Onggo A et al., JPKI, 2026;15(1):1-10
doi: 10.22146/jpki.106167

ORIGINAL RESEARCH

JPKI

# Knowledge and Attitudes of Medical Residents toward the Doctrine of Respondeat Superior: A Multicenter Study in Indonesia

**Andreas Onggo[1], Yoni Syukriani[2*], Sani Tanzilah[2], Annisa Anwar Muthaher[3], Sigid Kirana Lintang Bhima[4], Tuntas Dhanardhono[4]**

[1]Sultan Syarif Mohamad Alkadrie General Hospital, Pontianak, West Kalimantan - INDONESIA
[2]Department of Forensic Medicine & Medicolegal, Faculty of Medicine, Universitas Padjadjaran, Bandung, West Java - INDONESIA
[3]Faculty of Medicine, Universitas Hasanudin – dr. Wahidin Sudirohusodo General Hospital, Makassar, South Sulawesi - INDONESIA
[4]Faculty of Medicine, Universitas Diponegoro – dr. Kariadi General Hospital, Semarang, Central Java - INDONESIA

Submitted: 22 April 2025, Final Revision: 31 March 2026, Accepted: 31 March 2026

## ABSTRACT

**Background:** Medical residents are doctors undergoing specialized training through an apprenticeship under attending physicians. The requirement for them to hold a special practice license raised questions about their extent of responsibilities in the event of a lawsuit when performing their duty.
**Objectives:** This research investigates the knowledge and attitudes of medical residents towards the doctrine of respondeat superior, which pertains to liability in hierarchical medical contexts.
**Methods:** Questionnaires were distributed to residents across seven universities in Indonesia, representing surgical, medical, and diagnostic specialist groups. Statistical analyses were performed using univariate, bivariate, and multivariate approaches.
**Results:** Results showed that only 26.58% (n=538) of the participants understood the doctrine well, although they generally held a positive attitude towards it. There was no significant correlation between knowledge and attitudes or between specialist groups (all $p>0.05$). However, a significant correlation was found between residents' levels and attitudes towards respondeat superior ($p<0.01$), indicating that higher-level residents exhibited more positive attitudes. Multidimensional scaling revealed surgical residents showing more significant divergence from those in medical programs.
**Conclusion:** Results suggested although the attitude was positive, understanding regarding respondeat superior among residents is insufficient, particularly to clarify responsibilities among residents and supervisors. Therefore, specific education related to the matter is recommended.

**Keywords:** Medico-legal; Resident; Supervisor; Respondeat Superior; Vicarious Liability

## PRACTICE POINTS

- Implementation of mandatory, interdisciplinary medico-legal training programs involving residents, supervisors, legal experts, and risk management professionals.
- The medico-legal training programs includes the rights and responsibilities of both residents and supervisors, besides medico-legal issues such as informed consent, documentation, error disclosure, and liability.

*corresponding author, contact: yoni.fuadah@unpad.ac.id

## INTRODUCTION

Malpractice claims may be brought against doctors for medical negligence, with millions of such cases estimated to occur globally each year. An estimated 250.000 Americans die each year due to medical mistakes, ranking these as the nation's third most common cause of death after heart disease and cancer.[1,2] Reports estimated 1000 cases of medical malpractice lawsuits in South Korea[2] and between 300-700 emergency-related lawsuits in Japan.[3] The estimated percentage of medical malpractice lawsuits in the United States involving residents is 14,7%, while those involving medical students are 3,3%.[4] Between 2006 and October 2013, the Indonesian Medical Discipline Honorary Council recorded a total of 231 complaints concerning alleged incidents of medical malpractice.[5]

With the growing complexity of medical practice and the expansion of multidisciplinary teamwork, accountability now extends beyond individual errors to include responsibility for the actions of others – a principle recognized in Anglo-American jurisprudence as "vicarious liability".[6] This principle holds that senior doctors can be held accountable for the errors or negligence of junior doctors under the doctrine of respondeat superior,[6,7] posits superiors to bear the risks associated with their subordinates' actions, including compensating injured parties. While subordinates remain liable for their torts, this doctrine emphasizes that senior doctors, due to their more extended clinical experience, must direct and supervise junior doctors to mitigate potential harm to patients. Consequently, it mandates strict supervision within the healthcare sector and medical education.[8]

