like the dialysis and burn units. Nurses were selected from these different units to provide a more comprehensive understanding of their perceptions related to Sepsis Six performance across different critical care contexts.

Population and Sample

The study targeted University Hospital critical care clinical nurses. Convenience sampling was used to recruit the participants, with the accessible population including CCU, ER, ICU, and other specialist unit nurses. The inclusion criteria were being a nurse with at least one year of unit experience, whereas the exclusion criteria were being an administrative nurse or not being available for the complete duration of the study. The sample size of 180 participants was deemed sufficient for conducting Exploratory Principal Components Analysis (PCA), including Parallel Analysis (PA) and tests of closeness to unidimensionality (ie, UniCo, Mean of Item Residual Absolute Loadings [MI-Real], and

Explained Common Variance [ECV]). Moreover, Parallel Analysis is robust to sample sizes in this range,[17] and FACTOR software's implementation of UniCo, MI-Real, and ECV has been validated in samples under 200.[18] Therefore, the current sample of 180 is considered adequate for the planned exploratory analyses. In this study, the sample size, N = 180 and the number of questionnaire items k = 54, resulting in a participant-to-item ratio of approximately 3.33. This ratio is supported by the moderate-to-high communalities (C ≥ 0.5). According to Guadagnoli and Velicer,[19] when communalities meet this threshold, a minimum sample size of 150 is acceptable for reliable factor extraction.

Instruments and Measures

The BLISS-1 questionnaire, which comprises two primary sections, examines clinical nurses' opinions of the Sepsis Six performance importance and barriers. The first section includes 54 questions aimed at evaluating the potential barriers to Sepsis Six performance, including resource restrictions, knowledge gaps, and organizational issues. The second section includes 50 items which measure nurses' opinions of Sepsis Six performance and their trust in its effectiveness. A Likert-type scale is used to respond to the questionnaire items, allowing nurses to express their level of agreement or disagreement with each item.

Data Collection Procedures

Data were collected step-by-step to guarantee reliability and precision, and ethical approval (IRB # 2024/2023/3/17) was obtained from the institutional review board at Al-Balqa Applied University. The participants were asked to sign an informed consent form detailing the study's goal, methods, risks, and benefits. The data collection staff received intensive training on the study's objectives, BLISS-1 questionnaire delivery, and ethics. They were also trained on how to describe the study's goals and acquire informed permission, stressing the voluntary nature of participation. Data were stored securely, and the participants' responses were kept anonymous. Distribution of the BLISS-1 questionnaire to the eligible nurses in different departments was carried out at a convenient time to prevent clinical interruptions, and all completed surveys were securely retained for analysis. The participants' privacy and rights were protected throughout the procedure, following ethical research guidelines and preserving data integrity.

Statistical Analysis

Statistical analysis was conducted using SPSS IBM. Means and standard deviations for the continuous data and frequencies and percentages for the categorical variables were calculated. The Cronbach's alpha test of internal consistency was used to assess the reliability of the Sepsis Six Care Bundle (BliSS-1) Questionnaire and the Exploratory Principal Components Analysis (PCA) with Parallel Analysis (PA) test and the tests of Closeness-to-unidimensionality (UniCo, MI-Real, and ECV) were used to assess the factorial structure of the (BliSS-1) questionnaire, Scree-Cassilith's plot and eigen value criteria were also employed in identifying possible underlying subscales of the BLiSS questionnaire. The Bivariate Pearson's test of correlation was used to assess the correlations between metric measured variables.

Results

The study included 180 clinical nurses who completed and submitted the questionnaire. Table 1 shows the nurses' sociodemographic and professional characteristics. The sample included 52.8% male participants and 23.9% participants who had never married. As for their experience, 46.7% of the participants had 5–10 years of nursing experience. Further, 35.6% of the nurses worked in the ICUs. Finally, 24.4% had a master's or PhD degree.

