



Work Fatigue as a Mediator in the Influence of Communication and Assertivity on Nurses' Productivity

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Abstract: Rapid global environmental changes, especially due to advances in technology and information, have had a significant impact on various sectors of life, including the health sector. In the context of modern health services, hospitals are no longer just places of healing, but also institutions that are required to provide high-quality services, based on patient safety, and are able to adapt to the dynamics of community needs. This change requires a transformation in human resource management, especially related to the interpersonal and psychosocial competencies of nurses as the spearhead of medical services. Purposes: to analyze the effect of effective communication and Assertive Attitude on Nurses' Work Productivity in hospitals, with Work Fatigue as a mediating variable. Methods: This type of research is quantitative, using statistical figures to measure the influence of independent variables on dependent variables. The research design is a cross-sectional study. Results: The results of this study indicate that effective communication, assertiveness, and job fatigue collectively significantly influence nurses' work productivity. Communication and assertiveness positively contribute to job fatigue, which in turn affects productivity. Job fatigue is also shown to be a significant mediator in the relationship between communication and assertiveness on work productivity. Conclusion : The importance of strengthening effective communication as a strategy to increase productivity. Organizations need to design communication systems that support openness, transparency, and clarity of information and culture-based assertiveness training, so that employees can express their opinions appropriately without causing resistance in the team.

Keywords: Assertiveness; Effective Communication; Nurse; Work Fatigue; Work Productivity.

1. Introduction

Rapid global environmental changes, particularly due to advances in technology and information, have had a significant impact on various sectors of life, including the health sector. In the context of modern healthcare, hospitals are no longer simply places of healing, but also institutions that are required to provide high-quality services, based on patient safety, and able to adapt to the dynamics of community needs. This change requires a transformation in human resource management, especially regarding the interpersonal and psychosocial competencies of nurses as the spearhead of medical services (Gumelar et al., 2021).

Nurses in hospitals, like doctors, nurses, and other medical support staff, are faced with an increasingly complex workload. The pressure to work quickly and accurately, coupled with high expectations from patients and families, is an unavoidable source of stress. This condition causes various psychological problems among nurses, one of which is work fatigue or *burnout*. Job burnout is a chronic stress condition experienced by individuals in response to prolonged and unresolved work pressure (Maslach & Jackson, 1981). *Burnout* can affect physical, emotional and cognitive conditions, and significantly disrupt work productivity (Rudyarti, 2021).

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The World Health Organization (WHO) officially included *burnout* as a work phenomenon in the International Classification of Diseases (ICD-11), which marks the importance of this issue in the global framework of occupational health (3). In Indonesia, the Ministry of Health noted that the prevalence of *burnout* among nurses reached an alarming figure, namely between 50% and 70% in several large hospitals, especially those in urban areas or regional referral centers. This condition is exacerbated by limited human resources in the health sector and a work system that does not fully support work-life balance (Kemenkes RI, 2023).

High levels of work fatigue not only impact the well-being of individual nurses, but also reduce the overall quality of health services. Nurses who experience *burnout* are more prone to making medical errors, have poor interpersonal relationships, and tend to lose empathy for patients. This will ultimately affect work productivity, which in the hospital context, includes the ability to provide effective, efficient, and high-quality medical services (Sihombing et al., 2021).

Nurse productivity in hospitals is greatly influenced by their ability to build effective communication and healthy interpersonal behavior. Effective communication is a crucial component in the healthcare process, because through communication, clinical information can be conveyed accurately and clearly, both between medical personnel and to patients. Studies have shown that effective communication within a medical team can reduce the number of medical errors by up to 30%, as well as increase work efficiency and team coordination. In clinical situations that require quick and accurate decision-making, ineffective communication can be fatal (Pirrota et al., 2024).

2. Literature Review

The rapid transformation of healthcare systems has placed increasing demands on hospitals to deliver high-quality, safe, and efficient services. Nurses, as the largest workforce in hospitals, play a central role in determining service quality and organizational performance. Consequently, nurses' work productivity has become a critical indicator of hospital effectiveness, reflecting not only the quantity of tasks completed but also the quality, accuracy, and professionalism of nursing care delivered to patients (Sofiatun et al., 2021).

