



Knowledge, Attitude, and Practice of Fire Safety Systems and Preparedness among Healthcare Workers: A Cross-Sectional Study at a Tertiary Care Teaching Hospital in Navi Mumbai.

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Abstract

Background: Fire safety is a vital aspect of occupational health, especially in healthcare settings where the presence of vulnerable patients, complex equipment, and hazardous materials increases the risk of fire-related emergencies. Ensuring the safety of patients, staff, and infrastructure requires not only robust systems but also well-informed and adequately prepared healthcare personnel.

Objective: The primary aim of this study was to assess the level of awareness and preparedness regarding fire safety among healthcare professionals, focusing on three key domains: knowledge, attitude, and practice (KAP).

Methods: A cross-sectional, questionnaire-based study was conducted among healthcare staff in a tertiary care setting. The survey tool included items assessing participants' theoretical knowledge (knowledge domain), perceptions and beliefs (attitude domain), and self-reported actions in simulated or real scenarios (practice domain). The collected data were analyzed to determine the proportion of correct versus incorrect responses in each domain.

Results: Out of the total participants, the attitude domain demonstrated the highest accuracy, with 77.04% of responses reflecting a positive and proactive approach to fire safety. The practice domain showed moderate accuracy (56.9%), indicating that while some practical preparedness exists, there is room for significant improvement. The knowledge domain revealed the greatest deficiency, with correct responses accounting for only 51.3%, underscoring substantial gaps in theoretical understanding of fire safety protocols such as S.A.V.E. (Shout, Activate alarm, Vacate, Extinguish) and R.A.C.E. (Rescue, Alarm, Confine, Extinguish/Evacuate).

Conclusion: Although healthcare professionals display commendable attitudes towards fire safety, there is a critical need to enhance both theoretical knowledge and practical preparedness. Regular, hands-on training programs, refresher courses, and mock drills should be implemented to foster a comprehensive fire safety culture within healthcare institutions.

Recommendations: Implement periodic fire safety training, practical simulations, and audits to strengthen knowledge, attitude, and emergency response among healthcare staff.

Keywords: Fire safety, Healthcare workers, Preparedness, Shout-Activate-Vacate-Extinguish (S.A.V.E), Rescue-Alarm-Confine-Evacuate (R.A.C.E), Knowledge-Attitude-Practice

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Introduction

Fire safety is an essential pillar of occupational health and safety, particularly within high-risk environments such as healthcare institutions and educational establishments. Although fire has served humanity as a vital utility, its mismanagement or accidental ignition can result in catastrophic damage, causing physical, emotional, and economic trauma to affected individuals and communities alike. The need to cultivate a sound understanding of fire prevention, emergency response, and system preparedness has therefore become a public health priority.

Hospital environments are particularly susceptible to fire hazards due to the presence of flammable materials, high electrical loads, and limited patient mobility. Data from the National Crime Records Bureau (NCRB) reported over 9,000 fire-related deaths in India in 2020, with 15 known hospital fire incidents, including the Bharuch fire in Gujarat and Virar fire in Mumbai, resulting in significant casualties [1]. This necessitates a well-coordinated fire safety system that includes early detection, staff training, periodic drills, and maintenance of emergency equipment [1],[2].

Similarly, educational institutions—especially hostels and dormitories—pose a high risk due to dense occupancy, outdated infrastructure, and limited emergency awareness among students. A Malaysian study showed that.

Ultimately, enhancing the KAP of fire safety among students and healthcare professionals is not merely a regulatory requirement but a moral and professional imperative. Systematic assessments, responsive training modules, and an inclusive safety culture can ensure improved outcomes in emergencies. This study aimed to assess the Knowledge, Attitude, and Practice amongst the health care workers towards Fire Safety Systems and their Preparedness.

Methodology

Study Design and Setting

This cross-sectional, questionnaire-based study was conducted at Dr. D. Y. Patil Medical College and Hospital, Navi Mumbai, a tertiary care teaching hospital catering to a large urban and suburban population of Maharashtra. The hospital is a 1,500-bed facility equipped with advanced critical care units, medical colleges, and training facilities for healthcare professionals. The study was conducted over six months, from January 2024 to June 2024.

