

## A causal model of factors influencing the quality of nursing care in psychiatric and substance abuse wards in hospitals under the Office of the Permanent Secretary, Ministry of Public Health, Thailand

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**Received:** 18 February 2025 **Revised:** 6 September 2025 **Accepted:** 10 September 2025 **Available online:** May 2026

**DOI:** 10.55131/jphd/2026/240211

### ABSTRACT

The quality of nursing care in psychiatric and substance abuse wards directly affects patient outcomes. The objective of this study was to examine the causal factors affecting the quality of nursing care in psychiatric and substance abuse wards in Thailand. A multi-site cross-sectional study was employed among 480 registered nurses with at least a Bachelor's degree and experience in psychiatric and substance abuse care. Participants were purposively and conveniently sampled from 130 Ministry of Public Health hospitals across Thailand. Data were collected by an online survey using validated instruments, including the Practice Environment Scale of the Nursing Work Index (PES-NWI), a Nurses' Clinical Competency Scale, a Work Engagement Scale, a Burnout Assessment Tool, and a Quality Nursing Care Scale. Structural Equation Modeling (SEM) was applied to test the hypothesized model, assessing both direct and indirect effects of study variables. The final model demonstrated a good fit ( $\chi^2/df = 2.67$ , RMSEA = 0.06, GFI = 0.96, TLI = 0.95, SRMR = 0.05). Nurses' clinical competency had the strongest direct effect on the quality of nursing care ( $\beta = 0.63$ ,  $p < 0.001$ ), followed by work engagement ( $\beta = 0.16$ ,  $p < 0.05$ ). Burnout negatively influenced the quality of nursing care both directly ( $\beta = -0.09$ ,  $p < 0.05$ ) and indirectly through work engagement. Job satisfaction had an indirect effect on the quality of nursing care, whereas the nursing practice environment had no significant direct effect. Overall, the model explained 61% of the variance in the quality of nursing care. The findings suggested that improving nursing care quality in psychiatric and substance abuse settings requires enhancing clinical competency, work engagement, and reducing burnout. Implementation efforts should focus on training and burnout prevention, while future studies should examine the long-term effects and include diverse hospital settings.

### Keywords:

Quality of Nursing Care, Psychiatric Nursing, Substance-Related Disorders, Structural Equation Modelling

### Citation:

Vachira Posai, Armarapas Atthachaiwat, Teeraporn Sathira-Angkura, Kanogporn Jamsomboon, Uraiporn Janta-Um-Mou, Patcharee Kladjompong, Supisara Phonkrut, Niphon Watada, Supitcha Udomchai. A causal model of factors influencing the quality of nursing care in psychiatric and substance abuse wards in hospitals under the Office of the Permanent Secretary, Ministry of Public Health, Thailand. *J Public Hlth Dev.* 2026;24(2):158-171 (<https://doi.org/10.55131/jphd/2026/240201>)

## INTRODUCTION

The Narcotic Drugs Code of 2021, which came into effect in Thailand on December 9, 2021,<sup>1, 2</sup> marked a significant shift in the approach to managing substance use disorders, with a focus on treatment, rehabilitation, and social reintegration.<sup>3</sup> This legislation resulted in a significant rise in the number of individuals seeking care for drug-related issues and mental health conditions.<sup>4</sup> Various factors, including genetic predispositions, chronic health conditions, socioeconomic challenges, and environmental stressors, contributed to the rising prevalence of psychiatric and substance use disorders in the country.<sup>5</sup>

