Original Research

DOI: https://doi.org/10.64573/torgj2511002

The Operating Room Global Journal (TORGJ)

https://torgjournal.org/

ISSN: 3105-3262

Clinical Incidents Reporting Practice and Associated Factors Among Health Professionals in Debre Birhan Comprehensive Specialized Hospital, North Shoa, Amhara, Ethiopia.

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Declaration:
Authors' Contribution: All authors participated in proposal development, data collection, data entry and analysis, results write-up and interpretation, and manuscript preparation. All authors read and approved the final manuscript.
Conflict of Interest: No conflict of interest.
Funding: No funding received by the authors.

Article History:
Received: 16-11-2025
Accepted: 20-12-2025
Available Online: 22-12-2025

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ABSTRACT

Background: Clinical incident reporting is crucial means of the continuous learning system in improving patient safety. The patient safety incident reporting system is low and has not fully adhered to standard guidelines, particularly in the study area. The study assessed clinical incident reporting practice and associated factors among health care professionals in the area.

Methods and materials: A facility-based cross-sectional study design was conducted, and study units were selected using the systematic random sampling technique. Statistical Package for Social Science version 21 was used for data analysis.

Result: Around 240 healthcare workers participated in the study with a 100% response rate. The prevalence of incident reporting practice was 16% (with 95% CI (12%, 21%)). Work experience (AOR=1.15, with 95% CI (1.06, 1.26)), orientation about clinical incidents (AOR=0.09, with 95% CI (0.01, 0.56)), incident monitoring and evaluation (AOR=0.09, with 95% CI (0.01, 0.69)), and uncertainties on organizational plan about the consequence of reported clinical incident (AOR=12.9, with 95% CI (2.88, 57.99)) were found to be significant predictors of incident reporting practice among health care professionals in the study area.

Conclusion: The study revealed low incident reporting practice in the area. Integrating structure with the process for a better patient safety incident outcome is vital.

Keywords: Patient Safety, Incident Reporting, Healthcare Professionals, Safety Culture, Quality Improvement

INTRODUCTION

A patient safety incident refers to any unintended or unexpected event that could have, or did, result in harm (such as injury or disability due to acquired infections, medication errors, or procedural mistakes) for one or more patients receiving healthcare, as well as for the staff involved. Prevention of patient safety incidents involves several key steps: identifying the incident, reporting it initially, conducting a risk assessment, engaging in discussions for learning, and submitting an incident report to enhance patient care [1,2].

However, many medical practices and risks associated with health care are emerging as major challenges for patient safety, which contribute significantly to the burden of harm due to unsafe care. The actions stemming from the investigation would result in a redesign of policies, care processes, products, and procedures. Additionally, there would be changes to clinical care practices and the working styles of practitioners. Agreed-upon processes would be established to aggregate data and conduct analyses that reveal systemic weaknesses and facilitate the development of solutions. [2-4]. Here the reporting of incidents and near misses has been seen as a crucial means of improving patient safety [5].

A survey done at the Royal College of General Practitioners on patient safety culture emphasizes patient safety and incident reporting as essential tools to improve patient safety. High levels of reporting will facilitate lesson-drawing, with information from the reports being disseminated both within and across service areas. Critical incident reporting systems (CIRS) can be an important tool for the identification of organizational safety needs. Incident reporting systems are believed to fulfil one or more of the following purposes: public accountability, responding to patients and families involved, providing a communication alert route, assessing the weight of risk within health care, and serving as a foundation for learning and improvement [5,6].
Most countries have experienced incidents and adverse events that show failures in their health care systems. Studies have highlighted the burden of accidents caused by adverse events within the health and social care settings, which significantly impacted patients, families, and the health care system [7]. Patients die unnecessarily because of injury, fall accidents, missed diagnoses or poor clinical management of their acute illnesses, pressure ulcers, faulty or misused equipment, or incompetent staff [3,8].

