fortune Journals

Review Article

ANESTHESIA AND CRITICAL CARE

ISSN: 2687-7996

Evaluation of Patient Safety in the Operating Room of Zinder National Hospital Through the Application of the Checklist.

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Abstract

Introduction: Patient safety encompasses all means of removing sea or to prevent events unwanted or damage from medical care processes.

Objective: The objective of our study is study the application of the checklist of the WHO to the operating rooms of the Zinder National Hospital (HNZ).

Methodology: It was a cross-sectional descriptive study with prospective collection ranging from 1er October to December 31, 2023 that is a period of three (03) Month. The data collection has been made from the anesthesia sheet and of the checklist. Anonymity of patients was respected.

Results: Out of 698 interventions carried out, 306 had benefited from a completion of the checklist, i.e. a compliance of 43.84%, the global complétion of the chechlist was zero. completion by sheet varied of 21.73% and 82.6%. The average age was 24.6 years ±24 with extremes of 15 days and 85 years, the male sex predominated with a sex ratio of 1.94. All patients had benefited from a pre-anesthetic consultation (CPA), Classes ASA1 and 2 represented 92.5 %. A class 1 of Altemeier represented 71.57%. General anesthesia was realized about 69.93% cases. In 63.4% of cases, antibiotic prophylaxis was administered 30 minutes before the procedure. The adverse évents (AE) per operative represented 15.03% with a predominance of cardiovascular and respiratory in respectively 56.5% and 30.4%. **Conclusion:** The application of the checklist was quite encouraging. It's important to intensify the awareness of the different actors in order to guarantee the safety of the patient at the bloc.

Keywords: Checklist, block operative, Zinder National Hospital.

Introduction

Patient safety encompasses all means of removing sea or prevent events unwanted or damage from medical care processes [1]. The operating room is a unit of great complexity, with a high potential of adverse events for the patient [2.3] thus, the improvement of security rity of patients has become a priority croissante in the hospitals. According to several studies, surgery is responsible for a large part of adverse and avoidable events related to care [2].

In order to improve these results, the WHO has set up a program called "Safe Surgery Saves Lives" [6,7]. The implementation of this program required a "surgical patient safety" checklist (CL). The results showed a reduction in the rate of post-operative complications and mortality [4]. Based on these data,

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Citation: Hassane ML, Magagi A, Harouna M, Taofik M, Magagi I, Ibrahim A, Goni Alassan MB, Maikassoua M, Adamou H, Chaibou MS. Evaluation of Patient Safety in the Operating Room of Zinder National Hospital through the Application of the Check-List. Anesthesia and Critical care 7 (2025): 01-04.

Received: December 12, 2024
Accepted: December 23, 2024
Published: January 06, 2024

Hassane ML, et al., Anesth Crit Care
2025 DOI:10.26502/acc.075

it has been concluded that the checklist can improve surgical outcomes [6, 8, 9,10]. Hence our motivation to assess the extent to which the checklist has been implemented at the HNZ.

Patients and Method

We conducted a descriptive cross-sectional study with prospective data collection from October 1 to December 31, 2023. All patients admitted to the operating room for scheduled surgery were included. We observed the completion of the checklist in the various operating rooms. Application of the checklist was assessed by two indicators: compliance and completeness (Table 1). The variables studied were socio-demographic data, ASA classification, anesthesia technique, antibiotic prophylaxis and adverse events. Data analysis was performed using Microsoft Word 2010, Microsoft Excel 2010, SPSS 22. Prior authorization was obtained from the HNZ administration, and staff anonymity was preserved.

Table 1: Methodology for calculating the compliance rate and the completeness rate.

	Compliance	The overall completeness	Completeness by sheet
Numerator	Number of completed checklists	Number of fully completed checklists (Fully completed)	Number of questions filled in for the form in question
Denominator	Number of interventions = 698	Completed checklist numbers=306	Total number of questions to be filled in per sheet=18

Results

During the study period, 698 procedures were carried out. The checklist was applied to 306 patients, i.e. 43.84% compliance. The average age of patients was 24.46 ±24 years, with extremes of 15 days and 85 years. The 0-20 age group was the most represented, with 56.21% of cases (Table 2).

