ORIGINAL ARTICLE

Beliefs and Perceptions of Nonintensivists towards the Role of Intensivist Leadership in the Intensive Care Unit and the Impact of Intensivists on Patient-driven Outcomes in India: A Descriptive Survey

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Abstract

Aim: To study the perception of nonintensivists of Indian intensive care units (ICUs) about the role of intensivists as leaders of the ICU, their impact on patient outcomes, including length of stay on the ventilator, cost of care, and evidence-driven quality care using a survey questionnaire.

Materials and methods: This study employed an online survey conducted using a Google Form and distributed *via* WhatsApp to nonintensivists taking care of ICU/high dependency unit (HDU) patients in public and private hospitals all over India. It consisted of 24 questions related to perceptions about the role of an intensivist in the ICU, their impact on patient-driven outcomes, ICU processes, and ICU structure.

Results: There was a statistically significant difference in responses from respondents working in closed and semi-open ICUs vs open ICUs. Overall, the presence of an intensivist was perceived to be associated with improvements in patient outcomes, smoother decision-making for complex cases, reduced costs by avoiding unnecessary tests, and reduced litigation by patient families, especially in closed and semi-open ICUs vs open ICUs.

Conclusion: This is the first-ever survey done to understand the role of an intensivist in the ICU in India in the eyes of a nonintensivist/admitting physician or surgeon. It shows that intensivists are considered to play a significant role in impacting patient outcomes, such as facilitating smoother decision-making in complex cases, improving decision-making efficiency, reducing costs associated with unnecessary tests, and preventing litigation by families. The survey results are very encouraging and should pave the way for conducting large-scale surveys in the developing world.

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Introduction

Dual providers in the intensive care unit (ICU) provide care of critically ill patients in India, one who admits the patient, that is, the admitting consultant, and the other being the consultant intensivist. Most ICUs in India are semi-open/open ICUs. The Indian Society of Critical Care Medicine guidelines recommend that the responsibility for patient care be shared between the admitting consultant (i.e., physician/surgeon) and the consultant intensivist.[1]

Only 58% of Indian ICUs have 24-hour trained intensivist coverage, as per a study by Kashyap et al.[2] This may be due to multiple synergistic factors, for example, a lack of information about the role of the intensivist, a lack of trained intensivists, or a lack of finances to pay the intensivist. There is no published information on the perception and beliefs of nonintensivists, that is, admitting physicians/surgeons, regarding the roles and impact of an intensivist in managing critically ill patients, especially with regard to their understanding of the impact that an intensivist can make on the outcome of patients in terms of length of stay, cost of care, communication to families, end of life care, and palliation. This survey was therefore created to understand the beliefs and perceptions of the admitting consultant, that is, the nonintensivist, in ICUs in India. This information may help the intensive care community foster better relationships with the admitting consultant/nonintensivist.

Materials and Methods

This survey was conducted using an online Google form (https://forms.gle/qP6TbRjGxepqUW8d7, supplement), which was distributed through WhatsApp by the 15 group members responsible for data collection *via* personal messages/group chats. No particular web portal was used to get access to these nonintensivists. It was sent to all nonintensivists managing critically ill patients in India, including post-MS specialists and superspecialists working in both public and private hospitals. General practitioners, that is, MBBS doctors who were caring for critically ill patients in the ICU/high dependency unit (HDU), were not sent the survey and were excluded from the study. No personal identifiers were collected during the study. As this study was an anonymous survey, ethics approval was not sought. The survey data were collected over 3 months, from February to April 2024. The survey consisted of 24 questions, six of which pertained to the respondent's demographics. A closed ICU was defined as one in which the intensivist leads the care of the patient, with all treatments, including ventilatory support, nutrition, and extubation, being managed by them. An open ICU is one in which different specialists provide input, but there is no overall in charge of the patient. A semi-open ICU is one in which both the intensivist and the admitting