Incident reporting by health care providers who first discover, witness, or have familiarity with details of an incident or unsafe condition is fundamental to error prevention. Through incident reporting, various kinds of errors can be traced and discussed among health professionals, and preventive mechanisms can be designed. The present results indicate that there are still hindrances keeping errors from being reported. We advocate that besides clear reporting routines, there is a need for a complementary system that can identify and prevent near misses. A reporting system of incidents like near misses, such as a valid short and easy-to-use questionnaire or observational protocol, might be a solution to reduce the burden on personnel and to increase the possibility of error prevention. Reporting incidents can be improved by fostering a non-blaming safety culture [9,10].

Improving patient safety requires understanding the work conditions and processes that contribute to incidents. This understanding is optimally achieved through continuous clinical incident reporting and learning systems; however, these systems have generally not been implemented according to standards. Global studies show that clinical incident reporting rates remain low. While critical incident reporting systems exist in many countries, national-level reporting and learning systems have not yet been established, especially in low- and middle-income countries. Literature reviews indicate that although e-reporting systems were established to simplify reporting, they remain in an immature stage. Furthermore, while some studies have focused on types of incidents and others on identifying the causes behind them were focused on types of incidents and some of them focused on identifying the causes behind these incidents, significant gaps in system implementation persist [11-13].

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In the USA, a study on primary health care showed that 69% of staff reported that they had never filed an incident report regarding venous blood sampling[11]. A study done in South Africa on incident reporting reviewed that the vast majority had never reported adverse drug reactions (ADR). Only 2.3% knew how many incidents were reported; from these, 6.1% were discussed by a committee, and internal feedback was given [14].

Few cross-sectional and mixed-type studies done in Ethiopia perceived that the percentage of clinical incident reporting practice of the health professionals was very low. A study done in Amhara region public hospitals, the proportion of reported incidents was 31.9% [15]. Another study conducted in GUSH found that the proportion of nurses who reported incidents was 25.4%. Similar studies in Dessie and Addis Ababa hospitals showed that the reported incidents were 12.4% and 30.4%, respectively [8,10,16,17]. There was a gap because earlier studies didn't involve the qualified clinical staff who are directly involved in reporting incidents, analyzing them, and providing feedback. Also, there were factors that needed to be considered but couldn't be concluded due to differences in facility setups.

As incidents or mistakes are not reported, it affects patient safety. Clinical incident disclosing allows the healthcare systems to adjusted themselves. Incidents reporting provides valuable insights for preventing mistakes by identifying ongoing issues in the system that could put patients at risk for medical problems. If done right in healthcare settings, it can help spot issues that could be avoided, but a lot of these cases either go unreported or simply go unnoticed
As per the Ethiopian guidelines for hospital reform, each facility should have an incident officer responsible for gathering and analyzing incidents [18]. According to the 2022 annual report of Debre Birhan Hospital, there were just three clinical incidents reported. It's normal for clinical incidents to happen, not just in our hospital but also in more developed countries. So, doing this study can help highlight the real situation regarding incident reporting at the hospital and pinpoint factors that might influence it, either positively or negatively.

METHODS

Study area, Design, and period

The study was conducted in Debre Birhan Comprehensive Specialized Hospital which is located 130km from the capital city of Ethiopia. The hospital has 670 staff of which 140 non-clinical and 530 clinical staff. An institution-based cross-sectional study was conducted from April 1 to 15 /2023. With the protocol number IRB 051/2022, Asrat Woldeyes Health Science Campus, Debre Berhan University, granted ethical clearance.

Population

All Debre Birhan Comprehensive Specialized Hospital staffs were the source population for the study. Randomly selected clinical staffs (Nurses, Midwives, Pharmacists, Medical doctors, laboratory technicians, infection prevention staff, patient safety officers, public health emergency managers, and Anaesthesia) working in Debre Birhan comprehensive specialized hospital were the study populations.

Inclusion Criteria

All clinical staff in Debre Birhan comprehensive specialized hospital who are engaged in clinical practice participated in the study.

Exclusion criteria

Clinical staff on long-term training and maternity and annual leave are excluded.

Sample size estimation

The sample size was determined using the double population proportion formula by using Epi info version 7. Power 80%, and confidence interval 95% were assumed, by taking the variable fear of prestige among colleagues which was a

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significantly associated factor with incident reporting in a study conducted at public hospitals of Addis Ababa [16]. The final sample size was 240 health professionals.