Work productivity in nursing is a multidimensional concept that encompasses quality of care, adherence to standard operating procedures, efficiency in time management, teamwork, and patient safety. High levels of nurse productivity are associated with improved patient outcomes, reduced medical errors, and increased patient satisfaction. Previous studies have shown that productive nursing performance contributes significantly to organizational efficiency and the overall reputation of healthcare institutions (Almalki et al., 2012; Twigg & Duffield, 2009).

One of the key determinants of nurses' productivity is effective communication. Effective communication in nursing involves the ability to convey information clearly, accurately, and empathetically, while also actively listening and providing constructive feedback. Poor communication has been widely recognized as a major cause of medical errors, interpersonal conflict, and decreased quality of care, particularly in high-pressure hospital environments (Burgener, 2020; Foronda et al., 2016).

From a theoretical perspective, communication is a core element of professional nursing practice. Peplau's Interpersonal Relations Theory emphasizes communication as the foundation of therapeutic nurse-patient relationships, enabling trust, collaboration, and accurate assessment. Similarly, Watson's Theory of Human Caring highlights authentic and empathetic communication as an essential component of holistic healing, addressing not only physical but also emotional and psychological needs of patients (Peplau, 1997; Watson, 1985).

In addition to communication, assertive attitude is another important interpersonal competence in nursing practice. Assertiveness refers to the ability to express thoughts, feelings, and professional opinions openly, honestly, and respectfully without violating the rights of others. In healthcare settings, assertive nurses are better able to advocate for patients, participate in clinical decision-making, and prevent misunderstandings that may compromise patient safety (Fang et al., 2020; Moudatsou et al., 2020).

Empirical studies indicate that assertive behavior among nurses is positively associated with job satisfaction, teamwork effectiveness, and work performance. Nurses with higher levels of assertiveness tend to communicate more confidently with physicians and colleagues,

manage conflicts constructively, and maintain professional boundaries. Al-hawaiti et al. (2025) found that assertiveness significantly contributes to improved collaboration and service quality in hospital settings, thereby supporting higher levels of work productivity.

Despite the importance of communication and assertiveness, nurses often face demanding working conditions that lead to work fatigue or burnout. Burnout is defined as a state of chronic occupational stress characterized by emotional exhaustion, depersonalization, and reduced personal accomplishment (Maslach & Jackson, 1981). The World Health Organization has officially recognized burnout as an occupational phenomenon in the ICD-11, underscoring its growing relevance in the global workforce, particularly in healthcare professions (World Health Organization, 2024).

Work fatigue among nurses has been shown to negatively affect physical health, psychological well-being, and job performance. Nurses experiencing high levels of fatigue tend to have decreased concentration, reduced motivation, and lower emotional engagement with patients. These conditions increase the likelihood of errors, diminish service quality, and ultimately reduce work productivity (Rudyarti, 2021; Sihombing et al., 2021).

Furthermore, work fatigue has been found to impair nurses' communication abilities and assertive behavior. Fatigued nurses are more likely to withdraw from interpersonal interactions, avoid expressing professional opinions, and experience difficulty maintaining effective communication with colleagues and patients. This deterioration in interpersonal functioning suggests that fatigue plays a critical role in weakening factors that normally support productivity (Barker & Nussbaum, 2011).

Supporting this view, reported that higher levels of work fatigue among nurses were associated with poorer interpersonal communication and lower assertiveness. These conditions negatively affected teamwork and coordination, which are essential components of effective nursing care. Their findings reinforce the assumption that work fatigue may function as a mediating variable linking communication and assertiveness with work productivity.

Although previous studies have examined effective communication, assertive attitude, and work fatigue separately, relatively few have integrated these variables within a single conceptual model. A comprehensive approach is needed to understand how psychosocial factors interact simultaneously to influence nurses' productivity, particularly in hospital environments characterized by high workload and emotional demands (Pirrota et al., 2024).

Based on the existing literature, it can be concluded that effective communication and assertive attitude play a crucial role in enhancing nurses' work productivity, both directly and indirectly. Work fatigue appears to act as an important mediating mechanism through which communication and assertiveness influence productivity outcomes. This integrative perspective provides a strong theoretical foundation for examining the mediating role of work fatigue in the relationship between effective communication, assertive attitude, and nurses' work productivity, as investigated in the context of Hospital.

