

**The Effect of Nurses' Workload on Compliance in
Implementing Patient Education Before Discharge: The
Mediating Effect of Perceived Organizational Support and
Burnout Level**

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ABSTRACT

Nurses are essential to delivering discharge education, which ensures safe transitions and reduces hospital readmissions. However, high workloads can hinder nurses' ability to consistently provide this education. While burnout and perceived organizational support (POS) may mediate this relationship, evidence in the Indonesian healthcare setting is limited. Objective to analyze the effect of nurse workload on compliance with discharge education and assess the mediating roles of burnout and perceived organizational support. Methods a cross-sectional quantitative study was conducted with 100 nurses at a Type B private hospital in Semarang, Indonesia. Data were collected via validated questionnaires and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). Results Workload had a significant negative effect on compliance with discharge education and a significant positive effect on burnout. Burnout also had a strong negative effect on compliance and significantly mediated the relationship between workload and compliance. Conversely, perceived organizational support showed no significant influence on compliance and did not mediate the workload-compliance relationship. Conclusion Increased nurse workload reduces compliance with discharge education, primarily through its effect on burnout. Although nurses reported high levels of organizational support, it did not significantly impact educational compliance. Interventions focusing on workload management and burnout prevention are crucial to enhance the quality of discharge education and patient outcomes.

Keywords: *nurse workload, discharge education, burnout, perceived organizational support, compliance, PLS-SEM, Indonesia*

BACKGROUND

Nurses play a central role in delivering quality healthcare services within hospital systems. Beyond their traditional caregiving duties, nurses function as patient advocates, educators, coordinators, collaborators, and consultants. Their responsibilities span not only physical care but also emotional, social, and spiritual support. As educators, nurses are expected to provide comprehensive discharge education that prepares patients and families for post-hospital care. This discharge education is vital to ensure medication adherence, reduce the risk of readmissions, and improve overall patient safety outcomes (Aiken et al., 2017). However, this critical component of nursing care is often compromised due to high workloads and staffing challenges.

Workload is consistently cited as a major factor affecting the performance and compliance of nurses in adhering to care protocols. Excessive workloads have been linked to nurse fatigue, decreased job satisfaction, and reduced quality of patient care (Sabrina et al., 2022). Studies have shown that increased workload can impair nurses' communication with patients and deprioritize essential activities such as patient education before discharge (Van Bogaert et al., 2017).

Existing research has predominantly focused on how nurse workload affects patient safety and clinical outcomes. Yet, few studies have examined how workload influences nurse compliance with discharge education protocols, especially within the Indonesian healthcare context. Moreover, the mediating roles of perceived organizational support (POS) and burnout remain underexplored in this specific relationship. Organizational support can buffer the negative effects of workload by providing resources, recognition, and supportive management, which increase nurse resilience and job commitment (Kurtessis et al., 2017). Similarly, burnout a condition characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment can negatively influence the motivation and compliance of nurses with hospital standards (Maslach et al., 2016; Al Sabei et al., 2020).

A recent internal assessment at a type B private hospital in Semarang, Indonesia, revealed that the hospital's patient return rate for follow-up visits remains below the 60% standard set by the Indonesian Hospital Accreditation Commission (KARS). Between 2022 and 2024, follow-up visit percentages ranged from 49% to 50.5%, indicating suboptimal continuity of care. Further interviews with the hospital's inpatient unit head uncovered that discharge education is often overlooked due to service congestion and time constraints. A preliminary survey among 30 nurses showed that over 50% did not consistently provide standardized discharge education. This aligns with prior findings that inadequate nurse-led discharge communication may result in poor patient understanding of treatment plans, medication usage, and warning signs, ultimately leading to increased readmissions and poor long-term outcomes.

This study aims to fill critical gaps in the literature by examining how nurse workload impacts compliance with discharge education, and whether this relationship is mediated by burnout and perceived organizational support. While studies in the United States and Europe have discussed workload, burnout, and organizational support extensively, there is limited research assessing how these dynamics interact in Indonesia, where systemic, cultural, and resource-related differences may produce distinct outcomes. By understanding these relationships, hospitals can formulate targeted strategies to optimize nurse performance, improve discharge processes, and enhance post-discharge patient outcomes.