Clinical supervision is fundamental to specialist education, systematically guiding residents toward specialist competency through structured planning, implementation, and assessment cycles,[9] while the doctrine of respondeat superior establishes that teaching hospitals and attending physicians bear legal liability for residents' actions performed within their assigned scope of practice and supervision. Residents, despite being licensed physicians, cannot independently perform specialized procedures without supervision until they graduate and obtain specialist certification. Consequently, they function within both formal supervisory relationships with attending physicians and informal hierarchical dynamics with senior residents who provide guidance during their intensive shared clinical hours. The doctrine provides residents protection when practicing within the context of medical education. It necessitates that supervisory assistance is required rather than exceeding clinical authority. Both residents, in all levels, and supervisors must comprehend this doctrine to ensure appropriate graduated supervision, clearly defined scopes of practice, accountability for delegated decisions, comprehensive medical documentation, and ultimately, patient safety through effective coordination within the supervisory hierarchy.

Despite operating within a hierarchical training structure and being supervised by attending physicians responsible for their education and competence, residents nonetheless remain vulnerable to exposure to malpractice litigation.[10] The limited understanding of vicarious liability is especially problematic, as surgical trainees are reportedly listed as defendants in around 30% of malpractice cases within teaching hospitals.[11] In the United States, residents are required to maintain insurance coverage that encompasses any claims emerging from activities performed within the defined scope and period of their training.[12] Although studies on how far residents understand their rights and obligations related to respondeat superior doctrine is rare,[13] there are examples of how universities tried to include the doctrine into their training modules, such as in the University of Connecticut, New York Universities, and several others. They developed curriculum employing a multimodal approach for the residents to study the doctrine, particularly related to the topic of malpractice, risk management, and liability issues.[14,15]

Our preliminary evaluation showed that the Indonesian residency competency standards or curriculums incorporate general ethico-legal awareness, professionalism, and medico-legal documentation, but do not require competence in the concept of vicarious liability or respondeat superior, except in most of forensic programs. The 2023 Indonesian Health Law[16] does not explicitly invoke the doctrine of respondeat superior within

the educational context; however, specifically grants residents legal assistance and compensation rights during medical disputes. This study aims to evaluate the knowledge and attitudes of Indonesian residents toward the concept.

## METHODS

### Study Design

This study used a cross-sectional quantitative design with online questionnaire instruments, which were constructed by modifying questionnaires from Appiah-Agyekum and Kayi,[13] one questionnaire to assess knowledge and the other to assess attitudes.

### Population and sample

The population was residents of specialist programs in the Indonesian faculties of medicine that have more than 10 specialist programs (N=7080).[17] Faculties of medicines were selected via convenience sampling, resulting in seven faculties on the island of Sumatra, Java, and Sulawesi. Exclusion criteria eliminated residents from Primary Care Study Programs due to their non-hospital service context and from Forensic Medicine and Medico-legal Study Programs due to the inclusion of topics in their standard curriculum. There were 546 residents accessing Google Form questionnaires, eight of them dropped out by not completing the questionnaires, therefore n=538.

### Data Collection

We aimed seven prominent faculties of medicine in Sumatera, Java, and Sulawesi that each has more than 10 specialist study programs. We submitted formal requests to the Deans and was granted permission to offer their residents to participate in the study. Data collection was conducted only after official approval was obtained. The questionnaire development includes validity and reliability tests by testing 30 volunteer residents followed by questionnaire reiterations before distribution to participants (Cronbach's alpha=0.81). The questionnaires distributed online to residents across seven faculties of medicine using a total sampling approach. Both questionnaire phases were introduced with an informed consent process that allowed respondents to join or decline participation without consequences before completing the questionnaire (anonymous).

Inclusion criteria comprised residents enrolled in three study program categories (surgical, medical, and medical diagnostic) across three educational levels: junior (Level-1), intermediate (Level-2), and senior (Level-3), in accordance with Indonesian resident education standards. Surgical programs included anesthesiology and reanimation, ear-nose-throat-head & neck surgery, neurosurgery, obstetrics and gynaecology, ophthalmology, orthopedy and traumatology, pediatric surgery, plastic surgery, general surgery, thoracic-cardiac-vascular surgery, and urology. Medical programs comprised andrology, aviation medicine, clinical nutrition, dermatology and venereology, heart and vascular disease, internal medicine, medical acupuncture, neurology, occupational medicine, radiotherapy, paediatrics, physical medicine and rehabilitation, psychiatry, pulmonary medicine, and sports medicine. Medical diagnostic programs included anatomical pathology, clinical pathology, clinical microbiology, clinical pharmacology, nuclear medicine, and radiology. Exclusion criteria included residents from specialty programs outside these three categories and those not currently enrolled in active training during the study period. Data was collected using Google Forms to be distributed online to potential participants. The research process was carried out from August 2022 until August 2023.

