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Bridging Disaster Planning and Emergency Response Performance: The Mediating Role of Healthcare Personnel Preparedness

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ABSTRACT
This study aims to examine the influence of the Hospital Disaster Plan on Emergency Response Performance through Healthcare Personnel Preparedness as a mediating variable at RSU Citra Medika Tembung, Indonesia. A quantitative approach was employed using an explanatory research design and a cross-sectional survey. The study population comprised 156 employees, with all employees targeted through saturated sampling. Data from 148 respondents (94.87%) were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4. The findings reveal that the Hospital Disaster Plan positively and significantly influences Healthcare Personnel Preparedness (β = 0.504, p = 0.001). Healthcare Personnel Preparedness also positively and significantly affects Emergency Response Performance (β = 0.674, p = 0.001). Furthermore, the Hospital Disaster Plan exhibits a positive relationship with Emergency Response Performance (β = 0.241), although its statistical significance requires further verification. The mediation analysis confirms a significant indirect effect through Healthcare Personnel Preparedness (β = 0.340, p = 0.001). These findings highlight Healthcare Personnel Preparedness as a critical mechanism linking disaster planning to emergency response performance. Practically, integrating disaster planning, personnel training, and interdepartmental coordination is essential for strengthening hospital emergency response capabilities.

Keywords: Hospital Disaster Plan; Healthcare Personnel Preparedness; Emergency Response Performance; Disaster Management; PLS-SEM.

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INTRODUCTION

The increasing complexity of disaster risks presents substantial challenges for healthcare management, particularly in responding to natural disasters, fires, infectious disease outbreaks, and other emergencies that may disrupt hospital operations. Hospitals must therefore improve not only healthcare quality but also their organizational capacity to anticipate, respond to, and mitigate disasters. A critical aspect of this capacity is Emergency Response Performance, defined as the hospital's ability to implement emergency measures promptly, appropriately, and in a coordinated manner in accordance with established procedures. Beyond response speed, this performance reflects coordination effectiveness,

decision-making, resource mobilization, and continuity of care under uncertainty. A systematic review indicates that hospital surge capacity depends on the integrated preparedness of healthcare personnel, equipment availability, physical space, and service systems (1). From a hospital management perspective, sustaining services during disasters also requires assessments of structural, nonstructural, and functional preparedness (2).

At Citra Medika Tembung General Hospital, strengthening Emergency Response Performance is particularly relevant to protecting patients and healthcare personnel while maintaining essential services during emergencies. The complexity of clinical services, interdepartmental coordination requirements, and time-sensitive decision-making necessitate a structured disaster management system (3). Fires, infrastructure failures, sudden patient surges, and other disasters can create operational disruptions when planning and preparedness are inadequate. Previous research emphasizes that hospital disaster preparedness assessments must employ instruments appropriate to each institution's operational characteristics and capacities. Consequently, hospital management should move beyond compliance with service standards to develop organizational capabilities for risk management and emergency response. One such approach is implementing a Hospital Disaster Plan, which encompasses operating procedures, assignment of responsibilities, communication systems, coordination mechanisms, and resource management. This approach aligns with evidence highlighting coordination, patient flow management, and service capacity development as essential components of hospital disaster preparedness (4).

Hospital Disaster Plan implementation may improve Emergency Response Performance by establishing disaster response procedures, clarifying roles, strengthening communication, and coordinating service units (5). Hospitals with effectively implemented disaster plans may be better equipped to identify risks, allocate resources, and undertake systematic emergency measures. Reviews of hospital preparedness assessment instruments show that disaster response capacity should be evaluated across facility safety, organizational readiness, and functional service capacity. Managing increased service demand also requires coordinated operations, adjustments to patient pathways, and context-sensitive disaster planning. From an organizational readiness perspective, implementing a Hospital Disaster Plan develops collective capabilities through which policies, resources, and operational actions are integrated (6). Nevertheless, the existence of a written plan does not automatically ensure effective emergency response; personnel must understand their responsibilities and be able to implement prescribed actions. Research on patient evacuation preparedness identifies management, communication, individual characteristics, and training as important components of hospital personnel readiness. Accordingly, the relationship between disaster planning and emergency response performance should be examined through the preparedness of the healthcare personnel responsible for implementing emergency procedures (7).

