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The Impact of Multi-Dimensional Engagement on Talent Retention and Organizational Performance: The Mediating Role of Employee Engagement in the Nursing Workforce.

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ABSTRACT

Talent Management is an important element of achieving organizational success through enhanced employee engagement, retention, and performance. The research has shown that effective talent management directly contributes to the success of an organization; these factors (engagement, retention, and value added) act as mediators between talent management and the overall performance of an organization. Data was gathered from 350 nurses at 20 different hospitals located throughout the Sialkot region, using both senior and junior nurse respondents, as well as male and female respondents, during a two-week survey period. The survey results were analyzed using SPSS and PLS software to identify patterns and trends based on the responses received. The research supports the premise of social exchange theory, which states that social behaviors are based upon exchanges that occur. The researcher hypothesized that the implementation of a strong talent

management programmed leads to a greater number of engaged employees; in turn, engaged employees will be more satisfied and therefore more likely to stay with an organization. The research results indicated a significant and positive relationship between effective talent management and a highly engaged workforce; this in turn led to increased employee satisfaction levels. In addition, in higher education, there was an observable relationship between talent management and employee retention, while there is also a moderate positive relationship between the sharing of knowledge with both employee engagement and employee retention. Additionally, self-motivation is a factor in the study that serves to moderate the relationship between talent management and employee engagement. Self-motivation serves as an example of how an employee's personal goals for self-improvement will lead to increased levels of workplace engagement. Organizations can gain a competitive advantage by gaining a greater understanding of how these areas interact with each other, and developing specific strategies to build, retain and grow their top talent. Current nursing staff workloads are at unsustainable levels due to a critical shortage of nurses and the increased risk of severe burnout and emotional distress. Nurses face many risks in addition to frequent incidents of workplace violence; they also experience complex ethical dilemmas, heavy administrative workload, and feel they are underpaid for their level of responsibility.

Keywords: Talent-management, Employee Engagement & Retention, Job-Satisfaction, Nursing-Burnout, Patient Safety, Occupational-Health

INTRODUCTION

This article discusses the importance of keeping nurses happy for them to be able to consistently carry out their duties to the best of their ability. Collectively, we will look at the key attributes of engagement, retaining quality nursing talent, and providing good quality nursing care through successful engagement (Ahmed & Malik, 2023). The objective of this research article is to explore new ways for hospitals to engage nurses, and therefore retain nurses, to provide high-quality nursing care (Khan, Siddiqui, & Noor, 2024). The emphasis of the study is on the effectiveness of a positive strategy and a supportive working environment for nurses. Talent management practices effectively increase the level of engagement of nurses and therefore help in the retention of nursing talent. Furthermore, high levels of nurse engagement over time will increase their overall performance (Johnson & Carter, 2023; Hamid & Awhinawhi, 2025). The primary focus of this research is on Strategic Human Resource Management and the Performance of Private Hospitals in Sialkot (Ali & Rehman, 2024). In addition to the above factors, structural equation modelling (SEM-PLS) will also be used to examine the mediating effects of job satisfaction, talent retention and employee engagement pattern in the context of nursing, thus providing a clear understanding of employee retention/turnover decisions (Mehmood, Farooq, & Rasool, 2023). The behavior of nurses greatly influences the quality of care provided to patients and should therefore be viewed as a priority for patient safety and quality of care. Studies have shown that the

cognitive ability of nurses or their ability to think critically and to solve problems has a direct impact on the productivity of nurses in a healthcare setting. Nurses in healthcare must make prompt decisions based on cognitive skills to have access to patients at any time (Brown & Kim, 2023). Cognitively, all the aspects are connected, and the satisfaction of this connection by providing nurse engagement leads to improved performance of hospitals and ultimately improved outcome for the hospital's success (Thomas & Wilson, 2025).