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physician/surgeon can institute treatments. One question was related to the perception of care of acutely ill patients requiring special skills and knowledge, four were related to the role of the intensivist as a leader of ICU, code blue team, trauma team, and antibiotic stewardship team. One question was related to early referral of deteriorating patients in the general ward to the intensivist to prevent cardiac arrest. Four were related to outcomes, including patient outcomes, evidence-based quality care, extubation, and the cost of care. Two questions pertained to end-of-life care communication and litigation. Three questions were related to systems and processes of ICU, including utility of combined ICU-HDU, role of specialized ICUs (e.g., cardiac ICU, nephrology ICU), and clinical privileges of the intensivist in the ICU to do procedures and report them (e.g., bronchoscopy, echocardiogram). Three more questions were related to the presence of an intensivist and its impact on the dynamics of the team, including the stress on the admitting team, smoother decision-making for complex patients, and reducing conflict between multiple teams. A Likert scale was used, with points ranging from 1 (strongly agree) to 5 (strongly disagree). The survey questions were designed after discussions between the study group, which included intensivists from India, Singapore, Oman, and Dubai. All the intensivists involved in designing the survey were qualified intensivists working independently in their own countries, with >10 years of clinical experience. The study was conducted and reported in accordance with the published STROBE guidelines.[3]

Statistical Analysis

The data analysis was conducted using SPSS v25.0 to perform descriptive statistics, factor analysis, and analysis of variance (ANOVA) with Tukey's *post hoc* tests. Factor analysis, using principal component analysis (PCA) with varimax rotation, was applied to identify underlying components within the survey items, grouping them based on shared variance to reveal key factors influencing perceptions of intensivist-led care. ANOVA was then used to compare the mean survey scores across ICU types (open, semi-open, and closed ICUs) for each question to determine if perceptions varied significantly depending on the ICU model. Where significant differences were identified, a *post hoc* Tukey test was applied to identify specific pairwise differences, providing detailed insights into how each ICU type compared across survey items. For items with <5% missing data, mean imputation was used, assuming that the missingness was random and would not introduce bias.

Results

A total of 319 responses were received for the survey; however, for individual questions some respondents did not answer all questions. Of the 319 responders, 103 (32.2%) nonintensivist responders belonged to a surgical specialty, and 213 (66.7%) were from a medical specialty. Table 1 shows the clinical specialty of the responders.

About 57.3% of the respondents were senior consultants in their specialty, followed by 12.7% being the head of department, 10.5% being the junior/associate consultant, 10.2% marked as others, and 9.2% were professor/assistant professor. Five respondents did not answer this question.

A total of 54.5% of respondents worked in a semi-open ICU, 26.1% worked in a closed ICU, and 19.4% of respondents worked in an open ICU. Five respondents did not answer this question.

About 59.2% of respondents surveyed did not manage their critically ill patients independently without involvement of an intensivist, whereas 22.3% of respondents did manage their critically ill patients independently without involvement of an intensivist. 18.7% of respondents managed their critically ill patients independently without an intensivist sometimes. Three respondents did not answer this question.

Again 60.5% of respondents cared for <2 HDU/ICU patients daily, whereas 23.9% cared for 2–5 critically ill patients. 9.2% of respondents cared for 5–10 patients, and 6.4% cared for >10 ICU/HDU patients. Five respondents did not answer this question.

The responses to the remaining 18 questions have been tabulated in Table 2. The number of respondents who strongly agreed or agreed with the question on the Likert scale was totaled; similarly, the respondents who strongly disagreed or disagreed were added together.

The number of respondents who could not decide and marked the question as neither agreeing nor disagreeing, as well as those who did not answer the question, has also been displayed in Table 2.

A PCA was performed to identify underlying factors in participants' responses regarding the effectiveness and management of intensivist-led care. Using an eigenvalue criterion of >1, two principal components (PCs) were extracted (Table 3), accounting for 62.51% of the variance and explaining a significant portion of the variance in responses. Question 21 and 24 were not included in any PC as they both had a poor loading of <0.6. The missing data rate was <5% in our survey.

