

QUALITY OF WORK LIFE AND NURSES WORK ENGAGEMENT: PSYCHOLOGICAL EMPOWERMENT AS MODERATOR

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Abstract

Work engagement is a key determinant in enhancing organizational performance and sustainability, particularly in the healthcare sector, which is characterized by high job demands. However, the human resource management literature still shows limitations in explaining the interaction between job resources and personal resources in shaping work engagement. Grounded in Job Demands–Resources (JD-R) Theory, this study aims to analyze the effect of quality of work life (QWL) on work engagement and to examine the moderating role of psychological empowerment (PE) among nurses. This study employs a quantitative approach using Structural Equation Modeling based on Partial Least Squares (SEM-PLS) with 197 respondents. The results indicate that QWL has a positive and significant effect on work engagement ($\beta = 0.528$; $p < 0.001$), and PE also has a positive and significant effect ($\beta = 0.400$; $p < 0.001$). Furthermore, PE is found to significantly moderate the relationship between QWL and work engagement ($\beta = 0.179$; $p = 0.001$), indicating a strengthening effect between job resources and personal resources. The model demonstrates moderate to strong explanatory power ($R^2 = 0.552$) and good predictive relevance ($Q^2_{\text{predict}} = 0.525$). This study provides a theoretical contribution by extending JD-R Theory through empirical evidence of the interaction mechanism between QWL and PE in enhancing work engagement. Practically, the findings highlight the importance of HR strategies that integrate improvements in quality of work life and psychological empowerment to optimize healthcare workers' engagement.

Keyword: quality of work life, psychological empowerment, work engagement

Introduction

Healthcare organizations worldwide are increasingly challenged to maintain high-quality patient care while responding to growing service demands, workforce shortages, and escalating occupational stress among healthcare professionals. Nurses, as the largest professional workforce in hospitals, play a central role in ensuring patient safety, service quality, and organizational effectiveness (World Health Organization, 2020). However, the demanding nature of nursing including high workload, emotional exhaustion, shift work, and increasing clinical complexity often undermines nurses' psychological well-being and reduces their willingness to fully invest themselves in their work. Consequently, improving nurses' work engagement has become a strategic priority for healthcare organizations.

Work engagement refers to a positive and fulfilling work-related psychological state characterized by vigor, dedication, and absorption (Schaufeli, 2017). Numerous studies have demonstrated that highly engaged nurses exhibit superior job performance, stronger organizational commitment, better patient outcomes, and lower turnover intention (Bakker & Albrecht, 2018; García-Sierra et al., 2016; Keyko et al., 2016). Conversely, disengaged nurses are more likely to experience burnout, decreased service quality, and increased medical errors (Wan et al., 2018). Therefore, understanding the organizational mechanisms that promote work engagement remains an important issue in healthcare management research.

Among various organizational factors, Quality of Work Life (QWL) has consistently been recognized as an important antecedent of employee engagement. QWL reflects employees' perceptions of favorable working conditions, including work-life balance, career development opportunities, occupational safety, organizational support, and overall workplace well-being (Sirgy et al., 2017). According to the Job Demands–Resources (JD-R) Theory, these favorable conditions constitute job resources that stimulate intrinsic motivation and enhance work engagement by enabling employees to effectively cope with demanding work environments (Bakker & Demerouti, 2017). Accordingly, numerous empirical studies have reported a positive association between QWL and work engagement across different occupational settings (Rai, 2018; Kanten & Sadullah, 2018; Orgambidez & Almeida, 2020).

However, previous findings are not entirely consistent. Although most studies reported significant positive relationships, the magnitude of the relationship between QWL and work engagement varies

considerably across organizational settings and employee groups. Some studies have reported relatively strong effects, whereas others found only modest relationships, suggesting that favorable working conditions alone may not always translate into higher employee engagement. These inconsistent findings indicate that additional psychological mechanisms may influence how organizational resources are transformed into work engagement.