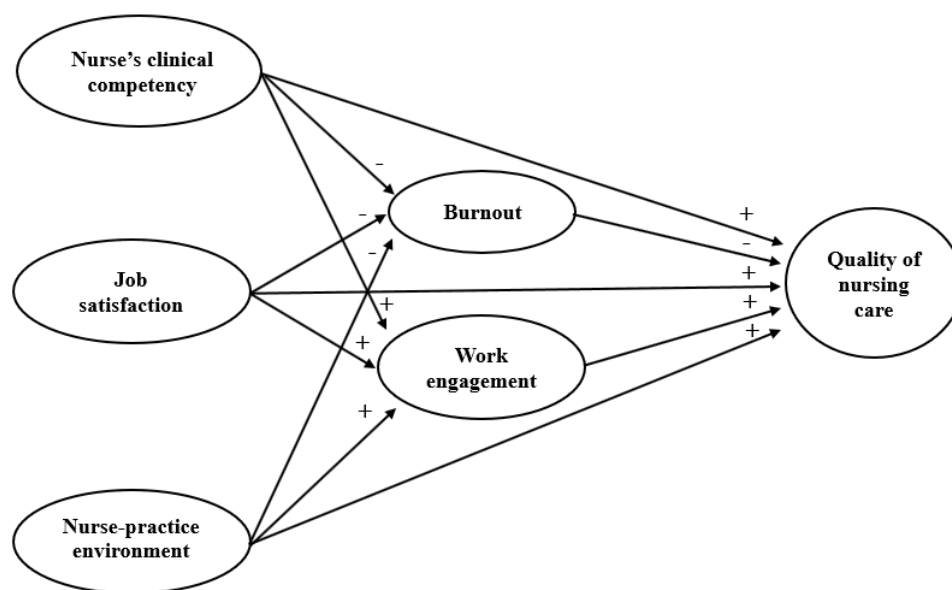
Between 2020 and 2023, Thailand experienced a 15.65% increase in individuals seeking mental health and substance abuse treatment in hospital settings, highlighting a growing demand for care services.<sup>6</sup> In 2024, the most commonly treated psychiatric conditions included drug-induced mental and behavioral disorders, schizophrenia, and mood disorders. That year, hospitals admitted a total of 4,043,508 patients with psychiatric and drug-related issues, with 2,868,564 receiving care at tertiary and general hospitals under the Ministry of Public Health.<sup>7</sup> Many of these patients also presented with concurrent physical health conditions, further complicating their care.<sup>8</sup>

Despite some progress, challenges in providing effective care persist. Reports highlighted issues such as inadequate infrastructure, insufficient staffing, and poor working conditions, which hindered the delivery of quality nursing services.<sup>9-11</sup> These challenges were particularly evident in the care of psychiatric and substance use patients, where nursing care quality directly

influenced outcomes, including waiting times, length of hospital stay, recovery, morbidity, and mortality.<sup>12-14</sup>

A preliminary study involving 24 professional nurses from 12 government hospitals across Thailand revealed that more than 67% of the nurses expressed dissatisfaction with the perceived quality of care. Specifically, nurses were dissatisfied with limited training in managing complex psychiatric and substance use disorders, inadequate skills in evidence-based psychiatric nursing, and a lack of specialized knowledge in dual diagnosis care. Additionally, they reported unfavorable work environments marked by elevated patient-to-nurse ratios, insufficient staffing, limited resources, and inadequate administrative support.<sup>15, 16</sup> Excessive workloads further contributed to their dissatisfaction.<sup>17</sup> These findings highlight a critical research gap regarding the competencies and systemic support required to effectively care for patients with co-occurring psychiatric and substance use disorders.<sup>18</sup>

Given the crucial role of nursing care in shaping patient outcomes, it was essential to identify and address the factors influencing nursing performance. The objective of this study was to examine the causal determinants influencing nursing care quality in psychiatric and substance abuse wards within hospitals under the Ministry of Public Health in Thailand. A hypothesized model for this study was formulated on the basis of theoretical foundations and empirical research (Figure 1). Results from this research contribute a valuable understanding that could inform the development of strategies to enhance nursing care, ensuring that it effectively meets the comprehensive needs of patients.



**Figure 1.** Hypothesized model of quality of nursing care in psychiatric and substance abuse wards in Thailand

## METHODS

### *Study Design, Participants, and Setting*

A multi-site cross-sectional design was conducted to investigate factors influencing nursing care quality in psychiatric and substance abuse wards across 130 hospitals governed by the Office of the Permanent Secretary, Ministry of Public Health, Thailand. Purposive sampling was applied to select hospitals representing different regions, while convenience sampling recruited registered nurses engaged in full-time employment who had attained a minimum of a bachelor's-level qualification, currently working in these wards with relevant clinical experience. Nurses who were on study leave, maternity leave, or extended sick leave at the time of data collection were excluded from the study. Convenience sampling was chosen due to limited access and logistical constraints during data collection. To reduce selection bias, efforts were made to recruit participants from various shifts and wards within each hospital, aiming for a diverse and representative sample.

The sample size was determined using the standard guideline, which suggests a sample size of 10 to 20 times the number of parameters to be estimated<sup>19, 20</sup>. Given the study's inclusion of 20 parameters, the required sample size ranged from 200 to 400 participants. To mitigate potential data loss, the sample size was increased by 20%, yielding a final sample of 480 participants.