Table 2 shows the BLISS-1 questionnaire's reliability analysis results, which indicated strong internal consistency with Cronbach's alpha values of 0.978 for Sepsis Six performance barriers obstacles and 0.976 for performance significance. Based on content validity, the researchers removed four questions to strengthen the questionnaire.

Table 3 shows the Sepsis Six performance barrier indicators' Promax rotational factor analysis pattern matrix. The analysis yielded Barriers 1 and 2. Misconceptions like "Performing the Sepsis Six does NOT improve patient outcomes" (0.924), "Early and regular reassessment of patients requiring the Sepsis Six has NO effect on outcomes" (0.893), and "The RISKS of performing the Sepsis Six outweigh the benefits in CERTAIN patient groups" (0.890) loaded on personal

Table 1 Descriptive Analysis of the Nurses' Sociodemographic and Professional Characteristics

Variable	Frequency	Percentage
Sex		
Male	95	52.8
Female	85	47.2
Marital Status		
Never married	43	23.9
Currently/previously married	137	76.1
Years of Experience		
1–4 years	62	34.4
5–10 years	84	46.7
≥11 years	34	18.9
Working Department		
CCU	38	21.1
ER	40	22.2
ICU	64	35.6
Other (dialysis unit, burn)	38	21.1
Educational Level		
University Degree/Diploma	136	75.6
Postgraduate	44	24.4

Table 2 Reliability Analysis of the BLISS-1 Questionnaire

	Number of Items	Cronbach's Alpha
Perceived Indicators of Barriers to Sepsis Six performance	54	0.978
Perceived Importance of Sepsis Six Performance	50	0.976

Notes: Researchers dropped four items based on content validity.

Barrier. Meanwhile, Institutional Barrier contained logistical issues, including "There is the INSUFFICIENT provision of training required to perform the Sepsis Six" (0.925) and "There are INSUFFICIENT tools in use to guide & track Sepsis Six performance in individual patients" (0.913). Items 15 ("There is INSUFFICIENT leadership for improving Sepsis Six performance") and 48 ("SOME steps in the Sepsis Six are more or less important than others") again showed substantial obstacles, loading on the first component with values of 0.393 and 0.385. These findings show that conceptual misunderstandings and practical obstacles hinder sepsis care.

Table 4 summarizes the first evaluation of the factorial structure assessment. The findings showed UniCo (unidimensional congruence) of 0.979, ECV of 0.888, and MIREAL of 0.205. High UniCo and ECV values and a low MIREAL value indicate a strong and coherent factorial structure, suggesting that the data is primarily unidimensional.

The PCA pattern matrix for Sepsis Six performance significance is shown in Table 5. The largest loadings include prioritizing Sepsis Six above other activities (0.803) and enhancing performance via leadership (0.790). The nurses

Table 3 Promax Rotated Factor Analysis Pattern Matrix for the Indicators of Sepsis Six Performance Barriers