From a theoretical perspective, the JD-R Theory proposes that employee engagement is generated through the interaction between job resources and personal resources (Bakker & Demerouti, 2017; Xanthopoulou et al., 2017). While previous studies have predominantly emphasized the direct motivational role of job resources, considerably less attention has been devoted to examining whether personal resources function as boundary conditions that strengthen the effectiveness of organizational resources. Consequently, the theoretical mechanism explaining when and under what conditions Quality of Work Life produces stronger work engagement remains insufficiently understood.

One important personal resource is psychological empowerment, defined as an individual's perception of meaning, competence, self-determination, and impact at work. Psychological empowerment enables employees to perceive greater control over their work, enhances intrinsic motivation, and improves their capacity to utilize available organizational resources effectively (Kim & Beehr, 2018; Tripathi & Bharadwaja, 2020). Nevertheless, previous empirical studies have primarily conceptualized psychological empowerment as an independent predictor or mediating mechanism of work engagement (Ugwu et al., 2017; Orgambidez & Almeida, 2020). Evidence examining psychological empowerment as a moderating variable remains scarce, despite the explicit proposition of JD-R Theory that personal resources strengthen the motivational influence of job resources.

In addition, the existing literature has been dominated by studies conducted in private organizations or healthcare systems in developed countries. Comparatively little evidence is available from public hospitals in developing countries, particularly Indonesia, where nurses routinely experience high workloads, limited organizational resources, and substantial emotional demands. These organizational characteristics may alter how Quality of Work Life and psychological empowerment jointly influence nurses' work engagement, thereby limiting the generalizability of previous findings.

Accordingly, this study addresses four important research gaps. First, it addresses an empirical gap by examining psychological empowerment as a moderator rather than merely as an antecedent or mediator of work engagement. Second, it addresses a theoretical gap by extending the Job Demands–Resources Theory through testing psychological empowerment as a boundary condition linking job resources to work engagement. Third, it addresses a contextual gap by providing empirical evidence from nurses working in Indonesian public hospitals, a setting that has received limited scholarly attention. Finally, it responds to the inconsistency in previous empirical findings regarding the relationship between Quality of Work Life and work engagement by investigating whether psychological empowerment explains variations in this relationship.

Therefore, this study aims to examine the effect of Quality of Work Life on nurses' work engagement, while investigating the moderating role of psychological empowerment within the framework of the Job Demands–Resources Theory. The findings are expected to contribute to the advancement of human resource management theory by clarifying the interaction between job resources and personal resources, while simultaneously providing practical guidance for hospital managers in designing interventions that strengthen nurses' engagement through improvements in both working conditions and psychological empowerment.

Method

This study employed a quantitative explanatory research design using a cross-sectional survey to examine the relationships among Quality of Work Life (QWL), Psychological Empowerment (PE), and Work Engagement (WE) among nurses. A quantitative approach was selected because the study aims to empirically test causal relationships between latent constructs and to examine the moderating role of psychological empowerment. The cross-sectional design enables data to be collected at a single point in time, providing an efficient approach for testing theoretical relationships within a specific population (Creswell, 2018).

The study was conducted at RSUD Dr. Doris Sylvanus, a provincial referral public hospital in Central Kalimantan, Indonesia. The hospital was selected because it has a large nursing workforce, provides comprehensive healthcare services, and represents a suitable setting for examining organizational and psychological factors influencing nurses' work engagement. Data collection was conducted May 2026.

The target population consisted of all registered nurses employed at the hospital across various service units, including inpatient wards, outpatient clinics, emergency departments, and other clinical units. Since

the research focused on employees with sufficient organizational experience, purposive sampling was applied. Respondents were required to meet the following inclusion criteria: (1) employed as a registered nurse at RSUD Dr. Doris Sylvanus; (2) directly involved in patient care; (3) having a minimum of one year of working experience; and (4) voluntarily agreeing to participate in the study. These criteria ensured that respondents possessed adequate experience to evaluate their quality of work life, psychological empowerment, and work engagement.