The study was approved by the Institute for the Development of Human Research Protections (IHRP), Health Systems Research Institute (HSRI), Thailand, in accordance with the Declaration of Helsinki. The approval was granted under Research Project COA No. IHRP2024184, dated December 23, 2024. All participants were thoroughly informed about the objectives and methodological procedures of the study, after which written informed consent was obtained prior to their enrollment. It was emphasized to participants that withdrawal from the study was permitted at any time without negative implications. The information collected from participants was kept confidential, and the study findings were reported exclusively for academic purposes. Data were collected by the research team through

self-report questionnaires, and completion of the questionnaires took participants approximately 15–20 minutes.

### ***Instruments***

The seven instruments were selected based on theoretical concepts that had been effectively applied in prior studies with nurses. Permission for their use and translation, when necessary, was granted by the original authors.

1. The demographic questionnaire, developed by the primary investigator (PI), gathered data on various factors such as age, gender, marital status, educational background, nursing specialty program, work experience, salary, employment status, the type of service provided to patients with psychiatric and substance use disorders, and the patient load per nurse. The patient count was calculated by averaging the patient load across all staff nurses within the respective units, which reflected the patient-to-nurse ratio and, consequently, the quality of care delivered.

2. The Nurses' Work Engagement Questionnaire, based on the Utrecht Work Engagement Scale-9 (UWES-9) developed by Schaufeli et al.<sup>21</sup> and later adapted by Wongcharoen et al.,<sup>22</sup> consisted of 9 items and was divided into three distinct components. A 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree), was employed for participants to rate each item. The higher the rating for each item, the greater the overall level of work engagement. Internal consistency of the instrument was satisfactory, with a Cronbach's alpha of 0.86.

3. The Job Satisfaction Questionnaire for nurses, developed by Khaowphong,<sup>23</sup> was grounded in the theoretical frameworks of McCarthy et al.,<sup>24</sup> Stamps and Piedmonte,<sup>25</sup> and Mueller and McCloskey.<sup>26</sup> This instrument consisted of 16 items, measured on a 5-

point Likert scale with response options ranging from 1 (strongly disagree) to 5 (strongly agree). Higher responses on each item reflected greater job satisfaction, and the instrument showed a Cronbach's alpha of 0.91 in this study, indicating high reliability.

4. The Burnout Assessment Tool (BAT), based on the work of Posai<sup>27</sup> and adapted from Schaufeli, Desart, and De Witte's work burnout scale<sup>28</sup>, consisted of 12 items. The instrument employed a 5-point Likert scale, where participants rated each item from 1 (strongly disagree) to 5 (strongly agree). Higher scores on each dimension indicate a higher level of burnout.<sup>29</sup> The instrument showed excellent internal consistency in the current study, as exhibited by a Cronbach's alpha coefficient of 0.93.

5. The Practice Environment Scale of the Nursing Work Index (PES-NWI) was translated and adapted by the researcher from the short form of the Practice Environment Scale of the Nursing Work Index (PES-5), developed by Lake et al.<sup>30</sup>, and consists of five items. Participants assessed each PES-NWI item in their unit on a 4-point Likert scale ranging from 1 (strongly disagree) to 4 (strongly agree), with the total score calculated as the average of all item responses. A mean subscale score exceeding 2.5 indicated a favorable practice environment. Internal consistency of the instrument was deemed acceptable, as indicated by a Cronbach's alpha of 0.83.

6. The Clinical Competency Assessment Scale in Psychiatric and Substance Nursing (CAPSN) was adapted by the researcher from Akiko Funakoshi's<sup>31</sup> Clinical Competency Measurement Tool in Child and Adolescent Mental Health Nursing (CAMHN), which consists of 23 items across two dimensions. Each item was evaluated using a 6-point Likert scale, anchored at 1 (Never) and 6 (Very Frequently). The tool was translated for accuracy and validated before use. Higher scores reflect greater

levels of clinical competency in psychiatric and substance nursing.<sup>32</sup> The instrument exhibited a high level of reliability, with a Cronbach's alpha value of 0.97.

7. The Quality Nursing Care Scale was translated and developed by the researcher from the Quality Nursing Care Scale (QNCS) formulated by Liu et al.,<sup>33</sup> consisted of 38 items across six dimensions, the instrument applied a 5-point Likert scale, with response options ranging from 1 (strongly disagree) to 5 (strongly agree). and was translated and validated before use. Higher scores indicate a higher level of quality nursing care, both overall and within each dimension.<sup>34</sup> Internal consistency of the instrument was confirmed with a Cronbach's alpha value of 0.98.

