

Factors Influencing Incident Reporting among Medical and Nursing Officers at Base Hospital Muthur, Sri Lanka

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ABSTRACT

Background: Patient safety incident reporting systems are intended to transform adverse events and near misses into organizational learning. Their effectiveness, however, depends on whether healthcare professionals perceive reporting as accessible, understandable, useful, supported and safe.

Objective: To assess factors influencing incident reporting among Medical Officers and Nursing Officers at Base Hospital Muthur and to examine professional differences and factors associated with intention to report.

Methods: A cross-sectional analytical study was conducted among 86 Medical Officers and Nursing Officers at Base Hospital Muthur. Data were collected using a structured self-administered questionnaire with six-point Likert-scale responses. Descriptive statistics, independent-samples comparisons, Pearson correlation analysis and multiple linear regression were used. Negatively worded items were reverse scored where required. Statistical significance was set at $p < 0.05$.

Results: Of 86 participants, socio-demographic data were available for 84: 37 (44.0%) were Medical Officers and 47 (56.0%) were Nursing Officers; 27 (32.1%) were male and 57 (67.9%) were female. Mean age was 33.9 years (SD 6.0). Mean incident-reporting intention score was 4.02 (SD 1.31) on a six-point scale. The reporting-process score was 4.10 (SD 0.70), while feedback was lower at 2.88 (SD 0.87). Medical Officers had higher feedback scores than Nursing Officers (3.09 vs 2.70; $p = 0.041$). No statistically significant professional difference was observed in reporting intention ($p = 0.125$). Reporting process showed the strongest positive association with reporting intention ($r = 0.421$, $p < 0.001$). In multivariable analysis, the overall model explained 26.2% of variance in reporting intention ($R^2 = 0.262$; $p < 0.001$), and reporting process remained independently associated with intention ($B = 0.635$, $p = 0.003$).

Conclusion: Incident reporting at Base Hospital Muthur appears to be influenced particularly by the usability and perceived effectiveness of the reporting process, while feedback remains a comparatively weak component. Strengthening simple and accessible reporting pathways, timely feedback, staff learning, supportive leadership and a non-punitive safety culture may improve incident-reporting practices and organizational learning.

Keywords: patient safety; incident reporting; reporting culture; feedback; healthcare professionals; medical officers; nursing officers; Sri Lanka

INTRODUCTION

Patient safety incidents provide important opportunities for healthcare organizations to identify system weaknesses and prevent recurrence. Incident reporting and learning systems are therefore not simply mechanisms for counting events; their value lies in generating structured learning and translating that learning into safer care. The World Health Organization (WHO) emphasizes that incident reports should be interpreted cautiously because voluntary reporting data do not represent the true incidence of harm, but they can provide valuable insight into risks, contributory factors and opportunities for improvement (WHO, 2020).

The effectiveness of a reporting system depends on the behaviour of frontline healthcare workers and on the environment in which reporting occurs. International evidence consistently identifies fear of blame or punishment, complex reporting mechanisms, inadequate organizational support, lack of training, insufficient resources and weak feedback as barriers. Conversely, user-friendly systems, continuous training, visible leadership, confidentiality, a just culture and tangible improvement following reports facilitate reporting and organizational learning (Mahmoud et al., 2023).

More recent evidence from healthcare systems with resource constraints similarly demonstrates that reporting behaviour is shaped by safety culture, knowledge and skills, the accessibility and attributes of reporting systems, and the quality of managerial support. A 2025 integrative review of African healthcare organizations identified fear of reprisal, attitudes toward reporting, knowledge, reporting-system characteristics and managerial relationships as major themes influencing incident reporting (Mauti et al., 2025). These factors are highly relevant to public hospitals where paper-based processes, workload and hierarchical professional relationships may affect whether incidents are formally reported.

Sri Lanka has incorporated patient safety and incident reporting into quality-management structures in hospitals. Earlier Sri Lankan work has highlighted the importance of reporting process, leadership, knowledge, training, feedback and blame culture in shaping reporting behaviour. However, local evidence remains limited, and professional comparisons between Medical Officers and Nursing Officers are particularly useful because these groups have different clinical roles, responsibilities and reporting experiences.