Sampling procedure

Systematic random sampling was used. Since there is a homogenous staff regarding incident exposure and reporting, since we have human resource roster and to avoid bias. The participants were selected systematically from the human resource registration from each category. The first participant was selected using the lottery method and the rest participants were included at every Kth value until the given quota was satisfied. The clinical staffs were nurses, midwives, medical doctors, pharmacists, laboratory professionals, and others. Major departments where clinical staffs incorporated were inpatient, outpatient, laboratory and pharmacy, obstetric, and emergency departments. Other healthcare professionals included quality officers, infection prevention officers, porters, public health emergency managers, incident officers or patient safety officers, and cleaners. The total sample size is 240. The Kth value is 2.

Data Collection Methods

Data were collected by using a structured self-administered English version of the Google Forms questionnaire adapted from studies done at Gondar University and Dessie and Addis Ababa hospitals [8,16,17]. The tool was composed of three parts, which were sociodemographic characteristics of clinical staff, institutional factors, and perceived barriers of clinical staff to incident reporting. The completeness of each recording format was checked before collecting the data. Questionnaires were reviewed and checked for completeness, accuracy, and consistency by the principal investigator every day during the data collection period. A reasonable amount of time to fill out the questionnaire was agreed upon between the research assistant and the respondent's Android phone and tablet. Two experienced BSc nurses (from another hospital) were collecting the data, and the researcher as well as the external supervisor supervised during the data collection period. The aim of the study was clearly explained to the study participants before they filled out the questionnaire. The data collectors were trained for half a day on how to facilitate the data collection process and prevent errors.

Table 1. Study variables, DBCSH, Debre Birhan, Ethiopia 2023, (n=240).

Sociodemographic	Institutional	Perceived barriers	Independent variable
Age Sex Educational level Marital status Profession Years of service	Training Orientation Availability of guideline/policy reporting formats	Supportive environment (culture of shame and blame) Loss of prestige among colleagues Fear of legal or financial penalties Fear of administrative sanction Lack of incident analysis and feedback Believe on incedent reporting	clinical incident reporting practice

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Operational Definition

1. Incident: Any deviation from usual medical care that either causes an injury to the patient or poses a risk of harm, including errors, preventable adverse events, and hazards
2. Incident reporting: is the process of recording worksite events, including near misses, injuries, and accidents. It can be measured by comparing the global and national research findings of clinical incidents that occurred
3. Sentinel event: an unexpected occurrence involving death or serious physical or psychological injury, or the risk thereof
4. Adverse event: an incident that results in preventable harm to a patient. a health care facility
5. Patient safety: a framework of organized activities that creates cultures, processes and procedures, behaviours, technologies, and environments in health care that consistently and sustainably
6. Near miss: an incident that did not reach the patient but narrowly avoided.

Data Quality Management

For quality assurance purpose, pre-test on 5% of the sample size was done one week before the actual data collection time at Debre Sina Primary Hospital. A total of 12(5%) participants were involved and of these 5(42%) were females. The Cronbach's Alpha value was 0.78 and most important amendments done on the tool. Variable, like whether incident encountered or not, categories and respondent options included. Educational levels subspecialities and must require also incorporated. The order of the questionnaires also rearranged and appropriate. Data collectors were trained and close field supervision by the researcher and a careful data validation at the point of entry and analysis done. The principal investigator checked completeness of each data collection tool, and its consistency of the entered data were crosschecked in a daily basis.

Data processing and Analysis

The Google form collected data were checked for completeness and exported to SPSS version 21 for cleaning and analysis. Bivariable logistic regressions used to evaluate the effects of each independent variable on the dependent variable. From the analysis variables with P-value≤ 0.05 used as statistically significance and the degree of association described using adjusted odds ratio (AOR) with 95% confidence interval (CI). All variable with P-value ≤ 0.25 in bivariable regression entered a multivariable regression. The sociodemographic variables and prevalence of incident report was presented in terms of frequency, mean and percentage using tables. Multicollinearity was checked among selected independent variable using variance inflation factor which is less than five. Additionally, the necessary assumption of logistic regression was also checked using Hosmer and Lemeshow goodness-of-fit-test (Pseudo-R^2 =0.000).