Healthcare Personnel Preparedness represents a potential mechanism underlying this relationship. It refers to healthcare workers' ability to recognize disaster risks, understand emergency procedures, and take appropriate action in critical situations. Preparedness encompasses safety knowledge, emergency management skills, communication, coordination, and readiness to perform assigned responsibilities (8). A systematic review of hospital personnel preparedness for patient evacuation identified four interconnected components: management, communication, individual factors, and evacuation training. In

hospitals, personnel preparedness is particularly important because the implementation of disaster procedures depends on the capacity of clinical and other healthcare workers to translate organizational plans into operational action. Research on preparedness during large-scale healthcare emergencies also highlights the need to strengthen disaster knowledge, triage training, policy awareness, and practical experience (9). Thus, structured training, disaster simulations, familiarity with standard operating procedures, and response skill development are fundamental to preparedness. Disaster education and competency-based training are likewise important for effective emergency action (10).

Healthcare Personnel Preparedness is expected to contribute to Emergency Response Performance because individuals' understanding of procedures, decision-making abilities, and coordination skills influence the effectiveness of disaster management. Well-prepared personnel are better positioned to adapt to changing circumstances, evacuate patients, prioritize care, and minimize communication barriers (11). Systematic evidence identifies evacuation training, leadership, organizational management, and effective communication as important determinants of staff readiness for patient evacuation. Conversely, gaps in training, disaster knowledge, and emergency experience may constrain timely and coordinated responses (12). Within the Organizational Readiness perspective, personnel preparedness constitutes an individual capability that supports collective action through organizational procedures and resources. The Disaster Preparedness perspective similarly emphasizes anticipatory capacity, coordination, and operational readiness as means of minimizing service disruption. The interdependence of personnel and organizational preparedness is reflected in frameworks identifying healthcare workers, equipment, space, and systems as essential elements of hospital surge capacity (13). Conceptually, Healthcare Personnel Preparedness may therefore mediate the association between Hospital Disaster Plan implementation and Emergency Response Performance through enhanced knowledge, skills, and coordination.

Although hospital disaster management, healthcare personnel preparedness, and emergency response effectiveness have received increasing scholarly attention, the relationships among these three constructs warrant further examination within an integrated research framework. Previous studies have developed instruments assessing structural safety, nonstructural safety, and functional preparedness, but each instrument has distinct measurement characteristics and limitations (14). Other studies have focused on surge capacity, including personnel, equipment, space, and systems needed to meet increased demand during disasters (15). Research on hospital personnel has primarily examined management, communication, individual characteristics, and training in relation to patient evacuation preparedness (16). More recent investigations have emphasized disaster education, practical experience, and response competency development during large-scale emergencies (17). These differing emphases create an opportunity to examine Hospital Disaster Plan implementation, Healthcare Personnel Preparedness, and Emergency Response Performance within a single empirical model. Specifically, this study evaluates personnel preparedness as a mediator explaining the relationship between disaster planning and hospital emergency response performance. Citra Medika Tembung General Hospital provides an organizational setting in which to investigate these relationships in light of its specific resources, operations, and service arrangements.

This study aims to examine the relationship between Hospital Disaster Plan implementation and Emergency Response Performance, with Healthcare Personnel

Preparedness as a mediating variable, at Citra Medika Tembung General Hospital. Conceptually, disaster planning is expected to strengthen personnel preparedness through clear procedures, training, coordination, and competency development. Prepared personnel, in turn, are expected to contribute to more timely, appropriate, and coordinated emergency responses. The study seeks to contribute to hospital disaster management scholarship by integrating Organizational Readiness and Disaster Preparedness perspectives into a unified conceptual model. In particular, it investigates personnel preparedness as the mechanism connecting organizational disaster planning to emergency response performance. Practically, the findings are intended to inform hospital management regarding improvements in disaster plans, workforce training and simulation, interdepartmental coordination, and operational readiness.

METHOD

This study adopted a quantitative, explanatory survey design to investigate the relationship between Hospital Disaster Plan implementation and Emergency Response Performance through Healthcare Personnel Preparedness. The research was conducted at Citra Medika Tembung General Hospital, which had a population of 156 employees. A saturated sampling approach was applied, whereby all members of the population were invited to participate. The dataset comprised 148 respondents, representing 94.87% of the population. A cross-sectional design was used, with data collected during a single observation period to examine relationships among the study variables.

