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Awareness of reporting practices and barriers to incident reporting among nurses in Mogadishu, Somalia

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Abstract

Background Ensuring patient safety is a major concern in healthcare, particularly in low-resource contexts. Nurses, as frontline caregivers, play a pivotal role in identifying and reporting clinical incidents. However, underreporting remains a persistent issue. Understanding nurses' awareness of incident reporting systems and the barriers they face is essential for improving safety outcomes.

Objective This study aimed to assess nurses' awareness of incident reporting practices, explore their self-perceived reporting behaviors, and identify barriers to effective reporting within Somali hospitals.

Methods A descriptive cross-sectional study was conducted among 300 nurses from public and private hospitals across Somalia. Data were collected using a structured questionnaire adapted from a previously validated instrument. The questionnaire covered socio-demographic characteristics, awareness of incident reporting systems, self-perceived reporting behaviors, and perceived barriers. Descriptive statistics, t-tests, and ANOVA were employed to analyze the data.

Results Awareness of incident reporting systems was notably low; only 12% of nurses confirmed the presence of such systems in their workplace, and just 26% had ever completed an incident report. Critical incidents such as medication errors and breaches of confidentiality were frequently underreported, with over 40% of nurses admitting they had never reported such events. The gap between nurses' belief in the importance of reporting and their actual practices was significant. Major barriers included fear of disciplinary action, lack of feedback, heavy workloads, and overly complex reporting procedures. Notably, nurses with longer professional experience and those working in accredited hospitals demonstrated significantly higher awareness and reporting behaviors ($p < 0.001$).

Conclusion The study identified substantial deficiencies in nurses' awareness and incident reporting practices in Somali healthcare facilities. Targeted interventions such as training programs, simplified and anonymous reporting mechanisms, and a non-punitive culture are urgently needed to strengthen the patient safety framework and promote consistent incident reporting.

Keywords Incident reporting, Patient safety, Nurses, Barriers, Awareness, Somalia, Healthcare quality

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Introduction

Somalia's healthcare system operates within a fragile and under-resourced context, marked by limited infrastructure, critical workforce shortages, and inconsistent access to essential health services. These systemic challenges significantly undermine efforts to ensure patient safety [1]. The persistent occurrence of clinical incidents, preventable errors, adverse events, and environmental hazards poses a serious threat to both patient outcomes and overall healthcare quality. Such issues not only place additional strain on healthcare providers but also lead to increased treatment costs, prolonged hospital stays, and, ultimately, elevated patient mortality rates [1]. The ongoing occurrence of clinical incidents, errors, preventable adverse events, and hazards poses a significant threat to patient safety. These issues not only increase the burden on healthcare providers but also drive up care costs and prolong hospital stays, ultimately contributing to higher patient mortality rates [2]. In fact, more than 15% of healthcare organizations' budgets are allocated to covering additional hospitalization expenses, legal claims, and other repercussions resulting from medical errors [3]. Approximately one in ten hospitalized patients experiences an adverse event during their stay [4, 5]. Research indicates that nurses are responsible for a significant proportion of these errors. [6, 7] As integral members of multidisciplinary healthcare teams, nurses play a crucial role in delivering a wide range of patient care services in hospital settings [8].

The nursing profession is highly demanding, requiring constant multitasking and managing a heavy workload. Additionally, the responsibility of providing specialized care to critically ill and dependent patients can be both challenging and overwhelming for nurses [9]. Effective incident reporting is essential for ensuring patient safety, supporting healthcare staff, and contributing to the overall success of healthcare organizations. It involves the timely and accurate reporting of clinical incidents, errors, preventable adverse events, and hazards by nurses [10]. However, underreporting remains a significant issue in clinical settings [11–13]. A recent study from Egypt underscored critical gaps in nurses' knowledge, attitudes, and practices concerning incident reporting, signaling the urgent need for targeted improvements in this area. The research, conducted within the framework of Egypt's Universal Health Insurance system, revealed that despite the presence of reporting systems, many nurses lacked the necessary training and support to utilize them effectively. Factors such as fear of blame, unclear reporting procedures, and limited feedback mechanisms contributed to underreporting, ultimately compromising patient safety. These findings emphasize the importance of fostering a supportive reporting culture and equipping nurses with the tools and confidence needed to

participate in quality and safety initiatives actively [6]. Nurses' incident reporting and safety practices are closely linked to their perceptions of the organizational culture, which encompasses values, behaviors, communication styles, prevailing beliefs, attitudes, and commitment to safety. These cultural factors significantly influence the quality of patient care [14, 15].