### Data Analysis

Aggregate statistical analyses employed difference testing based on knowledge question scores, dichotomized as ≥75 indicating good knowledge and <75 indicating low knowledge, reflecting a commonly accepted minimum competence benchmark for achieving learning objectives in medical education.[18] Answers to attitude questions were grouped into positive attitudes ["agree" (score 3) and "strongly agree" (score 4)] and less positive attitudes] [("not agree" (score 2) and "strongly disagree" (score 1)]. The participants' characteristics, knowledge scores, and attitude scores were presented in percentages. Correlation analyses were conducted to demonstrate

the difference between groups. Correspondence analysis (CA) and multidimensional scaling (MDS) were applied to explore subtle distinctions among residency levels and program groups in terms of knowledge and attitudes, converting categorical survey responses into geometric maps where spatial proximity reflects similarity of response profiles. Data analysis employed SPSS ® v.26.

## Ethical statement

The protocol of this study had received ethical approval from the Research Ethics Committee (REC) of Universitas Padjadjaran No. 476/UN6. KEP/EC/2022. The REC is an active member of the Sidcer-Fercap Foundation #008. Following ethical approval, formal authorization was subsequently obtained from the deans of the seven faculties of medicine to administer questionnaires to their residents. The information on the questionnaires stated the complete freedom for the residents to choose whether to participate without coercion.

## RESULTS AND DISCUSSION

Relative to the total resident population across the three program categories in the seven faculties of medicine during the study period (N=7080), participating residents represented 7,60% (n=538) (see Figure 1).

Figure 1 indicates that only 26.58% of respondents achieved a good knowledge score (>75), whereas the mean score of 65.87 ± 16.27 falls within the low category (<75) (see Supplementary Materials). Across residency categories and training levels, no group achieved a proportion of good scores exceeding 30%, with the sole exception of Level-2 residents (31,12%). When performance was examined at the item level, only four questions were correctly answered by more than three-quarters of respondents. These items concerned the definition of medical malpractice, the hospital's role in vicarious liability, the supervisory relationship between residents and attending physicians, and the accountability of senior residents for their juniors. The statement most frequently answered correctly (99,07%) concerned the principle that residents provide clinical services under the supervision of attending doctors. In contrast, the item most often answered incorrectly (6,51% correct) related to the misconception that superiors or faculty members bear no legal responsibility for errors committed by subordinate residents.

Figure 2 showed the residents' attitudes towards respondeat superior are characterized by strong consensus on core principles but concerns regarding implementation and information adequacy. Four statements (S1, S3, S4, S6) demonstrates positive attitudes with high mean scores and low standard deviations (0,530-0,677), includes recognition of