Principal component 1 (PC1) has a mean overall score of 3.81 [standard deviation (SD) = 1.11], indicating moderate agreement on perceptions related to the effectiveness of intensivist-led care. PC2 has a higher overall mean score of 4.29 (SD = 0.86), indicating stronger agreement on cost-effectiveness, resource management, and specialized roles in ICU care. Closed ICUs had the highest mean score for PC1 (mean = 4.17, SD = 0.99), followed by semi-open ICUs (mean = 3.70, SD = 1.07) and open ICUs (mean = 3.62, SD = 1.26). Semi-open ICUs had the highest mean score for PC2 (mean = 4.28, SD = 0.85), followed closely by closed ICUs (mean = 4.25, SD = 0.79) and open ICUs (mean = 4.18, SD = 0.95). The ANOVA test for PC1 revealed a significant difference across ICU types ($F(2, 298) = 5.824$, $p = 0.003$), indicating that perceptions related to the effectiveness and impact of intensivist-led care varied significantly among the different ICU models. However, for PC2, the ANOVA was not significant ($p = 0.237$), suggesting that there were no significant differences in perceptions related to cost-effectiveness and resource management across the ICU types.

The ANOVA analysis was also performed for each question of the survey to compare responses across ICU types. Mean scores, standard errors, and significance levels (p-values) are presented for each question in Table 4. A statistically significant difference was found between ICU types for five questions. Respondents in closed ICUs reported a significantly higher mean score (4.32 ± 0.13) than those in semi-open (3.84 ± 0.11) and open ICUs (3.62 ± 0.21), with intensivist-led care being perceived as reducing cost by avoiding unnecessary tests and treatments. Regarding patient outcomes, there was a significant effect of

Table 1: Specialty of the responder

Specialty of the responder	*Number (%)*
General medicine	97/319 (30.4)
General surgery	19/319 (5.9)
Nephrology	12/319 (3.7)
Pulmonology	21/319 (6.5)
Orthopedics	13/319 (4.0)
Trauma surgery	3/319 (0.9)
Gastrointestinal (GI) surgery	13/319 (4.0)
Gastroenterology	9/319 (2.8)
Obstetrics and gynecology	22/319 (6.8)
Ear, nose, and throat surgery	4/319 (1.2)
Cardiology	8/319 (2.5)
Cardiac surgery	3/319 (0.9)
Urology	9/319 (2.8)
Others	81/319 (25.3)
Unknown	5/319 (1.5)

Table 2: Responses of the survey

Question 7–24	*Number of respondents who strongly agreed*	*Number of respondents who strongly disagreed*	*Number of respondents who did not agree/ disagree*	*Number of respondents who did not answer this question*
Do you believe acute care, that is, looking after critically ill patients, is different from the care of stable, noncritically ill patients (nonacute care), which requires a special set of skills, knowledge, and training?	279/319 (87.4%)	23/319 (7.2%)	15/319 (4.7%)	2/319 (0.6%)
Do you believe an intensivist should be the administrative and clinical lead for critically ill patients in an ICU/HDU?	213/319 (66.7%)	52/319 (16.3%)	50/319 (15.6%)	4/319 (1.2%)