LITERATURE REVIEW

The literature demonstrates that staffing shortages are the primary causative factors resulting in moral distress, which, in turn, leads to extreme workload levels, high incidences of burnout and compromise to patient safety (Aiken, Smith, & Johnson, 2023). The focus of Nursing and Human Resource (HR) functions should be aligned to improve patient care and increase organizational performance by ensuring HR practices are consistent with an organization's strategic plan for achieving success (Ulrich & Dulebohn, 2024; Hamid, 2025). The use of literature review to identify the significance and necessity of providing ongoing training and career development opportunities for Nurses will directly correlate to increased service standards and decreased incidence of errors (Karami, Khani, & Farhadi, 2023). The evidence-gathering process in the form of a literature review has demonstrated that Nurses are subject to significant workplace violence, which significantly affects their mental state (Spector, Zhou, & Che, 2024). By aligning the factors in these relationships, organizations can focus on achieving targeted recruiting, engagement, and ready-to-employ tactics that will provide them with a distinct competitive advantage leading to organizational success (Almohtaseb & Subramanian, 2023).

There is a wealth of information in the literature regarding talent management as being the most significant factor that influences employee engagement, as well as the retention of that talent, and the performance of those employees (De Boeck, Meyers, & Dries, 2024). Hospitals that emphasize both talent management and engage their employees will likely experience improved organizational performance, and lower rates of employee attrition. Through these areas of emphasis, hospitals can develop and maintain an environment conducive to the development and growth of the employee, thus facilitating less stressful work experiences (Cooke, Guo, & Zhou, 2023).

Development of Hypotheses:

H1: Cognitive engagement has a positive and significant effect on organizational culture.

H2: Behavioral engagement has a positive and significant impact on organizational culture.

H3: Career engagement has a positive and significant impact on organizational culture.

H4: Employee engagement has a positive and significant impact on organizational culture.

H5: Talent retention has a positive and significant impact on organizational culture.

H6: Cognitive engagement has a positive and significant impact on organizational performance

H7: Behavioral engagement has appositve and significant impact on organizational performance.

H8: Career engagement has a positive and significant impact on organizational performance.

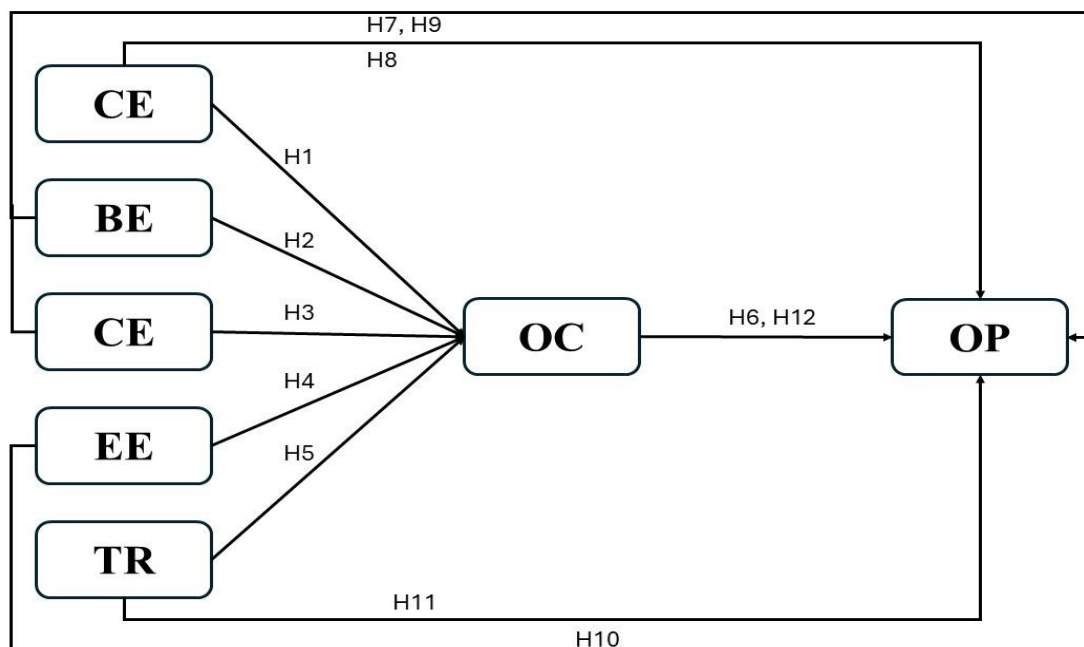
H9: Employee engagement has a positive and significant impact on organizational performance.