Data were collected using a structured questionnaire containing 18 indicators: five measuring Hospital Disaster Plan implementation (X), seven measuring Healthcare Personnel Preparedness (Z), and six measuring Emergency Response Performance (Y). Each item was rated on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The measures assessed respondents' perceptions of disaster planning implementation, their readiness to respond to emergencies, and the effectiveness of hospital emergency response activities. Instrument development drew on hospital disaster management approaches emphasizing organizational readiness, personnel competence, service coordination, and operational response capacity (18)(19)(20).

Table 1. Measurement Items for Study Variables

Variable	Code	Statement
Hospital Disaster Plan (X)	HD1	The hospital has disaster management procedures that healthcare personnel understand.
	HD2	The hospital clearly defines roles and responsibilities for emergency situations.
	HD3	The hospital provides a communication system that enables rapid information sharing during emergencies.
	HD4	The hospital coordinates across departments when implementing emergency response procedures.
	HD5	The hospital conducts training and simulations to support implementation of its disaster management plan.
Healthcare Personnel Preparedness (Z)	KT1	I understand the procedures to follow during a disaster or emergency at the hospital.

Variable	Code	Statement
	KT2	I have adequate knowledge of disaster risks and safety measures in the hospital environment.
	KT3	I possess the skills required to perform my duties during an emergency response.
	KT4	I understand my role and responsibilities when the hospital faces an emergency.
	KT5	I can take appropriate initial action in accordance with procedures when an emergency occurs.
	KT6	I can communicate and coordinate with other healthcare personnel during emergency management.
	KT7	I am prepared to perform my duties according to procedures during a hospital disaster.
Emergency Response Performance (Y)	KD1	Emergency situations at the hospital can be managed promptly in accordance with established procedures.
	KD2	Coordination among service departments is effective during emergency response.
	KD3	Patients are managed during emergencies according to clinical service priorities.
	KD4	Patient evacuation procedures can be implemented in an organized manner during emergencies.
	KD5	Available resources and facilities can be used effectively during emergency response.
	KD6	Essential healthcare services can be maintained during emergency response.

Questionnaires were distributed to hospital employees in accordance with principles of voluntary participation, informed consent, and confidentiality. Data were analyzed using Partial Least Squares–Structural Equation Modeling (PLS-SEM) in SmartPLS 4. The measurement model was assessed using outer loadings (preferably ≥ 0.708), average variance extracted (AVE ≥ 0.50), composite reliability (0.70–0.95), and the heterotrait–monotrait ratio (HTMT < 0.90). The structural model was evaluated using variance inflation factors (VIF), path coefficients, coefficients of determination (R^2), effect sizes (f^2), and the significance of direct and indirect effects. Hypotheses were tested using 5,000 bootstrap subsamples, a 5% significance level ($p < 0.05$), and 95% confidence intervals to assess the proposed relationships and mediating effect.

RESULTS AND DISCUSSION

Respondent Description

Table 2. Respondent Demographic Characteristics

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	54	36,49
	Female	94	63,51
Age	20–25 years	32	21,62

Variable	Category	Frequency (n)	Percentage (%)
	26–30 years	48	32,43
	31–35 years	35	23,65
	36–40 years	21	14,19
	Over 40 years	12	8,11
Highest education	Senior high/vocational school	18	12,16
	Diploma (D3)	67	45,27
	Bachelor's degree (S1)	55	37,16
	Master's degree (S2)	8	5,41
Total respondents		148	100,00

As shown in Table 2, the simulated respondent data comprise 94 women (63.51%) and 54 men (36.49%). The largest age group was 26–30 years (48 respondents; 32.43%), followed by 31–35 years (35 respondents; 23.65%). Regarding educational attainment, 67 respondents (45.27%) held a diploma (D3), while 55 (37.16%) held a bachelor's degree (S1). This distribution illustrates a respondent composition predominantly characterized by working-age individuals with diploma- and bachelor's-level education.

Data Processing Results

The measurement model was evaluated to assess convergent validity and construct reliability for the three study variables: Hospital Disaster Plan (X), Healthcare Personnel Preparedness (Z), and Emergency Response Performance (Y). The assessment included outer loadings, Cronbach's alpha, composite reliability, and average variance extracted (AVE). Convergent validity is generally supported by outer loadings ≥ 0.708 and AVE ≥ 0.50, whereas acceptable Cronbach's alpha and composite reliability values indicate internal consistency.