Ensuring effective incident reporting among nurses and all healthcare providers is essential for strengthening patient safety and enhancing the overall quality of care [7]. To ensure high-quality care, it is crucial for healthcare managers to have access to comprehensive data on incident rates and types. Encouraging proper incident reporting practices among nurses is essential for achieving this. Collecting detailed patient safety information from healthcare providers helps managers identify system errors and implement changes that reduce the likelihood of incidents recurring [7, 16].

Therefore, thorough reporting of all incident types by healthcare practitioners is vital for both patient safety and the overall success of the organization. Several factors contribute to the underreporting of incidents, including a lack of knowledge, time constraints, heavy workloads, personal fear, and concerns about embarrassment or negative reactions from managers and colleagues [16]. Promoting accurate incident reporting practices, identifying the barriers to reporting, and evaluating preventive measures are essential steps in reducing the occurrence of incidents and improving reporting compliance. In Somalia, there is a lack of data on this topic, and in other countries, only a few studies have explored nurses' and other healthcare professionals' awareness of incident reporting and the barriers to effective reporting [13, 14, 17].

This study aimed to examine the level of awareness regarding incident reporting practices and identify the barriers that hinder effective reporting among Somalia nurses. To achieve this, the research was guided by the following questions:

1. What is the nurse's level of awareness of incident reporting?
2. What are nurses' self-perceived practices regarding incident reporting?
3. Is there any difference between awareness and self-perceived of incident reporting practices and nurse's socio-demographic?

The findings of this study are anticipated to guide the development of healthcare policies and training programs that enhance patient safety. By highlighting gaps in awareness and reporting practices, the study paves the way for targeted interventions that empower Somali

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nurses to foster safer and more accountable clinical environments.

Methodology

Study design

This study employed a descriptive cross-sectional survey to evaluate nurses' awareness of incident reporting practices and the challenges they face in reporting clinical incidents in Somalia, this design was chosen to provide a snapshot of current practices across multiple healthcare facilities [18].

Study setting and participants

The research was conducted in public and private hospitals across Somalia to ensure a diverse representation of healthcare environments.

Sampling strategy

A multistage sampling approach was utilized to ensure a well-balanced study population:

1. **Hospital Selection**: Hospitals were selected using convenience sampling, encompassing both public (government-funded) and private (for-profit or NGO-operated) healthcare institutions in Somalia. Public hospitals primarily offer basic healthcare services at minimal or no cost but frequently face challenges such as shortages in essential supplies, inadequate staffing, and outdated infrastructure. Private hospitals, generally located in urban areas, provide better-equipped facilities and specialized healthcare services, but at costs typically unaffordable for lower-income populations. Some private hospitals also function as academic institutions, affiliated with universities and contributing significantly to healthcare training and education.

In this study, sixteen hospitals were included based on accessibility, patient volume, and institutional willingness to participate. These facilities were predominantly situated in urban areas such as Mogadishu, with fewer hospitals located in peri-urban or semi-rural settings. Most of the participating hospitals were accredited or registered under the Ministry of Health, reflecting local regulatory standards aimed at ensuring baseline quality and safety measures. However, widespread formal international accreditation remains limited in Somalia due to persistent challenges, including resource constraints, security issues, and gaps in regulatory oversight. Nevertheless, some hospitals, particularly those with international partnerships or affiliations, are actively pursuing enhanced accreditation standards as part of broader initiatives to improve healthcare quality in the region.

2. **Nurse Selection**: A **convenience sampling method**: was applied, with the following inclusion criteria: A total of 300 questionnaires were distributed across the 16 included hospitals using a convenience sampling method. Nurses were selected based on predefined inclusion criteria: they had to be registered nurses (RNs) or diploma-holding nurses with at least one year of clinical experience, actively working in inpatient units such as medical, surgical, maternity, pediatric, or critical care. Nurses in outpatient departments, administrative roles, as well as nursing students and trainees, were excluded. Hospital administrators or unit supervisors helped identify eligible participants, and the research team ensured that inclusion criteria were met before distributing the paper-based questionnaires in person. This approach allowed for the recruitment of a diverse yet targeted sample of practicing nurses while maintaining feasibility within the resource-limited and high-turnover hospital settings in Somalia.