Study Population

The study included a diverse group of participants comprising hospital staff, medical students, and paramedical students working or studying at the institution.

Inclusion Criteria

All healthcare workers (medical, nursing, and paramedical staff) and students who were present during the study period and consented to participate.

Exclusion Criteria

Administrative staff, non-clinical personnel, and any incomplete responses were excluded from the analysis.

Study Size

A total of 175 questionnaires were distributed, and 122 valid responses were obtained. The study size was based on a convenience sampling method to ensure a representative sample from all healthcare categories. The final sample size was determined by including all completed questionnaires during the study period and excluding 53 incomplete or invalid responses.

Study Tool

A pre-tested, structured questionnaire was developed to evaluate three domains:

Knowledge – assessing theoretical understanding of fire safety principles.

Attitude – evaluating perceptions and beliefs regarding the importance of fire safety.

Practice – examining self-reported preparedness and actions in fire-related situations.

Data Collection

Data collection was carried out using both online and offline methods:

An electronic version of the questionnaire was created using Google Forms.

The survey link was shared via social media platforms, primarily through WhatsApp groups.

Additionally, participants were approached through personal interviews, and printed hard copies of the questionnaire were distributed for self-administration.

Only the responses from participants who submitted fully completed Google Forms or returned the hard copies were included for analysis. An overview of participant inclusion is presented in Figure 1.



TABLE 1: Structured Data on Questionnaire Administration

Mode of Administration	Number of Questionnaires Distributed	Number of Valid Responses Received
Online Distribution (via Google Form)	80	40
Direct Interview Method	55	50
Self-Administered Paper Form	40	32
Total	175	122
Invalid/Excluded Responses: 53 responses were excluded from the final analysis due to incompleteness or missing data.		

Bias

To minimize selection bias, questionnaires were distributed across different shifts and departments to ensure diverse representation. Response bias was reduced by maintaining participant anonymity, and no personal identifiers were collected. The questionnaire was pre-tested and validated by subject experts to minimize information bias.

Data Analysis

The collected responses were categorized into knowledge-based, attitude-based, and practice-based domains. The proportion of correct and incorrect answers in each domain was analyzed to identify existing gaps and strengths in fire safety preparedness among the healthcare workforce.

Ethical Considerations

Before the commencement of the study, ethical approval was obtained from the Institutional Ethics Committee for Biomedical and Health Research, D. Y. Patil Deemed to be University School of Medicine, Navi Mumbai (IEC Ref. No: DYP/IECBH/2024/518). Participation was entirely voluntary, and the confidentiality of all participants was strictly maintained throughout the study.

Results

Participant Flow

Out of 175 healthcare personnel approached during the study period, 153 consented and submitted responses. After applying the inclusion criteria and excluding incomplete submissions (n = 31), a total of 122 participants were included for final analysis.

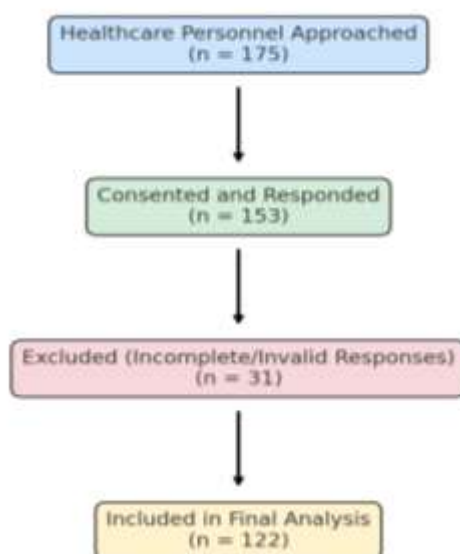


Figure 1. Participant Flow Diagram

Descriptive Data

The demographic profile of the 122 participants is as follows:

Variable	Category	n (%)
Age group	<25 years	58 (47.5%)
	25–35 years	44 (36.1%)
	>35 years	20 (16.4%)
Gender	Male	52 (42.6%)
	Female	70 (57.4%)
Role	Medical Students	38 (31.1%)
	Nursing Staff	38 (31.1%)
	Faculty & Residents	29 (23.8%)
	Paramedical Staff	17 (13.9%)