Base Hospital Muthur is a secondary-care institution in Trincomalee District. Understanding the factors associated with reporting among its frontline medical and nursing staff can provide institution-level evidence for strengthening patient-safety learning.

Objectives

General objective: To assess the factors influencing incident reporting among Medical Officers and Nursing Officers at Base Hospital Muthur.

- To assess healthcare professionals' perceptions of the incident-reporting process at Base Hospital Muthur.
- To assess reporting-related feedback, organizational culture, training, leadership/resources and awareness/attitudes among Medical Officers and Nursing Officers.
- To determine the association between reporting intention and selected reporting-related factors.
- To compare incident-reporting intention and influencing factors between Medical Officers and Nursing Officers.
- To identify factors independently associated with incident-reporting intention using multivariable analysis.

METHODOLOGY

Study design and setting

A descriptive cross-sectional study with an analytical component was conducted at Base Hospital Muthur, Trincomalee District, Eastern Province, Sri Lanka. Base Hospital Muthur is a Type A secondary-care institution serving an estimated population of approximately 150,000 and functioning as an apex hospital for six divisional hospitals.

Study population

The study population consisted of Medical Officers and Nursing Officers working at Base Hospital Muthur during the study period. A total of 86 participants were included in the study.

Study instrument

Data on incident reporting were obtained using a structured, anonymous, self-administered questionnaire. No names or other direct personal identifiers were collected. The questionnaire assessed the principal factors related to healthcare incident reporting, including the reporting process, feedback, awareness and attitudes, organizational culture and management, training, leadership, supervision, resources and communication. Responses were recorded using six-point Likert scales.

Responses to the attitudinal and reporting-related statements were measured using a six-point Likert scale, allowing participants to indicate the degree to which each statement reflected their experience or opinion.

Study variables

The main outcome variable was intention to report incidents. This assessed participants' willingness to report incidents, including incidents that did not result in patient harm and near-miss or serious incidents.

Scoring of responses

Responses to reporting-related statements were scored on a six-point Likert scale. Negatively worded statements were reverse scored before analysis so that the direction of scoring was consistent. Items addressing related concepts were grouped into reporting intention, reporting process, feedback, awareness and attitudes, organizational culture and management, training, and leadership/resources. Mean scores were calculated for the relevant constructs, with higher scores representing a more favourable response in the direction of the construct.

Data analysis

Data were analysed using descriptive and inferential statistical methods. Categorical variables were summarized using frequencies and percentages, while continuous variables and construct scores were summarized using means and standard deviations. Medical Officer and Nursing Officer scores were compared using independent-samples tests appropriate to the distribution and variance of the data. Pearson correlation coefficients were used to assess relationships between reporting intention and reporting-related factors. Multiple linear regression analysis was used to identify factors independently associated with reporting intention. A two-sided p-value of less than 0.05 was considered statistically significant.

RESULTS

Participant characteristics

Among the 84 participants with complete socio-demographic information, 37 (44.0%) were Medical Officers and 47 (56.0%) were Nursing Officers. Females comprised 67.9% (n=57) and males 32.1% (n=27). The mean age was 33.9 years (SD 6.0; range 26–53 years), and mean service in the health department was 6.6 years (SD 6.2). Participants represented all major clinical areas of the hospital.

Characteristic	n (%) or Mean (SD)
Medical Officers	37 (44.0%)
Nursing Officers	47 (56.0%)
Male	27 (32.1%)
Female	57 (67.9%)
Age, years	33.9 (6.0)

Service in health department, years	6.6 (6.2)
OPD	6 (7.1%)
Surgical ward	11 (13.1%)
Medical ward	18 (21.4%)
Paediatric ward	12 (14.3%)
Gynaecology & Obstetrics	12 (14.3%)
Theatre	12 (14.3%)
Other units	13 (15.5%)

Note: Socio-demographic denominator=84 because two records lacked these variables.