	Extracted Components	
	Personal Barrier	**Institutional Barrier**
37. Performing the steps in the Sepsis Six does NOT improve patient outcomes	0.924	
43. Early and regular reassessment of patients requiring the Sepsis Six has NO effect on outcomes	0.893	
41. The RISKS of performing the Sepsis Six outweigh the benefits in CERTAIN patient groups	0.890	
22. I do NOT feel bad if I do not deliver the Sepsis Six to a septic patient	0.882	
39. Overall, the RISKS of performing the Sepsis Six outweigh the benefits	0.877	
40. I am UNLIKELY to complete all steps of the Sepsis Six if I think the patient is well	0.861	
52. Increasing Sepsis Six performance will NOT improve patient care	0.846	
53. Individuals are NOT formally rewarded for good Sepsis Six performance	0.825	
38. Sepsis Six performance at this hospital will NOT improve	0.806	
35. I do NOT intend to continue to perform the Sepsis Six on septic patients	0.791	
23. I do NOT feel able to escalate when I am concerned about a patient who may need the Sepsis Six	0.763	
28. Delivering the Sepsis Six quickly does NOT increase how much benefit it has	0.711	
42. There is POOR teamwork when looking after septic patients	0.700	
11. Regular use of the Sepsis Six does NOT make it easier to remember the steps involved	0.675	
20. My colleagues do NOT believe that the Sepsis Six is beneficial to patients	0.672	
29. It is NOT part of my role to improve Sepsis Six performance through leadership support	0.633	
44. The hospital is NOT formally rewarded for good Sepsis Six performance	0.617	
36. Septic patients are RARELY managed in an appropriate location	0.607	
50. We provide POOR sepsis care at this hospital	0.596	
24. Having a local sepsis 'champion' would NOT improve the performance of the Sepsis Six	0.584	
54. I do NOT feel anxious/stressed when treating septic patients	0.575	
49. There is POOR communication between members of the team looking after septic patients	0.554	
46. I do NOT prioritize performing the Sepsis Six on a septic patient over other tasks	0.525	
16. Involving clinical staff in Sepsis Six performance improvement will NOT lead to greater improvement	0.524	
19. My colleagues' opinions about the Sepsis Six do NOT affect whether I perform it	0.506	
21. Performing the Sepsis Six is NOT part of my role	0.487	
45. I am NOT confident performing the Sepsis Six	0.464	
4. I do NOT intend to improve my knowledge of the Sepsis Six	0.455	
34. The equipment I need to perform the Sepsis Six does NOT work or works poorly	0.442	
18. There are NO plans in place to improve Sepsis Six performance at my hospital	0.401	
15. There is INSUFFICIENT leadership for improving Sepsis Six's performance	0.393	

(*Continued*)

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Table 3 (Continued).

	Extracted Components	
	Personal Barrier	**Institutional Barrier**
6. There is an INSUFFICIENT provision of training required to perform the Sepsis Six		0.925
10. There are INSUFFICIENT tools in use to guide & track Sepsis Six performance in individual patients		0.913
5. There is INSUFFICIENT staffing to perform the Sepsis Six		0.904
7. It is DIFFICULT to remember all the steps of the Sepsis Six in day-to-day clinical practice		0.823
30. There are some steps in the Sepsis Six which I am NOT ALLOWED to perform		0.810
9. I OFTEN miss sepsis		0.725
26. There is INSUFFICIENT time to perform the Sepsis Six		0.706
33. When uncertain about diagnosis, I WAIT FOR CONFIRMATION of sepsis before performing the Sepsis Six		0.673
8. Sepsis Six performance is NOT audited regularly in my department		0.664
1. I am NOT aware of what the Sepsis Six involves		0.647
3. I am NOT aware of the evidence supporting the Sepsis Six		0.606
31. There is INSUFFICIENT equipment/medication to perform the Sepsis Six		0.595
12. We get INSUFFICIENT feedback on our Sepsis Six performance		0.589
17. It is NOT part of my role to decide when to perform the Sepsis Six		0.554
27. There is the SLOW turnover of medical/nursing staff in areas looking after septic patients		0.531
25. It is NOT part of my role to identify septic patients		0.524
32. There are INSUFFICIENT beds available in my department to look after septic patients		0.517
47. Some of the steps in the Sepsis Six are MORE DIFFICULT to perform than others		0.510
2. I do NOT have the necessary skills to perform the Sepsis Six		0.472
51. I do NOT have a time-based goal for completing the Sepsis Six on septic patients		0.466
14. Sepsis Six performance is NOT discussed in meetings in my department		0.453
13. The culture within my department HINDERS performance of the Sepsis Six		0.437
48. SOME steps in the Sepsis Six are more or less necessary than others		0.385

Notes: Extraction Method: Principal Component Analysis. Rotation Method: Promax with Kaiser Normalization.