Do you believe that an intensivist-led treatment leads to a reduction in the cost of care by avoiding unnecessary laboratory tests and inappropriate treatments?	147/319 (46.0)%	92/319 (28.8%)	77/319 (24.1%)	3/319 (0.9%)
Do you believe that an intensivist-led treatment delivery leads to improvements in patient outcomes?	229/319 (71.7%)	41/319 (12.8%)	43/319 (13.4%)	6/319 (1.8%)
Do you believe an intensivist-led treatment leads to faster extubation and thus a reduction in ventilator days in the ICU?	232/319 (72.7%)	42/319 (13.1%)	39/319 (12.2%)	6/319 (1.8%)
Do you believe an intensivist-led treatment of critically ill patients reduces stress on the admitting team?	263/319 (82.4%)	28/319 (8.7%)	24/319 (7.5%)	4/319 (1.2%)
Do you believe that an intensivist-driven treatment is more evidence-based and up-to-date?	209/319 (65.5%)	46/319 (14.4%)	60/319 (18.8%)	4/319 (1.2%)
Do you believe that an intensivist-led care reduces conflict among multiple care teams?	200/319 (62.6%)	48/319 (15.0%)	67/319 (21.0%)	4/319 (1.2%)
Do you believe that an intensivist-led care of critically ill patients reduces the risk of litigation by patients' families?	204/319 (63.9%)	50/319 (15.6%)	59/319 (18.4%)	6/319 (1.8%)
Do you believe that the hospital should grant intensivist clinical privileges to perform bedside bronchoscopy and report transthoracic echocardiograms if they are trained to do so?	238/319 (74.6%)	41/319 (12.8%)	36/319 (11.2%)	4/319 (1.2%)
Do you think a closed ICU, led by intensivists, can lead to smoother decision-making for complex, critically ill patients, thereby resulting in efficient and timely care?	201/319 (63.0%)	59/319 (18.4%)	54/319 (15.4%)	5/319 (1.5%)
Do you believe that an intensivist should lead the communication with families regarding end-of-life care and palliation?	217/319 (68.0%)	38/319 (11.9%)	59/319 (18.4%)	5/319 (1.5%)
Do you believe an intensivist should lead the code blue team in a hospital?	276/319 (86.5%)	19/319 (5.4%)	20/319 (6.2%)	4/319 (1.2%)
Do you believe an early referral of a deteriorating patient in the surgical/medical ward to an intensivist can lead to earlier recognition of critical illness and thus avoid cardiac arrests in the general ward?	265/319 (83.0%)	26/319 (8.1%)	23/319 (7.2%)	5/319 (1.5%)
Do you believe an intensivist should be the leader of a trauma team?	192/319 (60.1%)	53/319 (16.6%)	69/319 (21.6%)	5/319 (1.5%)
Do you believe that an intensivist should lead the antibiotic stewardship program in the ICU in order to minimize antibiotic resistance and unnecessary costs, as well as side effects of prolonged antibiotic use?	238/319 (74.6%)	39/319 (12.2%)	34/319 (10.6%)	8/319 (2.5%)
Do you believe there should be a combined ICU and HDU in a hospital to facilitate the smoother transition of care for critically ill patients and better utilization of resources?	261/319 (81.8%)	26/319 (8.1%)	26/319 (8.1%)	6/319 (1.8%)
Do you believe that there should be specialized ICUs/HDUs, such as neurology ICUs, cardiac ICUs, gastroenterology ICUs, nephrology ICUs, etc.?	236/319 (73.9%)	37/319 (11.5%)	38/319 (11.9%)	8/319 (2.5%)