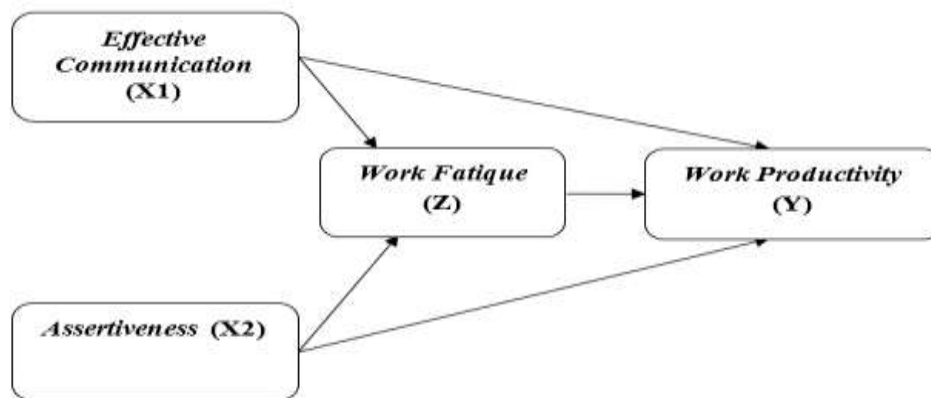


Figure 1. Constellation of penetian.

3. Proposed Method

This research is a quantitative research with a statistical approach that aims to measure the influence between independent variables on dependent variables and to test hypotheses, make predictions, and make generalizations based on the population studied (Bougie & Sekaran, 2019). The research design used was a cross-sectional study, which is conducting observations at a certain time to see the relationship between the independent variables and the dependent variable (Sugiyono, 2017). The variables in this study consist of three independent variables, namely Effective Communication (X1), Assertive Attitude (X2), one intervening variable, namely Work Fatigue (Z), and one dependent variable, namely Work Productivity (Y).

The population in this study was all nurses at Hermina Podomoro Hospital, and the sample used was 84 nurses who met the inclusion criteria, determined using the Slovin formula from a total population of 105. The sampling technique used was nonprobability sampling with a purposive sampling method, namely sample selection based on the consideration that the subjects have specific information relevant to the research objectives (Dharma, 2011). The research was conducted at Hermina Podomoro Hospital starting in June 2025. This study aims to analyze the influence of effective communication and assertiveness on work productivity with work fatigue as a mediating variable. The population in this study were all nurses at Hermina Podomoro Hospital, with a sample size of 84 respondents obtained using the Slovin formula and purposive sampling technique

4. Results and Discussion

Data Analysis

Analysis of direct and indirect influences and their magnitude between the direct and indirect influences and their magnitude between the Influence of Attitude and Environment on Service Quality with Motivation as an Intervening Variable in Nurses using the Structural Equation Model (SEM) model. With AMOS because: Multivariate normal distribution in the data is not necessary (can be used in the same model on indicators with nominal to ratio scales). Small samples can be used, a minimum of >30 is recommended to be used. Reflective indicators in the form of bias constructs can be analyzed by AMOS , After collecting raw data, the next stage is to present the data in various forms: At the beginning of the analysis results there is a presentation in the form of an image or description of the sample accompanied by a summary in the form of a table of the main descriptions. This can be done to help readers better understand the characteristics of the respondents where the results of the research data are obtained. SEM analysis presentation data from output data processing using AMOS assistance , presented in diagrams, tables and others. A more complete data presentation will be presented in the appendix including a questionnaire display .

Normality test

The normality test is used to determine whether the data is normally distributed. A regression model is normally distributed if the critical ratio (cr) of each variable is less than 2.58 . Based on the SEM-AMOS results, the normality test results can be seen in the following table:

Table 1. Normality Test Results.

Variable	Min	Max	Skew	Cr	Kurtosis	Cr
Assertiveness	2	4	-0.188	-0.705	-0.64	-1,198
Effective Communication	3	4	-0.289	-1.08	-1,917	-3,586
Work Fatigue	2	4	-0.118	-0.443	-0.69	-1,291
Work Productivity	2	4	0.189	0.706	-0.893	-1.67
Multivariate					18.34	12,131

Hypothesis Testing
Model Fit Test (Simultaneous Test)

The results of the analysis of Hypothesis 1 in the AMOS program version 24 are as follows:

Minimum was achieved

Chi-square = .000

Degrees of freedom = 0

Source: AMOS 24 output data, 2025

Hypothesis 1 is accepted because the calculated Chi-square value is 0.000. This very small Chi-square value indicates that there is no difference between the theory and empirical data, so Hypothesis 1 can be accepted. This means that the variables Effective Communication and Assertive Attitude simultaneously have a significant effect on nurses' Work Productivity. with Job Fatigue as a mediating variable. because the calculated value is much smaller compared to the Chi-square table value.