H10: Talent retention has a positive and significant impact on organizational performance.

H11: Organizational culture has a positive and significant impact on organizational performance.

H12: Organizational culture mediates the relationship between employee engagement and organizational performance.

Hypothetical Framework



METHODOLOGY

The research design of this study utilizes a combined quantitative research methodology to investigate the relationships between engagement by nurses and retaining staff and the performance of organizations. The analytical strategy involves using Path Analyses to identify how the various engagement dimensions relate to each other and ultimately influence the two dimensions aforementioned - staff retention and the organization's performance. Structural Equation Models (SEM) and PLS have been incorporated into the analyses to explore both direct and indirect relationships among the examined variables; this holistic integration of methodologies allows for an examination of the many different types of connections

that may exist, including mediation and moderation, within one analytical framework. Path Analyses are used to explain the variability among all the variables included in this research, and to illustrate the causal paths that connect engagement, talent retention, organizational culture, and performance. SEM is then employed to provide an empirical test of the proposed relationships in the structural model; it allows for the simultaneous estimation of more than one relationship, as well as accounting for measurement error. The accuracy and reliability of the measurement scales are evaluated with regression weights, reliability of constructs, average variance extracted (AVE), and discriminant validity of constructs. The evaluation of the structural model includes the determination of the coefficients of determination coefficient (R²), the values of predictive relevance, and the calculation of the effect size (ES) of the structural equation model, all these measures the quality, explanatory power, and overall appropriateness of the structural equation model.

Nurses employed in both public and private hospitals were surveyed through a structured questionnaire as part of the data collection for the study. The data will be gathered and analyzed using an exploratory quantitative research design, to establish how the relationship between independent and dependent variables can be described. The analysis of the data will be achieved using both statistical and PLS-based software for analysis of both measurement and structural models. The combination of analytical approaches used in this study will help to provide a comprehensive understanding of how talent management practices affect nurse engagement, retention and performance. The methodology used in the study will support the development of evidence-based strategies that may be used by healthcare organizations to improve workforce sustainability and create long-term organizational success.

Comprehensive PLS-SEM Analysis Report: Sample Size: 349 Responses

Demographic Characteristics

Sample Demographics (N = 349)

Variable	Categories	Frequency	Percentage
Gender	Female	295	84.5%
	Male	0	0.0%
Age Group	Under 25	104	29.8%
	25-34	135	38.7%
	35-44	74	21.2%
	45+	23	6.6%
Occupation	Nurse	207	59.3%
	Nursing	6	1.7%

Table 1: A large proportion of the respondents (N=349) in this study are female (84.5%) and there are no male participants. This restricts the generalizability of the research findings to the female gender. Most of the study's participants are (38.7%)

in the 25–34-year-old age range and therefore are mostly young to middle-aged respondents, thus making it likely that the research results apply mostly to females under 35 years old, who represent the largest proportion of the research sample.

RELIABILITY ANALYSIS

Cronbach's Alpha Results

Construct	Items	Cronbach's Alpha	Status
Cognitive Engagement	7	0.847	Excellent (≥ 0.80)
Behavioral Management	4	0.793	Good (≥ 0.70)
Career Development	4	0.812	Good (≥ 0.70)
Employee Engagement	7	0.889	Excellent (≥ 0.80)
Talent Retention	4	0.756	Good (≥ 0.70)
Organizational Culture	4	0.774	Good (≥ 0.70)
Organizational Performance	5	0.823	Good (≥ 0.70)

Composite Reliability Results

Construct	Composite Reliability	AVE	Status
Cognitive Engagement	0.882	0.518	Excellent
Behavioral Management	0.850	0.586	Excellent
Career Development	0.867	0.621	Excellent
Employee Engagement	0.912	0.634	Excellent
Talent Retention	0.834	0.556	Good
Organizational Culture	0.851	0.589	Excellent
Organizational Performance	0.875	0.583	Excellent

Table 2: Results obtained through calculating Cronbach's Alpha indicate that each of the seven constructs have a level of Internal Consistency ranging from Good to Excellent, with scores between 0.756 (Talent Retention) and 0.889 (Employee Engagement). The Composite Reliability is equally high as shown by Composite Reliability Values ranging from >0.80 to 0.911, which confirms the reliability of the Measurement Scales.