### **Data collection**

This study was carried out over the period January–February 2025, after receiving ethical approval. A list of psychiatric and substance abuse nurses from 130 hospitals was obtained, selected from a total of 905 target hospitals under the Ministry of Public Health that met the inclusion criteria. Detailed information about the study was provided to potential participants prior to their decision to participate, including its purpose, benefits, risks, and their autonomy in participation. After providing informed consent, participants completed the questionnaires privately through an online platform (Google Forms) using a designated access link. The survey required approximately 15 to 20 minutes to complete, and participation was voluntary. A total of 503 nurses who fulfilled the inclusion criteria were approached for enrollment in the study. Of these, 23 nurses were excluded due to incomplete responses or withdrawal, resulting in 480 complete responses used for analysis, representing 95.42% of the eligible participants.

### **Data analysis**

Statistical analyses were performed with SPSS for Windows (version 25.0) and Jamovi (version 2.6). Descriptive statistics were conducted to analyze both participants' characteristics and key variables. The reliability of the variables was tested. A p-value of less than 0.05 was considered statistically significant in all tests.<sup>35,36</sup> Before the analysis, all necessary assumptions were verified. To assess model fit, five statistical criteria were applied. First, the Chi-square ( $\chi^2$ ) test for model fit produced a non-significant result ( $p > 0.05$ ). Second, the normed Chi-square ( $\chi^2/\text{df}$ ) was below 3. Third, both the Comparative Fit Index (CFI) and the Tucker–Lewis Index (TLI) values exceeded 0.95. Finally, the Root Mean Square Error of Approximation (RMSEA) and the Standardized Root Mean Square Residual (SRMR) were below 0.08.<sup>37, 38</sup>

## **RESULTS**

### **Characteristics of participants**

Out of the 480 participants, females comprised the vast majority (89.79%), with an average age of 40.10 years ( $SD = 10.42$ ). Approximately 53.54% of participants reported being married. In terms of education, a substantial proportion of participants had attained a Bachelor's degree (81.46%) and a nursing specialty program (62.50%), with the most common specialization being psychiatric nursing (38.33%). Participants reported a mean of 6.65 years of work experience ( $SD = 5.80$ ), and 42.29% earned a monthly salary within the range of THB 30,000 to 44,999 (equivalent to \$879–1,320 USD). The majority of the participants were employed as government officers (94.79%), with a mean patient-to-nurse ratio of 51.64 ( $SD = 14.58$ ). Furthermore, 68.33% of the participants were assigned to fully functional wards that catered to patients with psychiatric and substance use disorders.

**Characteristics of the studied variables**

The characteristics of the independent variables are summarized in Table 1, indicating that the model's variables spanned a continuum from low to high levels. Specifically, the quality of nursing care demonstrated a mean score of 4.27 (SD = 0.50), suggesting that participants perceived a high level of nursing care provided to patients with psychiatric and substance use disorders. The mean work engagement score was 3.92 (SD = 0.62), reflecting moderate levels of engagement among participants. Regarding burnout, the mean score was 3.32 (SD =

0.62), indicating that participants reported experiencing high levels of burnout. The mean score of nurses' clinical competency was 5.15 (SD = 0.65), signifying that participants rated their clinical competency in the care of psychiatric and substance use patients as relatively high. The mean job satisfaction score was 3.40 (SD = 0.68), demonstrating that participants reported low levels of job satisfaction. Lastly, the mean score for the nurse-practice environment was 2.93 (SD = 0.51), indicating that participants perceived the work environment as favorable.

**Table 1.** Mean score and standard deviation of the studied variables (N = 480).

| Variable                    | Possible range | Actual range | Mean | SD   |
|-----------------------------|----------------|--------------|------|------|
| Work engagement             | 1.00 - 5.00    | 1.67 - 5.00  | 3.92 | 0.62 |
| Burnout                     | 1.00 - 5.00    | 1.00 - 5.00  | 3.32 | 0.65 |
| Nurse's clinical competency | 1.00 - 6.00    | 1.91 - 6.00  | 5.15 | 0.65 |
| Job satisfaction            | 1.00 - 5.00    | 1.38 - 5.00  | 3.40 | 0.68 |
| Nurse-practice environment  | 1.00 - 4.00    | 1.20 - 4.00  | 2.93 | 0.51 |
| Quality of nursing care     | 1.00 - 5.00    | 2.05 - 5.00  | 4.27 | 0.50 |