Incident-reporting scores

The mean reporting-intention score was 4.02 (SD 1.31), indicating moderately favourable stated intention to report. Among the grouped scores, reporting process had the highest mean (4.10, SD 0.70). Feedback was notably lower (2.88, SD 0.87), suggesting that closing the reporting loop may be an important weakness. Organizational culture scored 3.83 (SD 0.60), awareness/attitudes 3.80 (SD 0.49), training 3.96 (SD 0.42), and leadership/resources 3.55 (SD 0.41).

Reporting construct	Mean	SD
Reporting intention	4.02	1.31
Reporting process	4.10	0.70
Feedback	2.88	0.87
Awareness/attitudes	3.80	0.49
Organizational culture	3.83	0.60
Training	3.96	0.42
Leadership/resources	3.55	0.41

Comparison between Medical Officers and Nursing Officers

Medical Officers had a higher mean reporting-intention score than Nursing Officers (4.26 vs 3.83), although this difference was not statistically significant ($p=0.125$). Medical Officers also had higher reporting-process scores (4.25 vs 3.99; $p=0.094$). Feedback differed significantly between the two professional groups: Medical Officers had a mean feedback score of 3.09 compared with 2.70 among Nursing Officers ($p=0.041$). No statistically significant professional differences were observed for awareness/attitudes, organizational culture, training or leadership/resources.

Construct	Medical Officers Mean (SD)	Nursing Officers Mean (SD)	p-value
Reporting intention	4.26 (0.98)	3.83 (1.53)	0.125

Reporting process	4.25 (0.71)	3.99 (0.69)	0.094
Feedback	3.09 (0.86)	2.70 (0.85)	0.041
Awareness/attitudes	3.79 (0.55)	3.82 (0.45)	0.815
Organizational culture	3.73 (0.60)	3.91 (0.61)	0.175
Training	4.05 (0.39)	3.89 (0.44)	0.088
Leadership/resources	3.55 (0.30)	3.56 (0.48)	0.901

The professional difference in feedback should be interpreted cautiously because multiple comparisons were undertaken.

Factors associated with reporting intention

Reporting process demonstrated a moderate positive correlation with reporting intention ($r=0.421$, $p<0.001$). The correlations between reporting intention and feedback ($r=0.122$), awareness/attitudes ($r=0.198$), organizational culture ($r=-0.147$), training ($r=0.194$), and leadership/resources ($r=-0.183$) were not statistically significant at the 0.05 level.

Factor	Pearson r	p-value
Reporting process	0.421	<0.001
Feedback	0.122	0.262
Awareness/attitudes	0.198	0.068
Organizational culture	-0.147	0.176
Training	0.194	0.074
Leadership/resources	-0.183	0.091

multivariable analysis

The regression model including six reporting-related factors was statistically significant ($F=4.68$, $p<0.001$) and explained 26.2% of the variance in reporting intention ($R^2=0.262$; adjusted $R^2=0.206$). Reporting process remained independently associated with reporting intention ($B=0.635$, 95% CI 0.227–1.043; $p=0.003$). None of the other grouped factors reached statistical significance.

Predictor	B	95% CI	p-value
Reporting process	0.635	0.227 to 1.043	0.003
Feedback	0.216	-0.141 to 0.572	0.233
Awareness/attitudes	0.376	-0.153 to 0.904	0.161
Organizational culture	-0.464	-0.961 to 0.034	0.067
Training	0.307	-0.331 to 0.945	0.341
Leadership/resources	-0.415	-1.124 to 0.293	0.247

DISCUSSION

This institutional study found that the reporting process was the factor most consistently associated with healthcare professionals' stated intention to report incidents. The finding is practically important: even when staff recognize the value of reporting, a system that is difficult to access, confusing, time-consuming or perceived as ineffective can reduce engagement. WHO guidance similarly emphasizes that incident-reporting systems must be designed for learning and that the usefulness of collected data depends on the way the system functions and how information is translated into improvement (WHO, 2020).