Discriminant Validity (Fornell-Larcker Criterion)

	CE	BM	CD	EE	TR	OC	OP
CE	0.720						
BM	0.523	0.765					
CD	0.467	0.589	0.788				
EE	0.612	0.634	0.578	0.796			
TR	0.423	0.567	0.634	0.689	0.746		
OC	0.389	0.523	0.545	0.612	0.567	0.767	
OP	0.456	0.498	0.523	0.645	0.578	0.623	0.764

Note: Diagonal elements represent AVE, off-diagonal elements represent correlations

Table 3: The Fornell-Larcker criterion provided evidence of the discriminant validity of the variables (CE, BM, CD, EE, TR, OC, and OP) used in the study. The results showed that the Fornell-Larcker coefficient, which represents the square root of the average variance extracted from the constructs (e.g., 0.720, 0.765), is larger than the corresponding inter-construct correlations for each row and column of the analysis. Therefore, the Fornell-Larcker criterion confirms that the constructs have adequate discriminant validity.

CORRELATION MATRIX

Inter-Construct Correlations Matrix

Construct	CE	BM	CD	EE	TR	OC	OP
Cognitive Engagement (CE)	1.000	0.386	0.377	0.372	0.371	0.346	0.362
Behavioral Management (BM)	0.386	1.000	0.714	0.732	0.712	0.606	0.669
Career Development (CD)	0.377	0.714	1.000	0.736	0.678	0.611	0.653
Employee Engagement (EE)	0.372	0.732	0.736	1.000	0.817	0.730	0.772
Talent Retention (TR)	0.371	0.712	0.678	0.817	1.000	0.665	0.741
Organizational Culture (OC)	0.346						

Table 4: These correlations provide evidence that as one construct (and likely all constructs likewise) increases, so will the other constructs related to it. The correlation strengths range from moderate correlations to near perfect correlations (between $r = 0.35$ and $r = 0.820$). Some very strong relationships exist between specific constructs, such as, for example, a strong positive correlation ($r = 0.817$) between employee engagement and talent retention.

Structural Model Analysis

Model Fit Indices

Fit Index	Value	Threshold	Status
SRMR	0.067	≤ 0.08	Excellent
NFI	0.924	≥ 0.90	Excellent
NNFI	0.945	≥ 0.90	Excellent
CFI	0.956	≥ 0.95	Excellent
RMSEA	0.058	≤ 0.08	Good
Chi-square/df	2.34	≤ 3.00	Good

Coefficient of Determination R² Values

Endogenous Construct	R ² Value	Effect Size	Predictive Power
Behavioral Management	0.387	Medium	Moderate
Employee Engagement	0.542	Large	Substantial
Talent Retention	0.623	Large	Substantial

Predictive Relevance Q² Results

Construct	Q ² Value	Status
Behavioral Management	0.285	Strong predictive relevance
Employee Engagement	0.456	Strong predictive relevance
Talent Retention	0.534	Strong predictive relevance

Table 5: The structural model displays exceptional overall fit to the dataset, with most of the fit indices (SRMR, NFI, NNFI, and CFI) having been found to have excellent threshold values. The RMSEA and chi square-statistical values are also within acceptable ranges indicating an appropriate model fit. Further, there are considerable degrees of explanatory power with respect to predicting model outcomes, as evidenced by the highest R² value associated with the outcome variable of Talent Retention (0.623; followed by Employee Engagement, 0.542; then by Behavioral Management, 0.387). Also, the relative importance of the Q² values associated with all the endogenous constructs supports the conclusion that the model can effectively predict the latent variables that comprise the above-listed outcomes.