Table 1: Demographic Characteristics of the Study Participants

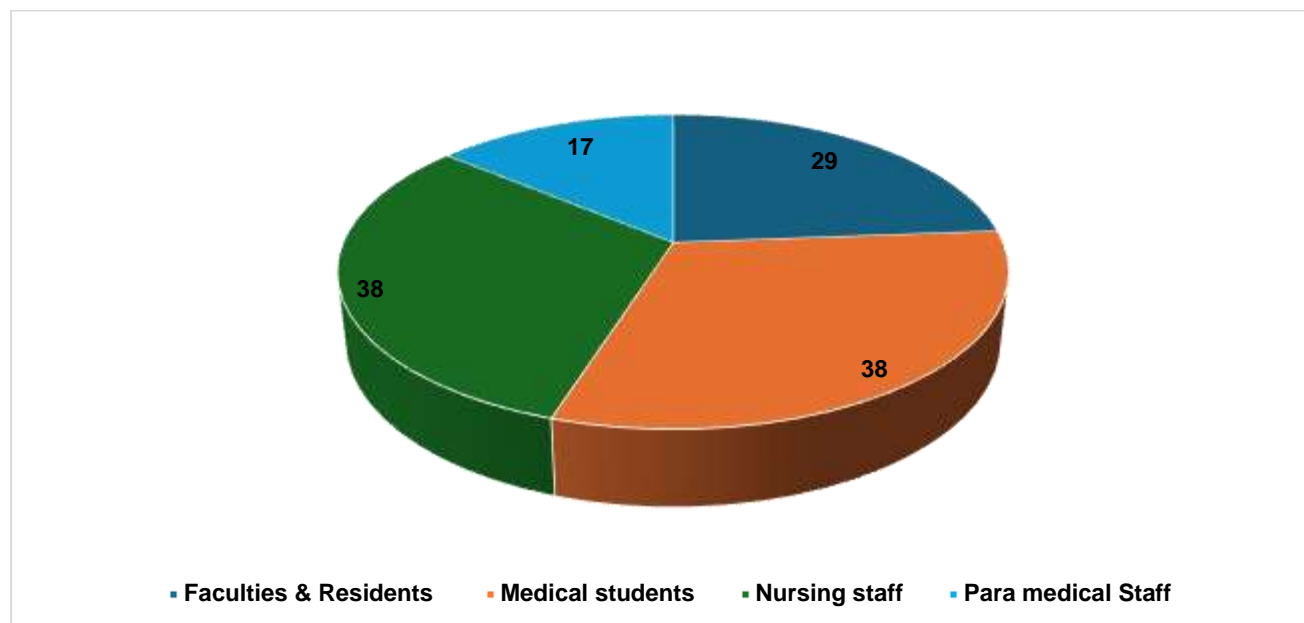


Figure 2. Distribution of Participants by Professional Role

Figure 2 illustrates the distribution of participants across various healthcare roles. The largest groups were *medical students* and *nursing staff*, each comprising 38 participants (30.6%). *Faculties and residents* accounted for 29 participants (23.4%), while *paramedical staff* represented

the smallest group with 17 participants (13.7%). This balanced representation ensures diverse perspectives across hierarchical and functional roles within the healthcare system (Table 1).

