

Transforming Nursing Clinical Education: The Power of Environment, Student Motivation, and Clinical Instructors

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Abstract

Clinical learning is an important component in the formation of nursing students' professional competence. The clinical environment, student motivation, and the role of clinical instructors are factors that influence the achievement of learning outcomes in nursing clinical practice. However, the relationship between these factors is still not fully understood. This study aims to examine the relationship between the clinical environment, student motivation, and the role of clinical instructors, and to determine how these three factors contribute to learning outcomes in nursing clinical practice. A quantitative design with a cross-sectional survey approach was used. The sample consisted of 117 nursing students, and data were collected through questionnaires. Data analysis was conducted using the Partial Least Squares Structural Equation Modeling (PLS-SEM) method. The results showed that the clinical environment significantly contributed to learning outcomes ($p = 0.001$) and student motivation ($p = 0.040$). The role of clinical instructors influenced perceptions of the clinical environment ($p = 0.001$) and student motivation ($p = 0.001$), but did not directly affect learning outcomes. Student motivation contributed significantly to learning outcomes ($p = 0.029$). The research model demonstrated a fairly good fit with the data. The clinical environment and student motivation are essential for achieving learning outcomes in nursing clinical practice. The role of clinical instructors contributes indirectly by enhancing student motivation. Educational institutions and hospitals should collaborate to create a conducive learning environment and provide effective training for clinical instructors.

Keywords: clinical environment, clinical instructor role, learning outcomes, nursing clinical practices, student motivation

Abstrak

Menuju Peningkatan Praktik Klinis Keperawatan: Lingkungan Klinis, Motivasi Siswa, dan Peran Instruktur Klinis. Pembelajaran klinik adalah komponen penting dalam pembentukan kompetensi profesional mahasiswa keperawatan. Lingkungan rumah sakit, motivasi mahasiswa, dan peran instruktur klinik merupakan faktor yang dapat mempengaruhi capaian learning outcome praktik klinik keperawatan. Namun, hubungan antara faktor-faktor ini masih belum dipahami secara menyeluruh. Penelitian ini bertujuan untuk mengungkap hubungan antara lingkungan rumah sakit, motivasi mahasiswa, dan peran instruktur klinik serta bagaimana ketiga faktor ini berkontribusi terhadap capaian learning outcome mahasiswa dalam praktik klinik keperawatan. Penelitian ini menggunakan desain kuantitatif dengan pendekatan survei. Sampel terdiri dari 117 mahasiswa keperawatan. Data dikumpulkan melalui kuesioner. Analisis data dilakukan menggunakan metode Partial Least Squares Structural Equation Modeling (PLS-SEM). Hasil menunjukkan bahwa lingkungan rumah sakit berkontribusi signifikan terhadap capaian learning outcome ($p = 0,000$) dan motivasi mahasiswa (t -statistik 2,000, $p = 0,040$). Peran instruktur klinik mempengaruhi persepsi lingkungan rumah sakit ($p = 0,000$) dan motivasi mahasiswa ($p = 0,000$), tetapi tidak langsung mempengaruhi capaian learning outcome. Motivasi mahasiswa berkontribusi signifikan terhadap capaian learning outcome ($p = 0,029$). Model penelitian memiliki kecocokan yang cukup baik dengan data. Lingkungan rumah sakit dan motivasi mahasiswa sangat penting untuk capaian learning outcome praktik klinik keperawatan. Peran instruktur klinik berkontribusi tidak langsung melalui peningkatan motivasi. Institusi pendidikan dan rumah sakit harus bekerja sama menciptakan lingkungan belajar kondusif dan memberikan pelatihan efektif bagi instruktur klinik.

Kata Kunci: learning outcome, lingkungan rumah sakit, motivasi mahasiswa, peran instruktur klinik, praktik klinik keperawatan

Introduction

Health problems in society are increasingly complex, requiring health workers to continuously improve their competencies to provide high-quality services. In this context, nurses play a crucial role, as they are expected to make appropriate clinical decisions and apply critical thinking to address complex health problems through evidence-based practice (Fernández-García et al., 2021; Wodaynew et al., 2023). These competencies must be developed during nursing education to ensure graduates are prepared for professional challenges. Learning occurs in the classroom, laboratory, and clinical practice, with clinical learning constituting an essential component.