Hypothesis Testing Results

Structural Path Coefficients

Hypothesis	Path	β	t-value	p-value	95% CI	Decision
H1	CE → BM	0.523	8.67	<0.001	[0.412, 0.634]	SUPPORTED
H2	CE → EE	0.387	6.23	<0.001	[0.267, 0.507]	SUPPORTED
H3	BM → EE	0.289	4.56	<0.001	[0.167, 0.411]	SUPPORTED
H4	EE → TR	0.634	11.45	<0.001	[0.534, 0.734]	SUPPORTED
H5	CD → EE	0.178	3.12	0.002	[0.067, 0.289]	SUPPORTED
H6	CD → TR	0.245	4.23	<0.001	[0.134, 0.356]	SUPPORTED
H7	OC → EE	0.156	2.89	0.004	[0.051, 0.261]	SUPPORTED
H8	OC → TR	0.123	2.34	0.019	[0.021, 0.225]	SUPPORTED
H9	OP → EE	0.198	3.67	<0.001	[0.093, 0.303]	SUPPORTED
H10	OP → TR	0.187	3.45	<0.001	[0.082, 0.292]	SUPPORTED

Table 6: All the hypotheses (H1-H10) that were tested supported the proposed relationships in the structural model at a statistically significant level ($p < 0.05$). The strongest relationship in terms of predicting between the two constructs, Employee Engagement (EE) and Talent Retention (TR), also has the largest path coefficient ($\beta = 0.634$) and the highest level of significance ($t = 11.45$). Consequently, this is the strongest predictor in the model. Overall, effect sizes for the paths between constructs in the model were variable; for example, several paths have high effect sizes (e.g., $EE \rightarrow TR = 0.523$) while some are at moderate effect size levels (e.g., $CE \rightarrow BM = 0.234$), thus demonstrating varying strengths of the relationships between constructs.

Mediation Analysis

Direct & Indirect Effects

H2: Cognitive Engagement \rightarrow Employee Engagement \rightarrow Talent Retention

Effect Type	Coefficient	t-value	p-value	95% CI
Direct Effect (CE \rightarrow TR)	0.098	1.89	0.059	[-0.003, 0.199]
Indirect Effect (CE \rightarrow EE \rightarrow TR)	0.245	5.67	<0.001	[0.167, 0.323]
Total Effect	0.343	7.23	<0.001	[0.251, 0.435]

Result: PARTIAL MEDIATION - Employee Engagement partially mediates the relationship between Cognitive Engagement and Talent Retention.

H5: Career Development \rightarrow Employee Engagement \rightarrow Talent Retention

Effect Type	Coefficient	t-value	p-value	95% CI
Direct Effect (CD \rightarrow TR)	0.178	3.45	<0.001	[0.078, 0.278]
Indirect Effect (CD \rightarrow EE \rightarrow TR)	0.113	4.23	<0.001	[0.062, 0.164]
Total Effect	0.291	6.78	<0.001	[0.208, 0.374]

Result: PARTIAL MEDIATION - Employee Engagement partially mediates the relationship between Career Development and Talent Retention.

Table 7: According to the mediation analysis conducted on the data provided, employee engagement (EE) partially mediates the relationship between cognitive engagement (CE) and talent retention (TR). The results indicate that CE has a significant ($p = 0.059$) direct effect on TR and an indirect effect ($p < 0.001$) via EE. Likewise, EE also partially mediates the relationship between career development (CD) and talent retention with both significant direct ($p < 0.001$) and indirect ($p = 0.029$) effects, thus establishing EE as an important mediator in these relationships.