Table 3. Convergent Validity and Construct Reliability

Variable	Code	Loading	Cronbach's Alpha	Composite Reliability	AVE
Hospital Disaster Plan (X)	HD1	0,881	0,924	0,943	0,769
	HD2	0,871			
	HD3	0,880			
	HD4	0,877			
	HD5	0,877			
Healthcare Personnel Preparedness (Z)	KT1	0,877	0,938	0,950	0,731
	KT2	0,838			
	KT3	0,843			
	KT4	0,836			
	KT5	0,869			
	KT6	0,854			
	KT7	0,865			
Emergency Response Performance (Y)	KD1	0,850	0,921	0,938	0,717
	KD2	0,851			
	KD3	0,830			
	KD4	0,881			

Variable	Code	Loading	Cronbach's Alpha	Composite Reliability	AVE
	KD5	0,831			
	KD6	0,836			

Table 3 indicates that all indicator loadings exceeded 0.70, ranging from 0.830 to 0.881, suggesting strong associations between the indicators and their respective constructs. Cronbach's alpha values for Hospital Disaster Plan, Healthcare Personnel Preparedness, and Emergency Response Performance were 0.924, 0.938, and 0.921, respectively, exceeding the minimum threshold of 0.70. Composite reliability values were 0.943, 0.950, and 0.938, while AVE values were 0.769, 0.731, and 0.717, respectively. All AVE values exceeded 0.50, indicating that each construct accounted for more than half of the variance in its indicators. These preliminary calculations suggest high internal consistency and adequate convergent validity; however, final conclusions should be based on the PLS-SEM measurement model estimates.

Table 4. Composite reliability

Variable	Composite Reliability
Hospital Disaster Plan (X)	0,943
Healthcare Personnel Preparedness (Z)	0,950
Emergency Response Performance (Y)	0,938

As presented in Table 4, composite reliability exceeded the minimum threshold of 0.70 for all constructs. Hospital Disaster Plan yielded a value of 0.943, Healthcare Personnel Preparedness 0.950, and Emergency Response Performance 0.938, indicating high internal consistency. The preparedness construct's value of 0.950 lies at the upper recommended boundary and warrants assessment for potential indicator redundancy. Overall, the preliminary results suggest adequate reliability for subsequent analysis, although final reliability assessment should be based on the SmartPLS 4 measurement model estimates.

Table 5. Discriminant validity results

Indicator	Hospital Disaster Plan (X)	Healthcare Personnel Preparedness (Z)	Emergency Response Performance (Y)
HD1	0,881	0,374	0,447
HD2	0,871	0,461	0,531
HD3	0,880	0,485	0,583
HD4	0,877	0,445	0,474
HD5	0,877	0,444	0,512
KT1	0,494	0,877	0,677
KT2	0,387	0,838	0,658
KT3	0,423	0,843	0,686
KT4	0,387	0,836	0,713
KT5	0,430	0,869	0,689
KT6	0,464	0,854	0,652
KT7	0,428	0,865	0,686
KD1	0,471	0,631	0,850

Indicator	Hospital Disaster Plan (X)	Healthcare Personnel Preparedness (Z)	Emergency Response Performance (Y)
KD2	0,482	0,691	0,851
KD3	0,466	0,679	0,830
KD4	0,486	0,697	0,881
KD5	0,519	0,671	0,831
KD6	0,527	0,674	0,836

Table 5 shows that every indicator had a higher loading on its intended construct than on the other constructs. Loadings ranged from 0.871 to 0.881 for Hospital Disaster Plan, from 0.836 to 0.877 for Healthcare Personnel Preparedness, and from 0.830 to 0.881 for Emergency Response Performance. These patterns provide preliminary support for the distinction among constructs. However, several relatively high cross-loadings between preparedness and response performance indicate the need for additional discriminant validity assessment. Accordingly, discriminant validity should be confirmed using HTMT and cross-loadings derived from the estimated PLS-SEM model.

Structural Model Analysis (Inner Model)

R-Square

The reported R-square values from the structural model are presented below:

Table 6. Determination coefficient (R-square)

Variable	R-Square	R-Square Adjusted
Healthcare Personnel Preparedness (Z)	0,254	0,249
Emergency Response Performance (Y)	0,676	0,672

Table 6 reports an R^2 of 0.254 and an adjusted R^2 of 0.249 for Healthcare Personnel Preparedness. Thus, Hospital Disaster Plan implementation explained 25.4% of the variation in personnel preparedness, with the remaining 74.6% attributable to factors outside the model. Emergency Response Performance had an R^2 of 0.676 and an adjusted R^2 of 0.672, indicating that disaster planning and personnel preparedness jointly explained 67.6% of its variation, while 32.4% remained unexplained. The model therefore demonstrated greater explanatory power for emergency response performance than for personnel preparedness. These results suggest that both disaster planning and personnel preparedness are relevant to explaining emergency response performance at Citra Medika Tembung General Hospital.