Partial Test

The results of the Partial Test with *Structural Equation Modeling* (SEM) from AMOS 24 software are in the table below:

Table 2. Structural Equation Modeling (SEM) Test.

	Estimate	SE	CR	P	Conclusion
EC->WF	0.376	0.107	3,504	0.000	H2 Accepted
AV->WF	0.380	0.092	4,158	0.000	H3 Accepted
AV->WP	0.129	0.039	3,279	0.001	H5 Accepted
EC->WP	0.143	0.045	3,180	0.001	H4 Accepted
WF->WP	0.723	0.043	16,882	0.000	H6 Accepted

In this study, the results of calculating the intervening variables in the AMOS 24 program can be shown as follows:

Table 3. Standardized Direct Effects.

	Assertive Behavior	Effective Communication	Burnout
<i>Assertiveness</i>	0.392	0.330	0,000
<i>Work Productivity</i>	0.144	0.136	0.785

Table 4. Standardized Indirect Effects.

	Assertive Behavior	Effective Communication	Burnout
<i>Bournot</i>	0,000	0,000	0,000
Job Productivity	0.308	0.259	0,000

The direct effect and *indirect effect* values were obtained . When compared, the direct influence appears to be greater than the indirect influence. This shows that Work Fatigue is not a significant intervening variable in mediating the influence of Effective Communication and Assertive Attitude on Work Productivity

The results of hypothesis testing indicate that effective communication has a significant effect on nurses' work productivity. Nurses who are able to communicate clearly, accurately, and empathetically tend to perform their duties more efficiently, minimize errors, and collaborate more effectively within healthcare teams. This finding highlights the critical role of effective communication in enhancing nurses' productivity in hospital settings.

Furthermore, the analysis confirms that assertive behavior has a significant effect on nurses' work productivity. Nurses who demonstrate assertive behavior are more confident in expressing professional opinions, conveying work-related needs, and actively participating in clinical decision-making without generating interpersonal conflict. This condition contributes positively to the smooth delivery of nursing services and leads to higher levels of work productivity.

The hypothesis testing also reveals that effective communication and assertive behavior have significant effects on work fatigue. Poor communication and low assertiveness tend to increase psychological pressure and emotional strain among nurses, which may lead to higher levels of work fatigue. In contrast, effective communication and assertive behavior help reduce stress and emotional exhaustion, enabling nurses to carry out their responsibilities more optimally.

In addition, the results demonstrate that work fatigue has a significant effect on nurses' work productivity and functions as a mediating variable. Work fatigue was found to weaken the influence of effective communication and assertive behavior on work productivity. Therefore, effective communication and assertive behavior affect nurses' work productivity not only directly but also indirectly through the reduction of work fatigue. These findings emphasize the importance of managing work fatigue as a strategic effort to improve nurses' productivity in hospital environments.

Discussion

The findings of this study demonstrate that effective communication has a significant influence on nurses' work productivity. This result indicates that nurses who communicate clearly, accurately, and empathetically are better able to perform their tasks efficiently and collaboratively. Effective communication supports accurate information exchange, reduces misunderstandings, and facilitates coordination among healthcare professionals, all of which are essential for maintaining high productivity in hospital settings.

This finding is consistent with previous studies that emphasize communication as a core competency in nursing practice. Effective communication has been shown to improve teamwork, enhance patient safety, and reduce clinical errors, which in turn positively affects work productivity. From a theoretical perspective, this result aligns with Peplau's Interpersonal Relations Theory, which highlights communication as the foundation of effective nurse-patient and interprofessional relationships that support optimal care outcomes.

The results also indicate that assertive behavior has a significant effect on nurses' work productivity. Nurses who demonstrate assertive behavior are more confident in expressing professional opinions, advocating for patients, and participating in clinical decision-making processes. This ability enables nurses to manage their responsibilities more effectively, prevent work-related conflicts, and contribute positively to team performance, ultimately enhancing productivity.

These findings are supported by previous research showing that assertiveness promotes professional autonomy, improves collaboration, and strengthens nurses' roles within multidisciplinary teams. Assertive behavior allows nurses to communicate boundaries and expectations clearly, reducing role ambiguity and work-related stress. As a result, nurses are better positioned to maintain consistent performance levels and achieve higher productivity.

