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Challenges Faced by Medical Officers during Postmortem Examinations at Peripheral Centres: A Cross-sectional Survey

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ABSTRACT

Background: Peripheral medicolegal postmortem services may face shortages of infrastructure, personnel, protective equipment and security.
Objective: To assess practical challenges reported by medical officers conducting postmortem examinations at peripheral centres.
Methods: A descriptive cross-sectional electronic questionnaire survey included 50 medical officers. It assessed workload, infrastructure, personal protective equipment and instruments, staffing, safety, external pressure and specimen-management logistics. Findings were summarised descriptively.
Results: Mean age was 31.0 ± 4.4 years (range 25–45). Thirty-seven respondents (74.0%) performed fewer than five postmortem examinations per month, and 38 (76.0%) assigned infrastructure ratings of 1 or 2. Lack of cold storage, frequent unavailability of protective equipment or instruments, and absence of dedicated mortuary staff were each reported by 29 (58.0%). Security threats, emotional outbursts or pressure from relatives or local crowds were reported frequently or sometimes by 41 (82.0%). Twenty-four (48.0%) felt unsafe during autopsy, and 21 (42.0%) reported undue political or administrative pressure. Only six (12.0%) reported consistently adequate specimen containers and preservatives.
Conclusion: Respondents reported deficiencies in mortuary resources, support personnel, occupational safety and specimen logistics. These findings support local service audits and coordinated improvements in infrastructure, staffing, supplies and security.

Keywords: *medicolegal autopsy; peripheral mortuary; medical officers; occupational safety; personal protective equipment; specimen management.*

INTRODUCTION

Medicolegal postmortem examination contributes to death investigation and requires coordination between medical services, investigating agencies and forensic laboratories. Kotabagi et al. described practical and procedural difficulties encountered by Armed Forces medical officers during medicolegal duties, emphasising the need for clear responsibilities and guidance.[1] These concerns provide a rationale for examining the resources and support available to medical officers conducting autopsies in peripheral settings.

The working environment also affects the personnel responsible for death investigation. Kömür et al. identified burnout and posttraumatic stress symptoms among forensic doctors and mortuary staff, demonstrating that occupational concerns extend beyond technical autopsy procedures.[2] Shrestha et al. discussed infection-related hazards during medicolegal death investigations in the context of COVID-19.[3] World Health Organization guidance addresses infection prevention during postmortem procedures for acute respiratory infections.[4] Together, these sources support attention to staff protection, adequate equipment and safe work practices.

Autopsy safety requires recognition of several distinct hazards. Burton reviewed risks associated with infected bodies, retained foreign objects and chemical or radioactive contamination.[5] Appropriate protective clothing, safe instrument handling and precautions tailored to the suspected hazard are therefore relevant to routine mortuary organisation. Examining the availability of protective equipment and practical support at peripheral centres can help identify service gaps, although a questionnaire survey cannot establish actual exposure rates or compliance with safety procedures.

The present study assessed infrastructure, staffing, perceived safety, external pressure, specimen-preservation materials and forensic science laboratory (FSL) dispatch barriers reported by medical officers practising at peripheral centres. It aimed to describe their operational difficulties and identify priorities for service improvement.

MATERIALS AND METHODS

This descriptive cross-sectional survey was coordinated by the Department of Forensic Medicine and Toxicology, Jawaharlal Nehru Medical College, Ajmer, Rajasthan, India. Fifty medical officers responded to a structured electronic questionnaire about medicolegal postmortem practice at peripheral centres. The unit of analysis was the responding medical officer.

The questionnaire covered age, experience, monthly postmortem workload, mortuary infrastructure, personal protective equipment (PPE) and instruments, trained support staff, security, perceived safety, political or administrative pressure, specimen containers and preservatives, FSL dispatch barriers, suggested reforms and additional experiences. Infrastructure was recorded using a five-point rating scale. Categorical findings were summarised as frequencies and percentages, and age as mean ± standard deviation and range. Open-ended responses were reviewed for recurring themes. The study used descriptive analysis; no hypothesis tests or associations are reported. Institutional Ethics Committee approval and written informed consent from all participants were reported.