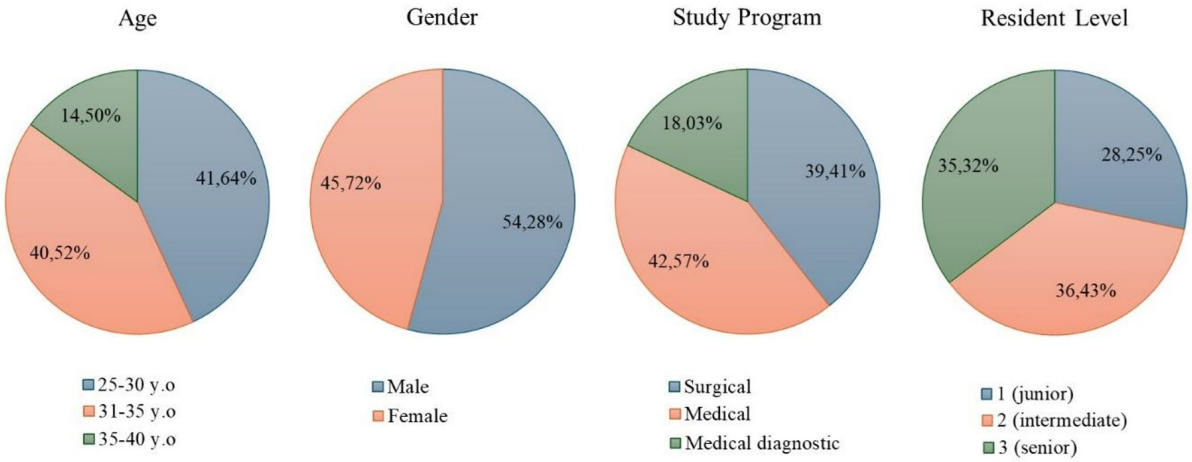


**Figure 1. Participant Characteristics (n = 538)**

the principle's importance, curriculum inclusion, implementation for residents' malpractice cases, and attending physician responsibility sharing. Residents strongly rejected sole responsibility in malpractice lawsuits, underscoring expectations that hierarchical supervision should translate into shared legal accountability. S2 revealed a critical information gap, representing the only item with majority disagreement (53,8% negative), suggesting inconsistent educational exposure across training programs. S7 addressing Level-3 resident (chief residents) responsibility showed moderate support, but lower consensus (SD=0,964), indicating complexity in attitudes toward peer-level versus vertical hierarchical accountability.

Correlation analysis demonstrated a very weak correlation between knowledge scores and residents' attitudes toward respondeat superior, as well as weak correlation involving program group, knowledge score, attitude, and residency level. Residents enrolled in the medical study program group exhibited the highest mean knowledge score compared with the other groups (80,27 ± 7,03) (Table 1).