Ethical Considerations

Ethical clearance obtained from the Ethical Committee of Institute review board (IRB) of AWHSC, school of public health, department of public health, Debre Birhan University before conducting the study. Letter of cooperation was written to DBCSH for permission and support and permission letter obtained from the hospitals. Informed written consent was taken from each participant, and confidentiality was assured. Participation of the respondents was purely voluntary. Respondents were free to pull out of the study, for whatever reason(s) and their decisions to do so were highly respected.

RESULT

Sociodemographic characteristics of the respondents

A total of 240 study participants participated in the study with a 100% response rate. About 151(63%) of the respondents were male. The mean age of the participants was 34 (SD=6.04) years, and their mean work experience was 10 (SD=6.12) years. Of all the participants, 41 (17%) responded that clinical incidents are being reported, while 199 (83%) thought there was no clinical incident reporting procedure at the facility level. All the respondents know and believe in clinical risk and incidents. Only 39 (16%) respondents out of a total of 240 had a clinical incident reporting practice, with a 95% confidence interval of 12–21(Table 2).

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Table 2: Sociodemographic characteristics of the respondents, DBCSH, Debre Birhan, Ethiopia 2023, (n=240).

Variable categories		Frequency	Percent (%)
Sex	Female	89	37.1
	Male	151	62.9
Age	21-30	71	71 30
	31-40	136	36 57
	41-55	30	30 13
	56-70	3	3 1
Total work experience	<5	23	9.6
	5 to 10	16	6.7
	11 to 15	25	10.4
	>15	176	73.3
Work experience in this facility	5	111	46
	6 to 10	100	42
	11 to 15	17	7
	>15	12	5
Marital status	Divorced	7	2.9
	Married	165	68.8
	Single	68	28.3
Educational level	Diploma	22	9.2
	Degree level	176	73.3
	Master level	30	12.5
	Specialist	12	5.0
Profession	Anesthetist	9	3.8
	Biomedical	4	1.7
	EMT	5	2.1
	Environmental health	6	2.5
	Health officer	6	2.5
	Laboratory	27	11.3
	Medical Doctor	50	20.8
	Midwife	20	8.3
	Nurse	90	37.5
	Pharmacist	21	8.8
	Physiotherapy	2	0.8

Institutional factors

One hundred sixty-six respondents (66%) indicated that there was no clinical incident guideline in the facility, while 8 (34%) reported about the existence. Twenty-two respondents (9%) reported the existence of a continuous learning system in the study area. Six respondents noted that there was administrative support for facilitating incident reporting. Among all participants, 50 (21%) indicated that a reporting format is available in their service area. From the total of 240 respondents, only 18 (8%) reported receiving orientation on incident reporting. In terms of workload, 94 (39%) expressed concerns about the high demands in their clinical practice area. Additionally, only 17 (7%) indicated that monitoring and evaluation for clinical incidents were in place(Table 3).

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Table 3: Summary of institutional factors, DBCSH, Debre Birhan, Ethiopia 2023, (n=240).

Variables categories		Frequency	Percent (%)
Believe on incident reporting practice	Yes No	41 199	17 83
Incident guideline	Yes No	8 160	34 66
Reporting format	Yes No	50 190	21 79
Incident monitoring and evaluation	No Yes	223 17	93 7
Incident analysis	No Yes	235 5	98.6 2
Orientation	No Yes	222 18	92 8
Training	No Yes	232 8	97 3
Continuous learning	No Yes	218 22	91 9
Workload	No Yes	144 94	61 39
Administrative support	No Yes	234 6	97 3

Perceived barriers

A possible perceived barrier for low incident reporting practice may be due to the possibility that clinical practitioners may not encounter clinical incidents. However, in this study, 207 respondents (86%) acknowledged that the low reporting practice is not solely due to a lack of clinical incidents encountered. But in this study 207(86%) respondents did not deny that low reporting practice is not because they did not encounter clinical incidents. But in this study 207 (86%) respondents did not deny that low reporting practice is not since they did not encounter clinical incidents. Only 33 (14%) of them responded that they did not encounter clinical incidents in their life. The reporting practice of the clinical practitioner can be affected due to feelings of personal failure and loss of prestige with their staff whereas 206(86%), 175(73%) and 34(14%), 64(27%) disagree with this idea respectively. Uncertainties about the organizational plan and fear of legal punishment also affect the incident reporting practice; 192 (80%), 197 (82%), 48 (20%), and 43 (18%) of the participants were against this, respectively. Workload and low-priority stress also affect clinical incident reporting [182 (76%)]. Lack of feedback and departmental cooperation, 193 (80%) and 184 (77%), also affect incident reporting practice, respectively. Two hundred six (86%) of the participants replied that the type of incident can affect the reporting practice. (Table 4).