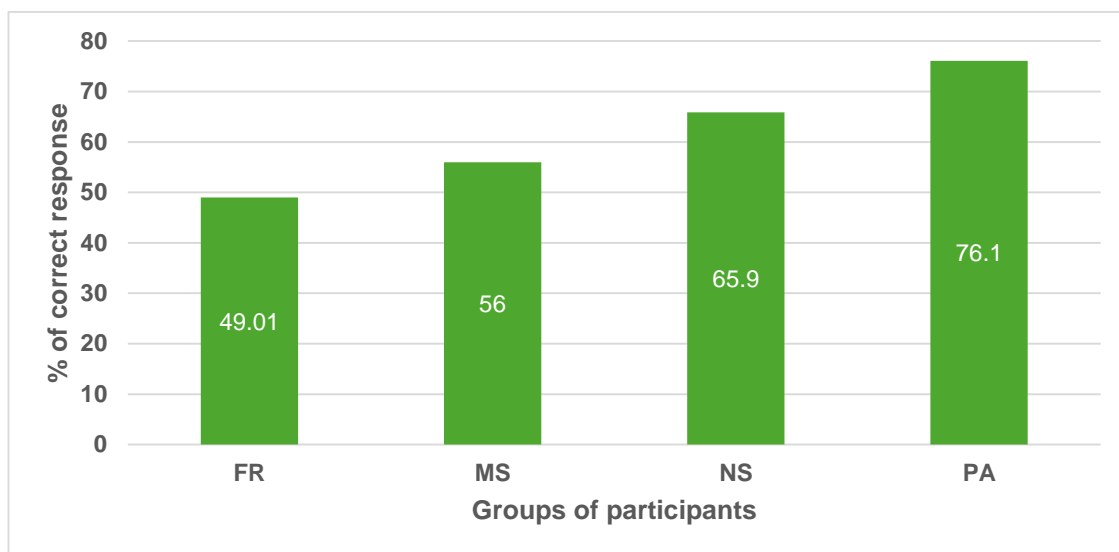


Figure .3 Correct Response Rates by Group (Medical Students, Nursing Staff, etc.)

Figure 3 depicts the group-wise distribution of correct responses among study participants. Paramedical staff (PA) demonstrated the highest accuracy with 76.1%, followed by nursing staff (NS) at 65.9%. Medical students (MS) achieved 56%, while faculty and residents (FR) showed the

lowest correct response rate at 49.01%. These findings highlight a noteworthy knowledge gap among higher academic strata, emphasizing the need for targeted educational interventions.

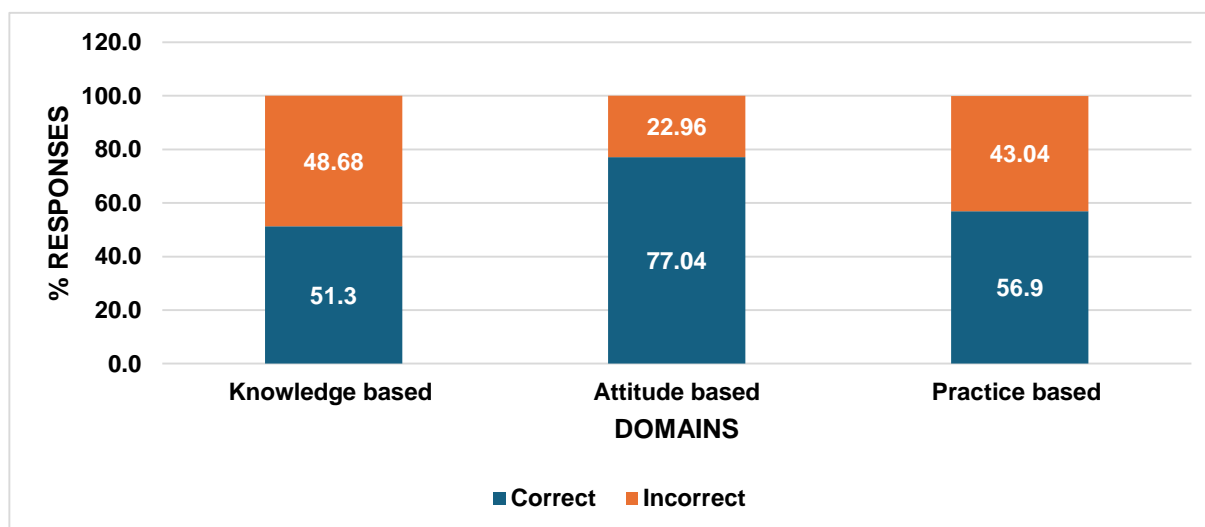


Figure .4 Domain-wise Accuracy in Knowledge, Attitude, and Practice

Figure 4 highlights domain-wise response accuracy. Attitude-based items showed the highest correct response rate (77.04%), reflecting strong awareness. Practice-based responses were moderately accurate (56.9%), while

knowledge-based responses were nearly balanced (51.3% correct vs. 48.68% incorrect), indicating conceptual gaps. These results underscore the need to strengthen theoretical and applied training in fire safety protocols.