Furthermore, the study reveals that effective communication and assertive behavior significantly affect work fatigue. Nurses who experience ineffective communication or lack assertiveness tend to face greater psychological pressure, emotional strain, and work-related stress, which contribute to increased levels of fatigue. Conversely, effective communication and assertive behavior help nurses manage interpersonal demands more effectively, thereby reducing emotional exhaustion and fatigue.

This finding supports the view that psychosocial factors play a critical role in the development of work fatigue among nurses. Poor interpersonal interactions, unresolved conflicts, and limited opportunities to express professional concerns may exacerbate stress and accelerate fatigue. In contrast, supportive communication and assertive interactions create a healthier work environment that protects nurses from excessive fatigue.

The results further indicate that work fatigue has a significant negative effect on nurses' work productivity. Nurses experiencing high levels of fatigue tend to have reduced concentration, lower motivation, and diminished emotional engagement with their work. These conditions impair efficiency, increase the likelihood of errors, and reduce overall productivity, particularly in high-demand hospital environments.

Finally, this study confirms that work fatigue serves as a mediating variable in the relationship between effective communication, assertive behavior, and work productivity. Effective communication and assertive behavior contribute to higher productivity both directly and indirectly by reducing work fatigue. This finding underscores the importance of organizational strategies that strengthen communication skills, promote assertive behavior, and address work fatigue simultaneously as part of comprehensive efforts to improve nurses' productivity and the quality of hospital services.

5. Comparison

In comparison, compensation and transformational leadership serve as protective he findings of this study are consistent with previous research indicating that effective communication and assertive behavior are significant determinants of nurses' work productivity. Similar to studies by Foronda et al. (2016) and Burgener (2020), this study confirms that effective communication enhances coordination, reduces errors, and improves efficiency in nursing practice. In line with Al-hawaiti et al. (2025) and Moudatsou et al. (2020), the results also support the positive role of assertive behavior in strengthening professional confidence, teamwork, and performance. Furthermore, the mediating role of work fatigue found in this study is consistent with prior findings by Maslach & Jackson (1981), Rudyarti (2021), and Barker & Nussbaum (2011), which emphasize that fatigue weakens interpersonal functioning and productivity. However, this study extends existing literature by integrating effective communication, assertive behavior, and work fatigue within a single explanatory model, thereby providing a more comprehensive understanding of how interpersonal and psychosocial factors jointly influence nurses' work productivity in hospital settings.

The results indicate that work fatigue plays a crucial role in shaping nurses' work productivity by influencing their physical endurance, emotional stability, and cognitive focus. When nurses experience high levels of fatigue, their ability to communicate effectively and demonstrate assertive behavior tends to decline, which can reduce efficiency and increase the risk of errors. Conversely, lower levels of work fatigue allow nurses to maintain better interpersonal interactions and sustain productivity. This finding highlights the importance of organizational efforts to manage work fatigue through supportive work environments, balanced workloads, and effective communication practices to ensure optimal nursing performance.

6. Conclusions

This study concludes that effective communication and assertive behavior have significant positive effects on nurses' work productivity. Nurses who are able to communicate clearly and demonstrate assertive behavior tend to perform their duties more efficiently, collaborate better with healthcare teams, and contribute to higher-quality patient care. These findings indicate that interpersonal competencies are essential factors in improving productivity in hospital nursing services.

The results also confirm that work fatigue has a significant negative effect on nurses' work productivity and plays an important role in the relationship between interpersonal factors and productivity. High levels of work fatigue reduce nurses' concentration, motivation, and emotional involvement, which ultimately decreases productivity. Furthermore, effective communication and assertive behavior were found to significantly reduce work fatigue, suggesting that supportive interpersonal interactions can help mitigate physical and psychological exhaustion among nurses.

In addition, this study demonstrates that work fatigue acts as a mediating variable in the relationship between effective communication, assertive behavior, and nurses' work productivity. This indicates that communication and assertiveness influence productivity not only directly but also indirectly by lowering work fatigue levels. Overall, the findings emphasize the importance of hospital management strategies that strengthen communication

skills, promote assertive behavior, and manage work fatigue simultaneously in order to enhance nurses' productivity and support sustainable healthcare service quality.

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