RESEARCH METHODS

Study Design

This research utilized a quantitative approach with an explanatory research design, aiming to explain causal relationships between variables—specifically, how

nurse workload affects compliance in delivering discharge education, with burnout and perceived organizational support (POS) as mediating variables. The study employed a cross-sectional design, collecting data at a single point in time without intervention, allowing for assessment of real-time associations among variables.

Study Population and Sampling

The study population comprised nurses working in a private type B hospital in Semarang, particularly those responsible for patient discharge education. A purposive sampling technique was used to select participants who met the inclusion criteria: (1) actively involved in providing discharge education, (2) having a minimum of six months of work experience, and (3) willing to participate. Nurses on leave or not involved in direct patient discharge education were excluded.

Sample size calculation was performed using G*Power 3.1, with parameters set for multiple regression analysis (effect size $f^2 = 0.15$, $\alpha = 0.05$, power = 0.80, and 2 predictors). The minimum required sample size was 55; to account for potential dropouts or unusable data, the final target was 66 respondents.

Data Collection

Primary data were collected using a structured questionnaire distributed online and in person. The questionnaire was designed to measure nurse workload, compliance with discharge education, perceived organizational support, and burnout level. All items were rated using a 5-point Likert scale, ranging from "Strongly Disagree" (1) to "Strongly Agree" (5), or from "Never" (1) to "Very Often" (5) for burnout indicators.

Secondary data were sourced from relevant academic literature, hospital policies, and previous research studies.

Operationalization of Variables

Each construct was operationalized with clearly defined dimensions:

- a. Workload: measured through mental, physical, time demands, performance, frustration, and effort
- b. Compliance: evaluated based on the extent to which nurses adhered to discharge education protocols
- c. Perceived Organizational Support: measured by nurses' perceptions of support from their institution (Kurtessis et al., 2017)
- d. Burnout: assessed through emotional exhaustion, depersonalization, and personal accomplishment (Maslach et al., 2016)

Only validated items with outer loading ≥ 0.70 were retained following the pilot study.

Data Analysis

Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) via SmartPLS software. Two major analytical stages were conducted.

Outer Model (Measurement Model): Evaluated indicator reliability (outer loadings), convergent validity (AVE), discriminant validity (HTMT), and construct reliability (CR, Cronbach's alpha). Inner Model (Structural Model): Assessed path coefficients, coefficient of determination (R^2), and mediation effects of POS and burnout on the relationship between workload and compliance.

RESULT AND DISCUSSION

Sample Characteristic

A total of 100 respondents met the inclusion and exclusion criteria and were included in the final analysis to ensure robust data representation. All participants were nurses working at a private type B hospital in Semarang. The majority of respondents were female (99%), with only 1% male. The most common age group was 31–40 years (43%), followed by 41–50 years (36%), 21–30 years (17%), and a minority aged 51–60 years (4%). In terms of educational background, 52% of respondents held a Diploma degree, 31% had completed professional education, and 17% held a bachelor's degree. All respondents reported being actively employed as nurses and responsible for providing discharge education. Most had more than six months of work experience (98%), while only 2% had worked for less than six months. The majority worked in inpatient wards (97%), with the remaining 3% distributed in other units. These characteristics provide a well-defined nursing population for the study context.

Table 1. Sample Characteristic

Variable	Frequency	Percentage
Gender		
Male	1	1.0%
Female	99	99.0%
Age		
<21 – 30 years	17	17.0%
31 – 40 years	43	43.0%
41 – 50 years	36	36.0%
51 – 60 years	4	4.0%
Last Education Level		
Diploma	52	52.0%
Bachelor's Degree	17	17.0%
Professional Degree	31	31.0%
Working as a Nurse		
Yes	100	100.0%
No	0	0.0%
Length of Employment		
< 6 months	2	2.0%
≥ 6 months	98	98.0%

Responsible for Providing Education		
Yes	100	100.0%
No	0	0.0%
<hr/>		
Work Unit		
Ward	97	97.0%
Others	3	3.0%
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Willing to Complete the Questionnaire		
Yes	100	100.0%
No	0	0.0%