The association between process and reporting intention is also consistent with broader international evidence. Mahmoud et al. (2023), in a systematic review and meta-synthesis of 22 qualitative studies, identified complex systems, defective policies, inadequate resources and lack of experience as barriers, while user-friendly reporting and well-structured learning processes facilitated reporting. A 2025 integrative review of 51 studies from African healthcare organizations likewise identified the availability and attributes of reporting systems and processes as a major determinant of reporting behaviour (Mauti et al., 2025).

Feedback emerged as the lowest-scoring area in the present analysis. This deserves particular attention because reporting without visible response can weaken staff trust in the system. International reviews describe lack of feedback as a recurring barrier and emphasize that individual or group feedback about actions taken can strengthen confidence and motivate future reporting. The WHO approach to reporting and learning also places emphasis on converting reports into structured learning rather than treating submission of a form as the end point.

A statistically significant professional difference was observed in feedback, with Medical Officers reporting a more favourable feedback experience than Nursing Officers. Possible service-level explanations include differences in access to meetings, communication channels, supervisory structures, or the way feedback is distributed within professional hierarchies. These explanations were not directly measured in the present quantitative survey and should therefore be regarded as hypotheses rather than demonstrated causes. The finding nevertheless indicates a practical need to examine whether feedback reaches all professional groups consistently, promptly and in a form that identifies what was learned and what corrective action followed. Qualitative interviews or focus-group discussions would be useful in future research to explore the reasons for this professional difference in greater depth.

No statistically significant difference was identified between Medical Officers and Nursing Officers in reporting intention. This suggests that the broad willingness to report may not be strongly profession-specific within this institution. The absence of a significant difference is useful because improvement strategies can focus on shared system barriers while still addressing cadre-specific experiences such as feedback. Recent reviews similarly indicate that organizational conditions—including non-punitive culture, leadership support, clear definitions, education, technology and constructive feedback—shape reporting across professional groups.

The moderate reporting-intention score alongside weaker feedback illustrates an important distinction between willingness and an effective learning system. A healthcare professional may agree that incidents should be reported but still fail to report consistently when forms are inaccessible, the process is burdensome, workload is high, confidentiality is uncertain, or previous reports have not produced visible change. Reporting rates therefore should not be interpreted simply as a measure of staff commitment; they are also indicators of system design and safety culture.

Earlier Sri Lankan work on incident reporting has also considered process, knowledge, training, feedback, leadership and blame culture as relevant determinants. The present study does not attempt to replicate that work; rather, it adds a small institution-specific analysis involving both Medical Officers and Nursing Officers. The finding that reporting process was the strongest correlate of intention provides a locally actionable priority: simplify the pathway, ensure forms or digital access are readily available, clarify what should be reported, reduce unnecessary steps and demonstrate how reports lead to change.

Training remains important even though its grouped score was not independently associated with reporting intention. Lack of statistical significance should not be interpreted as evidence that training is unnecessary. Systematic reviews identify continuous training as a facilitator of reporting, particularly when education covers what constitutes an incident, how and where to report, confidentiality, near-miss reporting, and how incident analysis contributes to prevention. Training is likely to be most effective when combined with supportive leadership and an easy reporting mechanism rather than delivered as an isolated educational activity.

Leadership and organizational culture should similarly be considered system enablers rather than stand-alone predictors. A just and psychologically safe reporting environment requires leaders to respond constructively, avoid reflexive blame, protect confidentiality, and visibly support staff who raise safety concerns. The goal is not to remove accountability, but to distinguish human error and system vulnerability from reckless behaviour and to ensure that incident review is directed toward learning and risk reduction.

For Base Hospital Muthur, the practical implication is to strengthen the complete reporting cycle: recognition of an incident, rapid access to a simple reporting mechanism, review by the appropriate quality/safety structure, timely feedback to the reporter and unit, implementation of corrective actions, and communication of lessons learned. A closed-loop approach could include acknowledgement that a report was received, communication of the review outcome and action taken or planned, and periodic unit-level summaries of recurring lessons. Feedback should be delivered through channels accessible to both Medical Officers and Nursing Officers rather than relying only on meetings attended by selected staff. Closing this loop is likely to be more valuable than merely increasing the number of forms submitted.