Table 4: Summary of perceived barriers, DBCSH, Debre Birhan, Ethiopia 2023, (n=240).

Variable categories		Frequency	Percent (%)
Do you know the incidents and risks	Yes No	235 5	98 2
No Incident encounter	No Yes	207 33	86 14

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Feelings of personal failure	No Yes	34 206	14 86
Uncertainties on organizational plan	Yes No	192 48	80 20
Workload and low priority Stress	Yes No	182 58	76 24
Need for support	Yes No	197 43	82 18
Fear of legal punishment	Yes No	197 43	82 18
Loss of prestige with collegues	Yes No	176 64	73 27
Lack of departmental cooperation	Yes No	184 56	77 23
Lack of feedback	Yes No	193 47	80 20
Type of incident affects reporting	Yes No	206 34	86 14

Factors Associated with incident reporting practice

The variables associated with the bivariable analysis included work experience, uncertainties regarding the organization's plan, orientation about clinical incidents, fear of legal repercussions, incident monitoring and evaluation, the type of incident impacting reporting practices, and a lack of interdepartmental cooperation. These variables were further analyzed using multiple logistic regression.

For health professionals, each additional year of work experience correlates with 1.15 times decrease in the practice of reporting clinical incidents (AOR = 1.15, with a 95% confidence interval of (1.06 to 1.26)). As health professionals are oriented about clinical incidents, their incident reporting practice is enhanced by 91% when compared to those without orientation (AOR = 0.09, with 95% CI (0.01, 0.56)). Incident monitoring and evaluation could also increase incident report practice by 91% with AOR=0.09 and 95% CI (0.01, 0.69). Uncertainties about the organizational plan also negatively affected clinical incident reporting practice by 13 times (AOR=12.9, with 95% CI (2.88, 57.99)) (Table 5).

Table 5: Multivariable analysis of factors associated with incident reporting practice,(n=240).

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Variable category		IRP		COR(95%CI)	AOR (95% C.I.)	Sig.
		No	Yes			
Incident monitoring and evaluation						
	Yes	7	10		1	
	No	194	29	**0.11 (0.04, 0.30)**	**0.09 (0.01, 0.69)**	0.021
Type of incident affecting reporting practice						
	No	20	14		1	
	Yes	181	25	5.06 (2.20, 11.28)	2.51 (0.63, 9.96)	0.190
Orientation on clinical incidents						
	Yes	7	11		1	
	No	194	28	**0.07 (0.02, 0.23)**	**0.09 (0.01, 0.56)**	0.011
Fear of legal punishment						
	No	15	28		1	
	Yes	186	11	**44.8 (17.6, 113.5)**	2.72 (0.76 , 9.75)	0.124
Uncertainties on organizational plan						
	No	19	29		**1**	
	Yes	182	10	**27.70 (11.75, 65.6)**	**12.90 (2.88, 57.99)**	0.001
Lack of interdepartmental cooperation						
	No	26	30		1	
	Yes	175	9	22.43(9.57, 52.5)	3.80 (0.95, 15.00)	0.057
Work experience				**1.16 (1.10, 1.23)**	**1.15 (1.06, 1.26)**	0.001

AOR: adjusted odd ration; COR: crude odd ration.

DISCUSSION

Clinical incident reporting, along with analysis and feedback, as well as the implementation of a continuous learning system within the facility, contributes to the prevention of error recurrence and ultimately enhances patient safety[19]. The incident reporting practice in the study area was 16%, which aligns with a study conducted at Dessie Hospital (12.4%). Additionally, other studies in Australia and Ethiopia indicate that incident reporting and analysis behaviors among healthcare professionals remain low [3,8,10,9]. Although incident reporting and analysis began over a decade ago, a study conducted in Indonesia revealed that the patient safety incident reporting system has not fully complied with the WHO guidelines [20]. The reporting rate is currently low compared to prospective studies, indicating an issue of underreporting [21]. A study done in Rwanda suggested that only 35% of nurses have incident reporting practice [22]. Health care providers reported 30.4% of events in Addis Ababa hospitals, 31.9% in Northwest Amhara hospitals, and 25.4% in Gondar Hospital, according to a study [8,10,16,17].