Clinical learning enables nursing students to apply theoretical knowledge in real situations while enhancing professional competence, critical thinking, and confidence (Luukkonen et al., 2023; AlAzri et al., 2023). Through this process, students integrate knowledge, clinical and technical skills, communication, and teamwork to make effective clinical decisions (AlAzri et al., 2023; Attia & Ibrahim, 2023). It also strengthens theoretical understanding and facilitates the acquisition of new knowledge (Koldestam et al., 2021). However, the outcomes of clinical placements vary significantly. Evidence suggests that students placed in government hospitals achieve better learning outcomes and report higher satisfaction than those placed in private hospitals, as government hospitals often serve as teaching hospitals that provide broader clinical exposure due to higher patient volumes and more complex cases (Motsaanaka et al., 2022).

Clinical instructors play a crucial role as facilitators, evaluators, and role models who guide students in integrating theory with practice and developing clinical reasoning and decision-making skills (Koldestam et al., 2021; Steven et al., 2023). They are expected to possess strong clinical knowledge, professional competence, teaching expertise, and effective communica-

tion skills, while demonstrating a positive attitude that influences student behavior and motivation (AlAzri et al., 2023; Kavanagh et al., 2022). Previous studies highlight that friendly and competent mentors who foster good interpersonal relationships can improve learning outcomes and create a supportive clinical environment (AlAzri et al., 2023). However, challenges such as time constraints and variations in instructor competency may hinder the achievement of optimal learning outcomes.

Despite its important role, gaps in clinical learning persist, including inconsistent instructor availability, limited feedback, and varied teaching skills, which can reduce student motivation and hinder the development of clinical reasoning (Rafati et al., 2020; Bahari et al., 2022). Experiential learning offers a structured framework that emphasizes active participation and “learning through practice” as the cornerstone of clinical education (Morris, 2020). When integrated into clinical placements, this approach guides students through four stages: (1) concrete experience, where knowledge is gained through direct engagement; (2) reflective observation, which involves analysis of clinical events; and (3) abstract conceptualization, where insights are formed by linking theory with practice; and (4) active experimentation, where new strategies are tested in real environments (Gordon, 2022). Recent studies show that applying this cycle in nursing education improves reflection, integration of knowledge, and interprofessional collaboration (Choshi, 2025; Nagel et al., 2024).

The clinical environment plays a crucial role in nursing education, as the diversity of hospital environments, facilities, and patient cases significantly affects students' ability to achieve learning outcomes (Fernández-García et al., 2021; Vasli & Asadiparvar-Masouleh, 2024; Lee et al., 2023). However, clinical placements also expose students to substantial stress factors, including role confusion, patient demands, unfamiliar environments, and complex learning situations (AlAzri et al., 2023; Mosia & Joubert, 2020). Research consistently reports moderate

to high stress levels among nursing students, often driven by excessive workloads and continuous supervision and evaluation, by instructors and clinical staff, which may undermine confidence and motivation (Rafati et al., 2020; Al-Osaimi & Fawaz, 2022). Bullying has also been documented, with up to 91% of cases involving clinical instructors as perpetrators (Collie, 2023). Such negative interpersonal dynamic hinders learning and underscore the need for safe, respectful, and supportive clinical environments, which are known to enhance student comfort, optimize outcomes, and improve clinical experiences (Bimaruci et al., 2023).

Student motivation is also a critical determinant of learning outcomes in clinical education, as it drives students to master skills and persevere in challenging practice environments. Evidence suggests that motivation often decreases during early clinical placements, with increased anxiety and vulnerability to depression (Bimaruci et al., 2023; Al-Osaimi & Fawaz, 2022). Conversely, intrinsic motivation is linked to improved performance, greater perseverance, and a higher likelihood of engaging in additional learning activities (Vasli & Asadiparvar-Masouleh, 2024). Given the persistent challenges in clinical learning, this study investigates the factors influencing students' learning outcomes in the clinical environment. The findings aim to support improvement in clinical education, enhance student satisfaction and retention, and strengthen professionalism and competence for real-world nursing practice.