Descriptive Analysis

Descriptive analysis of the nurse workload variable, measured through 20 indicators, revealed a total mean score of 3.35 on a Likert scale of 1 to 5, which falls into the "Neutral" category. This suggests that respondents perceived their workload to be moderate. The indicator with the highest mean was "I rarely achieve the performance targets set by the hospital" (mean = 3.48), indicating a tendency toward agreement on performance pressure. In contrast, the indicator "My job requires high physical effort" had the lowest mean score (mean = 3.05), though still within the neutral range. These findings suggest that nurses experience moderate cognitive and emotional demands, with physical workload perceived as relatively less burdensome. Analysis of the compliance variable, comprising 12 indicators, resulted in an overall mean of 4.11, categorized as "Agree." This reflects a high level of compliance among nurses in providing discharge education. The highest mean was noted for the indicator related to recommending lifestyle changes (mean = 4.18), while the lowest, though still within the "Agree" category, pertained to explaining follow-up actions for symptom recurrence (mean = 4.07). Overall, these results indicate a strong commitment among nurses to fulfill discharge education protocols.

The perceived organizational support variable, measured using six indicators, yielded an overall mean of 4.09, indicating a favorable perception of organizational support among the respondents. The highest score was observed for "The hospital considers my life values" (mean = 4.13), while the lowest, albeit still positive, was "The hospital cares about my well-being" (mean = 4.07). This suggests that the organization's support is consistently recognized by the nursing staff, particularly in areas concerning personal values and support during difficulties.

Burnout level was assessed through 30 indicators and produced a total mean score of 3.31, which is categorized as "Neutral." This implies that the respondents experienced moderate levels of burnout. The highest mean was recorded for "I feel I have gained a lot through my work" (mean = 3.51), reflecting positive professional reward, while the lowest was for "I feel overworked at the hospital" (mean = 3.12), suggesting some emotional fatigue. While burnout was not severe, early signs of

emotional exhaustion and depersonalization were evident and warrant organizational attention.

Inferential Analysis

Measurement Model (Outer Model)

Initial validation through outer loading indicated that 44 of 63 indicators met the required threshold (loading ≥ 0.70), while 19 were excluded due to insufficient validity. Post-elimination, all remaining indicators met the validity criteria.

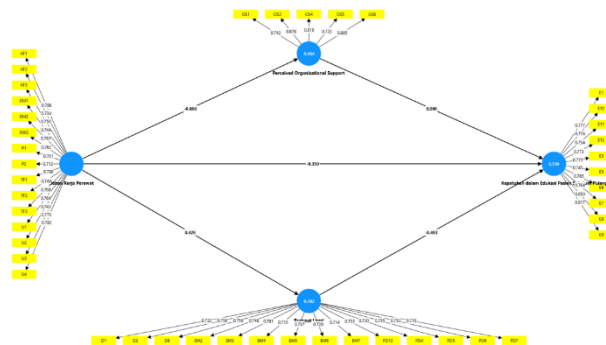


Figure 1. Outer Loading Result after Elimination

Convergent validity was confirmed as all constructs had AVE values above 0.50, with perceived organizational support having the highest (0.659).

Table 2. Average Variance Extracted (AVE)

Variable	AVE ≥ 0.50
Nurse Workload	0.564
Compliance with Discharge Education	0.609
Perceived Organizational Support	0.659
Burnout Level	0.547

Discriminant validity was established using the Fornell-Larcker criterion, cross loading, and HTMT, all of which met established thresholds. Internal consistency reliability was confirmed, with all constructs displaying Cronbach's alpha and composite reliability values above 0.70, indicating strong reliability across constructs.

Table 3. Reliability Statistics for Each Construct

Variable	Cronbach's Alpha	Composite Reliability
Nurse Workload	0.945	0.951

Compliance with Discharge Education	0.928	0.932
POS	0.872	0.911
Burnout Level	0.936	0.938

Structural Model (Inner Model)

Co-linearity diagnostics indicated VIF values < 5, confirming no multicollinearity issues. R² values showed that the model explained 53.6% of the variance in discharge education compliance (moderate explanatory power), 18.2% in burnout level (weak), and only 0.4% in perceived organizational support (very weak).