RESULTS

The mean respondent age was 31.0 ± 4.4 years (range 25–45). Eighteen respondents (36.0%) had less than two years of experience, 15 (30.0%) had two to five years and 17 (34.0%) had more than five years. Thirty-seven (74.0%) performed fewer than five postmortem examinations per month. Infrastructure ratings were 1 in 28 respondents (56.0%), 2 in 10 (20.0%), 3 in eight (16.0%), 4 in three (6.0%) and 5 in one (2.0%); consequently, 38 (76.0%) selected ratings of 1 or 2 (Figure 1).

Lack of cold storage, frequent unavailability of PPE or autopsy instruments, and absence of dedicated mortuary staff were each reported by 29 respondents (58.0%). Untrained staffs were reported by 26.0%. Only six respondents (12.0%) reported consistently adequate kits, jars and preservatives; 20 (40.0%) reported occasional deficiencies and 24 (48.0%) reported frequent unavailability (Figure 2). These difficulties concern separate questionnaire items and may coexist in the same respondent.

Security threats, emotional outbursts or pressure from relatives or local crowds were reported frequently by 14 respondents (28.0%) and sometimes by 27 (54.0%), giving a combined total of 41 (82.0%). Twenty-four (48.0%) reported feeling unsafe during autopsies, and 21 (42.0%) reported undue political or administrative pressure (Figure 3). Delay in police taking custody of specimens was the most frequently reported FSL dispatch barrier; a numerical distribution of dispatch barriers was not available.