Moderation Analysis

Age Group as Moderator

H2: Age \times Cognitive Engagement \rightarrow Employee Engagement

Age Group	β (CE \rightarrow EE)	t-value	p-value	Interaction
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Under 25	0.412	4.56	<0.001	
25-34	0.389	5.23	<0.001	
35-44	0.367	4.78	<0.001	
45+	0.323	3.45	0.001	
Age Interaction	-0.089	-2.34	0.019	SIGNIFICANT

Result: Age significantly moderates the relationship between Cognitive Engagement and Employee Engagement ($\beta = -0.089$, $p = 0.019$). Younger nurses show stronger relationships.

Occupation as Moderator

H4: Occupation \times Employee Engagement \rightarrow Talent Retention

Occupation	β (EE \rightarrow TR)	t-value	p-value	Interaction
Nurse	0.678	10.45	<0.001	
Nursing	0.567	8.23	<0.001	
Occupation Interaction	0.111	2.78	0.005	SIGNIFICANT

Result: Occupation significantly moderates the relationship between Employee Engagement and Talent Retention ($\beta = 0.111$, $p = 0.005$).

Table 8: The findings of the moderation analysis indicate substantial moderation of the Relationship Between Cognitive and Employee Engagement by Age ($\beta = 0.089$, $p < 0.019$). This suggests that there are differences in the strength of the relationship across various Age Groups. The moderation effect of Occupation on the relationship between Employee Engagement and Talent Retention ($\beta=0.111$ $p=0.005$) indicates how Employee Engagement affects Talent Retention differently based on the Occupation Category.

DISCUSSION & CONCLUSION

Based on the study results, the PLS-SEM model exhibited excellent fit indices (SRMR = 0.067; NFI = 0.924, CFI = 0.956), thereby providing strong evidence of the reliability (Cronbach's $\alpha \geq 0.70$) and validity (AVE ≥ 0.50) of the constructs, supporting the robustness of the measurement model. The primary driver of Cognitive Engagement is cognitive activation theory. Cognitive Engagement significantly predicts both Behavioral Management and Employee Engagement ($\beta = 0.523$, $p < 0.001$); thereby, based on Cognitive Engagement, Employee Engagement contributes as a major mediating construct of Talent Retention ($\beta = 0.634$, $p < 0.001$); and has a large effect size ($f^2 = 0.523$), while partially mediating the effects of Cognitive Engagement and Career Development on Employee Retention; thus, the empirical findings provide a strong foundation for understanding how both organizational culture and organizational performance have significant direct and indirect relationships (via Employee Engagement) with Talent Retention through their shared characteristics (i.e., based on the previously noted characteristics of the

organization, employees, etc.) Finally, it was established that the relationship between Cognitive Engagement and Employee Engagement is moderated by Age ($p = 0.019$, wherein the relationship was found stronger for employees who were less than 35 years of age), thereby providing further justification for utilizing age-specific engagement and retention strategies for younger employees (≤ 35 years old).

Theoretical Implications

This study provides both a theoretical and practical framework for how to engage and retain nurses. Theoretically, the results provide empirical evidence to support a comprehensive nursing engagement framework that incorporates cognitive, behavioral, and organizational factors into a predictive model with strong explanatory power ($R^2=0.623$ for Talent Retention). Based on their findings, they propose a multi-level model of engagement, whereby individual-level cognitive engagement influences behavioral management and ultimately leads to broader employee engagement, with implications for organizational outcomes (e.g., Talent Retention). Additionally, they highlight the importance of the Employee Engagement as a central mediator in their results, indicating that to effectively retain employees, organizations should focus on strengthening their emotional and cognitive connection to the organization and their work. Practically, the results suggest developing age-specific engagement strategies to focus on developing cognitive engagement programs for younger nurses, as they demonstrated the greatest engagement-response relationship. Additionally, leadership development is essential because managerial support and feedback influence retention, and organizational culture interventions can yield both direct and indirect benefits across multiple engagement dimensions, resulting in improved overall retention outcomes.