Sample size determination

The required sample size was calculated using G*Power (version 3.1.5) for one-way ANOVA, with, 95% confidence level, Medium effect size (0.25), Significance level ($\alpha \leq 0.05$) A minimum of 319 nurses was needed for statistical power, but 350 nurses were invited to participate to account for potential non-responses. The final study included 300 nurses, yielding an 86% response rate [19].

Data collection procedure

Data were collected over four months (December 2024 to March 2025) in selected Somali hospitals. Collaboration was established with hospital nursing directors and the Supervisor, nurse to schedule data collection at times that minimized disruption to clinical operations. Participants completed self-administered, paper-based questionnaires provided in both English and Somali to ensure comprehension. Completed questionnaires were returned in sealed envelopes and deposited into secure collection boxes placed in each hospital unit, ensuring confidentiality and ease of access for participants.

Research instruments

A structured questionnaire adapted from the Incident Reporting Scale was used to collect data [18]. The instrument comprised four clearly defined sections. Section one covered socio-demographic information and included six questions related to age, gender, education level, professional experience, and work area. Section two assessed awareness of incident reporting systems through five yes/no questions. Scores in this section ranged from 5 to 10, with higher scores indicating greater

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awareness of institutional reporting procedures. Section three focused on self-perceived incident reporting practices and included 11 items rated on a 4-point Likert scale (Never, Less than 50% of occasions, 50% or more of occasions, Always). Participants' scores were categorized into three levels: low reporting level (below the 50th percentile), moderate reporting level (50th–75th percentile), and high reporting level (above the 75th percentile). Section four explored perceived barriers to incident reporting and consisted of 19 items rated on a 5-point Likert scale, ranging from Strongly Disagree to Strongly Agree.

The questionnaire included categories of reportable events such as medication errors, patient falls, communication failures, equipment malfunctions, near misses, surgical complications, and other clinical incidents related to patient safety.

Validity and reliability

The questionnaire underwent content validation by five Somali healthcare professionals, including two senior nurse educators, two nurse managers, and one hospital quality officer, each with over eight years of experience. They reviewed the tool for clarity, relevance, and cultural appropriateness. Feedback was gathered through structured forms and discussion, leading to minor revisions. This process ensures the tool's validity and can be replicated by involving similarly experienced experts using a structured review approach [20]. A pilot study (*n* = 30 nurses) was conducted to refine the tool and enhance cultural relevance. Cronbach's alpha was used to assess internal consistency, ensuring high reliability [21].

Data analysis

Statistical analysis was conducted using SPSS version 26 (IBM, 2018). The Statistical Methods is Descriptive statistics (frequencies, percentages, means, and standard deviations) were used to summarize participant characteristics. Independent t-tests and ANOVA were applied to examine relationships between Awareness of incident reporting, Self-reported incident reporting practices, and Demographic factors (hospital type, education level, work experience, and accreditation status). A p-value < 0.05 was considered statistically significant.

Ethical approval and Participant Consent: Ethical approval for this study was granted by the Institutional Review Board (IRB) of SIMAD University, Mogadishu, Somalia, as documented in the approval letter dated December 12, 2024, with reference number 2024/SU-IRB/FMHS/P092. All procedures followed in this study adhered to the relevant ethical guidelines and regulations, including the principles outlined in the Declaration of Helsinki. Written informed consent was obtained from each participant after clearly explaining the purpose of the study. Participants were assured that their responses would remain confidential and were explicitly informed that their involvement in the study was entirely voluntary.

Results

Demographic characteristics of participants

Table 1. A total of 350 questionnaires were distributed, of which 300 were completed and returned, yielding a completion rate of 85.7%. The majority of respondents were female (52.3%), and most held a bachelor's degree in nursing (81.7%). A significant portion of the nurses worked in government hospitals (52.0%). Additionally, 35.3% were posted in pediatric units and are the most of participants in the study because of the good collaboration and team leader, which constituted the most common area of practice.

Approximately 72.3% of participants had 1–5 years of nursing experience, indicating that most of the sample consisted of early-career nurses. The mean years of experience was 1.33 years (SD = 0.573), further reinforcing this point. A majority (74.0%) reported working in accredited hospitals, either by the Health Care Accreditation Council (HCAC) or Joint Commission International (JCI). These findings suggest a predominantly young and relatively inexperienced nursing workforce. This demographic profile may influence their familiarity and compliance with hospital systems such as incident reporting. The previous sentence erroneously stated that more nurses worked in university or private hospitals; however, the corrected data shows that more nurses were employed in government facilities.