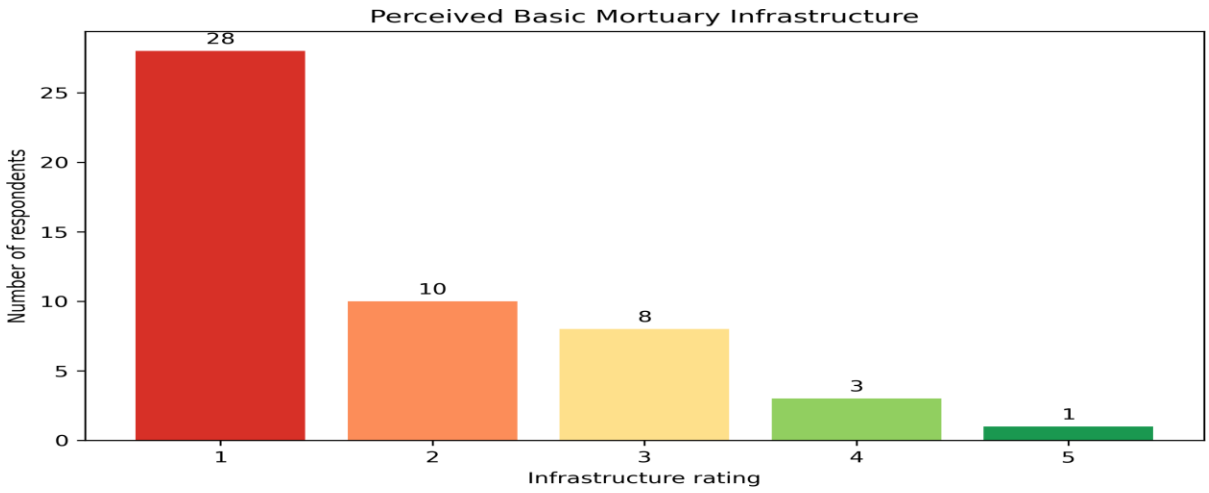


Figure 1: *Distribution of infrastructure ratings among 50 medical officers.*

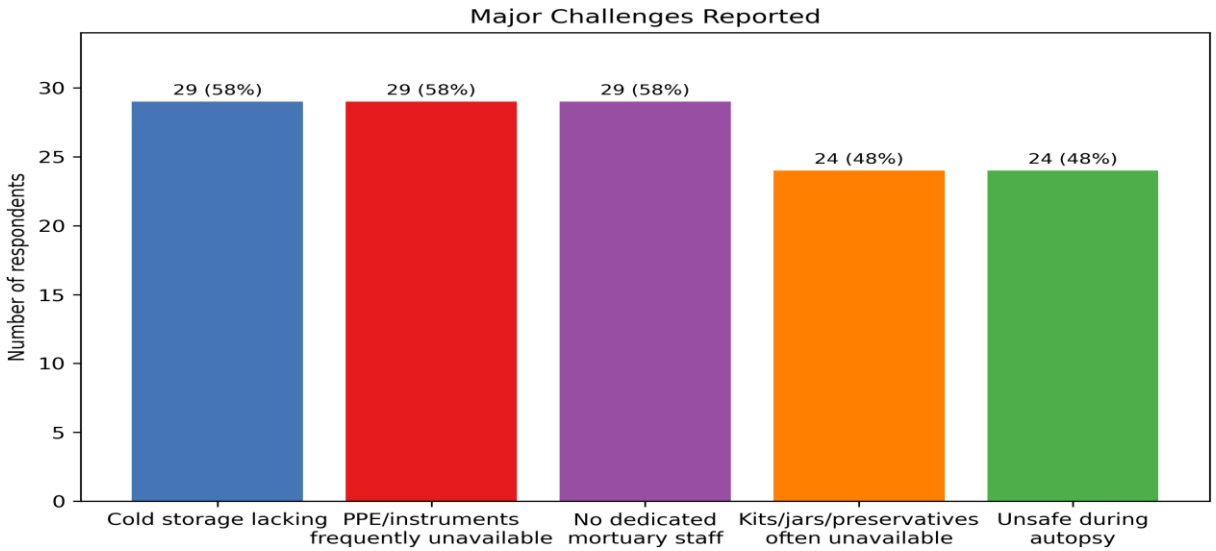


Figure 2: *Selected resource deficiencies and perceived lack of safety among 50 respondents. Categories may overlap; bars not to be summed.*

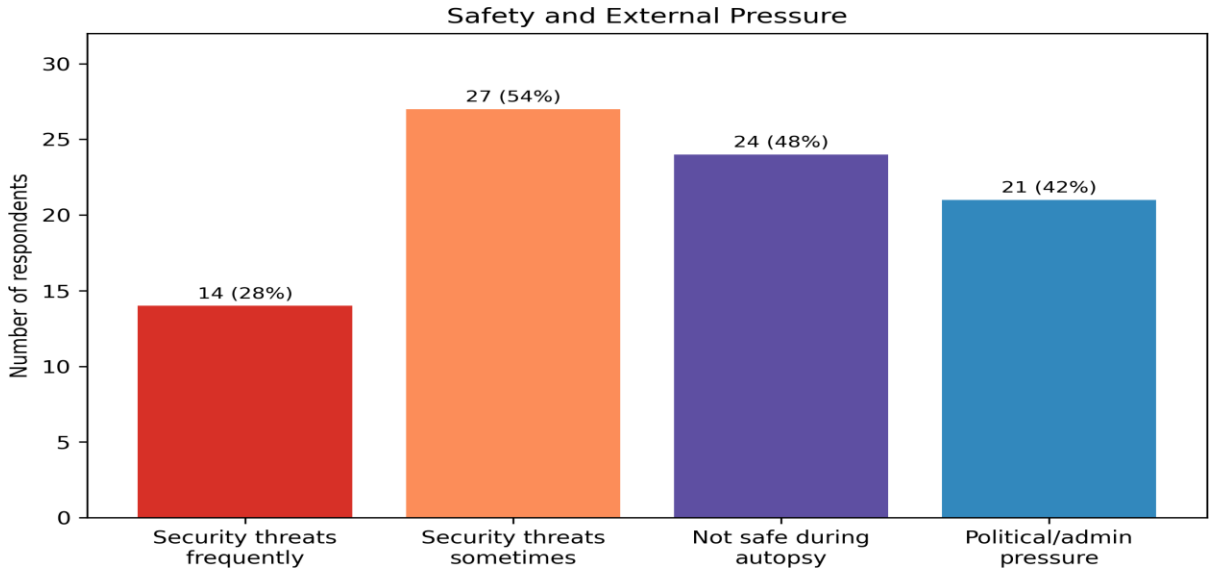


Figure 3: *Safety concerns and external pressure among 50 respondents. The first two bars refer to the combined questionnaire item covering security threats, emotional outbursts or pressure from relatives or local crowds. The remaining bars represent separate items; categories may overlap.*

DISCUSSION

The findings indicate substantial perceived resource deficiencies among the surveyed medical officers. Three-quarters assigned infrastructure ratings of 1 or 2, and more than half reported lack of cold storage and frequent shortages of PPE or instruments. These are respondent-level reports rather than independent facility measurements. Burton's review describes biological, mechanical and contamination-related hazards in autopsy work,[5] while WHO guidance sets out protective precautions for postmortem procedures involving acute respiratory infections.[4] The present findings identify gaps relevant to those precautions, but do not demonstrate occupational infection, injury or noncompliance.