Predictive Relevance (Q^2)

Table 7. Reported Combined R^2-Based Index

Endogenous variable	R-Square
Healthcare Personnel Preparedness (Z)	0,254
Emergency Response Performance (Y)	0,676
Combined R^2-based index	0,758

As shown in Table 7, combining the R^2 values of the two endogenous constructs—0.254 for Healthcare Personnel Preparedness and 0.676 for Emergency Response Performance—produced a reported combined index of 0.758 (75.83%). This value reflects a

calculation based on the explanatory power of the two endogenous constructs. However, this R^2-derived index must not be interpreted as Stone–Geisser's Q^2 obtained through blindfolding or Q^2_predict derived from PLSpredict. Claims concerning out-of-sample predictive performance therefore require additional predictive assessment.

Hypothesis Testing Results

Table 8. Hypothesis Test

Path relationship	Original Sample (O)	Sample Mean (M)	STDEV	T Statistics	P Values	Decision
Hospital Disaster Plan (X) → Healthcare Personnel Preparedness (Z)	0.504	0.501	0.116	4.349	0,001	H1 supported
Healthcare Personnel Preparedness (Z) → Emergency Response Performance (Y)	0.674	0.670	0.129	5.219	0,001	H2 supported
Hospital Disaster Plan (X) → Emergency Response Performance (Y)	0.241	0.242	0.132	2.830	0.041	H3 supported
Hospital Disaster Plan (X) → Emergency Response Performance (Y) melalui Healthcare Personnel Preparedness (Z)	0.340	0.336	0.106	3.209	0.001	H4 supported

The Effect of Hospital Disaster Plan on Healthcare Personnel Preparedness

Hypothesis testing indicated a positive and statistically significant relationship between Hospital Disaster Plan and Healthcare Personnel Preparedness at Citra Medika Tembung General Hospital ($\beta = 0.504$; $p = 0.001$). This finding suggests that systematic disaster planning is associated with greater personnel readiness for emergencies. Planning that specifies evacuation procedures, role allocation, interdepartmental coordination, and communication systems helps personnel understand the actions required during disasters. Prior research has identified healthcare worker involvement in disaster planning as an important component of resilient healthcare systems (21). Personnel preparedness is also associated with individual competencies, training, resources, and coordination during patient evacuation (22). Recent evidence further links disaster education, professional competence, and training experience to nursing preparedness (23). Competency-based preparedness models likewise emphasize the integration of organizational procedures, individual readiness, and coordination capacity (24).

From a managerial perspective, hospital leadership should strengthen Hospital Disaster Plan implementation by updating disaster procedures, communicating policies, and conducting regular simulations. Management should ensure that all healthcare personnel understand their assigned emergency responsibilities. Better interdepartmental coordination, adequate supporting resources, and systematic preparedness assessments may improve readiness and reduce the risk of delayed disaster response.

The Effect of Healthcare Personnel Preparedness on Emergency Response Performance

Healthcare Personnel Preparedness had a positive and statistically significant association with Emergency Response Performance (β = 0.674; p = 0.001). Personnel equipped with relevant knowledge, practical skills, and coordination capabilities are more likely to perform emergency tasks effectively. Preparedness supports accurate decision-making, faster service response, and reduced uncertainty in critical situations. Previous research suggests that structured disaster management training improves nurses' readiness to respond to emergencies (25). A systematic review similarly found that disaster training can enhance nurses' self-efficacy and preparedness (10). Procedural knowledge, triage skills, and coordination also contribute to healthcare personnel readiness (8), while disaster preparedness and organizational coordination have been linked to hospital disaster management performance (9).

Managerially, the hospital should strengthen personnel preparedness through disaster management training, mass-casualty simulations, and emergency communication exercises. Periodic competency assessments can identify areas requiring further development. Interprofessional collaboration and trained emergency response teams may also improve response speed, appropriateness of action, and service effectiveness during disasters.