Data were collected using a structured self-administered questionnaire distributed both in printed form and through an online survey platform. All measurement instruments were adapted from previously validated scales to ensure content validity and comparability with earlier studies. Quality of Work Life was measured using indicators reflecting employees' perceptions of working conditions, work-life balance, career development, occupational safety, and organizational support. Psychological Empowerment was assessed using Spreitzer's (1995) four-dimensional framework comprising meaning, competence, self-determination, and impact. Work Engagement was measured based on the Utrecht Work Engagement Scale (UWES), which captures vigor, dedication, and absorption (Schaufeli, 2017). All items were measured using a five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree").

The proposed conceptual model was analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS) with SmartPLS software. SEM-PLS was selected because it is appropriate for predictive research, accommodates complex structural models involving moderating effects, and does not require multivariate normality assumptions (Hair et al., 2022). Data analysis consisted of two stages. First, was evaluated by assessing indicator reliability, internal consistency reliability using Cronbach's alpha and Composite Reliability (CR), convergent validity through Average Variance Extracted (AVE). Second, the structural model (inner model) was assessed by examining collinearity, path coefficients, coefficient of determination (R^2), effect size (f^2), predictive relevance (Q^2), and the significance of the moderating effect through a bootstrapping procedure with 5,000 resamples. Descriptive statistics were also calculated to summarize respondents' demographic characteristics and the distribution of the study variables.

This study received ethical approval from the Health Research Ethics Committee of RSUD Dr. Doris Sylvanus, Central Kalimantan, Indonesia (Ethical Approval No. 1928/UMPEG/RSUD/04-2026). All participants provided informed consent prior to data collection, and participation was voluntary and anonymous.

Results and Discussions

The following section presents the results of the analysis using a two-stage approach, consisting of the outer model (measurement model) evaluation and the inner model (structural model) evaluation.

Results

1. Outer Model Analysis

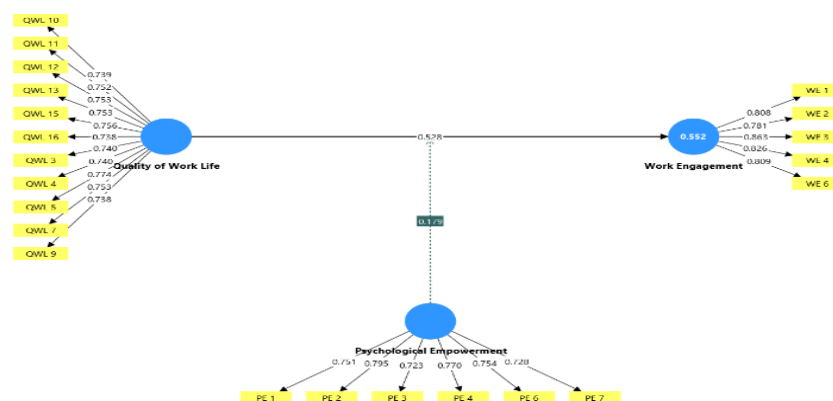


Figure 1. Outer Model Test Result

The outer model evaluation was conducted to assess the quality of the measurement instrument, ensuring that the indicators accurately and reliably measured the intended latent constructs. The outer model assessment consists of three stages, namely:

Table 1. Convergent Validity Tes (Outer Loading)

	Psychological Empowerment	Quality of Work Life	Work Engagement
PE 1	0.751		
PE 2	0.795		
PE 3	0.723		
PE 4	0.770		
PE 6	0.754		
PE 7	0.728		
QWL 10		0.739	
QWL 11		0.752	
QWL 12		0.753	
QWL 13		0.753	
QWL 15		0.756	
QWL 16		0.738	
QWL 3		0.74	
QWL 4		0.74	
QWL 5		0.774	
QWL 7		0.753	
QWL 9		0.738	
WE 1			0.808
WE 2			0.781
WE 3			0.863
WE 4			0.826
WE 6			0.809

Source: Data Processing Result, 2026

The validity assessment indicated that all indicators achieved outer loading values greater than or equal to 0.70. Hence, all measurement indicators met the recommended criterion for convergent validity and were retained in the measurement model.