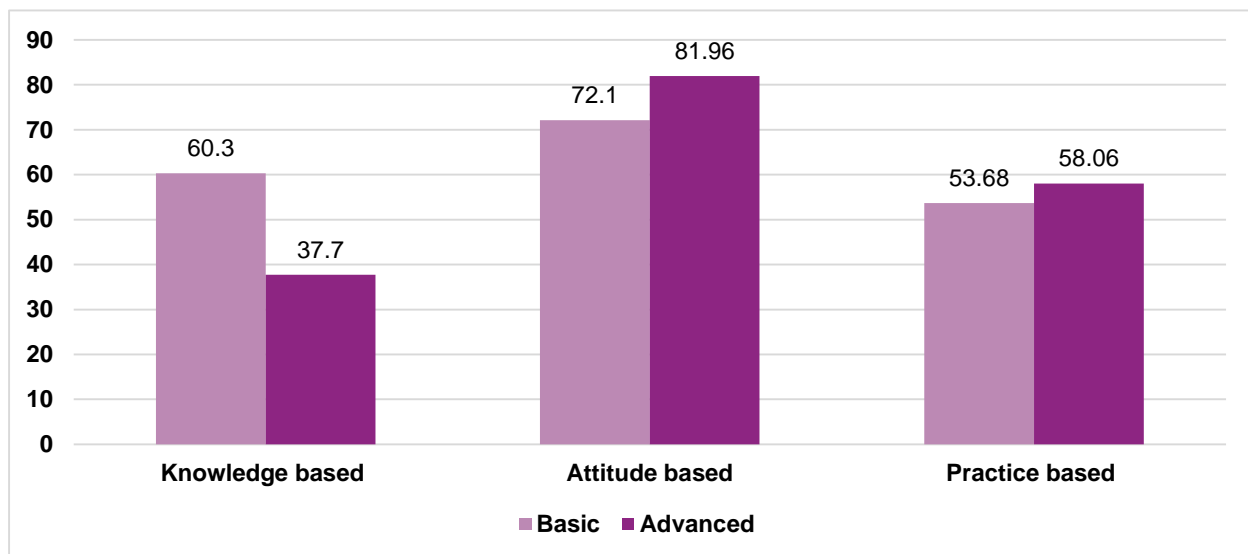


Figure 5. Level-wise Accuracy in Each KAP Domain (Basic vs. Advanced Items)

Figure 5 illustrates the level-wise distribution of correct responses across knowledge, attitude, and practice domains. In the attitude-based domain, both basic (72.1%) and advanced (81.96%) responses were notably high, indicating strong perceptual alignment across participant levels. Conversely, the knowledge domain revealed a marked disparity, with basic-level responses at 60.3% and advanced-

level responses significantly lower at 37.7%, suggesting potential gaps in deeper conceptual understanding. Practice-based responses remained relatively consistent between basic (53.68%) and advanced (58.06%) levels, reflecting moderate proficiency in application. These findings highlight the need to reinforce advanced theoretical frameworks, particularly in the knowledge domain.

TABLE 2: stratification of correct responses based on levels and domains

LEVEL	Questions	FR N (%)	MS N (%)	NS N (%)	PA N (%)
Knowledge based					
	The fire triangle	16 (55.2)	23 (60.5)	29 (76.3)	13 (76.5)
	Electrical equipment is dangerous	9 (31.0)	8 (21.1)	19 (50.0)	5 (29.4)
	Colour code of fire	26 (89.7)	35 (92.1)	37 (97.4)	17 (100)
Basic	Dial code for FIRE	13 (44.8)	16 (42.1)	23 (60.5)	11(64.7)
	R.A.C.E. stands for	6 (20.7)	8 (21.1)	22 (57.9)	7 (41.2)
	“PASS” represents	18 (62.1)	28 (73.7)	37 (97.4)	16 (94.1)
	Flammable material disposal	5 9(17.2)	NIL	13 (34.2)	4 (23.5)