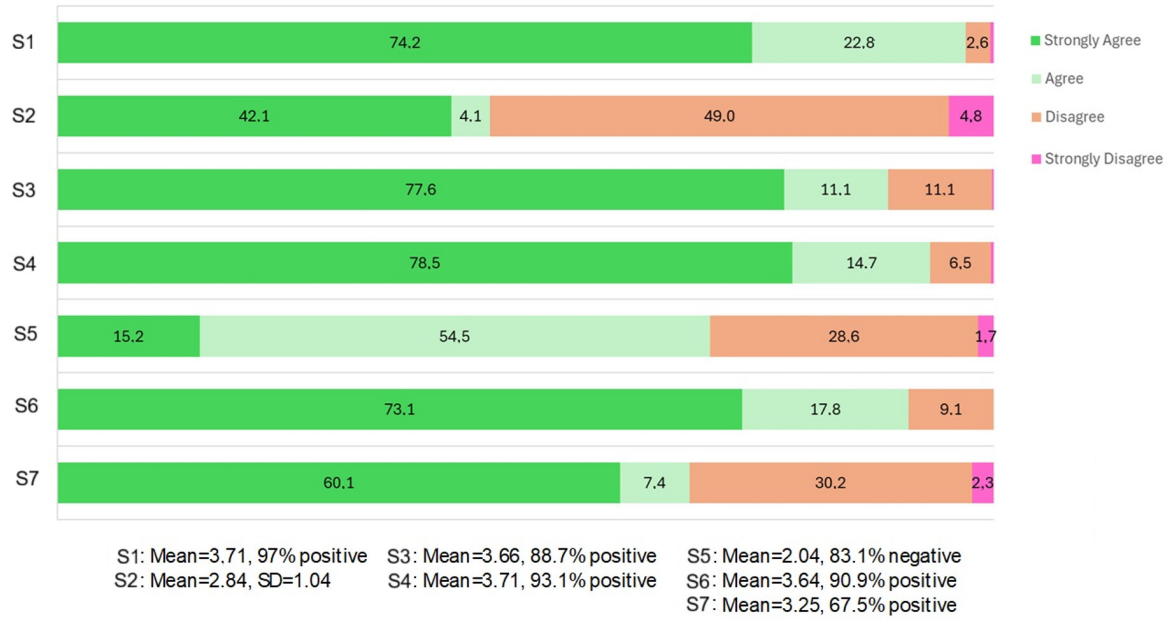


**Figure 2. Participants' Attitudes Towards Respondent Superior**
**Q1-Q7 represent attitude question numbers**

**Table 1 Correlation between Study Program Category and Residency Level with Score and Attitude**

| | Score | | | | Attitude | | |
|---|---|---|---|---|---|---|---|
| | Mean + SD | >75 | <75 | $r_s$ and $p$ | Positive | Less positive | $r_s$ and $p$ |
| Program | | | | | | | |
| Surgical | 66.12 + 16.01 | 62 | 150 | | 1099 | 385 | |
| Medical | 80.27 + 7.03 | 59 | 170 | $r_s$ = -0.013 | 1271 | 325 | $r_s$ = 0.023 |
| Diagnostic | 66.45 + 15.38 | 22 | 75 | $p$ = 0.766 | 526 | 153 | $p$ = 0.159 |
| Level | | | | | | | |
| Level-1 | 65.31 + 15.18 | 32 | 120 | | 781 | 283 | |
| Level-2 | 66.65 + 16.69 | 61 | 135 | $r_s$ = 0.005 | 1055 | 317 | $r_s$ = 0.064 |
| Level-3 | 65.50 + 16.72 | 50 | 140 | $p$ = 0.917 | 1067 | 263 | $p$ = 0.000 |

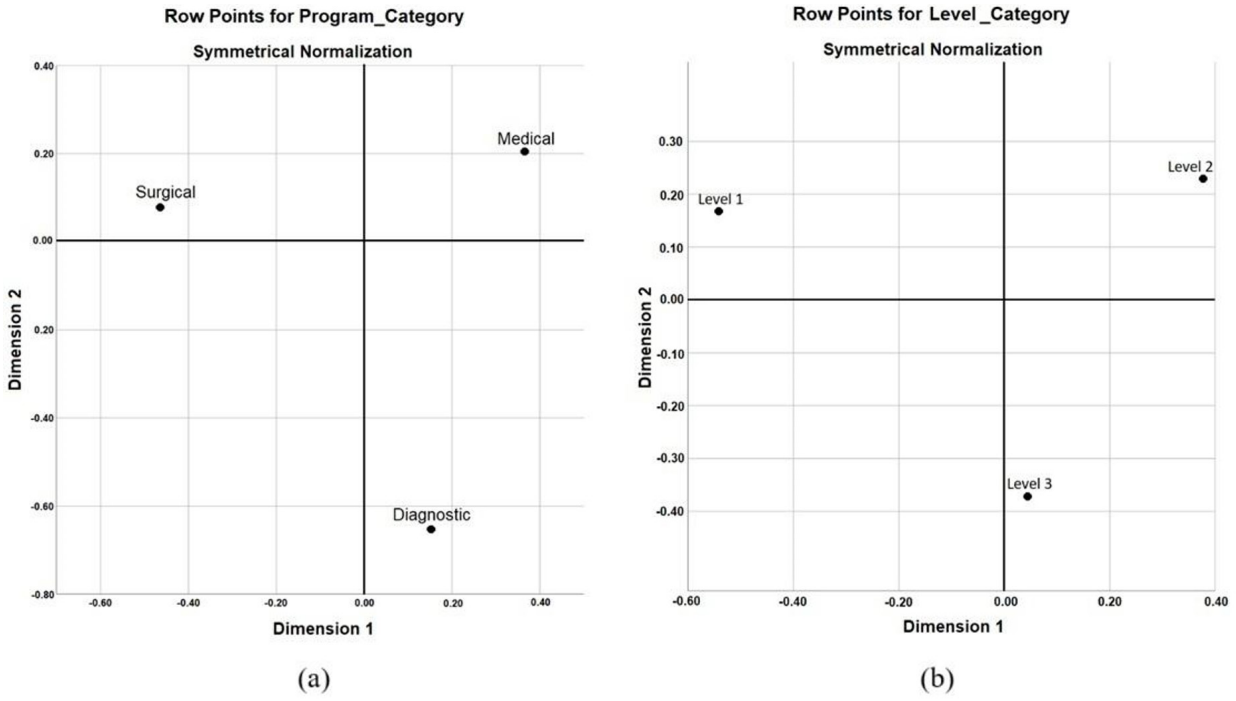


**Figure 3. Correspondence Analysis Plots**

**Correspondence analysis plots revealed subtle differences between study programmes and grades (a), as well as between residency levels and grades (b)**

CA showed that Level-1 Residents' knowledge is most different from Level-2, while the Surgical study program group is most different from the Diagnostic group (total inertia = 0.024 and 0.031 respectively (Figure 3). Although the total inertias are low, meaning weak association between variables, the results explained 100% of the data or high reliability (Table 4 in Supplementary Materials). Additionally, MDS reveals program groups and levels consistently position closer to specific attitude categories rather than neutral, indicating that both training progression and clinical specialty shape fundamental beliefs about hierarchical responsibility in medical practice (MDS graphs see Supplementary Materials).