Table 2. Discriminant Validity

	Psychological Empowerment	Quality of Work Life	Work Engagement
Psychological Empowerment	0.754		
Quality of Work Life	0.331	0.749	
Work Engagement	0.539	0.627	0.818

Source: Data Processing Result, 2026

Based on the table above, the square root of the AVE value for each construct is greater than its correlation with other constructs, indicating that these values satisfy the Fornell-Larcker criterion.

**Table 3. Cronbach's Alpha dan Composite Reliability
(Internal Consistency Reliability)**

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Psychological Empowerment	0.848	0.852	0.888	0.568
Quality of Work Life	0.922	0.923	0.933	0.561
Work Engagement	0.876	0.878	0.91	0.669

Source: Data Processing Result, 2026

The test results in the table above indicate that all latent variables meet the reliability testing criteria. This is based on the Cronbach's alpha and composite reliability values of all latent variables being > 0.7. Therefore, all latent variables are declared reliable after fulfilling all measurement criteria.

2. Inner Model Analysis

Table 4. R Square

	R-square	R-square adjusted
Work Engagement	0.552	0.545

Source: Data Processing Result, 2026

The R-square (R^2) value of 0.552 indicates that 55.2% of the variation in Work Engagement can be jointly explained by Quality of Work Life, Psychological Empowerment, the interaction between Quality of Work Life and Psychological Empowerment (the moderating effect) contained in the research model. Thus, an R^2 of 0.552 falls into the moderate category. This indicates that the model has fairly good explanatory power in explaining the variation in Work Engagement.

The effect size evaluation is conducted by examining the f^2 value to determine the magnitude of the influence of exogenous variables on endogenous variables within a model. The following is the f-square value for each construct, which can be seen in the table below.

Table 5. F Square

	Work Engagement
Quality of Work Life	0.547
Psychological Empowerment x Quality of Work Life	0.08

Source: Data Processing Result, 2026

Quality of Work Life has an effect size of 0.547, which falls into the large category and represents the dominant influence. Psychological Empowerment has an effect size of 0.312, which falls into the medium-to-large category, while the interaction effect of Psychological Empowerment and Quality of Work Life, at 0.080, falls into the small category.

Table 6. Q^2 Predict

	Q^2 predict	RMSE	MAE
Work Engagement	0.525	0.696	0.539

Source: Data Processing Result, 2026

MAE (Mean Absolute Error) and RMSE (Root Mean Square Error) are used to assess predictive accuracy, where the smaller the value, the higher the model's predictive ability. The Q-Square value for Work Engagement is 0.525. This value is positive, indicating that the model has good predictive relevance in predicting the endogenous variable.

Table 7. Standardized Root Mean Square Residual (SRMR)

	Saturated model	Estimated model
SRMR	0.053	0.053

Source: Data Processing Result, 2026

SRMR is a model fit measure representing the difference between the correlation matrix of the data and the correlation matrix estimated by the model. The SRMR value is 0.053 for both the saturated model and the estimated model. This value is below the threshold of 0.08, indicating that the model has a good fit.

Table 8. Path Coefficient

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
Quality of Work Life → Work Engagement	0.528	0.53	0.062	8.552	0.000
Psychological Empowerment x Quality of Work Life → Work Engagement	0.179	0.176	0.052	3.468	0.001

Source: Data Processing Result, 2026

Quality of Work Life has a positive and significant effect on Work Engagement, with a coefficient of 0.528, a T-value of 8.552, and a p-value of 0.000. Since the p-value is smaller than 0.05, H1 is accepted. This indicates that the higher the quality of work life, the higher the work engagement.