Table 4. Co-linearity Test

Variable Relationship	VIF
Nurse Workload → Compliance with Patient Education Before Discharge	1.222
Nurse Workload → Perceived Organizational Support	1.000
Perceived Organizational Support → Compliance with Patient Education Before Discharge	1.015
Nurse Workload → Burnout Level	1.000
Burnout Level → Compliance with Patient Education Before Discharge	1.235

Table 5. Coefficient of Determination (R²)

Variable	R ²	Adjusted R ²
Burnout Level	0.182	0.173
Compliance with Patient Education Before Discharge	0.536	0.522
Perceived Organizational Support	0.004	-0.006

Effect size analysis revealed moderate effects of nurse workload on both burnout ($f^2 = 0.222$) and discharge compliance ($f^2 = 0.217$), and a large effect of burnout on compliance ($f^2 = 0.424$).

Table 6. Effect Size (f^2) for Dependent Variables

Predictor	Burnout Level	Compliance with Patient Education	Perceived Organizational Support
Nurse Workload	0.222	0.217	0.004
Burnout Level	-	0.424	-
Perceived Organizational Support	-	0.017	-

Hypothesis testing confirmed significant negative effects of nurse workload on discharge education compliance (H1) and positive effects on burnout (H5), with burnout also significantly and negatively influencing compliance (H6). However, hypotheses related to perceived organizational support (H2, H3, H4) were not supported, indicating that this variable neither influenced compliance nor mediated the workload-compliance relationship.

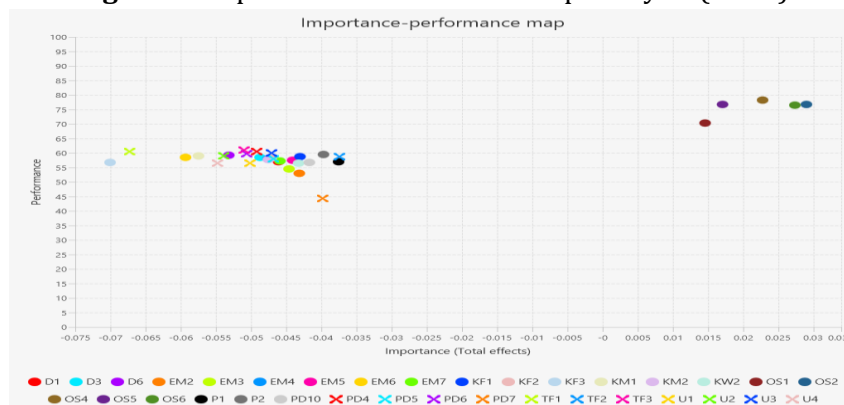
Table 7. Sign and Significance of Path Coefficients

Hypotheses	<i>P values</i>
H1: Nurse Workload → Compliance with Patient Education Before Discharge	0.000
H2: Nurse Workload → Perceived Organizational Support	0.64
H3: Perceived Organizational Support → Compliance with Patient Education Before Discharge	0.24
H5: Nurse Workload → Burnout Level	0.000
H6: Burnout Level → Compliance with Patient Education Before Discharge	0.000

Importance-Performance Map Analysis

The IPMA revealed that perceived organizational support had high importance and performance scores, especially in indicators such as life value recognition and well-being support, marking it as a strategic area for continuous improvement. Meanwhile, certain indicators of burnout (e.g., emotional exhaustion and low energy) showed low performance despite moderate importance, suggesting a need for targeted interventions. Indicators from the workload construct also varied in performance but generally showed low direct impact, reinforcing the need to manage stressors indirectly through burnout mitigation.

Figure 2. Importance-Performance Map Analysis (IPMA)



Effect of Nurse Workload on Compliance with Discharge Education

The study found a significant negative effect of workload on nurse compliance with discharge education ($\beta = -0.350, p < 0.001$). This confirms that a higher workload impairs the ability of nurses to consistently provide adequate discharge education—an essential aspect of continuity of care and post-discharge safety.