**Correlation coefficients of the studied variables**

The correlation matrix for all variables, as shown in Table 2, revealed moderate to strong correlations among the variables. The nurse practice environment ( $r = 0.30$ ,  $p < 0.001$ ) and job satisfaction ( $r = 0.35$ ,  $p < 0.001$ ) exhibited a moderate positive correlation with quality nursing

care. In contrast, burnout ( $r = -0.35$ ,  $p < 0.001$ ) was found to have a moderate negative relationship with quality of nursing care. Additionally, work engagement ( $r = 0.51$ ,  $p < 0.001$ ) and nurses' clinical competency ( $r = 0.68$ ,  $p < 0.001$ ) demonstrated strong positive associations with quality of nursing care.

**Table 2.** The correlation coefficient matrix of the studied variables (N = 480).

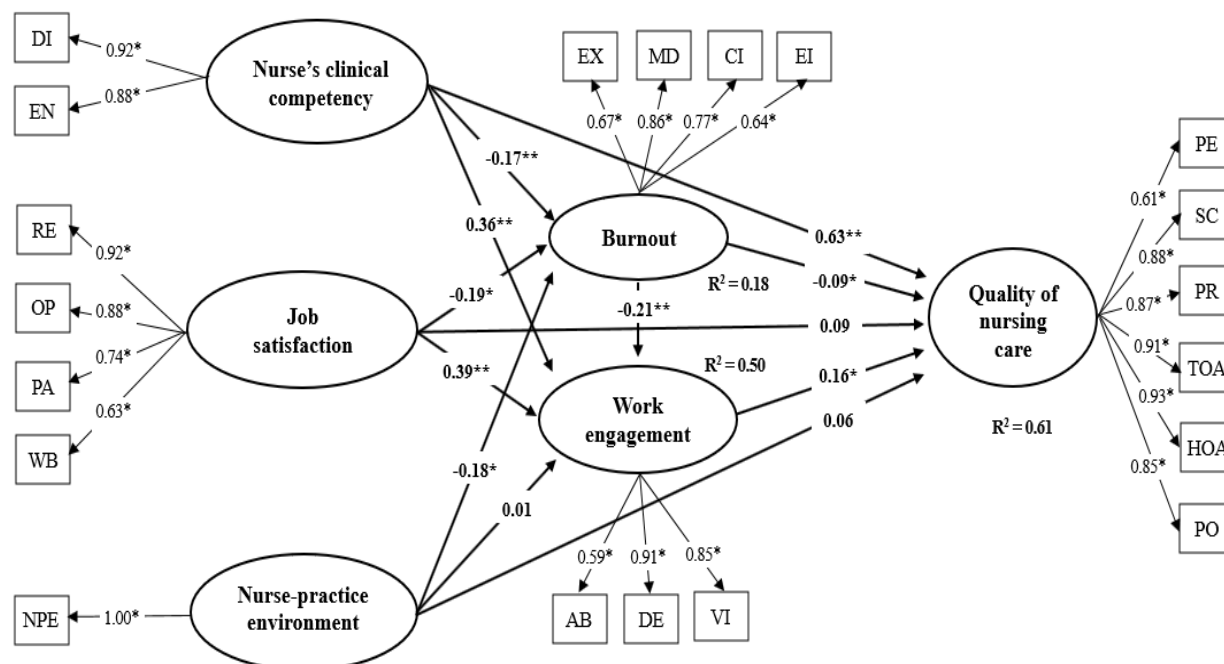
| Variables                      | 1       | 2       | 3      | 4      | 5      | 6    |
|--------------------------------|---------|---------|--------|--------|--------|------|
| 1. Work Engagement             | 1.00    |         |        |        |        |      |
| 2. Burnout                     | -0.41** | 1.00    |        |        |        |      |
| 3. Nurse's Clinical Competency | 0.50**  | -0.26** | 1.00   |        |        |      |
| 4. Job satisfaction            | 0.53**  | -0.33** | 0.29** | 1.00   |        |      |
| 5. Nurse-Practice Environment  | 0.39**  | -0.32** | 0.26** | 0.63** | 1.00   |      |
| 6. Quality of Nursing Care     | 0.51**  | -0.35** | 0.68** | 0.35** | 0.30** | 1.00 |

Note. \* $p < 0.05$ , \*\* $p < 0.001$

**Model testing**

The hypothesized model for QNC in Psych & Substance Wards at MOPH, Thailand, is shown in Figure 1, with the results from testing the model in Figure 2. Initially, the model did not fit well, so it was modified using adjustments based on the applied indices (see Table 3). After these changes, the model fitted the data much

better. The modified model's fit was confirmed by several indices: the Chi-square to degrees of freedom ratio ( $\chi^2/df$ ) was 2.67, which is considered a good fit; the RMSEA was 0.06; the SRMR was 0.05; the GFI was 0.96; and the TLI was 0.95, all indicating good fit. The model explained 61% of the total variance in quality of nursing care.