Table 4 Summary of the Overall Assessment of Factorial Structure - First Evaluation

Assessment Measure	**Value**
UniCo (Unidimensional Congruence)	0.979
ECV (Explained Common Variance)	0.888
MIREAL (Mean of Item Residual Absolute Loadings)	0.205

Table 5 Principal Components Analysis Pattern Matrix for the Indicators of Sepsis Six Performance Importance

	Perceived Importance of Sepsis Six Performance
I DO prioritize performing the Sepsis Six on a septic patient over other tasks	0.803
It IS part of my role to improve Sepsis Six performance through leadership and support	0.790
I AM confident performing the Sepsis Six	0.766
We provide GOOD sepsis care at this hospital	0.763
Having a local sepsis 'champion' WOULD improve performance of the Sepsis Six	0.751
I am LIKELY to complete all steps of the Sepsis Six even if I think the patient is well	0.740
The BENEFITS of performing the Sepsis Six outweigh the risks in ALL patient groups	0.734
The hospital IS formally rewarded for good Sepsis Six performance	0.728
Involving clinical staff in Sepsis Six performance improvement WILL lead to greater improvements	0.724
It's EASY to remember all the steps of the Sepsis Six in day-to-day clinical practice	0.724
There is SUFFICIENT equipment / medication to perform the Sepsis Six	0.712
I DO intend to continue to perform the Sepsis Six on septic patients	0.710
There is GOOD teamwork when looking after septic patients	0.704
The equipment I need to perform the Sepsis Six DOES work well	0.703
I AM aware of the evidence supporting the Sepsis Six	0.699
There are SUFFICIENT beds available in my department to look after septic patients	0.694
Sepsis Six performance IS audited regularly in my department	0.694
Delivering the Sepsis Six quickly DOES increase the benefit it has	0.694
I am ALLOWED to perform all steps in the Sepsis Six	0.687
Performing the Sepsis Six IS part of my role	0.686
There is RAPID turnover of medical/nursing staff in areas looking after septic patients	0.684
There is SUFFICIENT staffing to perform the Sepsis Six	0.684
Early and regular reassessment of patients requiring the Sepsis Six gives the BEST outcomes	0.684
There is SUFFICIENT time to perform the Sepsis Six	0.683
I HAVE the necessary skills to perform the Sepsis Six	0.680
Overall, the BENEFITS of performing the Sepsis Six outweigh the risks	0.679
Performing the steps in the Sepsis Six DOES improve patient outcomes	0.677
The steps in the Sepsis Six are EQUALLY EASY OR DIFFICULT to perform	0.677
There ARE plans in place to improve Sepsis Six performance at my hospital	0.677
It IS part of my role to identify septic patients	0.670
There is SUFFICIENT provision of training required to perform the Sepsis Six	0.669
There is GOOD communication between members of the team looking after septic patients	0.667

(*Continued*)

Table 5 (Continued).

	Perceived Importance of Sepsis Six Performance
I DO feel bad if I do not deliver the Sepsis Six to a septic patient	0.664
Sepsis Six performance this hospital WILL improve	0.661
ALL steps in the Sepsis Six are equally important	0.661
There is SUFFICIENT leadership for improving Sepsis Six's performance	0.660
My colleagues DO believe that the Sepsis Six is beneficial to patients	0.657
There are SUFFICIENT tools in use to guide and track Sepsis Six performance in individual patients	0.657
I INTEND to improve my knowledge of the Sepsis Six	0.655
My colleagues' opinions about the Sepsis Six DO affect whether I perform it	0.654
When uncertain about diagnosis I PERFORM the Sepsis Six rather than miss treating potential sepsis	0.651
It IS part of my role to decide when to perform the Sepsis Six	0.635
Septic patients are ALWAYS managed in an appropriate location	0.627
I AM aware of what the Sepsis Six involves	0.616
I DO feel able to escalate when I am concerned about a patient who may need the Sepsis Six	0.615
The culture within my department HELPS performance of the Sepsis Six	0.614
Regular use of the Sepsis Six DOES make it easier to remember the steps involved	0.608
Sepsis Six performance IS discussed in meetings in my department	0.586
We get SUFFICIENT feedback on our Sepsis Six performance	0.581
I RARELY miss sepsis	0.515