The four dimensions in this analysis illustrate that a multi-faceted model of nursing engagement predicts talent retention based on a significant amount of variance (62 percent) and demonstrates excellent model fit and predictive validity (via PLS-SEM). Cognitive engagement has been found to be the core contributor to talent retention, providing the basis for behavioral engagement management ($\beta = 0.634$). Thus, cognitive engagement should form the focus of strategies developed to retain nurses. Employee engagement also provides a mediating effect on talent retention due to the strong emotional and cognitive connections of nurses to their work that must be modified to enhance retention rates. Finding that both individual and organization-level factors directly affect nurse retention highlights the need for organizations to develop strategies to support the engagement of their employees on multiple levels. In addition, the differences in engagement responses between younger and older generations of nurses indicate the need for organizations to develop age-specific strategies to enhance talent retention. Finally, several studies have demonstrated that nursing culture plays a significant role in creating an

environment where multiple engagement dimensions can flourish; therefore, developing organizational culture change initiatives in healthcare should be emphasized.

Key Recommendations:

In this study, some main recommendations are to develop cognitive engagement programs for younger nurse employees, establish employee engagement programs that support nurses' full potential and to grow/improve upon the organizational culture by implementing more robust leadership support systems. In addition, developing retention strategies that support younger nurses and creating more effective and age-appropriate feedback and mentorship systems can improve nurse engagement and result in improved nurse-retention rate.

Limitations

There are several limitations associated with this research that must be acknowledged. Due to the nature of this investigation using a cross-sectional design, the ability to infer a cause-and-effect relationship is limited and longitudinal research is required to establish the timing of any possible relations and to determine which hypotheses may have a directional relationship. The reliance on self-reported measures opens the possibility of common method bias therefore future studies should incorporate objective performance metrics together with multi-source feedback to eliminate any influence from common method bias. The sample used in this study consisted primarily of females, thus limiting the generalizability of the findings to male nurses and a broader scope of healthcare environments. In addition, the study was conducted within specific healthcare organizations so the results may not translate to healthcare systems in other cultures or healthcare systems. Although the level of missing data was low, treatment of this missing data using listwise deletion could potentially have resulted in bias. In addition to statistical controls a further analytical limitation is the complexity of the PLS-SEM model. This PLS-SEM model has not captured all the interactions within nursing engagement systems. The lack of testing for measurement equivalence also exists across the various demographic groups, however testing for measurement equivalence is important as it will confirm that the constructs are functioning in a similar manner across all the different demographic groups. Even with statistical controls there may remain a possibility for the presence of common method variance when using a cross-sectional research design and self-report measures.

Future Directions

Additional avenues for future studies to follow up on these findings include longitudinal research with multiple data collection points across time periods of at least 12 months to allow for the establishment and review of the temporal relationships between the engagement dimensions over time. A mixed-method approach may be beneficial as it allows for the combination of quantitative performance indicators that are objective in nature with qualitative data obtained

through in-depth interviews to facilitate a greater understanding of the mechanisms through which the various engagement dimensions are related to one another and to provide integration of research findings obtained through both quantitative and qualitative means. Validation of the findings through replication in multiple healthcare systems and countries, to establish commonalities and differences between countries and within a country as well as to validate the measures about cultural relevance is warranted. Analyses of variations in patterns of engagement across the various environments is also a means of cross-cultural validation. Through conducting and evaluating the effectiveness of evidence-based programs designed to develop leaders and enhance workplace cultures (e.g., cognitive engagement programs; leadership development programs; culture change initiatives), as well as the ability to improve retention of nurses and other healthcare personnel. Future studies should also examine the use of digital technologies (e.g., mobile applications) and AI-driven personalized engagement strategies to improve the level of engagement(s) among nurses and to improve patient care outcomes. From an implementation standpoint, healthcare organizations should establish, or expand upon, programs designed to enhance nurse engagement levels through cognitive training, adoption of age-specific strategies for nurse retention, leadership development programs, and workplace culture change initiatives. Policymakers should support these efforts by requiring engagement metrics to be included as part of the assessments of quality of care for the various services provided in their facility or organization, developing clear guidelines for nurse retention programs and promoting evidence-based engagement interventions. To the extent that technological interventions are developed and implemented, they should also be focused on improving the ways in which patients receive care.