The moderation test results show that the interaction between Psychological Empowerment and Quality of Work Life has a positive and significant effect on Work Engagement, with: $\beta = 0.179$, $t = 3.468$, $p = 0.001$. Since the t-statistic value of $3.468 > 1.96$ and the p-value of $0.001 < 0.05$, H2 is accepted and the moderating effect is proven significant. The positive interaction coefficient ($\beta = 0.179$) indicates that Psychological Empowerment strengthens the relationship between Quality of Work Life and Work Engagement.

Discussions

1. Overview of the Research Findings

The results of the analysis indicate that the proposed research model demonstrates adequate capacity to explain Work Engagement among hospital nurses. The R^2 value of 0.552 indicates that 55.2% of the variance in Work Engagement can be accounted for by Quality of Work Life (QWL), Psychological Empowerment, and the interaction between these two variables. This value reflects a moderate level of explanatory power, suggesting that the model captures a substantial proportion of the variance in nurses' work engagement, while acknowledging that additional factors outside the model may also contribute.

Beyond its explanatory strength, the model also exhibits adequate predictive capability, as reflected in the Q^2 predict value of 0.525, which indicates that the model possesses predictive relevance in estimating the endogenous variable. According to Hair et al. (2022), a Q^2 value greater than zero indicates that a model is not only capable of explaining the relationships among variables but also of accurately predicting observed data. Accordingly, the developed model holds not only theoretical value but also practical potential as a basis for predicting the level of Work Engagement in nursing care settings.

Furthermore, the goodness-of-fit evaluation, assessed through the Standardized Root Mean Square Residual (SRMR), yielded a value of 0.053, which falls below the recommended threshold of 0.08. This result indicates a satisfactory level of fit between the empirical and estimated correlation matrices, suggesting that the structural relationships among the constructs are consistent with the empirical data (Henseler et al., 2016; Hair et al., 2022). Taken together, these findings provide strong support for the adequacy of the research model in explaining the roles of Quality of Work Life and Psychological Empowerment in enhancing Work Engagement among hospital nurses, and establish a robust foundation for interpreting the causal relationships among variables discussed in the following sections.

2. The Effect of Quality of Work Life on Work Engagement

The results reveal that Quality of Work Life (QWL) exerts a positive and significant effect on Work Engagement among hospital nurses ($\beta = 0.528$, $t = 8.552$, $p < .001$). In addition to its statistical significance, the effect size ($f^2 = 0.547$) indicates that QWL is a predictor with a large effect on Work Engagement. This finding suggests that the more favorably nurses perceive the quality of their work life, the higher their level of engagement with their work. QWL therefore functions not merely as a determinant of healthcare workers' well-being, but as a strategic driver of nurses' work engagement in hospital settings.

This finding is consistent with Job Demands–Resources (JD-R) Theory, which posits that job resources are a key driver of the motivational process that gives rise to Work Engagement (Bakker & Demerouti, 2023; Schaufeli, 2021). In the present study, Quality of Work Life represents a form of job resources encompassing a safe working environment, organizational support, harmonious working relationships, opportunities for professional development, fair recognition, and work–life balance. The availability of such resources enables nurses to meet job demands while simultaneously enhancing their intrinsic motivation to contribute optimally to the organization. In other words, QWL functions as a mechanism that transforms work pressure into a meaningful work experience, thereby fostering vigor, dedication, and absorption—the core dimensions of Work Engagement.

The hospital context further reinforces the relevance of this finding, given that the nursing profession is characterized by high job demands, including heavy workloads, shift-based work systems, emotional strain from patient care, the complexity of clinical decision-making, and responsibility for patient safety. According to JD-R Theory, such demands do not necessarily produce adverse outcomes when organizations provide adequate job resources. Under such conditions, nurses tend to perceive their work as a professional challenge (challenge demands) that fosters personal growth, rather than as a burden that depletes psychological energy. Investment in Quality of Work Life is therefore a strategic imperative that enables nurses to sustain their motivation, commitment, and engagement even in high-pressure work environments.