In tort law, the doctrine of respondeat superior holds supervisors accountable for residents' actions in specialized education.[5,9] Common allegations against residents include failure to perform necessary examinations, inadequate patient history and assessments, misinterpretation of test results, and referral errors. Factors affecting the performance of both supervisors and residents include cognitive issues, insufficient supervision, heavy workloads, and improper delegation of authority. Importantly, society and legal systems often do not distinguish between the responsibilities of supervisors and residents.[19]

The findings indicate that residents' understanding of respondeat superior remains suboptimal, with only 26,58% demonstrating a level of knowledge classified as good. Most of them know that they work under supervision (91,64% and 99,07% respectively); however, those who know the supervisors' liability for residents' medical errors made by residents and that hospitals could also be accountable is lower (93,49% and 92,57%). Medical malpractice might be included in residents' education, but the specific delineation of legal responsibility shared by supervisors and hospitals might not necessarily be emphasized or systematically discussed. These findings parallel studies from India, Bangladesh, and the United States, where only 4.8-5% of residents demonstrated good knowledge of medicolegal principles despite general awareness of malpractice concepts. While Indonesian residents showed notably higher awareness, the knowledge-practice gap persists globally.[20-22]

The 2023 Health Law[16] does not mandate specific licenses for residents, but the MOH regulation still places them to practice under supervision. Additionally, the law establishes a safeguard for medical personnel by requiring assessment and recommendation from the MOH Disciplinary Council before the law enforcement agency can investigate alleged medico-legal violations. It ensures due process and prevents double prosecution in criminal and disciplinary courts.

A United States study reported that, between 2007 and 2016, residents were implicated in 4% of malpractice actions, of which 32% involved surgical specialty trainees.[23] Duty is one of the four components of evidence needed to prove tort medical malpractice.[18] Residents' duty is in the context of their position as doctors working under the supervisor's responsibility, and their involvement should be based on the supervisor's judgment to determine the extent of the residents' involvement.[24]

In their study, residents need direct involvement in patient care, including in high-risk procedures, to achieve competency and gain clinical experience, which is essential for the sustainability of the medical profession. Conversely, resident involvement may lead to patient dissatisfaction, particularly in communities with pre-existing biases. The informed consent regarding residents' participation in patient care is crucial and can help mitigate potential legal claims in the future.[25]

Despite only 26,58% of residents demonstrating good knowledge scores, they generally express positive attitudes toward the superior's liability and support applying this principle when residents are alleged to have committed malpractice. They also regard explicit instruction on this doctrine as an essential component of their educational program. Prior research by Rukmini and Bogar highlighted the prominence of seniority dynamics within Indonesia's specialist training system.[26] This hierarchical culture may contribute to the perception that senior residents should share responsibility for errors made by juniors, a view that does not fully reflect the actual legal framework. Junior residents' informal learning from senior peers should be further strengthened by clearly affirming that designated supervisors hold primary responsibility for ensuring the accuracy and clarity of the knowledge conveyed.

The declining positive attitudes toward hierarchical responsibility sharing among senior residents, reflects the intersection of hierarchical medical training culture and inadequate medico-legal education. The strong hierarchical power distance in Asia might play a role – where supervisors maintain authoritative positions while subordinates demonstrate high respect and avoid confrontative interactions. This parallels with findings in Malaysia and Pakistan where formal medico-legal training is either absent or relegated to isolated lectures rather than integrated curricula, leaving residents unprepared to navigate vicarious liability.[27,28]

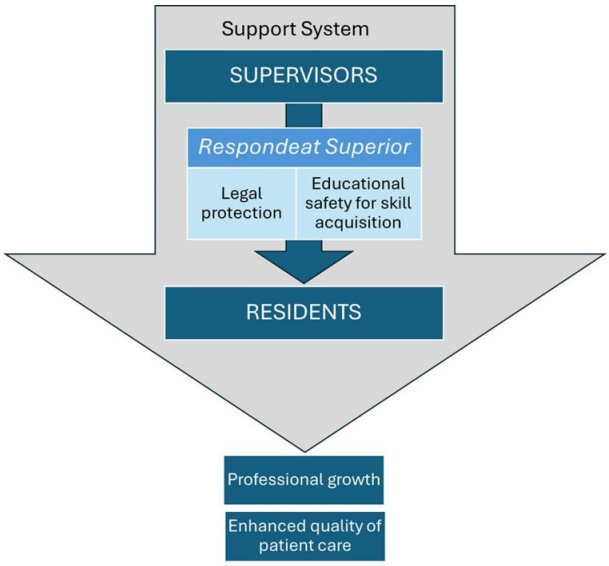


**Figure 4. Hierarchical Framework of Respondeat Superior and Its Role in Supporting Residents' Professional Development**