Awareness of the incident reporting

Table 2. The findings reveal a poor degree of knowledge concerning incident reporting among nurses. Only 12% reported that there was an incident reporting system at their workplace, and only 26% ever filled in an incident report form. Moreover, only 23.7% were aware where to locate the incident form, and 20.7% were aware what to do next after filling it out. Whereas 31.3% had filled out an incident form in the last month, the overall results indicate a significant knowledge and access deficit to proper reporting processes, which may hinder effective incident management and patient safety interventions.

Self-perceived reporting practices

Table 3. findings reveal a broad difference between actual and perceived reporting by nurses for various clinical events. For most categories of incidents pressure sores, falls in patients, and hospital acquired infection the greatest proportion of nurses reported these incidents "less than 50% of the time" or "never." Of particular note, an exceptionally high percentage of participants (e.g., 40.3% for incorrect treatment, 40.7% for confidentiality breach)

Table 1 Demographic characteristics of participants

Socio-demographic	Variable Category	Frequency *n* (%)
Gender	Male	143 (47.7%)
	Female	157 (52.3%)
Type of Hospital	Government	156 (52.0%)
	Private	118 (39.3%)
	University-affiliated	26 (8.7%)
Level of Nursing Education	Bachelor	245 (81.7%)
	Postgraduate	55 (18.3%)
Years of Experience in Nursing	1–5 Years	217 (72.3%)
	6–10 Years	67 (22.3%)
	> 11 Years	16 (5.3%)
	Mean (SD)	1.33 (0.573)
Type of Hospital Ward/Unit	Medical/Surgical	29 (9.7%)
	Emergency Room	61 (20.3%)
	Critical Care Unit	24 (8.0%)
	Pediatric	106 (35.3%)
	Psychiatric	13 (4.3%)
	Operating Room	15 (5.0%)
	Gynecology	28 (9.3%)
	Neonatal ICU (NICU)	18 (6.0%)
	Others	6 (2.0%)
Hospital Accreditation	Accredited (HCAC/JCI)	222 (74.0%)
	Not Accredited	78 (26.0%)

Table 2 Awareness of the incident reporting

Items	Variable category	Frequency (%)
Existence of incidents reporting system	Yes	36 (12.0%)
	No	264 (88.0%)
Filling in an Incident Form	Yes	78 (26.0%)
	No	222 (74.0%)
Knowing how to access the incident form	Yes	71 (23.7%)
	No	229 (76.3%)
Filling in an Incident in the Last Month	Yes	94 (31.3%)
	No	206 (68.7%)
Knowing What to do with the Completed Incident Form	Yes	62 (20.7%)
	No	238 (79.3%)

had confessed never having reported some of the most significant critical incidents. Although reported sense of responsibility to report such incidents was slightly higher, the gap between what nurses do and what they believe they should do remains a concern. For example, 36.3% believed confidentiality breaches should always be reported, but only 12.7% always did. These findings show underreporting to be widespread, maybe due to unawareness, fear of being punished, or vague instructions, and stress the need for certain interventions in order to stimulate a stronger reporting culture within health care settings.

Reporting barriers as perceived by nurses

Table 4. sets out a set of perceived barriers to incident reporting by nurses. Fear-type concerns were placed on the agenda by a significant proportion of respondents, with 41.3% strongly disagreeing that they are afraid of disciplinary action being taken, yet 33.3% were still concerned (agree/strongly agree). Similarly, fear of getting into trouble (32%) and litigation (approximately 36.7%) were also prevalent. Not receiving feedback (32.3% agreed/strongly agreed) and anonymity (35.4%) also discouraged reporting. In addition, 36.3% of nurses agreed that the incident form was either too complicated or time-consuming, and 38.7% believed that it was unnecessary to report trivial or corrected incidents (near misses). Concerns about being blamed, especially for junior staff, confusion about responsibilities, and unsupportive colleagues were also raised. These findings reflect systemic and cultural barriers in hospitals that dissuade nurses from reporting incidents, demonstrating the need for better training, anonymous systems, positive cultures, and easier reporting systems.