the type of ICU. Respondents in closed ICUs had a higher level of agreement (3.75 ± 0.15) compared to those in semi-open ICUs (3.08 ± 0.11) and open ICUs (3.18 ± 0.20). A significant difference in perceptions regarding decision-making efficiency was also observed. Closed ICUs received the highest mean score (4.27 ± 0.12), followed by semi-open (3.47 ± 0.10) and open ICUs (3.62 ± 0.20). For the item addressing litigation risk, a significant difference was found between ICU types. The role of the intensivist in closed ICUs was rated higher (4.15 ± 0.12) compared to semi-open (3.72 ± 0.10) and open ICUs (3.63 ± 0.18). The ANOVA analysis revealed a significant effect on perceptions of treatment efficiency ($p = 0.018$). Closed ICUs had a higher mean score (4.33 ± 0.12) compared to semi-open (3.96 ± 0.09) and open ICUs (3.75 ± 0.19). *Post hoc* Tukey analysis revealed similar significant differences in comparisons of responses from nonintensivists between closed ICU and semi-open ICU, and between closed ICU and open ICU. Closed ICUs

Table 3: PCA

PC1	*PC2*
VAR00008: "Do you believe an intensivist should be the administrative and clinical lead for critically ill patients in an ICU/HDU?"	VAR00007: "Do you believe acute care (i.e., looking after critically ill patients) is different from the care of stable noncritically ill patients (nonacute care) requiring a special set of skills, knowledge, and training?"
VAR00009: "Do you believe an intensivist-led treatment leads to a reduction in the cost of care by avoiding unnecessary laboratory tests and inappropriate treatments?"	VAR00012: "Do you believe an intensivist-led treatment of critically ill patients reduces stress on the admitting team?"
VAR00010: "Do you believe an intensivist-led treatment delivery leads to improvement in patient outcomes?"	VAR00016: "Do you believe that the hospital should give an intensivist clinical privileges to do bedside bronchoscopy and report transthoracic echocardiograms if trained to do so?"
VAR00011: "Do you believe an intensivist-led treatment leads to faster extubation and thus reduction in ventilator days in ICU?"	VAR00018: "Do you believe that an intensivist should lead the communication with families regarding end-of-life care and palliation?"
VAR00013: "Do you believe that an intensivist-driven treatment is more evidence-based and up-to-date?"	VAR00019: "Do you believe an intensivist should lead the code blue team in a hospital?"
VAR00014: "Do you believe an intensivist-led care reduces conflict among multiple care teams?"	VAR00020: "Do you believe an early referral of a deteriorating patient in the surgical/medical ward to an intensivist can lead to earlier recognition of critical illness and thus avoid cardiac arrests in the general ward?"
VAR00015: "Do you believe an intensivist-led care of critically ill patients reduces the risk of litigation by patients' families?"	VAR00022: "Do you believe that an intensivist should lead the antibiotic stewardship program in the ICU to minimize antibiotic resistance, costs, and side effects?"
VAR00017: "Do you think a closed ICU, which is intensivist-led, can lead to smoother decision-making for complex critically ill patients, thus leading to efficient, timely care?	VAR00023: "Do you believe there should be a combined ICU and HDU in a hospital to facilitate smoother transitions of care for critically ill patients and better resource utilization?"

Table 4: ANOVA across different ICU types

Variable	*Overall*	*Open (n = 61)*	*Semi-open (n = 171)*	*Closed (n = 82)*	*p-value*
Special skills required for acute care vs nonacute care	4.54 ± 0.60	4.34 ± 0.17	4.58 ± 0.08	4.59 ± 0.11	0.297
Cost reduction by avoiding unnecessary tests	3.93 ± 0.78	3.62 ± 0.21	3.84 ± 0.11	4.32 ± 0.13	0.006*
Improvement in patient outcomes	3.28 ± 0.08	3.18 ± 0.20	3.08 ± 0.11	3.75 ± 0.15	0.003*
Improvement in treatment efficiency	4.02 ± 0.07	3.75 ± 0.19	3.96 ± 0.09	4.33 ± 0.12	0.018*
Faster extubation and reduced ventilator days due to intensivist-led care	4.07 ± 0.69	3.82 ± 0.18	4.04 ± 0.09	4.29 ± 0.12	0.075
Reduction in stress on the admitting team with intensivist-led care	4.33 ± 0.06	4.31 ± 0.14	4.26 ± 0.09	4.48 ± 0.11	0.353
Intensivist leadership effectiveness	3.83 ± 0.07	3.62 ± 0.19	3.76 ± 0.09	4.10 ± 0.12	0.053
Reduction of conflicts among care teams with intensivist-led care	3.78 ± 0.07	3.67 ± 0.18	3.68 ± 0.09	4.05 ± 0.13	0.075
Reduction in litigation risk	3.82 ± 0.07	3.63 ± 0.18	3.72 ± 0.10	4.15 ± 0.12	0.021*
Clinical privileges for intensivists for bedside procedures	4.07 ± 0.07	3.90 ± 0.17	4.09 ± 0.09	4.19 ± 0.13	0.393
Smoother decision-making for complex cases	3.72 ± 0.08	3.62 ± 0.20	3.47 ± 0.10	4.27 ± 0.12	<0.001*
Intensivist-led communication with families on end-of-life care	3.99 ± 0.07	3.98 ± 0.17	3.87 ± 0.10	4.25 ± 0.13	0.079
Intensivist as leader of the code blue team	4.51 ± 0.06	4.58 ± 0.11	4.53 ± 0.08	4.43 ± 0.11	0.631
Early referral to intensivists to prevent deterioration in general wards	4.36 ± 0.06	4.12 ± 0.17	4.39 ± 0.08	4.50 ± 0.12	0.118
An intensivist as the leader of a trauma team	3.75 ± 0.07	3.62 ± 0.18	3.77 ± 0.10	3.81 ± 0.14	0.659
Intensivist-led antibiotic stewardship to reduce resistance and costs	4.11 ± 0.07	3.93 ± 0.17	4.11 ± 0.10	4.23 ± 0.13	0.389
Combined ICU and HDU to improve patient transitions and resource use	4.31 ± 0.06	4.32 ± 0.15	4.33 ± 0.08	4.27 ± 0.13	0.902
Need for specialized ICUs (e.g., neurology, cardiac) for specific patient needs	4.12 ± 0.07	3.88 ± 0.18	4.12 ± 0.09	4.27 ± 0.14	0.193

*Indicates *p*-value is statistically significant

consistently exhibited higher ratings across questions related to the role of intensivists in leadership effectiveness, patient outcome improvements, cost efficiency, and litigation risk reduction when compared with both semi-open and open ICUs.