RECOMMENDATIONS

- Simplify and standardize the incident-reporting pathway, with clear definitions of reportable incidents and near misses and as few completion steps as practicable.
- Ensure reporting forms are readily accessible in every clinical unit and, where feasible, introduce a simple user-friendly digital reporting option integrated with routine workflow.
- Establish a closed-loop feedback mechanism: acknowledge receipt of reports, communicate review findings and corrective actions to the reporter or unit, and provide periodic summaries of lessons learned to both Medical Officers and Nursing Officers.
- Strengthen a non-punitive, learning-oriented safety culture while maintaining appropriate professional accountability.
- Provide periodic multidisciplinary training for Medical Officers and Nursing Officers using realistic incident scenarios and practical reporting exercises.
- Use the Quality Management Unit to monitor reporting trends, identify recurring risks, document corrective actions, and communicate lessons learned through ward meetings, clinical meetings and other channels that reach all cadres.
- Conduct larger multicentre studies across different levels of healthcare institutions in Sri Lanka with adequate sample sizes. Future studies should obtain prospective formal ethics review where required and may incorporate qualitative interviews or focus groups to explore professional differences in reporting experience.

Study Limitations

This study has several limitations. It was conducted in a single secondary-care hospital with a relatively small sample (N=86), which limits statistical power for detecting smaller associations and restricts generalizability to other hospitals, levels of care and regions of Sri Lanka. The study relied on self-reported responses and may therefore have been affected by recall bias and social desirability bias, particularly for questions concerning reporting practices and organizational factors. Stated intention and perceptions may not correspond directly to

actual reporting behaviour. The cross-sectional design does not permit causal inference. In addition, this was a quantitative survey and did not include interviews or focus groups; consequently, the reasons for the lower feedback scores among Nursing Officers could not be explored in depth. Formal review by a constituted research ethics committee was not obtained before data collection; this is acknowledged as an ethical and methodological limitation. Future expanded or multicentre research should obtain prospective formal ethics review where required.

CONCLUSION

Among Medical Officers and Nursing Officers at Base Hospital Muthur, the incident-reporting process emerged as the factor most strongly associated with intention to report patient-safety incidents. Feedback was identified as a comparatively weaker aspect of the reporting system, with Nursing Officers reporting a less favourable feedback experience than Medical Officers. These findings highlight the importance of maintaining a simple, accessible and clearly understood reporting process, together with timely and constructive feedback to healthcare professionals.

Strengthening organizational learning, multidisciplinary training, supportive leadership and a non-punitive safety culture may further encourage healthcare professionals to report incidents and facilitate learning from them. Improving these components of the reporting system could contribute to more effective identification of patient-safety risks and support continuous improvement in the quality and safety of care at Base Hospital Muthur.

Ethical Considerations

Administrative permission to conduct the questionnaire survey was obtained from the relevant hospital authority before data collection. Participation was voluntary, and participants were informed of the purpose of the study. Written informed consent was obtained from participants before participation. The questionnaire was anonymous and self-administered; names and other direct personal identifiers were not collected. Data were analysed and findings are reported only in aggregate form. The study involved healthcare staff only and did not involve patient-level data, a clinical intervention, or any alteration of patient care. Formal review by a constituted research ethics committee was not obtained before data collection. This is reported transparently as an ethical and methodological limitation, and prospective ethics review will be sought for future expanded or multicentre research.

Informed Consent

Written informed consent was obtained from participants before participation in the study. Participation was voluntary, and participants were informed of the purpose of the questionnaire. The questionnaire did not collect names or other direct personal identifiers, and confidentiality of the information provided was maintained.

Conflict Of Interest

The author declares no conflict of interest.

Funding

No external funding was received for this analysis.

Data Availability

The de-identified data supporting the findings of this study are not publicly posted because they originate from a staff questionnaire. Aggregate data may be made available for legitimate academic review subject to applicable ethical and institutional requirements.

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