**Figure 2.** A causal model of quality of nursing care in psychiatric and substance abuse wards in Thailand

**Note:** \* $p < 0.05$ , \*\* $p < 0.001$

**Abbreviations:** DI = Direct care for children and their family members, EN = Approach to the care environment, RE = Reward, OP = Opportunity, PA = Performance results, WB = Work-life balance, NPE = Nurse-practice environment, EX = Exhaustion, MD = Mental distance, CI = Cognitive impairment, EI = Emotional impairment, AB = Absorption, DE = Dedication, VI = Vigor, PE = Physical environment, SC = Staff characteristic, PR = Precondition, TOA = Task-orientated activities, HOA = Human-orientated activities, PO = Patient outcome

The causal model of quality of nursing care in psychiatric and substance abuse wards in Thailand demonstrated that nurses' clinical competency was the primary determinant influencing nursing care quality. The findings demonstrated that the standardized total effect of nurses' clinical competency on nursing care quality was 0.71 ( $p < 0.001$ ). Nurses' clinical competency exerted a significant positive direct effect on the quality of care ( $\beta = 0.63$ ,  $p < 0.001$ ) and also exerted an indirect

positive influence through burnout and work engagement ( $\beta = 0.08$ ,  $p < 0.05$ ). Additionally, work engagement was found to have a positive direct effect on the quality of nursing care ( $\beta = 0.16$ ,  $p < 0.05$ ). In contrast, burnout showed a negative direct effect ( $\beta = -0.09$ ,  $p < 0.05$ ) on the quality of care, along with a negative indirect effect through work engagement ( $\beta = -0.03$ ,  $p < 0.05$ ). Although job satisfaction did not have a significant direct positive effect ( $\beta = 0.09$ ,  $p = 0.23$ ) on nursing care

quality, it exhibited a positive indirect effect ( $\beta = 0.09$ ,  $p < 0.05$ ) through burnout and work engagement. Furthermore, the nurse practice environment did not demonstrate a significant direct and indirect positive effect on the quality of care ( $\beta = 0.03$ ,  $p = 0.43$  and  $\beta = 0.03$ ,  $p = 0.29$ ). The findings from model testing were summarized in Table 4.

Our findings highlighted a critical role in advancing the understanding of how work engagement mediated the relationships between nurse clinical competency, job satisfaction, nursing practice environment, and burnout, all of which were found to influence the quality of nursing care.

**Table 3.** Comparison of the goodness-of-fit indices in the hypothesized and final models of quality of nursing care in psychiatric and substance abuse wards in Thailand (N = 480).

| Goodness-of-fit statistics | Threshold values | Hypothesized Model | Modified model |
|----------------------------|------------------|--------------------|----------------|
| $\chi^2$                   | $p > 0.05$       | $p < 0.001$        | $p < 0.001$    |
| $\chi^2/df$                | $< 3.00$         | 3.96               | 2.67           |
| CFI                        | $\geq 0.95$      | 0.93               | 0.96           |
| TLI                        | $\geq 0.95$      | 0.91               | 0.95           |
| RMSEA                      | $< 0.08$         | 0.08               | 0.06           |
| SRMR                       | $< 0.08$         | 0.07               | 0.05           |

**Note:**  $\chi^2$  = Chi-square,  $\chi^2/df$  = normed Chi-square, CFI = comparative fit index, TLI = Tucker–Lewis index, RMSEA = root mean square error of approximation, SRMR = standardized root mean square residual