Discussion

One of the reasons for conducting this study was that intensive care, as a specialty, is still underrecognized and undervalued by the medical fraternity, hospital administration, and society in low- and middle-income countries. Although, intensive care units developed in some countries in Asia in the 1960s; the specialty of intensive care is still not recognized in many developing countries, such as Nepal and Pakistan. This is compounded by the fact that training for the specialty, that is, the critical care fellowship programs, existed in only 34, 65, and 67% of ICUs in low-, middle-, and high-income countries, respectively, in 2013–2014, as per the data published by Phua et al. in their study of Asian ICUs.[4] About 87% of nonintensivists surveyed in this study strongly believed that acute care, which involves taking care of critically unwell patients, requires special skills, knowledge, and training, which lends support to the Indian Society of Critical Care Medicine's initiative of putting forth guidelines that standardize the definition of an intensivist.[1] The presence of dual providers in Indian ICUs, that is, the admitting physician/surgeon as well as the intensivist looking after patients, may lead to conflict or disagreements in everyone's roles and responsibilities. The results of our survey indicate that ICU type has a significant impact on the perceptions of nonintensivists about intensivist-led care. The results of our survey also provide reassurance that the nonintensivist in India does understand the role of an intensivist as effective in impacting patient care, especially in closed and semi-open ICUs, in terms of smoother decision-making in complex cases, reduction of cost of care by avoiding unnecessary tests, reducing litigation by patient families, improving treatment efficiency, and better patient outcomes. The impact of closed ICUs on patient outcomes has been studied.

Pronovost et al.,[5] in their systematic review of 26 studies conducted in North America, Europe, and Asia, also found that high-intensity intensive care staffing, that is, in closed ICUs or mandatory ICU consultation, was associated with reduced ICU and hospital mortality, as well as reduced length of stay in ICU and hospital, when compared to ICUs with low-intensity intensive care staffing.[5] A recent systematic review by Vahedian-Azimi et al.[6] looked at 90 studies comparing open vs closed ICUs from around the world and concluded that ICU mortality and length of stay were reduced in a closed ICU model as compared to an open ICU model.[6] The staffing of ICUs in North America has dramatically improved over the last 25 years. In a survey published recently by Gershengorn et al.,[7] out of 554 ICUs, 93% had intensivist coverage, with 53% being present onsite 24 hour/day. However, the situation in developing countries, such as India, is different. In the Intensive Care Unit Needs Assessment Survey (ININ18) by Kashyap et al., which was an extensive national semi-structured needs assessment survey conducted in 134 ICUs across India, 82% were open ICUs, and only 58% had 24-hour in-house intensivist coverage.

Most nonintensivist responders in our survey were senior consultants of medicine who cared for critically ill patients while working in semi-open ICUs, which correlates with data from studies in India.

Most nonintensivists in this survey strongly believed that the intensivist should be the clinical and administrative lead of the ICU, lead the code blue team and trauma team in the hospital. This is a very encouraging finding, which should empower intensivists in taking up these leadership roles in the hospital. Most nonintensivists surveyed also believed that early referral of deteriorating patients to the intensivist can prevent cardiac arrests in the hospital, which is also consistent with the data from the rapid response studies from the UK and Australia.[8,9]

Stress and burnout in healthcare workers in the ICU are a well-recognized worldwide phenomenon, and various critical care societies are undertaking measures to prevent it and avoid loss of workforce.[10–14] The results of this survey also indicate strong agreement among nonintensivist respondents regarding the role of intensivists in reducing stress on the admitting team. There may be multiple reasons for this, due to the centralized leadership of a closed ICU, which can provide seamless care through a single decision-maker with focused insight and prompt, timely decisions.