We propose a hierarchical framework to illustrate how respondeat superior supports residents' professional development (Figure 4) based on finding that 97% of residents recognize respondeat superior as crucial and 91% expect supervisors to share responsibility. Supervisors provide supervision and share responsibility with residents, creating a protective structure that prevents residents from bearing sole legal liability. This shared accountability framework enables

four critical development outcomes: legal protection, educational safety for skill acquisition, professional growth, and enhanced quality of patient care. The framework requires a support system as the foundation, including institutional backing and educational system (curriculum, monitoring, evaluation).

This study has several limitations. We could not analyze the type of study program specifically because they were classified into three major groups. The participation rate was only 7,6%, although it is significant from a random sampling perspective. The reluctance to participate may reflect the sensitivity of the topic for some physicians, leading certain study programs to decline participation in the research. It is also possible that many still consider medico-legal research not/less interesting.[29]

## CONCLUSION

This study reveals a critical paradox: Indonesian residents strongly recognize respondeat superior's importance yet lack adequate knowledge to apply it clinically. This gap reflects systemic deficiencies in medico-legal education. Without structural reforms residents will continue navigating complex medicolegal landscapes unprepared, undermining their learning environment and the quality of care they involve providing. To address these systemic deficiencies, medical education stakeholders must implement multi-level interventions, such as mandating longitudinal medico-legal education spanning all residency years; explicit discussion on responsibility distribution; modelling transparent decision-making about delegation and oversight; and establishing formal mentorship programs, and operationalizing respondeat superior principle in policies. Healthcare systems also must establish clear institutional policies operationalizing respondeat superior principle in shared responsibility policy, ensuring residents understand their protections within hierarchical supervision structures.

## ACKNOWLEDGEMENT

We thank Faculties of Medicine in seven Universities, of which, unfortunately, names cannot be mentioned, who supported this study by giving their permission and assistance to collect data.

## COMPETING INTERESTS

The authors declare that there are no competing interests related to the study.

## AUTHORS' CONTRIBUTION

***Andreas Onggo*** – conceptualization, methodology development, statistical analysis, validation, formal analysis, investigation, a part of resources, a part of data curation, writing original draft.

***Yoni Syukriani*** – conceptualization, methodology development, validation, formal analysis, investigation, resources, data curation, writing original draft, writing review & editing, visualization, project administration.

***Sani Tanzilah*** – conceptualization, methodology development, writing review & editing.

***Annisa Anwar Muthaher*** – conceptualization, methodology, a part of resources, data curation, writing review & editing.

***Sigid Kirana Lintang Bhima*** – conceptualization, a part of resources, data curation, writing review & editing.

***Tuntas Dhanardhono*** – conceptualization, a part of resources, data curation, writing original draft, writing review & editing.

## REFERENCES

1. Hatipoğlu U. Chronic obstructive pulmonary disease: More than meets the eye. Annals of Thoracic Medicine. 2018; 13(1): 1-6.
2. Jung JY, Kim SY, Kim DG et al. Analysis of lawsuit cases in the Department of Surgery in Korea. Annals of Surgical Treatment and Research. 2018; 94(3): 113-117.
3. Miyagami T, Watari T, Harada T et al. Medical Malpractice and Diagnostic Errors in Japanese Emergency Departments. The Western Journal of Emergency Medicine. 2023; 24(2): 340-347.
4. Murphy B. Resident medical liability lawsuits: Why and how often they happen. American Medical Association. July 10, 2020 (accessed: August 14, 2023)