Advanced	Storage of Full and empty gas cylinders	16 (55.2)	26 (68.4)	28 (73.7)	16 (94.1)
	S.A.V.E.	7 (24.1)	3 (7.9)	7 (18.4)	2 (11.8)
	Smoke detectors	15 (51.7)	11 (28.9)	16 (42.1)	15 (88.2)
Attitude					
Basic	Designated meeting point for evacuation	16(55.2)	24 (63.2)	30 (78.9)	17(100)
Advanced	Fire evacuation drills in the hospital	18(62.1)	32 (84.2)	32 (84.2)	16 (94.1)
Practices					
Basic	First step after a fire alarm?	11(37.9)	24 (63.2)	21 (55.3)	13 (76.5)
	First step after clothes catch fire?	13 (44.8)	21 (55.3)	20 (52.6)	8 (47.1)
Advanced	Rescuing patients from a hospital wing	11 (37.9)	17 (44.7)	26 (68.4)	14 (82.4)
	Frequency of fire drills in a hospital	15 (51.7)	21 (55.3)	11 (28.9)	10 (58.8)
	Encounter with smoke while evacuating	15 (51.7)	22 (57.9)	21 (55.3)	14 (82.4)
	Inspection of fire extinguishers	14 (48.3)	23 (60.5)	35(92.1)	16(94.1)
	Safe distance for Fire extinguisher use	8 (27.6)	9 (23.7)	15(39.5)	10 (58.8)
	Aim the nozzle of the fire extinguisher	20 (69.0)	25 (65.8)	37(97.4)	16 (94.1)
* FR - FACULTY + RESIDENT MS - MEDICAL STUDENTS NS - NURSING STAFF PA - PARAMEDICS					

The stratified analysis of correct responses across domains (knowledge, attitude, practice) and participant levels (faculty/residents, medical students, nursing staff, paramedics) revealed notable trends. In the knowledge domain, *basic concepts* such as the PASS acronym were best understood by nursing staff (97.4%) and paramedics (94.1%), while understanding was lowest among medical students for R.A.C.E. (21.1%) and faculty/residents for flammable material disposal (17.2%). In the *advanced knowledge* category, paramedics performed best (94.1% on gas cylinder storage), whereas the lowest response rate was among medical students (7.9% for S.A.V.E.). For the attitude domain, basic-level questions were correctly answered by all paramedics (100%), while only 55.2% of faculty/residents responded correctly. Advanced attitude questions had high correct rates across all groups, with paramedics again scoring highest (94.1%). In the practice

domain, paramedics consistently outperformed others in both basic (76.5%) and advanced items (94.1% for extinguisher inspection, 94.1% for aiming nozzle), while medical students had the lowest scores in advanced areas, particularly for safe extinguisher distance (23.7%). Overall, paramedics and nursing staff demonstrated the highest levels of knowledge, attitude, and practice, while medical students lagged, particularly in practical and advanced-level domains.

Discussion

This cross-sectional study explored the knowledge, attitude, and practices (KAP) regarding fire safety among healthcare professionals in a tertiary care teaching hospital. The primary objective was to assess awareness levels and practical preparedness across diverse healthcare roles. The key findings revealed that while attitude scores were notably



high (77.04%), significant deficits existed in both knowledge (51.3%) and practice (56.9%) domains. Among the subgroups, paramedical and nursing staff performed better than medical students and faculty, particularly in advanced and application-based components of fire safety.

The relatively high attitude scores suggest a general recognition of the importance of fire safety among healthcare workers. However, the moderate knowledge and poor practical scores indicate that positive perception does not consistently translate into adequate preparedness. Faculty and medical students who are expected to lead emergency responses displayed lower proficiency in core domains such as the interpretation of emergency codes, use of extinguishers, and procedural actions during fire incidents. These findings underscore a critical gap between awareness and action.