This result is consistent with prior research by (Yuliatin et al., 2020) and (Muryono, 2022), which highlighted that heavy workloads compromise educational interventions due to time constraints and cognitive overload. These findings reinforce the need for hospital management to implement workload balancing strategies to maintain educational standards and patient safety.

Effect of Nurse Workload on Perceived Organizational Support

Contrary to expectations, the influence of workload on perceived organizational support was not statistically significant ($\beta = -0.066, p = 0.640$). This suggests that even under high workloads, nurses may still perceive organizational support positively, possibly due to strong interpersonal dynamics, leadership recognition, and non-material appreciation.

This finding diverges from earlier studies that emphasized workload as a detractor from POS. The discrepancy could stem from contextual differences such as supportive leadership culture and informal peer support within the study setting (Sahrah, 2018; Putri et al., 2023).

Effect of Perceived Organizational Support on Compliance with Discharge Education

The relationship between POS and discharge education compliance was also found to be statistically insignificant ($\beta = 0.090, p = 0.240$). While theory and literature (Zheng et al., 2024; Bukhari et al., 2023) emphasize the role of POS in motivating staff behavior, the nurses in this study cited personal values and professional ethics as stronger motivators than organizational factors. This suggests that internal drivers may outweigh institutional support in influencing educational compliance.

Mediation of POS between Workload and Compliance

The mediating role of POS was not supported ($\beta = -0.006, p = 0.763$). Despite theoretical models positioning POS as a buffer against stressors like workload, the findings suggest that POS does not sufficiently neutralize workload's impact on compliance in this context. This may be due to misalignment between the support provided and the specific needs of nurses related to discharge education.

Effect of Nurse Workload on Burnout

A significant positive relationship was found between workload and burnout ($\beta = 0.426, p < 0.001$), supporting prior research (Getie et al., 2025; Saputeri et al., 2023). High workloads contribute to emotional exhaustion and depersonalization,

which are hallmark features of burnout. These results highlight the need for hospital administrators to implement stress-reduction strategies and equitable workload distribution.

Effect of Burnout on Compliance with Discharge Education

Burnout significantly and negatively influenced compliance ($\beta = -0.493, p < 0.001$). As seen in studies by (Dharmeswari et al., 2023) and (Sundari et al., 2023), burnout impairs concentration, empathy, and motivation—elements crucial to effective discharge education. The findings affirm that burnout is not only a threat to well-being but also to patient safety and healthcare outcomes.

Mediation of Burnout between Workload and Compliance

Burnout was found to mediate the relationship between workload and compliance ($\beta = -0.210, p = 0.001$), indicating a significant indirect effect. This mechanism reinforces the importance of addressing burnout as a pathway through which workload affects clinical performance, consistent with research by (Halawa et al., 2022) and (Lestari et al., 2021).

CONCLUSION

This study investigated the effect of nurse workload on compliance with discharge education, with a focus on the mediating roles of perceived organizational support (POS) and burnout. The research employed a quantitative approach involving 100 nurses from a Type B private hospital in Semarang, using self-administered questionnaires and data analysis through the latest version of SmartPLS software. The findings revealed that nurse workload has a significant negative impact on compliance with discharge education, indicating that higher workload levels are associated with lower adherence to patient education practices. However, nurse workload did not significantly influence perceived organizational support, suggesting that workload pressures alone do not necessarily diminish nurses' perceptions of institutional support.

Similarly, POS did not significantly affect compliance with discharge education, implying that organizational support, as perceived by nurses, may not be a primary factor influencing their educational performance. Furthermore, POS was found not to mediate the relationship between workload and compliance, indicating it does not serve as an effective intermediary variable in this model. On the other hand, workload was shown to have a significant positive effect on burnout, demonstrating that increased job demands lead to greater emotional exhaustion and reduced personal accomplishment among nurses. Burnout, in turn, had a significant negative effect on compliance with discharge education, highlighting that emotional strain undermines nurses' ability to consistently carry out educational responsibilities. Importantly, burnout was found to significantly mediate the

relationship between workload and compliance, establishing its role as a key psychological mechanism by which workload impacts nurse performance. These results emphasize the need for strategies that address both workload management and burnout prevention to enhance the quality of discharge education delivered by nurses.

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