5. Widjaja G, Ayuningtyas D. Malpractice: Causes and Disputes Resolution Choices. Journal of Indonesian Health Policy and Administration. 2015; 1-7.
6. Shenoy A, Shenoy GN, Shenoy GG. Respondeat superior in medicine and public health practice: The question is – Who is accountable for whom? Ethics Medicine and Public Health. 2021; 17.
7. Harper MC. Using The Anglo-American Respondeat Superior Principle to Assign Responsibility for Worker Statutory Benefits and Protections. Global Studies Law Review. 2019; 18(1).
8. Zhang G, Wu H, Xie AN et al. The association between medical student research engagement with learning outcomes. Medical Education Online. 2022; 27(1): 2100039.
9. Education Coordinating Committee. [Supervision Level Procedures for Medical Students and Trainees]. Dr. Hasan Sadikin General Hospital. Bandung, 2018.
10. Ngo E, Paterick ZR, Patel N, et al. Professional Liability Pertinent to Graduate Medical Education: The Intersection of Medical Education, Patient Care, and Law. Journal of Medical Practice and Management. 2016; 31(4).
11. Thiels CA, Choudhry AJ, Ray-Zack MD, Lindor RA, Bergquist JR et al. Medical Malpractice Lawsuits Involving Surgical Residents. JAMA Surgery. 2018; 153(1): 8-13.
12. Kachalia A, Studdert DM. Professional Liability Issues in Graduate Medical Education. JAMA. 2004; 292(9).
13. Appiah-Agyekum NN, Kayi EA. Knowledge and Awareness of Vicarious Liability: Views of Healthcare Workers in Ghana. Online Journal of Health Ethics. 2013; 9(1).
14. Nissen K, Angus SV, Miller W, Silverman AR. Teaching Risk Management: Addressing ACGME Core Competencies. Journal of Graduate Medical Education. 2010; 2(4): 589-594.
15. Zhao B, Cajas-Monson LC, Ramamoorthy S. Malpractice allegations: A reality check for resident physicians. American Journal of Surgery. 2019; 217(2): 350-355.
16. The Republic of Indonesia Law No. 17 Year 2023 on Health.
17. Ministry of Education and Culture of The Republic of Indonesia. The National Higher Education Database [accessed August 20, 2023]
18. Friederichs H, Marschall B, Weissenstein A. Simulation-based mastery learning in medical students: skill retention at 1-year follow up. Medical Teacher. 2019; 41(5): 539–546.
19. Bailey RA. Resident Liability in Medical Malpractice. Annual of Emergency Medicine. 2013; 61: 114-117.
20. Varghese AM, Vaswani VR, Kumar BK, Shenoy V. Awareness and Attitude of Medical Negligence and Medical Ethics among Interns and Resident Doctors. International Journal of Current Microbiology and Applied Science. 2016; 5(11): 532-535.
21. Nikkhahmanesh N, Kang P, van Sonnenberg E. Evaluating Medical Students' Knowledge of Medical Malpractice: A Pilot Study. International Journal of Medical Students. 2023; 11(4): 276–284.
22. Mathew S, Samant N, Cooksey C, Ramm O. Knowledge, Attitudes, and Perceptions About Medicolegal Education: A Survey of OB/GYN Residents. The Permanente Journal. 2020; 24(5): 19.217.
23. Keshavarzi MH, Azandehi SK, Koohestani H, Baradaran HR, Hayat AA et al. Exploration the role of a clinical supervisor to improve the professional skills of medical students: a content analysis study. BMC Medical Education. 2022; 22: 399.
24. Zhao B, Cajas-Monson LC, Ramamoorthy S. Malpractice Allegations: A Reality Check for Resident Physicians. The American Journal of Surgery. 2018; 217(2): 350-355.
25. Ghaith S, Campbell RL, Pollock JR, Torberson VE, Lindor RA. Medical Malpractice Lawsuits Involving Trainees in Obstetrics and Gynecology in the USA. Healthcare. 2022; 10: 1328.
26. Rukmini E, Bogar KJ. Exploratory study on medical graduates with nonclinicians career.

The Indonesian Journal of Medical Education. 2021; 10(1): 86-98.

27. Kishor SC. Forensic medicine curriculum in medical schools of Malaysia - a review. Bangladesh Journal of Medical Education. 2014; 5(1): 2-5.
28. Zahoor R, Akhtar N, Habib RI. Clinical Legal Education and its Implications on Legal Education System: Challenges and Prospects. Responsible Education, Learning and Teaching in Emerging Economies. 2021; 3(1): 15-26.
29. Suryadi T, Kulsum K. Knowledge and Attitude Among Resident Doctors Related to Ethical and Medico-legal Issues In A Teaching Hospital. The Indonesian Journal of Medical Education. 2022; 11(4): 349-362.