This finding is consistent with a growing body of recent international research. Through a systematic review, Midje et al. (2024) concluded that a supportive work environment, effective leadership, learning opportunities, and a positive organizational culture are key determinants of Work Engagement among nurses. Comparable findings were reported by Montani, Dagenais-Desmarais, and Giorgi (2024), who demonstrated that the quality of the work environment directly contributes to the psychological well-being and engagement of healthcare workers. Van den Heuvel et al. (2023) further emphasized that the combination of job resources and a positive organizational climate enhances healthcare workers' ability to sustain performance under high work pressure.

Other studies reveal a consistent pattern. Galanakis and Tsitouri (2022) found that job resources are positively associated with Work Engagement while simultaneously reducing the risk of burnout. Dall'Ora et al. (2023) demonstrated that a supportive work environment is associated with lower levels of work-related fatigue and higher nurse engagement. In addition, Keyko et al. (2023) explained that Work Engagement develops when organizations grant professional autonomy, foster interdisciplinary collaboration, and implement leadership that is responsive to healthcare workers' needs. In a similar vein, Wei et al. (2023) found that perceptions of a high-quality work environment enhance nurses' affective commitment, which in turn improves service quality and patient satisfaction. Mäntynen et al. (2024) further reported that hospitals that consistently invest in improving Quality of Work Life exhibit higher nurse retention, lower turnover intention, and better organizational performance.

From a human resource management (HRM) perspective, these findings underscore that enhancing Work Engagement requires an approach oriented toward creating a high-quality work environment. It is insufficient for hospitals to provide financial compensation or physical facilities alone; they must also develop HRM practices that support the psychological well-being of nursing staff through proportionate workload management, supportive leadership, opportunities for competency development, open communication, and equitable reward systems. This approach aligns with the concept of High-Performance Work Systems (HPWS), which emphasizes that integrated HRM practices can enhance employees' motivation, ability, and opportunity to contribute optimally (Jiang & Messersmith, 2023). Taken together, these results not only reinforce the empirical validity of JD-R Theory within the hospital context but also demonstrate that improving Quality of Work Life is an effective HRM strategy for building sustainable Work Engagement, strengthening nurse retention, and ultimately enhancing the quality of healthcare services.

3. The Moderating Role of Psychological Empowerment in the Relationship between Quality of Work Life and Work Engagement

The results indicate that Psychological Empowerment significantly strengthens the relationship between Quality of Work Life and Work Engagement ($\beta = 0.179$, $t = 3.468$, $p = .001$), thereby supporting the second hypothesis. Although the effect size ($f^2 = 0.080$) falls within the small category, the significance of the interaction coefficient indicates that Psychological Empowerment functions as a moderating variable that strengthens the positive effect of Quality of Work Life on Work Engagement. In other words, the beneficial effect of Quality of Work Life on work engagement is amplified among nurses with a high level of psychological empowerment. Conversely, among nurses with low Psychological Empowerment, the positive effect of a high-quality work environment on Work Engagement tends not to reach its full potential.

This finding extends Job Demands–Resources (JD-R) Theory, whose more recent developments position personal resources as an important factor in strengthening the motivational pathway. If Quality of Work Life is regarded as a form of job resources provided by the organization, Psychological Empowerment can be understood as a personal resource that enables individuals to utilize such resources more effectively (Bakker & Demerouti, 2023). Accordingly, the relationship between a high-quality work environment and Work Engagement is shaped not only by the availability of organizational resources, but also by individuals' psychological capacity to interpret and optimize those resources. Nurses who perceive themselves as having control, competence, and meaning in their work are better able to translate organizational support into positive energy for dedicated performance. This finding can also be explained through the theory of Psychological Empowerment developed by Spreitzer (1995), which posits that psychological empowerment is built upon four core dimensions: meaning, competence, self-determination, and impact. These dimensions reflect a psychological state in which individuals perceive their work as meaningful, feel confident in their abilities, experience latitude in decision-making, and believe that their contribution has a tangible impact on the organization. In the context of nursing care, these dimensions are particularly critical, as nurses are required to make rapid clinical decisions, collaborate across healthcare professions, and adapt to changing patient conditions. Nurses with a high level of Psychological Empowerment are therefore better positioned to leverage a high-quality work environment as a source of motivation for delivering more optimal care.