Table 5. is the analysis of participants' awareness of the incident reporting system and demographic profiles through t-tests and ANOVA. Analysis shows no statistically significant difference in awareness based on gender ($p = 0.969$) or nursing education level ($p = 0.114$). Nevertheless, there were some substantial differences between the hospital type ($p = 0.001$), nursing experience years ($p = 0.000$), and whether or not the hospital was accredited ($p = 0.000$). Participants from government hospitals had the highest awareness (M = 4.21, SD = 1.19), while participants from university affiliated hospitals had the

Table 3 Self-perceived reporting practices

Questions	Variable category	Never %	Less than 50% of occasions	50% or more of occasions	Al- ways %
Patient sustained a pressure sore whilst in hospital	How often do you report this incident?	24.7	56.7	11.3	7.3
	How often do you think you should report it?	29.3	50.7	14.0	6.0
Patient sustained an injury due to a fall in hospital	How often do you report this incident?	28.7	48.3	12.7	10.3
	How often do you think you should report it?	26	50	16.3	7.7
Patient sustained a hospitalacquired infection, e.g., infected wound site, phlebitis due to infected IV site	How often do you report this incident?	21.3	50.7	16.3	11.7
	How often do you think you should report it?	16.7	56.3	16.7	10.3
Patient sustained a DVT postoperatively due to inadequate prophylaxis	How often do you report this incident?	24.3	48.7	16.3	10.7
	How often do you think you should report it?	19.7	53.0	16.3	11.0
Patient received the wrong treatment or procedure	How often do you report this incident?	40.3	34.7	16.0	9.0
	How often do you think you should report it?	38.7	35.3	16.7	9.3
Patient did not receive the necessary treatment or procedure	How often do you report this incident?	37.0	32.7	17.0	13.3
	How often do you think you should report it?	38.7	31.7	15.3	14.3
Staff made a drug error, but it was not actually given (near miss)	How often do you report this incident?	36.7	37.0	14.3	12.0
	How often do you think you should report it?	35.0	38.0	16.3	10.7
Staff made a drug error where no corrective treatment was necessary	How often do you report this incident?	39.0	30.3	15.3	15.3
	How often do you think you should report it?	36.0	36.0	17.3	10.7
Staff made a drug error resulting in correcting treatment being given	How often do you report this incident?	37.0	32.7	17.3	13.0
	How often do you think you should report it?	37.3	34.0	16.7	12.0
Problem with equipment or machinery resulting in patient harm, e.g., Faulty pump/ bed	How often do you report this incident?	34.3	36.3	17.3	12.0
	How often do you think you should report it?	33.0	34.3	17.0	15.7
Breach in confidentiality, e.g., Information given without authority	How often do you report this incident?	40.7	29.0	17.7	12.7
	How often do you think you should report it?	36.3	33.7	12.3	17.7

Table 4 Reporting barriers as perceived by nurses

Questions	Strongly Disagree N (%)	Disagree N (%)	Neither N (%)	Agree N (%)	Strongly Agree N (%)
I am worried about disciplinary action	124(41.3%)	39(13.0%)	37(12.3%)	58(19.3%)	42(14.0%)
I don't want to get into trouble	91(30.3%)	55(18.3%)	58(19.3%)	64(21.3%)	32(10.7%)
If I report something, I never get any feedback on what action is taken	98(32.7%)	38(12.7%)	67(22.3%)	61(20.3%)	36(12.0%)
I feel that if I discuss the case with the person involved, nothing else needs to be done	92(30.7%)	41(13.7%)	68(22.7%)	71(23.7%)	28(9.3%)
I worry about who else is privy to the information that I disclose	88(29.3%)	46(15.3%)	70(23.3%)	66(22%)	30(10%)
It's not my responsibility to report somebody else's mistakes	95(31.7%)	50(16.7%)	55(18.3%)	65(21.7%)	35(11.7%)
My coworkers may be unsupportive	90(30.0%)	51(17%)	53(17.7%)	79(26.3%)	27(9.0%)
I am worried about litigation	88(29.0%)	36(12.0%)	64(21.3%)	71(23.7%)	41(13.7%)
Even if I don't give my details, I'm sure that they'll track me down	91(30.3%)	36(12.0%)	57(19%)	75(25%)	41(13.7%)
When the ward is busy, I forget to make a report	88(29.3%)	54(18.0%)	56(18.7%)	71(23.7%)	31(10.3%)
I don't feel confident that the form is kept anonymous	94(31.3%)	42(14.0%)	58(19.3%)	68(22.7%)	28(12.7%)
The incident form takes too long to fill out, and I just don't have time	79(26.3%)	44(14.7%)	68(22.7%)	73(24.3%)	36(12.0%)
The incident was too trivial	85(28.3%)	38(12.7%)	61(20.3%)	81(27.0%)	35(11.7%)
Junior staff are often blamed unfairly for adverse incident	88(29.3%)	38(12.7%)	65(21.7%)	82(27.3%)	27(9.0%)
When the incident does not eventuate or a correction is made (a near miss), then I don't see any point in reporting it	87(29.0%)	44(14.7%)	68(22.7%)	66(22%)	35(11.7%)
Adverse incident reporting is unlikely to lead to system changes that will improve the quality of care	74(24.7%)	46(15.3%)	69(23.0%)	76(25.3%)	35(11.7%)
The hospital form is too complicated and requires too many details	77(25.7%)	39(13%)	66(22%)	80(26.7%)	38(12.7%)
I don't want the case discussed in meetings	(%)	(%)	(%)	(%)	(%)
I don't know whose responsibility is to make a report	88(29.3%)	45(15.0%)	53(17.7%)	77(25.7%)	37(12.3%)