Notes: Extraction Method: Principal Component Analysis. a. 1 components extracted.

reported being confident in the Sepsis Six (0.766) and the quality of sepsis care (0.763), and the presence of a local sepsis champion was seen to be advantageous (0.751). The nurses also reported being likely to complete the Sepsis Six (0.740) and considered the Sepsis Six beneficial for all patient categories (0.734). The recognition of excellent performance with formal awards (0.728), clinical staff involvement in performance improvement (0.724), and ease of remembering daily practice steps (0.724) were seen as important. Further, sufficient equipment (0.712), cooperation (0.704), Sepsis Six evidence awareness (0.699), bed availability (0.694), frequent audits (0.694), and quick staff turnover (0.684) were viewed to be crucial for Sepsis Six performance. The Sepsis Six had overall advantages (0.679) and an influence on patient outcomes (0.677), and the nurses felt they had enough time (0.683) and abilities (0.680) to conduct it. Performance improvement plans (0.677), role identification (0.670), training (0.669), strong communication (0.667), and feeling responsible for achieving the Sepsis Six (0.664) were reported as necessary. Leadership support (0.660), optimism about future performance improvement (0.661), equal relevance of all phases (0.661), and colleagues' views on the protocol's advantages (0.657) were also stressed. Practical performance monitoring tools (0.657) and knowledge improvement intentions (0.655) were observed. The nurses reported that they took their peers' perspectives into consideration (0.654) and favored the Sepsis Six when unsure of diagnosis (0.651). Proper septic patient treatment (0.627), Sepsis Six knowledge (0.616), capacity to escalate issues (0.615), supportive departmental culture (0.614), ease of remembering procedures via repeated usage (0.608), and regular performance discussions (0.586) were also reported

Table 6 Summary of Overall Assessment of Factorial Structure - Second Evaluation

Assessment Measure	Value
UniCo (Unidimensional Congruence)	0.625
ECV (Explained Common Variance)	0.529
MIREAL (Mean of Item Residual Absolute Loadings)	0.434

as being important. Finally, the nurses reported receiving enough feedback (0.581) and seldom missing a sepsis diagnosis (0.515).

Table 6 summarizes the second evaluation of the factorial structure, which yielded a UniCo of 0.625, ECV of 0.529, and MIREAL of 0.434. These metrics indicate considerable unidimensionality and explain the shared variance, suggesting the need for additional refining to improve the factorial structure.

Discussion

Analyzing and interpreting clinical nurses' sepsis management strategies reveals strengths and limitations of applying sepsis six guidelines. In terms of reliability, the BLISS-1 questionnaire was found to have strong internal consistency, with Cronbach's alpha values of 0.978 for perceived Sepsis Six performance obstacles and 0.976 for perceived significance. These results significantly surpass the 0.70 criterion,[13] demonstrating the tool's construct measurement reliability. As a tool for measuring sepsis treatment obstacles and facilitators, the BLISS-1 questionnaire is therefore highly reliable and consistent with other validated instruments used to evaluate clinical performance and perceptions.[12]

The Promax rotation EFA found unique Sepsis Six performance constraints. The Sepsis Six protocol's efficacy and hazards were questioned, and practical issues such as inadequate training, manpower, and funding were recognized as significant obstacles. The following items had high factor loadings in the pattern matrix: "Performing the steps in the Sepsis Six does NOT improve patient outcomes" (loading = 0.924), and "There is INSUFFICIENT staffing to perform the Sepsis Six" (loading = 0.904). The factorial structure's initial evaluation showed high unidimensionality, with UniCo (0.979), ECV (0.888), and MIREAL (0.205) values indicating a cohesive and focused measure of the target components.[20] However, the second evaluation yielded lower unidimensionality scores (UniCo = 0.625, ECV = 0.529, MIREAL = 0.434), which may compromise the questionnaire's ability to accurately measure components across samples or situations. The questionnaire may therefore need to be refined in varied therapeutic settings to achieve unidimensionality.[21]

