

Original Research Article

Evaluation of Knowledge and Use of the WHO Surgical Safety Checklist in Operating Rooms of Healthcare Facilities in Senegal

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Received: 27.07.2025

Accepted: 23.09.2025

Published: 25.09.2025

Journal homepage:<https://www.easpublisher.com>**Quick Response Code**

Abstract: *Introduction:* Operating room safety is a major imperative. The surgical safety checklist (CL), developed by the World Health Organization (WHO), is an essential tool to reduce surgical risks and improve patient safety. *Objective:* This study aimed to assess the level of knowledge and use of the checklist among healthcare professionals in operating rooms in Senegal. *Methods:* This was a multicenter cross-sectional study conducted over three months, from September to December 2024. Data were collected using an anonymous questionnaire, available in both paper and digital formats. Data analysis was performed with SPSS v.29 and Excel 2021. *Results:* The study included 110 professionals, with 56% based in Dakar and 44% in other regions. Participants were mainly surgeons (45%), anesthesiologists (35%), and paramedical staff (25%), with an average professional experience of 6.7 years. Although 94% of professionals were aware of the checklist, only 36% used it systematically. The main barriers identified were lack of training (53%), workload (31%), and resistance related to work habits (16%). Furthermore, 92.7% of participants emphasized that training initiatives (workshops, online sessions, or a combination) could facilitate adoption and implementation of the checklist. Finally, 98.5% of participants perceived a positive impact of the checklist on patient safety. *Conclusion:* The checklist is an essential tool to improve patient safety in the operating room. Its integration must be part of a broader quality improvement strategy. However, adoption in Senegal is hindered by lack of training, organizational constraints, and entrenched work habits. To optimize its use, it is crucial to strengthen training, improve working conditions, and promote a systemic approach centered on safety.

Keywords: Patient Safety, WHO Checklist, Operating Room, Healthcare Professionals.

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INTRODUCTION

Patient safety has become a major concern for healthcare facilities since the publication of international reports highlighting the consequences of medical errors. These reports showed that adverse events remain multifactorial and an integral part of healthcare systems. Following this global awareness of the impact of medical errors, patient safety in operating rooms became a priority for the WHO. Faced with the magnitude of the problem, operating room safety was recognized as a major priority. This is why the WHO launched the program 'Safe Surgery Saves Lives', based on best practice recommendations [1].

The objective of this study, conducted in operating rooms in Senegal, was to assess knowledge

and use of the WHO surgical safety checklist in healthcare facilities.

MATERIALS AND METHODS

This was a multicenter cross-sectional survey conducted in healthcare structures in Senegal during the period September – December 2024. It involved healthcare professionals working in operating rooms, including surgeons, anesthesiologists, and support staff. Quantitative data were analyzed using SPSS v.29 and Excel 2021. Statistical tests included the Chi² test and Fisher's exact test.

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RESULTS

The study included 110 professionals, with 56% from Dakar and 44% from other regions. Participants

were mainly surgeons (45%), anesthesiologists (35%), and paramedical staff (25%), with an average professional experience of 6.7 years.

Table I: Professional distribution of participants

Position	Number	Percentage (%)
Surgeon	45	41
Anesthesiologist	39	35
TSAR	17	15
IBODE	9	8
Total	110	100

Although 94% of professionals were aware of the checklist, only 36% used it systematically. The main barriers identified were lack of training (53%), excessive workload (31%), and resistance linked to work habits

(16%). However, 97% of participants confirmed that the checklist helps prevent errors and malfunctions during surgery. Similarly, 98.5% stated that the checklist contributes to developing a culture of safety in their field.