Table 2: Distribution of patients according to sociodemographic characteristics

Sociodemographic characteristics	Frequency	Percentage%
Sex		
Masculine	202	66.01
Feminine	104	33.99
Age (years)		
[0-20]	172	56.21
[20-40]	58	18.95
[40-60]	38	12.41
> 60	38	12.41

Males predominated in 66.01% of cases, i.e. a sex ratio of 1.94. All patients had undergone CPA. ASA1 and ASA2 accounted for 92.5% of cases. Altemeier class1 represented 71.57% of procedures performed. General anaesthesia (GA) was the most common anaesthetic technique, accounting for 69.93%.

In 63.4% of cases, antibiotic prophylaxis was administered 30 min before the procedure (Table 3). Adverse events occurred in 15.03% of patients, of which 56.5% were of cardiovascular origin and 30.4% of respiratory origin.

Discussion

We studied the implementation of the checklist in the operating theatres of the Hôpital National de Zinder (HNZ). The mean age of our patients was 24.46 years. This was lower than those of Haynes et al (USA) [4], Collazos C et al (Colombia) [9], Van Klei et al (Netherland) [10], who found respectively 46.7, 48.5 and 54.2 years. The average age of our series can be explained by the youthfulness of the African population in general, and of the Nigerian population in particular [11]. We recorded a male predominance with a rate of 66.01% (n=202), i.e. a sex ratio of 1.94. This result was similar to that reported by Van Klei et al (Netherland) [10] and Sow et al (Mali) [12], who reported 52.6% and 60.3% respectively. In contrast, Haynes et al (USA) [4], Kabey et

Table 3: Detailed distribution according to the completeness by question of the CL

	Frequency	Percentage%	
Item1= before induction			
Patient's identity	294	**96.1**	
Preoperative fast	306	95.8	
Documentation (CPA, consent, balance sheets)	284	93	
Materials (anesthesia, surgery, source O_2,.....)	285	93.1	
Patient's allergy	182	59.5	
Significant risk of bleeding	145	47.4	
Item 2=ultimate cross verification			

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2025 DOI:10.26502/acc.075

Respect for the scheduled time of the intervention	119	39	
Patient's name confirmation	306	100	
Planned intervention confirmed	300	98.03	
Correct surgical site	306	100	
Information sharing (anesthesia and surgery plan)	40	13.7	
Antibiotic prophylaxis performed	306	100	(30 min time before incision respected in 63.4%)
Item 3=before leaving the room			
Correct final count of compresses, needles, instruments...	**Summary verification**		
Labeling of samples, operative parts...	19	36	(A total of 55 samples are taken)
Occurrent of IS	46	15.03	
Post-op prescriptions made	306	100	(Not jointly)
Filling of the supports (operative and anesthetic report)	306	100	(Only in the backsier, rarely in the archiving register of the operating room)

al (Congo) [13] and De Vries et al (Netherland) [8] reported 57.6%, 67.8% and 52.6% of women respectively. Our result could be explained by the absence of an obstetrics and gynecology department at the national hospital in Zinder, and the proportion of women in the general population in Niger [11]. Patients classified as ASA1 and ASA2 were in 42.2% and 50.33 respectively. The same observation was made by Sow et al (Mali) [12], Kabey et al (Congo) [13] with a rate of 94.7% and 91.9%. Clean surgery (Altemeir class 1) accounted for 71.57% of cases, which was higher than the 28.3% reported by Sow et al (Mali) [12]. General anaesthesia was the most common technique, with a rate of 69.93%. However, for Van Klei et al (Netherland) [10], Kabey et al (Congo) [13], Sow et al (Mali) [12], general anaesthesia was used in 96.99%, 87.6% and 87.2% of cases respectively. Antibiotic prophylaxis was administered in 63.4% of cases. In our study, 46 patients (15.03%) experienced adverse events, 56.5% of which were of cardiovascular origin and 30.4% of respiratory origin. On the other hand, Sow et al (Mali) [12] recorded 38% of cardiovascular adverse events and 25.6% Diop et al (Mali) [15] also made the same observations. On the other hand, Lahmar (Algeria) [16] found a predominance of respiratory adverse events in 73% of children under 3 years of age, and cardiovascular adverse events in 57% of adults. We reported a checklist compliance rate of 43.84%, which was lower than that found by Sewell et al (UK) [17], Fourcade et al (France) [6] and Sow et al (Mali) [12], who reported 96.9%, 95.8% and 77% respectively. However, Sewell et al (UK) [17] found a compliance rate of 7.9%. Completion rates were 39%, 68% and 81% respectively for Van Klei et al (Netherland) [10], Fourcade et al (France) [6] and Sow et al (Mali) [12].