**Table 4.** The direct, indirect and total effects between the variables of the study (N = 480)

| Caused variables            | Affected variables   |        |        |                 |       |         |         |    |         |
|-----------------------------|----------------------|--------|--------|-----------------|-------|---------|---------|----|---------|
|                             | Quality Nursing Care |        |        | Work Engagement |       |         | Burnout |    |         |
|                             | TE                   | IE     | DE     | TE              | IE    | DE      | TE      | IE | DE      |
| Work engagement             | 0.16*                | -      | 0.16*  | -               | -     | -       | -       | -  | -       |
| Burnout                     | -0.12*               | -0.03* | -0.09* | -0.21**         | -     | -0.21** | -       | -  | -       |
| Nurse's clinical competency | 0.71**               | 0.08*  | 0.63** | 0.40**          | 0.04* | 0.36**  | -0.17** | -  | -0.17** |
| Job satisfaction            | 0.18*                | 0.09*  | 0.09   | 0.43**          | 0.04* | 0.39**  | -0.19*  | -  | -0.19*  |
| Nurse Practice Environment  | 0.09                 | 0.03   | 0.06   | 0.05*           | 0.04* | 0.01    | -0.18*  | -  | -0.18*  |
| R-Square                    | 0.61*                |        |        | 0.50*           |       |         | 0.18*   |    |         |

**Note:** \* $p < 0.05$ , \*\* $p < 0.001$ , TE = total effect, IE = indirect effect, DE = direct effect

## DISCUSSION

This research sought to develop and validate a hypothesized causal model explaining nursing care quality in psychiatric and substance use wards in the Thai context. The results highlighted several key factors affecting nursing care quality, including nurse clinical competency, job satisfaction, burnout, and work engagement. These findings indicated that attention should be directed toward enhancing the quality of care for patients

with psychiatric and substance use disorders, as it was more significantly affected by these factors compared to other patient groups. Notably, in the context of Thailand, psychiatric and substance abuse care is often delivered in settings facing resource constraints, workforce shortages, and social stigma, which differ from many Western healthcare systems. These contextual factors can intensify challenges in maintaining high care quality, underscoring the importance of addressing

nurse-related factors within this unique healthcare environment.

The findings identified critical determinants shaping nursing care quality within psychiatric and substance use disorder wards. Participants rated the quality of care highly, suggesting a generally positive perception of care standards, which was consistent with prior research indicating that well-trained and supported nurses are essential for maintaining high-quality care in specialized settings.<sup>39</sup> However, work engagement was moderate, and burnout levels were high, signaling challenges in sustaining staff motivation and well-being. This aligns with the Thai psychiatric care context, where nurses often manage heavy caseloads alongside social stigma toward patients, factors that contribute to burnout. These findings are consistent with Maslach and Leiter's<sup>40</sup> work, which emphasized that burnout negatively impacts nurse performance and patient care. Despite high ratings for clinical competency, job satisfaction was low, and the nurse practice environment was only moderately favorable. This reflects issues in Thailand's mental health wards, where infrastructural limitations and cultural attitudes towards mental illness may affect the working environment. These results echo the findings by Laschinger et al.,<sup>41</sup> who emphasized that a positive work environment and high job satisfaction are critical for reducing turnover and improving care quality<sup>42</sup>. Thus, while clinical competency and perceived care quality were strong, addressing burnout, job satisfaction, and the work environment remains crucial for improving both patient outcomes and nurse well-being in Thailand's specialized psychiatric settings.

This study offered valuable understanding of the factors influencing nursing care quality (QNC) in psychiatric and substance abuse wards in Thailand. The modified causal model demonstrated a good fit to the data, explaining 61% of the

variance in QNC, underscoring the significant impact of nurse-related factors on care quality. Nurse clinical competency emerged as the most pivotal determinant, with both a direct positive effect on QNC and an indirect effect through work engagement and burnout. This finding has particular significance in the Thai context, where continuing professional development opportunities for psychiatric nursing are limited compared to other specialties, emphasizing the need to prioritize competency-based training. Consistent with previous studies, such as Aiken et al.,<sup>43</sup> higher nurse education and clinical competency are linked to better psychiatric care outcomes. Furthermore, ensuring patient safety and achieving high-quality care across healthcare contexts is contingent upon the competency of healthcare professionals,<sup>44-46</sup> which is critical in Thailand given the complexity of co-occurring psychiatric and substance use disorders that require specialized skills.<sup>47</sup>

Work engagement was identified as a positive driver of nursing care quality. More engaged nurses tended to provide higher-quality care, supporting findings from other healthcare systems. However, in Thailand, factors such as understaffing and societal stigma toward mental illness can dampen engagement.<sup>48,49</sup> This highlights the need for tailored strategies, such as improved leadership support and culturally sensitive organizational policies, to foster engagement. Laschinger et al.<sup>41</sup> demonstrated that leadership and organizational support positively impact work engagement, which influences patient care outcomes, a principle equally applicable within Thai healthcare institutions.