Table II: Participants' opinion on the checklist

Interest in using the checklist	Number	Percentage (%)
Strongly agree	34	31
Agree	59	54
Disagree	13	12
Strongly disagree	3	3
Perception of the checklist as a safety tool	Number	Percentage (%)
Strongly agree	38	34
Agree	55	50
Disagree	13	12
Strongly disagree	4	4

Furthermore, 92.7% of participants emphasized that training initiatives (workshops, online sessions, or both) could facilitate adoption and implementation of the checklist. Finally, 98.5% recognized its positive impact on patient safety.

DISCUSSION

Our study revealed strong theoretical knowledge of the checklist among professionals surveyed, with 94% being aware of it. However, only 25% of respondents had received specific training on its use. Additionally, 70% of services did not systematically integrate the checklist, despite its adoption. The main barriers identified included lack of training, lack of time, and entrenched habits. Analytical results showed that training received was significantly associated with systematic use of the checklist ($p < 0.05$), while neither awareness of the checklist nor identified barriers (lack of training, lack of time, poor habits) showed significant association with its use ($p = 0.40$). These results suggest that while training is a necessary lever, it is not sufficient; its impact is influenced by contextual factors such as available resources and organizational leadership. Similar findings were reported by Hacquard *et al.*, (2013), where cultural and institutional barriers were identified as obstacles to checklist implementation, underscoring the importance of a supportive framework for systematic adoption [2, 3]. The WHO introduced the checklist as part of the global initiative 'Safe Surgery

Saves Lives' in 2008. Its objective was to reduce surgical morbidity and mortality by standardizing practices and improving communication within surgical teams. Haynes *et al.*, (2009) demonstrated a significant reduction in major complications (from 11% to 7%) and mortality (from 1.5% to 0.8%) thanks to its use [4]. In our study, although 94% of Senegalese professionals were aware of the WHO checklist, systematic application errors (36%) show that its benefits are not yet fully exploited. This reflects implementation challenges highlighted in studies by the Haute Autorité de Santé (2012), which stressed that checklist adherence depends heavily on institutional support and team training [3]. Hacquard *et al.*, (2013) also showed that acceptance of the checklist by healthcare professionals is influenced by team dynamics, ingrained habits, and level of training [2]. Similarly, our study identified lack of checklist training (53%) and workload (31%) as major barriers to integration. Norton *et al.*, (2016) emphasized the importance of adapting the checklist to local contexts to improve its acceptability [5]. In Senegal, this could include simplifying the checklist and better integrating multidisciplinary teams in its implementation. Organizational factors such as lack of time (35%) and human resources (25%) were also cited as obstacles. Gillespie *et al.*, (2016) found that team participation in checklists depends on role clarity and interprofessional training [6]. Verdaasdonk *et al.*, (2009) recommended ergonomic checklist design and participatory implementation to foster acceptance [7]. These

recommendations could be applied in Senegalese hospitals by adapting the checklist to local constraints and actively involving end-users. Reason (2000, 2004) and Helmreich *et al.*, (2000) demonstrated that checklists act as systemic barriers to reduce human error [8-10]. However, their effectiveness depends on rigorous integration into daily routines. Literature also shows that improving patient safety and care quality, especially in operating rooms, requires promoting and developing a culture of safety [11, 12]. In our study, the low systematic use of the checklist (36%) limits its benefits, highlighting the urgent need for training programs focused on error management. Such programs could include practical workshops, online training, and simulations to strengthen professional adherence.

CONCLUSION

The checklist is an essential tool to improve patient safety in the operating room. Its integration should be part of a broader quality improvement approach. However, in Senegal, its adoption is hindered by lack of training, organizational constraints, and entrenched work habits. To optimize its use, it is crucial to strengthen training, improve working conditions, and promote a systemic, safety-centered approach.

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Cite this article: Gaye I, Ndiaye APN, BA EB, Coundoul A, Ndiaye B, Leye PA, Bèye MD (2025). Evaluation of Knowledge and Use of the WHO Surgical Safety Checklist in Operating Rooms of Healthcare Facilities in Senegal. *EAS J Anesthesiol Crit Care*, 7(5), 84-86.