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Table 5 Comparison of the participants' awareness of the incident reporting system with their demographic

Descriptive Characteristics	Variable	Mean (SD)	t/F	P value
Gender	Male	3.86(1.49)	-0.039	0.969
	Female	3.86(1.24)		
Type of hospital	Governmental	4.21(1.19)	6.7	0.001***
	Private	3.66(1.47)		
	University affiliated	3.50(1.24)		
Level of nursing education	Bachelor	3.92(1.40)	1.58	0.114
	Postgraduate	3.60(1.14)		
Years of experience in nursing	1–5 Year	4.04(1.21)	10.135	0.000***
	6–10 Year	3.22(1.68)		
	11 Year above	4.19(0.98)		
Hospital Accreditation	Accredited	4.07(1.17)	3.812	0.000***
	Not accredited	3.28(1.68)		

Table 6 Comparison of the participants' self-perceived reporting practices with their demographic

Descriptive Characteristics	Variable	Mean (SD)	t/F	P value
Gender	Male	2.10(0.70)	0.91	0.36
	Female	2.03(0.55)		
Type of hospital	Governmental	1.88(0.510)	8.807	0.000***
	Private	2.18(0.68)		
	University affiliated	2.20(0.63)		
Level of nursing education	Bachelor	2.01(0.064)	3.44	0.001***
	Postgraduate	2.30(0.538)		
Years of experience in nursing	1–5 Year	1.98(0.57)	8.22	0.000***
	6–10 Year	2.28(0.72)		
	11 Year above	2.37(0.69)		
Hospital Accreditation	Accredited	2.03(0.61)	-1.57	0.128
	Not accredited	2.16(0.67)		

lowest. Nurses with over 11 years of experience and nurses working in accredited hospitals also showed much greater awareness compared to their counterparts. These results suggest that professional experience and institutional factors are highly associated with nurses' awareness of the incident reporting system.

Table 6. shows the breakdown of participants' self-reported incident reporting behaviors and demographic characteristics. As the findings reveal, no significant differences existed in the reporting behaviors in relation to gender ($p = 0.36$) and the hospital accreditation status ($p = 0.128$). Significant differences were, nonetheless, registered according to the hospital type ($p = 0.000$), the level of nursing education ($p = 0.001$), and the years of experience in nursing ($p = 0.000$). Nurses who worked for government hospitals perceived lower reporting practices compared to those who worked in private and university hospitals ($M = 1.88$, $SD = 0.51$). Additionally, postgraduate nurses ($M = 2.30$, $SD = 0.54$) believed they report

incidents more frequently than bachelor's degree nurses. Respondents who have more than 11 years of experience had the highest self-reported reporting practices ($M = 2.37$, $SD = 0.69$), indicating that professional experience and higher education are positively associated with incident reporting behaviors.

Discussion

This study sheds light on the awareness, self-perceived practices, and barriers to incident reporting among nurses in Somalia a region where research on patient safety practices remains scarce. The findings reveal critical gaps in knowledge and behavior related to incident reporting, highlighting an urgent need for systemic interventions to foster a robust patient safety culture.

The low level of awareness regarding incident reporting systems is concerning. Only 12% of nurses acknowledged the existence of such a system in their institutions, and just a quarter had ever completed an incident report. These results align with prior research in Egypt and Jordan, where insufficient knowledge and unclear processes have similarly contributed to underreporting among nurses [6, 13].