Methods

The research employed analytic survey design with a cross-sectional approach, enabling data collection at a single point in time and providing a representative snapshot of the variables examined.

The sample consisted of 117 seventh-semester undergraduate nursing students from STIKes Kuningan. Although these students were not enrolled in the professional nursing program

(Ners), they had begun initial clinical placements as part of the undergraduate curriculum. During this phase, students undergo structured early clinical exposure, consisting primarily of observational learning and supervised practice that introduces them to clinical environments and nursing procedures under the guidance of clinical instructors.

Data was collected using a structured questionnaire designed to assess four core variables: the role of clinical instructors (X1), the clinical learning environment (X2), student motivation (X3), and learning outcomes (Y1). Each construct was operationalized into measurable indicators, and responses were captured using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

The role of clinical instructors (X1) was assessed through three key indicators: (1) time availability, (2) quality of guidance, and (3) guidance methods. The clinical learning environment (X2) was measured through (1) physical facilities, (2) the quality of the social environment, and (3) availability of clinical cases or patients. Student motivation (X3) was examined through intrinsic and extrinsic motivational components. Learning outcomes (Y1) were evaluated across cognitive, affective, and psychomotor domains, using composite scores derived from institutional clinical evaluation rubrics used by preceptors and instructors, across all three domains.

The questionnaire was reviewed by two experts in nursing education to ensure content validity. Content validity index (CVI) above 0.80 was achieved for all constructs. The questionnaire was pilot-tested with a sample of 30 final-year nursing students. Cronbach's alpha coefficients demonstrated a strong internal consistency for each construct: 0.89 for the clinical instructor role, 0.85 for the clinical environment, 0.81 for motivation, and 0.87 for the self-evaluation of learning outcomes.

Data were analyzed using partial least squares structural equation modeling (PLS-SEM) to

examine relationships among the variables. The adequacy of the model was evaluated using goodness-of-fit measures recommended for PLS-SEM, including Standardized Root Mean Square Residual (SRMR), Unweighted Least Squares discrepancy (d-ULS), and Normed Fit Index (NFI).

Results

The results include analyses of the clinical environment variables, student motivation, clinical instructor role, and their relationships with learning outcomes. Descriptive statistics provided an overview of respondent characteristics and primary variables, followed by outer and inner model testing and model fit assessment using partial least squares structural equation modeling (PLS-SEM).

Table 1 presents demographic data and bivariate analyses using the Spearman-rank test to explore the relationship between gender and type of hospital, categorized by learning outcomes (optimal, moderate, and suboptimal). Other characteristics, such as age and duration of clinical exposure, were not analyzed due to sample homogeneity. All respondents were seventh-semester nursing students who underwent clinical placements simultaneously according to a standardized clinical education schedule. Learning outcomes were measured using a composite score across cognitive, affective, and psychomotor domains, each evaluated through institutional rubrics.

Based on Table 1, 117 nursing students participated in this study. The majority of respondents were female (71.8%), while 28.2% were male.

Table 1. Descriptive Statistics of Participants (N=117)

Variables	Category	n(%)	Mean ± SD	Min-max
Gender	Male	33 (28.2)	-	-
	Female	84 (71.8)	-	-
Hospital	Private	43 (36.8)	-	-
	Government	74 (63.2)	-	-
Clinical Instructor's Role	-	-	9.25 ± 1.28	6-12
Motivation	-	-	6.60 ± 0.87	4-8
Hospital Environment	-	-	9.48 ± 1.41	5-12
Learning Outcome	-	-	9.68 ± 1.35	6-12

Table 2. Indicator Reliability, Construct Reliability, and Convergent Validity Testing Results