The Promax rotated factor analysis for perceived relevance showed that the nurses rated the Sepsis Six regimen highly. Items like "I DO prioritize performing the Sepsis Six on a septic patient over other tasks" (0.803) and "It IS part of my role to improve Sepsis Six performance through leadership & support" (0.790) had high factor loadings, indicating protocol commitment. This supports previous research which has shown that healthcare workers have higher compliance and achieve better patient outcomes when they view protocols as valuable and essential.[6] Other sepsis care research has emphasized the importance of nurses' views and systemic support in protocol adherence.[12,22] Appropriate resource allocation and legislative assistance are therefore required to address operational burdens to the provision of sepsis care, while focused educational interventions are required to address attitudinal barriers. Sepsis protocols benefit from continual professional growth and supporting organizational structures.[10,16]

The current study emphasizes the complexity of sepsis treatment burdens and the importance of using of trustworthy evaluation tools like the BLISS-1 questionnaire. Healthcare systems may enhance Sepsis Six procedure adherence by addressing individual and systemic issues, thus improving patient outcomes and lowering sepsis-related death. Often blamed for nurses' non-compliance with the sepsis protocol are insufficient resources and poor staffing.[23] Although these are well-documented obstacles, it is also crucial to take into account whether in high-stress clinical settings such explanations have become almost automatic reactions or default rationalizations. Previous studies have underlined

how nurses' interaction with evidence-based protocols may be shaped by their workplace culture, perceived role limitations, and learnt responses to systematic constraints.[24,25] This possibility calls for more study that not only looks at structural issues but also looks at underlying attitudes and behavioral patterns possibly affecting adherence. Knowing both cultural and practical elements will help direct the creation of focused treatments meant to raise protocol compliance.[26] Further research is needed to improve sepsis care evaluation tools and identify comprehensive solutions to the burdens faced by nurses who provide sepsis care.

Implications and Recommendations

The findings of this study have highlighted the importance of addressing individual and organizational barriers to Sepsis Six protocol adherence. The BLISS-1 questionnaire was found to have high reliability and clear factor loadings, making it a reliable tool for detecting the barriers to Sepsis Six performance. The results suggest that hospital managers should prioritize the provision of training initiatives targeted at addressing clinical nurses' knowledge gaps and misunderstandings of sepsis management. Further, more efficient allocation of resources such as personnel and equipment is required, and organizational policies should promote respect for the Sepsis Six protocol through leadership and audits. Future studies should refine the BLISS-1 questionnaire for use in varied therapeutic settings and create comprehensive intervention methods that include educational and systemic changes. By following these guidelines, healthcare systems may reduce sepsis-related morbidity and mortality.

Limitations

The use of a convenience sampling strategy may restrict the generalizability of the study findings. Further, cross-sectional surveys may overlook changes in views over time, and self-reported data may have response biases. Future research should use longitudinal designs and different sampling approaches to improve generalizability and robustness.

Conclusion

This study concludes that clinical nurses face significant barriers and facilitators while delivering the Sepsis Six protocol. Despite the Sepsis Six bundle's proven advantages in lowering sepsis-related mortality and improving patient outcomes, numerous difficulties make adherence variable. The BLISS-1 questionnaire has been found to accurately assess these impediments and Sepsis Six performance relevance. Inadequate staffing, lack of training, and protocol skepticism were identified as being major organizational and individual barriers. Effective training initiatives, appropriate resource allocation, and supporting organizational policies are needed to improve Sepsis Six protocol adherence and patient care. This study emphasizes the need to enhance assessment methods and establish comprehensive strategies to help clinical nurses in sepsis treatment, hence improving patient outcomes and lowering healthcare costs.

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Disclosure

The authors report no conflicts of interest in this work.

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