Conclusion

The compliance rate at our facility was quite encouraging. Efforts must be made to introduce the checklist on a permanent basis.

Conflict of interests: No

References

1. WHO. WHO Guidelines for a safe surgery (2009): 133
2. Venneri F, Al. Safe Surgery Saves Lives. Textbook of Patient Safety and Clinical Risk Management [Internet]. Cham: Spr Inger International (2021): 177- 188.
3. Baudrin D. Operating room risks: mapping and management. DRASS Midi-Pyrénées Toulouse: (2007): 78
4. Haynes AB, Wise TG, BeRry WR, et al. A Surgical Safety Checklist to Reduce Morbidity and Mortality in a Global P Population. N Engl J Med 360 (2009): 491-499.
5. Nana FW, Koidima B, Some E, et al., State of play on the use of the surgical safety checklist in Burkina Faso. RASP 5 (2023): 16-22.
6. Fourcade A, Minvielle E, Blache JL, et al., Evaluation and applicability of the checklist HAS on a daily basis: experience of can control centers Cer. Ann Fr Anesth Reanim 30 (2011): 495- 500.
7. Dabo I. The implementation of the checklist of the Safety Surgical of the World Health Organization at the Blaise National Hospital Compaore. [Memory]: Institute for Interdisciplinary Training and Research in Health andEducation (Ifrisse) Burkina Faso (2017): 103.
8. DE Vries EN. Effect of a Comprehensive Surgical SafeTy System on Patient Outcomes. N E Ngl J MEd. 2010;363 (2010): 1928-1937
9. Collazos C, Bermudez L, Quintero A, et al., Checklist verification for surgery safety from the patient's perspective. Rev. Columbus Anesthesiol 41 (2013): 109-113.

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10. Van Klei WA, Hoff RG, Van Aarnhem EEHL, et al., Effects of the Introduction of the WHO "Surgical Safety Checklist" on In-Hospital Mortality: A Cohort Study. Annals of Surgery 255 (2012): 44-49.

11. Average age in the world: The population of Niger is characterized by its youth (14.5 years according to the UN) - leFaso.net [Internet] (2024).

12. Sow F, Diallo A, Broulaye S, et al., A Safety From the patient to the block Operative Of the surgery department General meeting Of the Gabriel Toure University Hospital. [Thesis] Faculty of Medicine, Pharmacy and Odontostomatology of Bamako (2013): 88.

13. Kabey AK, Lubanga M, Tshamba M, et al., Anesthetic practice in Lubumbashi: indications, types of surgery and types of patients. Pan Afr Med J [InTernet] (2015): 21.

14. Martin C And Al. Antibiotic prophylaxis in surgery and interventional medicine (adult patients) - The SFAR [Internet] (2018).

15. Diop TM. Accidents and incidents during anesthesia in Unscheduled surgery at Gabriel Touré Hospital. [Thesis] Faculty of Medicine, Pharmacy and Odontostomatology of Bamako (2006): 128.

16. Lahmar M. Prevalence of adverse events related to anesthesia in operating rooms in Eastern Al Gérien. Batna J Med Sci 8 (2021): 13-18.

17. Sewell M, Adebibe M, Jayakumar P, et al., Use of the WHO surgical safety checklist in trauma and orthopedis patients. International Orthopaedics.35 (2010): 897.