Care of critically ill patients is complex and dynamic, requiring input from multiple teams and decision-makers regarding therapeutic interventions. This requires effective interdisciplinary communication. Medical malpractice cases have shown that a breakdown of communication is a significant contributing factor in litigation by patient families.[15] The results of this survey highlight the important role an intensivist can play in smoothing out communication with families, which may be an important factor to consider, as litigation cases contribute significantly to the economic burden on the hospital. The potential short-term cost of employing an intensivist by a hospital may bring benefits in the long term, not only to the patients but also to hospital systems.

This study has several drawbacks. The survey tool we used has not been validated in any previous study. We were unable to find any previous surveys on this topic in our PubMed search, so we developed this survey tool. We were unable to accurately calculate the response rate as the survey was widely distributed through WhatsApp. Additionally, the difference in responses from respondents working in various ICU models, which was found to be statistically significant in our study, had not been planned a priori. Although closed ICUs were perceived to have a better impact on patient outcomes due to the presence of an intensivist, only 26.1% of respondents in our survey worked in closed ICUs. This survey tool may be tested in other developing countries where intensive care is still a growing specialty to understand the needs, perceptions, and biases of the nonintensivists toward trained intensivists and their role in managing critically ill patients. By doing this, one can further the cause of improved care and outcomes for these vulnerable, critically ill patients, with the trained intensive care specialist serving as the leader and collaborator. This may be a small step in helping intensive care societies in the developing world build the critical care specialty as an important entity in itself by championing for its own self.

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References

1. Divatia JV, Baronia AK, Bhagwati A, et al. Critical care delivery in intensive care units in India: defining the functions, roles and responsibilities of a consultant intensivist. Recommendations of the Indian Society of Critical Care Medicine Committee on defining the

functions, roles and responsibilities of a consultant intensivist members. Indian J Crit Care Med 2006;10(1):53–63.
2. Kashyap R, Vashistha K, Saini C, et al. Critical care practice in India: results of the intensive care unit need assessment survey (ININ2018). World J Crit Care Med 2020;9(2):31–42.
3. von Elm E, Altman DG, Egger M, et al. The strengthening the reporting of observational studies in epidemiology (STROBE) statement: guidelines for reporting observational studies. Ann Intern Med 2007;147(8):573–577.
4. Phua J, Lim CM, Faruq MO, et al. The story of critical care in Asia: a narrative review. J Intensive Care 2021;9(1):60.
5. Pronovost PJ, Angus DC, Dorman T, et al. Physician staffing patterns and clinical outcomes in critically ill patients: a systematic review. JAMA 2002;288(17):2151–2162.
6. Vahedian-Azimi A, Rahimibashar F, Ashtari S, et al. Comparison of the clinical features in open and closed format intensive care units: a systematic review and meta-analysis. Anaesth Crit Care Pain Med 2021;40(6):100950.
7. Gershengorn HB, Garland A, Costa DK, et al. ICU staffing in the United States. Chest 2024;166(4):743–753.
8. De Jong A, Jung B, Daurat A, et al. Effect of rapid response systems on hospital mortality: a systematic review and meta-analysis. Intensive Care Med 2016;42(4):615–617.
9. Maharaj R, Raffaele I, Wendon J. Rapid response systems: a systematic review and meta-analysis. Crit Care 2015;19:254.
10. Moss M, Good VS, Gozal D, et al. A critical care societies collaborative statement: burnout syndrome in critical care health-care professionals. A call for action. Am J Respir Crit Care Med 2016;194:106–113.
11. Costa DK, Moss M. The cost of caring: emotion, burnout, and psychological distress in critical care clinicians. Ann Am Thorac Soc 2018;15:787–790.
12. Pastores SM, Kvetan V, Coopersmith CM, et al. Workforce, workload, and burnout among intensivists and advanced practice providers: a narrative review. Crit Care Med 2019;47:550–557.
13. Brindley PG. Psychological burnout and the intensive care practitioner: a practical and candid review for those who care. J Intensive Care Soc 2017;18:270–275.
14. Mikkelsen ME, Anderson BJ, Bellini L, et al. Burnout, and fulfilment, in the profession of critical care medicine. Am J Respir Crit Care Med 2019;200:931–933.
15. Humphrey KE, Sundberg M, Milliren CE, et al. Frequency and nature of communication and handoff failures in medical malpractice claims. J Patient Saf 2022;18(2):130–137.