An Australian study comparing two hospitals discovered variations in the risks they faced and the organizational structures they established. These variations may have resulted from the two institutions' differing perspectives on reporting incidents [10,16,23,24]. In this case, MOH has set up a procedure or system whereby an incident officer is assigned to each hospital to receive and investigate all incident reports, evaluate them, and provide input to the clinical area. [18].

Generally, healthcare professionals tend to become more sensitive to risks, accidents, and dangers, leading to improve incident tracking and reporting practices. However, in this study, in contrary to this general trend, the practice of incident reporting practice decreases as work experience increases. This may be due to work experience leading to desensitization regarding incidents and a subsequent disregard for established policies and procedures. These individuals become more

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knowledgeable about patient safety and infection prevention and control, focusing on specific incidents rather than reporting all occurrences.

Orientation about clinical incidents for health care professionals is believed to increase incident reporting practice. Similar studies done in Europe, Indonesia, and Africa assured us that, as healthcare professionals are oriented about clinical incidents, there would be an increment in incident reporting practice [19,25-29]. Availability of clinical incident guidelines and reporting formats also plays a significant role in the clinical incident reporting practice of health care professionals. The clinical incident reporting practice of trained staff was higher than those who had no training. Research also showed that teaching professionals how to report incidents and fostering strong, positive personal sentiments to enhance safety continue to be the main elements that facilitate clinical incident reporting. The reports also don't follow accepted guidelines. Healthcare workers who had received medical incident reporting training were more cooperative than those who had not[28, 30]. Higher officials should be aware of the reporting system at all levels, and CIRP is impacted by supportive environments and administrative assistance in all areas [10,16,23].

The study confirms that low incident reporting practice is also strongly linked to clinical incident reporting barriers such as ambiguity about the organizational plan. This is typically caused by a lack of clarity in the organizational strategy on the destination of reported incidents and the purpose of reporting. This finding is supported by the study done in Addis Ababa, Dessie, and other Amhara hospitals. It identified barriers like hospital management support, non-punitive response to errors, or lack of feedback. Other identified barriers in the above areas are communication openness, supervisors' actions, safety promotion, feedback on reported errors, fear of administrative and legal sanctions or penalties, non-supportive environment, and feeling that reporting to colleagues was easier [10,16,23]. A study conducted in Indonesia that highlighted confusion because of the system's lack of feedback and confidentiality mechanisms supported this study. The clinical incident reporting procedure was also impacted by the lack of a policy that protects the healthcare provider from any punitive actions taken in response to reported clinical occurrences. On the other hand, a study done in Uganda revealed that reporting behaviour was unaffected by fear of the consequences. Studies showed that incident monitoring was efficacious as a quality tool in identifying incident contributing factors. Incident monitoring allowed for greater systems evaluation. Further evaluation of this quality tool within different disaster settings is required. It was concluded that incident monitoring may be a suitable technique for improving patient safety in intensive care [28,30].

STRENGTH OF THE STUDY

The study was done by the clinicians who had direct day-to-day life experience with the clinical incidents. It was done in one health facility that could avoid variation of clinical incident occurrence due to variation in structure, process and outcome as variables due to these differences were controlled.

LIMITATIONS

This study finding is lower than in most study findings in Ethiopia except Dessie Hospital, this might be due to the difference in infrastructure setup, variables selection, and health facility clinical and administrative process differences.

CONCLUSION AND RECOMMENDATIONS

Even though patient safety incident reporting mainly helps as the foundation for learning and improvement, this study reveals that clinical incident reporting practice is low in the study area. Finally, this study signified that monitoring and evaluation, work experience, and uncertainties in organizational plans about the consequence of reported clinical incidents are important predictors for regular incident reporting. The health facility better establishes a clear organizational clinical incident reporting plan and creates awareness about the purpose of incident collection and analysis. Incidents will be collected centrally, analyzed, and entered a feedback loop to create a continuous learning

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system in the facility. It is advisable to initiate a sequential observational confirmatory qualitative study in the area to address the safety culture of health care professionals.