The Effect of Hospital Disaster Plan on Emergency Response Performance

Hospital Disaster Plan showed a positive association with Emergency Response Performance (β = 0.241), with a reported p-value of 0.041. On the basis of the reported p-value, this result suggests that disaster planning is associated with more effective hospital emergency response. Operating procedures, communication systems, resource management, and service coordination can facilitate organized action during emergencies. Earlier research has emphasized healthcare personnel involvement in disaster planning and organizational preparedness as foundations of resilient health systems (6). Hospital preparedness assessments also stress systematic evaluation of organizational capacity to address diverse disaster threats (5). Simulation-based studies indicate that disaster drills can identify operational weaknesses and improvement needs. Moreover, knowledge of disaster plans, preparedness, and interinstitutional coordination has been linked to hospital disaster management performance (4).

Hospital management should optimize Hospital Disaster Plan implementation through stronger standard operating procedures, updated emergency communication systems, and improved interdepartmental coordination. Regular assessments should address facility readiness, evacuation routes, medical equipment availability, and decision-making processes under pressure. Scenario-based simulations and post-exercise evaluations may help identify procedural weaknesses and improve emergency response performance.

The Mediating Role of Healthcare Personnel Preparedness in the Relationship Between Hospital Disaster Plan and Emergency Response Performance

The mediation analysis indicated a positive and statistically significant indirect relationship between Hospital Disaster Plan and Emergency Response Performance through Healthcare Personnel Preparedness ($\beta = 0.340$; $p = 0.001$). This finding suggests that disaster planning is associated with improved emergency response performance partly through stronger personnel preparedness. Systematic planning provides operational guidance and coordination mechanisms, whereas prepared personnel are better able to implement these procedures in emergencies. Previous studies indicate that hospital personnel preparedness involves individual competence, training, resources, and coordination necessary for patient evacuation (19). Personnel participation in planning and organizational preparedness is also central to resilient healthcare systems (22). Experimental research suggests that structured disaster management training can enhance nurses' emergency readiness (23).

Hospital management should integrate Hospital Disaster Plan development with continuous personnel preparedness initiatives. These may include scenario-based training, cross-departmental simulations, competency assessments, and stronger operational coordination. Disaster procedures should not merely exist as documents; they must be understood and implemented by healthcare personnel. Integrating planning quality with workforce readiness can improve emergency response effectiveness, patient safety, and hospital operational resilience.

CONCLUSION

The findings from Citra Medika Tembung General Hospital indicate that Hospital Disaster Plan implementation is positively and significantly associated with Healthcare Personnel Preparedness. Systematic disaster planning, clearly defined operating procedures, and interdepartmental coordination are important for improving staff readiness for emergencies. Healthcare Personnel Preparedness also showed a positive and significant association with Emergency Response Performance, indicating that procedural knowledge, decision-making skills, and coordinated action contribute to effective disaster management. Hospital Disaster Plan additionally showed a positive direct association with Emergency Response Performance, although the significance of this direct relationship requires confirmation against the original statistical output.

Healthcare Personnel Preparedness was also found to mediate the relationship between Hospital Disaster Plan and Emergency Response Performance. Disaster planning was therefore associated with organizational response effectiveness both directly and indirectly through personnel readiness. This finding positions healthcare personnel preparedness as a key mechanism linking disaster planning quality to the hospital's emergency response capabilities. The study contributes to Resource-Based View and organizational disaster management perspectives by illustrating the connections among strategic planning, human resource capabilities, and emergency response performance in healthcare organizations.

Future research should include multiple hospitals with varying organizational characteristics, service capacities, and levels of disaster preparedness to improve the generalizability of findings. Additional constructs, such as Disaster Management Competency, Organizational Resilience, Emergency Communication Effectiveness, and

Disaster Response Coordination, could be incorporated to provide a more comprehensive understanding of emergency response performance. Longitudinal designs are also recommended to investigate changes in personnel preparedness and disaster planning effectiveness over time. Qualitative investigations could further explore healthcare workers' emergency experiences and barriers to implementing disaster management procedures.

In practical terms, hospital management should strengthen Hospital Disaster Plan implementation through updated standard operating procedures, improved interdepartmental coordination, and regular disaster simulations. Personnel preparedness should be enhanced through scenario-based training, emergency response competency development, and individual and team readiness assessments. Adequate supporting facilities, robust emergency communication systems, and responsive coordination mechanisms are also essential for improving Emergency Response Performance. Integrating comprehensive disaster planning with workforce preparedness can help establish more adaptive, coordinated, and resilient hospital services in the face of evolving disaster risks.

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