Conversely, burnout had a detrimental effect on care quality, with direct negative consequences and indirect impacts via reduced engagement. In Thailand's psychiatric wards, the heavy emotional toll from managing complex patient needs amid limited resources

exacerbates burnout risk, consistent with global research showing burnout's negative impact on patient care.<sup>50,51</sup> Burnout leads to lower job satisfaction and poor performance, ultimately affecting care quality.<sup>52,53</sup> Interestingly, job satisfaction did not illustrate a direct significant effect on care quality but had a positive indirect effect through burnout and work engagement. This suggests job satisfaction is a complex factor affecting emotional well-being and motivation, which then influences care quality.<sup>54</sup> Dall'Ora et al.<sup>55</sup> found similar patterns, and this study corroborates that improving job satisfaction alone may not be sufficient without addressing burnout and engagement, especially in resource-limited Thai psychiatric settings.

The nurse practice environment did not illustrate a direct or indirect significant effect on QNC in this study, which may seem counterintuitive given the importance of a supportive environment. However, in Thailand, systemic issues such as infrastructural inadequacies, cultural stigmatization, and policy limitations may overshadow the immediate impact of the work environment on care quality. This finding corroborates the results reported by Laschinger et al.,<sup>56</sup> suggesting that while a positive practice environment influences job satisfaction and retention, its direct effect on care quality may be less pronounced compared to individual nurse factors like competency. Ditlopo et al.<sup>57</sup> and Boudreau & Rhéaume<sup>58</sup> also found that the environment's impact is often mediated by staffing and education, factors that are critical in Thailand, where workforce shortages and training gaps are ongoing challenges.

## RECOMMENDATIONS

This study examined key factors influencing nursing care quality in

psychiatric and substance use disorder wards across 130 government hospitals in Thailand, using a large sample of 480 nurses. Clinical competency emerged as the most significant factor, both directly and indirectly, through its effects on work engagement and burnout. Work engagement positively contributed to care quality, while burnout had a detrimental impact. Although job satisfaction and the practice environment showed weaker effects, they remain relevant in supporting long-term workforce stability. A major strength of this study lies in its nationwide, multi-center design and use of a theory-driven causal model, providing comprehensive insight into nurse-related influences on care quality. However, the interpretation of these findings should be considered in light of two main limitations: the cross-sectional design, which does not permit causal inference, and the reliance on self-reported data, which may be affected by social desirability. To mitigate this, anonymity, voluntary participation, and private online survey completion were emphasized. Future research should employ longitudinal study designs, expand to private and community-based facilities, and consider triangulating data from multiple sources—including supervisors and patient outcomes—to enhance validity. Findings suggest that healthcare administrators should prioritize continuous competency development, burnout reduction strategies, and organizational policies that foster engagement and psychological safety in the workplace.

## ACKNOWLEDGEMENTS

The authors sincerely expressed their gratitude to all individuals who contributed to the completion of this research, especially the nurses in the Psychiatric and Substance Abuse Wards of hospitals under the Office of the Permanent

Secretary, Ministry of Public Health, Thailand, whose participation was crucial to the success of the study. They also extended their thanks to the Dr. VANVILAI Foundation for providing support for this study.

## AUTHOR CONTRIBUTIONS

VP: Methodology, Formal analysis, Funding acquisition, Investigation, Data Curation and Writing - Review & Editing. NW: Methodology, Formal analysis and Writing - Review & Editing. SP: Investigation and Writing - Review & Editing. SU: Investigation and Writing - Review & Editing. AA: Investigation and Writing - Review & Editing. TS: Investigation and Writing - Review & Editing. KJ: Investigation and Writing - Review & Editing. UJ: Investigation and Writing - Review & Editing. PK: Investigation and Writing - Review & Editing.

## ETHICAL CONSIDERATION

Ethical approval for this study was obtained from the Institute for the Development of Human Research Protections (IHRP), Health Systems Research Institute (HSRI), Thailand (approval no. IHRP2024184), on 23 December 2024. All study procedures were carried out in accordance with the ethical standards of the Declaration of Helsinki.

## FUNDING

This study was supported by the Dr. VANVILAI Foundation (grant no. 001/2568, awarded to Vachira Posai). The funding body had no role in the design of the study, data collection, analysis, interpretation, or manuscript preparation.

## CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest related to this study.

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