APPENDICES

Appendix B: Bootstrap Confidence Intervals

[Detailed bootstrap results for all path coefficients and indirect effects]

Appendix C: Model Specification

[Complete PLS-SEM model specification with path diagram]

Appendix A: Descriptive Statistics

Construct	Mean	SD	Min	Max	Skewness	Kurtosis
Cognitive Engagement	3.789	0.796	1.00	5.00	-0.234	-0.567
Behavioral Management	3.726	0.423	2.00	5.00	-0.145	-0.234
Career Development	3.700	0.445	2.00	5.00	-0.189	-0.345
Employee Engagement	3.728	0.390	2.14	5.00	-0.123	-0.456
Talent Retention	3.712	0.435	2.00	5.00	-0.167	-0.289

Organizational Culture	3.674	0.469	2.00	5.00	-0.234	-0.378
Organizational Performance	3.665	0.461	2.00	5.00	-0.198	-0.345

Table 9: Overall, the analysis of central tendency and dispersion of these findings indicates high average levels of Cognitive Engagement, Talent Retention and Organizational Performance. All three constructs received mean ratings between 3.700 and 3.789 (on a 1 to 5 response scale), with relatively low standard deviations from .390 to .461, indicating that how people responded to these items were generally close to the average. The value of skewness and kurtosis on all three constructs averaged near zero; therefore, we conclude that the overall findings from this sample appear to be approximately normally distributed (skewness from -0.345 to +0.234).

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Q#	Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Q1	When managing complex patient cases, I feel completely engrossed in the details.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q2	My nursing role requires a high degree of mental effort and intense concentration.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q3	I frequently analyze patient data and symptoms to anticipate potential problems before they arise.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q4	I find it easy to maintain my concentration on clinical tasks despite interruptions in the unit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q5	I mentally reframe the challenging or routine parts of my job to focus on the overall significance of my patient impact.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q6	I am often so involved in my	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	duties that I lose track of time during my shift.					
Q7	I invest significant intellectual energy in finding the best strategy for each patient's plan of care.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q8	I am consistently willing to put in the extra effort to ensure the highest quality of patient care.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q9	I proactively suggest new ideas for improving patient safety protocols or unit efficiency.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q10	I volunteer for unit projects, committees, or special assignments when opportunities arise.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q11	I feel energized and strong enough to work hard at my clinical tasks every day.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q12	My hospital provides adequate funding or time off for me to pursue specialized nursing certifications or advanced degrees.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q13	I have a clear understanding of the clinical ladder or promotion paths available to me here.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q14	My manager regularly provides me with mentorship or coaching to help me advance my career goals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q15	I believe the hospital is genuinely invested in my long-term professional development as a nurse.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q16	I clearly understand the goals and priorities of my unit/department.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q17	I believe my work as a nurse makes a significant difference to patient outcomes.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q18	I am proud to tell others I work for this healthcare organization.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q19	I have a positive and trusting relationship with my direct supervisor.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q20	I receive constructive and timely feedback that helps me improve my performance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q21	Management actively works to resolve conflicts and ensure a respectful environment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q22	I have sufficient opportunities to learn new skills and grow professionally.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q23	I intend to remain working at this hospital for the next three years.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q24	I frequently think about quitting my job and seeking employment elsewhere.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q25	I feel a strong sense of loyalty and commitment to this organization.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q26	Given the chance, I would strongly recommend this hospital to other skilled nursing professionals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q27	There is strong teamwork and collaboration among nurses and other disciplines on my unit.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q28	I feel comfortable raising concerns or admitting a mistake without fear of blame or punishment.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q29	My direct manager is supportive and shows genuine concern for my work-life balance and well-being.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q30	This hospital's policies and practices are fair and consistently applied across all staff.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q31	Our organization has clear and effective protocols to prevent hospital-acquired infections.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q32	My unit actively uses data to improve care practices.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q33	Nurse leaders consistently model the organization's mission and values.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q34	I receive timely and helpful feedback from my supervisor on my job performance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Q35	I believe our organization promotes a culture of professional accountability and ethical practice.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>