This finding is consistent with the study by Kelesoglu et al. (2024), which demonstrated that personal resources play an important role in enhancing Work Engagement among healthcare workers. That study explained that individuals with a positive perception of their own competence and capacity are better able to sustain motivation even under high work pressure. Similarly, Wang et al. (2023) found that Psychological Empowerment enhances work engagement by increasing individuals' sense of autonomy and meaning in their work. When healthcare workers feel trusted to make decisions consistent with their competencies, they tend to exhibit greater dedication to the organization.

This finding is further supported by Kim and Beehr (2023), who explained that Psychological Empowerment constitutes a psychological resource that enhances individuals' capacity to cope with job demands while sustaining intrinsic motivation. According to them, individuals who perceive themselves as having influence over their work are better able to capitalize on organizational support than those who feel they lack control over their work. In a similar vein, Tripathi, Priyadarshi, and Kumar (2023) reported that human resource management practices exert a greater influence on positive work behavior when accompanied by increased Psychological Empowerment. This suggests that the success of organizational policy depends not only on the quality of the work system itself, but also on how that policy is perceived by employees as a form of trust and empowerment.

From an HRM perspective, these findings suggest that improving Quality of Work Life and Psychological Empowerment should be pursued concurrently, as the two constructs operate in a complementary manner. Providing a comfortable work environment, equitable reward systems, and career development opportunities is important, but their benefits are amplified when accompanied by an organizational culture that fosters professional autonomy, participation in decision-making, and recognition of nurses' competence. Strategies such as empowering leadership, shared governance, clinical autonomy, mentoring programs, and the involvement of nurses in clinical policy development should therefore be incorporated into hospital human resource management policy. Such an approach not only strengthens the relationship between Quality of Work Life and Work Engagement but also holds the potential to enhance nurse retention, service quality, patient safety, and the long-term sustainability of organizational performance.

4. Limitations and Directions for Future Research

Although this study provides empirical evidence regarding the roles of Quality of Work Life and Psychological Empowerment in enhancing Work Engagement among nurses, several limitations should be considered when interpreting the findings. First, this study employed a cross-sectional

design, such that the relationships identified reflect conditions observed at a single point in time and cannot capture dynamic behavioral change or establish causal relationships with certainty. Longitudinal research is needed to examine how changes in Quality of Work Life and Psychological Empowerment influence the development of Work Engagement over time.

Second, the data were obtained through a self-report questionnaire, which may be subject to common method bias and respondent subjectivity in evaluating the work environment and their own level of engagement. Although the instruments used met the criteria for validity and reliability, incorporating additional data sources—such as supervisor ratings, objective performance indicators, or behavioral observation—would provide a more comprehensive picture.

Third, this study was conducted within a specific hospital context, such that organizational characteristics, work culture, and management systems may limit the generalizability of the findings. Future research is therefore encouraged to include a broader range of hospital types, both public and private, and to expand the geographic scope of the study in order to obtain more representative empirical evidence.

In addition, future studies could extend the model by incorporating other variables relevant to the Job Demands–Resources Theory framework, such as Perceived Organizational Support, Leadership, Resilience, Psychological Safety, or Burnout, either as mediators or moderators. Such model development is expected to provide a more comprehensive understanding of the factors influencing nurses' Work Engagement and to yield stronger recommendations for the development of human resource management policy in the healthcare sector

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