ABBREVIATIONS

ARHB: Amhara Regional Health Bureau, AWHSC: Asrat Woldeyes Health Science Campus, DBCSH: Debre Birhan Comprehensive Specialized Hospital, CIRS: Critical Incident Reporting Systems, CIRP: Clinical incident reporting practice, DCSH: Dessie Comprehensive Specialized Hospital, EMT: Emergency Medical Technician, FMOH: Federal Ministry of Health, PSI: Patient safety incident, PSIR: Patient safety incident reporting, GCSH: Gondar University Comprehensive Specialized Hospital, IPC: Infection Prevention and Control, PHEM: Public Health Emergency Management.

ACKNOWLEDGEMENTS

Our heart felt gratitude goes to all health professionals in Debre Berhan Comprehensive Specialised Hospital, the hospital administrators, and data collectors who participated in the study.

AUTHOR CONTRIBUTIONS (CRediT)

All authors participated in proposal development, data collection, data entry and analysis, results write-up and interpretation, and manuscript preparation. All authors read and approved the final manuscript.

CONFLICT OF INTEREST

The authors declare no conflicts of interest.

FUNDING STATEMENT

No specific grant was given to this research by any funding organization in the public, private, or nonprofit sectors.

AVAILABILITY OF DATA AND MATERIALS

The datasets used and/or analyzed during the current study are available from the corresponding author upon reasonable request.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

With the protocol number IRB 051/2022, Asrat Woldeyes Health Science Campus, Debre Berhan University, granted ethical clearance. A written informed consent form outlining the study's goals and participants' rights was given to every study participant. The questionnaires were securely handled after completion, and all access to the results was strictly controlled. Participants were all chosen at random without any bias.

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CITE THIS ARTICLE

- **APA (7th edition):** Habiteyohannis, N. T., Aemiro, M. T., Tesfahun, E., & Workie, S. G. (2025, December 22). *Clinical incidents reporting practice and associated factors among health professionals in Debre Birhan Comprehensive Specialized Hospital, North Shoa, Amhara, Ethiopia. The Operating Room Global Journal (TORGJ), 1*(2). https://doi.org/10.64573/torgj2511002
- **Harvard**: Habiteyohannis, N.T., Aemiro, M.T., Tesfahun, E. and Workie, S.G., 2025. Clinical incidents reporting practice and associated factors among health professionals in Debre Birhan Comprehensive Specialized Hospital, North Shoa, Amhara, Ethiopia. *The Operating Room Global Journal (TORGJ)*, **1**(2). Published 22 December. Available at: https://doi.org/10.64573/torgj2511002
- **Vancouver**: Habiteyohannis NT, Aemiro MT, Tesfahun E, Workie SG. Clinical incidents reporting practice and associated factors among health professionals in Debre Birhan Comprehensive Specialized Hospital, North Shoa, Amhara, Ethiopia. *The Operating Room Global Journal (TORGJ).* 2025 Dec 22;1(2). https://doi.org/10.64573/torgj2511002
- **MLA (9th edition)**: Habiteyohannis, Nigussie Tefera, et al. "Clinical Incidents Reporting Practice and Associated Factors Among Health Professionals in Debre Birhan Comprehensive Specialized Hospital, North Shoa, Amhara, Ethiopia." *The Operating Room Global Journal (TORGJ),* vol. 1, no. 2, 22 Dec. 2025, https://doi.org/10.64573/torgj2511002
- **Chicago (Author–Date)**: Habiteyohannis, Nigussie Tefera, Muluken Tessema Aemiro, Esubalew Tesfahun, and Sewnet Getaye Workie. 2025. "Clinical Incidents Reporting Practice and Associated Factors Among Health Professionals in Debre Birhan Comprehensive Specialized Hospital, North Shoa, Amhara, Ethiopia." *The Operating Room Global Journal (TORGJ)* 1 (2), December 22. https://doi.org/10.64573/torgj2511002

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