The results of this study are consistent with prior investigations that identified limited fire safety competence among healthcare staff despite favorable perceptions. In one Indian study, mean knowledge scores were notably low among tertiary hospital workers, reinforcing the concern that many professionals lack conceptual and procedural clarity despite training exposure [3]. A study conducted in the Namibian healthcare setting also demonstrated that over 70% of workers were unfamiliar with basic fire safety procedures, attributing this to the absence of structured refresher programs [5]. Similarly, a multicentric study from Nigeria found that staff with hands-on training and regular fire drills were significantly more competent in emergency preparedness [6].

The performance disparity across professional groups appears to be linked with their functional exposure and role-based responsibilities. Paramedical and nursing staff, often designated as first responders in clinical emergencies, are more likely to participate in mandatory drills and equipment handling exercises. In contrast, the academic and clinical schedules of medical students and teaching faculty may limit their participation in such operational training. This is particularly concerning given that healthcare education curricula seldom integrate structured modules on emergency preparedness [7].

The utility of simulation-based and blended learning approaches has been highlighted in several trials. An interventional study demonstrated that perioperative nurses who received structured simulation-based fire safety training showed significant improvements in both behavior and confidence during mock drills [9]. Furthermore, digital learning modules, when combined with on-site

demonstrations, have proven effective in enhancing both knowledge retention and procedural accuracy among healthcare workers [8].

Collectively, the findings from this study suggest that the current fire safety training modalities may be inadequate, particularly for students and academic staff. Attitudinal readiness must be supplemented with tailored, profession-specific training that emphasizes practical skills. Integration of fire safety into routine academic instruction, along with periodic simulations and audits, can help address the disconnect between theoretical awareness and actionable preparedness.

Generalizability

The findings of this study offer valuable insights into the status of fire safety awareness and preparedness among healthcare professionals within a tertiary care teaching hospital in urban India. While the inclusion of diverse participant categories, including students, paramedical staff, nursing personnel, and faculty, enhances the breadth of perspectives, the results may not be universally generalizable. Institutional policies, training frequency, infrastructure, and regional safety regulations vary widely across healthcare settings. Therefore, extrapolation of these findings to other hospitals, particularly those in rural or private sectors, should be approached with caution. Nonetheless, the observed trends underscore common systemic gaps that are likely relevant across comparable clinical institutions.

Conclusion

The study highlights significant gaps in fire safety preparedness, particularly among medical students and faculty members, despite positive attitudes. Nursing and paramedical staff demonstrated superior knowledge and practical skills, likely due to greater functional involvement and exposure. These findings underscore the urgent need to incorporate structured, simulation-based fire safety training into routine hospital operations and academic curricula.

Strengths and Limitations

A major strength of this study lies in the stratified inclusion of a wide spectrum of healthcare personnel, allowing meaningful comparisons across professional roles such as medical students, faculty, nursing staff, and paramedical workers. The use of a validated, pre-tested questionnaire



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ensured reliability in assessing knowledge, attitude, and practice domains.

However, the study is limited by its cross-sectional design, which precludes assessment of changes over time or causality. The use of self-reported data introduces the possibility of social desirability and recall bias. Additionally, the sample was confined to a single tertiary care teaching hospital in an urban setting, which restricts external validity to broader or rural healthcare contexts. Despite these constraints, the findings remain relevant for institutions with similar training structures and clinical responsibilities.

Recommendations

Based on the findings of this study, it is recommended that healthcare institutions implement mandatory periodic fire safety drills involving scenario-based simulations for all staff categories. Fire safety training should be integrated into undergraduate and postgraduate medical curricula using interactive, competency-based approaches to bridge knowledge and practice gaps. Role-specific educational modules should be designed to address the distinct responsibilities of paramedics, nursing staff, and medical professionals. Routine performance audits and knowledge assessments should be linked with institutional accreditation requirements such as NABH and JCI. Adoption of blended learning—combining online modules with hands-on drills—can enhance overall preparedness and safety culture.

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Abbreviations

KAP – Knowledge, Attitude, and Practice

FR – Faculty and Residents

MS – Medical Students

NS – Nursing Staff

PA – Paramedical Staff

S.A.V.E – Shout, activate alarm, Vacate, Extinguish

R.A.C.E – Rescue, Alarm, Confine, Extinguish/Evacuate

PASS – Pull, Aim, Squeeze, Sweep

IEC – Institutional Ethics Committee

NCRB – National Crime Records Bureau

NABH – National Accreditation Board for Hospitals and Healthcare Providers

JCI – Joint Commission International

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Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this study.