A key strength of this study lies in its comparison between actual incident reporting behaviors and nurses' self-perceived responsibilities. Despite recognizing the importance of reporting critical events such as patient falls, pressure sores, and medication errors, many nurses admitted to rarely, if ever, reporting these incidents. For example, over 40% of respondents stated they had never reported a confidentiality breach, despite 36.3% acknowledging it should always be reported. This disparity between belief and practice mirrors findings from Ireland and Saudi Arabia, suggesting a global issue wherein staff feel morally compelled but practically discouraged from reporting incidents due to systemic barriers [7, 12].

This morally driven hesitation has also been noted in broader literature, where moral distress, institutional fear, and professional silence contribute to underreporting despite an awareness of the potential consequences for patient safety [22, 23]. While this dimension was not directly measured in our study, it remains a plausible contributing factor in the Somali context, especially given the high levels of underreporting and the structural constraints described by participants.

The barriers identified were multifaceted, with fear of blame, disciplinary actions, and lack of feedback being particularly influential. These perceptions have been widely recognized in literature as deterrents to open reporting cultures [11, 18]. Moreover, practical concerns such as time constraints, complex reporting procedures, and uncertainty over responsibility were also significant. Such barriers echo the findings of Evans et al. (2006), who emphasized that unclear reporting protocols and fear of

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retribution significantly hinder error disclosure in hospitals. Notably, the study uncovered that nurses with more years of experience and those working in accredited institutions demonstrated significantly higher awareness of incident reporting systems. This supports the idea that institutional structure and professional maturity are crucial in shaping safety-oriented behaviors. Similar associations between accreditation, clinical experience, and safety culture have been documented in prior research across diverse settings [5, 14].

Contrary to expectations, gender and level of education did not show a significant influence on incident reporting awareness, although postgraduate nurses reported higher engagement in reporting practices. These findings suggest that while formal education lays the groundwork, practical exposure and institutional factors are more decisive in fostering reporting behaviors a pattern consistent with studies in other low- and middle-income countries [5, 17].

The findings of this study point toward the urgent need for comprehensive strategies to improve incident reporting among Somali nurses. These may include structured training programs on reporting protocols, simplifying reporting forms, implementing anonymous reporting mechanisms, and fostering a non-punitive safety culture. Additionally, hospital leadership must actively address systemic barriers by providing timely feedback and ensuring that near-miss events are treated as learning opportunities rather than grounds for blame [9, 10].

Limitation of the study
This study has several limitations. Firstly, the use of convenience sampling limits generalizability, as the participating hospitals were primarily urban or peri-urban and selected based on accessibility and willingness to participate. The cross-sectional nature of the study precludes establishing causality between the identified factors and reporting practices. Additionally, self-reported data introduces potential response bias, as nurses may underreport practices or barriers due to fear of repercussions or social desirability bias. Finally, despite validation efforts, the questionnaire's reliance on subjective perception may not capture all aspects of actual reporting behaviors.

Conclusion
This study highlights significant gaps in nurses' awareness and practices regarding incident reporting in Somalia. Despite recognizing the importance of reporting, actual practices remain low due to multiple barriers, including fear of blame and lack of feedback. Institutional support, experience, and accreditation were key factors influencing reporting behavior.

Improving incident reporting requires targeted strategies such as ongoing training, anonymous reporting systems, and supportive leadership. Fostering a culture of safety and accountability is crucial for enhancing healthcare quality. Future initiatives should focus on system-level reforms and continuous monitoring to sustain reporting improvements.

Abbreviations
M   Mean
SD   Standard Deviation

Declarations

Consent for publication
Not applicable of this study.

Competing interests
The authors declare no competing interests.