Staffing was another concern: 58.0% reported no dedicated mortuary staff and 26.0% reported untrained staff. Dartey et al. interviewed 19 mortuary attendants working in nine facilities across three regions of Ghana and found that most acquired their skills through apprenticeship, with challenging working conditions and limited structured formal education.[6] Their qualitative findings broadly correspond to the training concerns reported here. However, their participants were mortuary attendants, whereas the present respondents were medical officers; their study therefore offers contextual support rather than a directly comparable prevalence estimate. Formal training and clearly defined support roles merit consideration in both settings.

Safety concerns involved both the work environment and interactions with others. The combined item covering threats, emotional outbursts or pressure was reported at least sometimes by 82.0%, while 48.0% felt unsafe during autopsy. Kömür et al. studied 142 forensic doctors and mortuary personnel in Turkey, including 40 specialists, 54 residents, 24 autopsy technicians and 24 other staff. Autopsy technicians showed greater emotional exhaustion and posttraumatic stress symptoms, and residents reported a lower sense of personal accomplishment.[2] Both studies identify occupational concerns, but the Turkish study used psychological symptom scales and the present survey measured perceived safety. The present percentages cannot be interpreted as rates of burnout or posttraumatic stress disorder. Security arrangements and access to staff support should address these different dimensions of wellbeing.

Sen et al. investigated stigma among 30 male mortuary workers in four tertiary teaching hospitals in West Bengal. Although the questionnaire suggested infrequent discriminatory experiences overall, interviews identified avoidance and concealment of occupational identity; more than half gave inaccurate occupational information during their children's school enrolment, and one-third avoided disclosing their occupation to others.[7] This provides a further comparison with the social pressures described in the present survey. However, stigma among attendants differs from threats or pressure reported by doctors, and the present questionnaire did not directly measure stigma. The findings support respectful working conditions without establishing that stigma caused the staffing deficiencies observed here.

Political or administrative pressure was reported by 42.0%. Kotabagi et al. discussed procedural uncertainty and responsibility in medicolegal duties,[1] but their article was not a comparable prevalence survey of external pressure. Clear documentation, defined reporting channels and specialist consultation may support medical officers facing difficult situations. Reported pressure should be interpreted as the respondents' perception, because interference was not independently verified. Likewise, Shrestha et al.'s COVID-19 discussion concerns infection prevention,[3] and should not be treated as evidence about crowd-related threats.

Only 12.0% reported consistently adequate specimen containers and preservatives. The reported delay in police taking custody of samples suggests a coordination problem, although the survey did not quantify dispatch times or laboratory rejection rates. Reliable consumable supplies and locally agreed procedures for labelling, sealing, storage, documented handover and transport are reasonable service priorities. Whether these measures improve evidence quality or turnaround time requires prospective evaluation. Service strengthening should combine facility audits with staff training and coordination across the agencies involved in death investigation.

Strengths and Limitations

The study brings together several operational concerns in peripheral postmortem practice. Its limitations include the small sample, self-reported findings and lack of independent infrastructure or safety assessments. The number of facilities represented is not specified, so percentages describe respondents rather than the prevalence of deficiencies across unique mortuaries. The combined safety item cannot distinguish threats, emotional outbursts and pressure. Relationships between variables and overlap across reported difficulties were not analysed. The study design does not establish causation or demonstrate the effectiveness of proposed improvements.

CONCLUSION

The surveyed medical officers reported deficiencies in infrastructure, cold storage, protective equipment, support staff, specimen-preservation materials and perceived safety during peripheral postmortem practice. These findings support targeted local audits and coordinated improvements in resources, training, security and specimen handover. Broader conclusions about peripheral mortuaries require larger studies with clearly defined recruitment and objective facility assessments.

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Conflict of interest: The authors report no conflicts of interest.
Data availability: Deidentified survey data are available from the corresponding author on reasonable request, subject to institutional approval and protection of participant confidentiality.
Use of artificial intelligence: ChatGPT assisted with language revision, and reference formatting. Authors confirmed responsibility for the final manuscript.

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