Authors' Contributions

Dr. Prasad Kulkarni: Conceptualization, study design, and manuscript drafting., Dr. Jinita Panikar: Data collection, analysis, and interpretation. Dr. Adwait Malik: Statistical validation and critical revision of the manuscript. Dr. Masum Reza: Literature review and questionnaire development. Dr. Manali Deshpande: Final review and approval of the manuscript. Dr. Vaishali Thakare: final manuscript preparation and submission to the journal

Data Availability Statement

Data Available on request

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References

1. R. R. Kavitha et al., "A Study to Assess the Knowledge on Fire Safety at Workplace among the

Health Care Workers at a Tertiary Care Hospital," *Nurs. J. India*, vol. CXV, no. 04, pp. 152-157, 2024, doi: 10.48029/NJI.2024.CXV402. <https://doi.org/10.48029/NJI.2024.CXV402>

2. D. Liu, Z. Xu, Y. Wang, Y. Li, and L. Yan, "Identifying fire safety in hospitals: Evidence from Changsha, China," *Alex. Eng. J.*, vol. 64, pp. 297-308, Feb. 2023, doi: 10.1016/j.aej.2022.08.055. <https://doi.org/10.1016/j.aej.2022.08.055>
3. R. Mondal and S. K. Sinha, "Knowledge attitude assessment regarding fire safety among healthcare workers in tertiary care teaching hospitals in the eastern region of India," *Int. J. Community Med. Public Health*, vol. 12, no. 1, pp. 212-216, Dec. 2024, doi: 10.18203/2394-6040.ijcmph20244020. <https://doi.org/10.18203/2394-6040.ijcmph20244020>
4. R. Kulkarni, P. Giri, and P. Gangwal, "Knowledge and practices regarding fire safety amongst health care workers in a tertiary care teaching hospital in Marathwada region of Maharashtra, India," *Int. J. Community Med. Public Health*, pp. 1900-1904, 2016, doi: 10.18203/2394-6040.ijcmph20162062. <https://doi.org/10.18203/2394-6040.ijcmph20162062>
5. E. N. Johannes and M. H. Koray, "Fire safety knowledge and emergency preparedness assessment among health care workers at three hospitals in Kunene region, Namibia," *BMC Health Serv. Res.*, vol. 25, no. 1, p. 54, Jan. 2025, doi: 10.1186/s12913-025-12211-z. <https://doi.org/10.1186/s12913-025-12211-z>
6. U. Ukegbu et al., "Workplace Fire Safety: Knowledge and Preparedness in a Public Tertiary Healthcare Facility in Abia State, South East Nigeria," *J. Community Med. Prim. Health Care*, vol. 34, no. 2, pp. 94-108, Aug. 2022, doi: 10.4314/jcmphc.v34i2.7. <https://doi.org/10.4314/jcmphc.v34i2.7>
7. P. O. Adejumo et al., "Knowledge, preparedness, and attitude towards COVID-19 among health profession students in Sub-Saharan Africa: A cross-sectional survey," *IJID Reg.*, vol. 1, pp. 150-158, Dec. 2021, doi: 10.1016/j.ijregi.2021.10.010. <https://doi.org/10.1016/j.ijregi.2021.10.010>
8. P. H. Lee et al., "The effectiveness of an online training program for improving knowledge of fire prevention and evacuation of healthcare workers:



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A randomized controlled trial," PLOS ONE, vol. 13, no. 7, p. e0199747, Jul. 2018, doi: 10.1371/journal.pone.0199747.

<https://doi.org/10.1371/journal.pone.0199747>

9. O. Cho, D. Lee, and K. Hwang, "Patient safety awareness, knowledge, and attitude about fire risk

assessment during time-out among perioperative nurses in Korea," Nurs. Open, vol. 9, no. 2, pp. 1353-1361, Mar. 2022, doi: 10.1002/nop2.1180. <https://doi.org/10.1002/nop2.1180>

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