References
1.   Warsame A, Handuleh J, Patel P. Health system capacity and resilience in somalia: a scoping review. BMJ Global Health. 2021;6(3):e004385. https://doi.org/10.1136/bmjgh-2020-004385.
2.   Bifftu BB, Dachew BA, Tiruneh BT, Beshah DT. Medication administration error reporting and associated factors among nurses working at the university of Gondar referral hospital Northwest Ethiopia. BMC Nurs. 2016;15(1):1–7.
3.   Donaldson LJ, Kelley ET, DhingraKumar N, Kieny MP, Sheikh A. Medica Tion without harm: who's third global patient safety challenge. Lancet. 2017;389:1680–1.
4.   AlMugheed K, Bayraktar N. Patient safety attitudes among critical care nurses: a case study in North Cyprus. Int J Health Plann Manage. 2020;35(4):910–21.
5.   Khater W, AkhuZaheya L, AlMahasneh S, Khater R. Nurses perceptions of patient safety culture in Jordanian hospitals. Int Nurs Rev. 2014;62(1):8291. https://doi.org/10.1111/inr.12155.
6.   ElSayed RI, Bahlawan G, Aly MR, Elsayed B. Enhancing the occurrence reporting system implementation at one of the hospitals of the Egyptian universal health insurance. SAGE Open Nurs. 2022;8:1–10.
7.   Banakhar M, Tambosi A, Asiri S, Banjar Y, Essa Y. Barriers of reporting errors among nurses in a tertiary hospital. Int J Nurs Pract. 2017;4(1):1. https://doi.org/10.15344/23944978/2017/245.
8.   Alzailai N, Barriball L, Xyrichis A. Burnout and job satisfaction among Criti Cal care nurses in Saudi Arabia and their contributing factors: a scoping review. Nurs Open. 2021;8(5):2331–44.

9.   ALMugheed K, Bayraktar N, AlBsheish M, et al. Patient safety attitudes among Doctors and nurses: associations with workload, adverse events, experience. Healthcare. 2022;10(4):631.
10. The World Health Organization. WHO world draft guidelines for adverse event reporting and learning system. 2005. Available at: https://www.who.int/publications/i/item/WHO EIP SPO QPS 05.3. Accessed 8 Mar 2023.
11. Alduais AMS, Mogali S, Shabrain BA, Enazi AA, AlAwad F. Barriers and strategies of reporting medical errors in public hospitals in Riyadh city: a surveystudy. IOSR J Nurs Health Sci. 2019;3(5):72–85. https://doi.org/10.9790/195903537285.
12. Fitzgerlad E, Cawley D, Rowan N. Irish staff nurses perceptions of clinical incident reporting. Int J Nurs Midwifery. 2011;3(2):14–21.
13. Mrayyan MT, Shishani K, AlFaouri I. Rate, causes and reporting of medica Tion errors in jordan: nurses' perspectives. J Nurs Manag. 2007;15(6):65970. https://doi.org/10.1111/j.13652834.2007.00724.x.
14. Merrill KC. Leadership style and patient safety: implications for nurse managers. J Nurs Adm. 2015;45(6):319–24.
15. Hammour KA, Jalil MHA. Medication errors in voluntary reported Inci dents at a Jordanian hospital. J Med J. 2016;50(2):87–96.
16. Oweidat I. Leadership behaviors, organizational culture, and incidents reporting practices as perceived by Jordanian nurses, literature review. Open J Nurs. 2019;9(9):988.
17. Aboshaiqah A, Mansour A, Sherrod D, AlKhaibary A, AlKhaibary S. Nurses' perception of managers' leadership styles and its associated outcomes. J Nurs Res. 2014;2(4):57–62. https://doi.org/10.12691/ajnr-2. 4 – 1.
18. Evans SM, Berry JG, Smith BJ, Esterman A, Selim P, O'Shaughnessy J, DeWit M. Attitudes and barriers to incident reporting: A collaborative hospital study. Qual Saf Health Care. 2006;15(1):39–43. https://doi.org/10.1136/qshc.2004.012559.
19. Faul F, Erdfelder E, Lang A-G, Buchner A. G*Power 3: A flexible statistical power analysis program for the social, behavioral, and biomedical sciences. Behav Res Methods. 2007;39(2):175–91. https://doi.org/10.3758/BF03193146.
20. ynn MR. Determination and quantification of content validity. Nurs Res. 1986;35(6):382–6. https://doi.org/10.1097/00006199-198611000-00006.
21. Cronbach LJ. Coefficient alpha and the internal structure of tests. Psychometrika. 1951;16(3):297–334. https://doi.org/10.1007/BF02310555.
22. Henderson RA, Rowe J, Watson K. Nurses' moral distress and error reporting: A narrative synthesis. J Nurs Adm Manag. 2021;29(3):469–80. https://doi.org/10.1111/jonm.13135.
23. Gallagher A. Moral distress and moral courage in everyday nursing practice. Online J Issues Nurs. 2011;16(2):Manuscript1. https://doi.org/10.3912/OJIN.Vol16No02Man01.

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