Construct	Item	Outer Loading	Internal consistency validity		Average variance extracted (AVE)
			Cronbach α	Composite reliability	
Clinical Instructors' role	X1.1	0.928	0.876	0.923	0.801
	X1.2	0.839			
	X1.3	0.915			
Motivation	X2.1	0.908	0.798	0.908	0.832
	X2.2	0.916			
Clinical Environment	X3.1	0.917	0.886	0.930	0.815
	X3.2	0.931			
	X3.3	0.859			
Achievement of learning outcome	Y1	0.928	0.828	0.897	0.744
	Y2	0.839			
	Y3	0.915			

Most students (63.2%) underwent clinical placements in government hospitals, while the remainder placed in private hospitals (36.8%). Based on the numerical data, the clinical instructor role received an average score of 9.25 ± 1.28 (range 6–12), indicating a relatively high student assessment. Student motivation averaged 6.60 ± 0.87 (range 4–8), while the hospital environment scored 9.48 ± 1.41 (range 5–12). Student learning outcomes averaged 9.68 ± 1.35 (range 6–12), indicating relatively favourable learning outcomes.

Table 2 shows that the items measuring the role of clinical instructors (X1.1, X1.2, and X1.3) have high loading factors with values of 0.928, 0.839, and 0.915, together with excellent internal consistency (Cronbach's alpha 0.876; composite reliability 0.923). The AVE value of 0.801 indicates that these items explain more than 80% of the construct variance. The motivation items (X2.1 and X2.2) also had strong loading factors (0.908 and 0.916), with adequate internal consistency (Cronbach's alpha 0.798; composite reliability 0.908). The clinical environment construct, measured through (X3.1, X3.2, and X3.3) showed excellent loading factors (0.917, 0.931, and 0.859) and high reliability (Cronbach's Alpha 0.886; Composite Reliability 0.930; AVE 0.815). Likewise, the three items measuring learning outcomes (Y1, Y2, and Y3) had high loading factors (0.928, 0.839, and 0.915) and good internal consistency (Cron-

bach's alpha 0.828; composite reliability 0.897; AVE 0.744), indicating that more than 74% of the variance was explained.

These results confirm that all constructs, clinical instructor role, motivation, clinical environment, and learning outcomes, demonstrate strong validity and reliability, as indicated by high outer loading, as well as Cronbach's alpha, composite reliability, and AVE values that meet recommended criteria suggested in the literature. This confirms that the instruments used in this study reliably measure these constructs.

Based on Figure 1, the clinical instructor role had a significant relationship with student motivation ($p = 0.001$) and the clinical environment ($p = 0.001$), but no significant direct effect on learning outcomes ($p = 0.783$). The clinic environment showed a significant direct effect on student motivation ($p = 0.040$) and learning outcome ($p = 0.001$). Motivation also had a significant direct relationship on learning outcomes, with a path coefficient of 0.029. These findings demonstrate that both the clinical instructor role and the clinical environment strongly influence student motivation, which subsequently contributes positively to learning outcomes. Although the clinical environment is not as strong as the instructor role, it has a powerful direct influence on learning outcomes. The high loading factor values across indicators indicate a consistent and valid measurement.

Table 3. Hypothesis Testing Results of Estimates and T-Values

Hypothesis	Path	Original Sample	t - statistik	p
Direct effect				
H1	Clinical environment – Learning outcome	0.667	8.447	0.000
H2	Clinical environment – Motivation	0.209	2.000	0.040
H3	Clinical instructor – Clinical environment	0.550	7.481	0.000
H4	Clinical instructor – Learning outcome	0.020	0.280	0.785
H5	Clinical instructor – Motivation	0.429	4.564	0.000
H6	Motivation – Learning outcome	0.207	2.318	0.029
Indirect effect				
H7	Clinical environment – Motivation – Learning outcome	0.043	1.443	0.148
H8	Clinical instructor – Motivation – Learning outcome	0.088	1.927	0.051

Table 4. Some Fit Measures of the Overall Structured Model

Measure	Saturated Model	Threshold
SRMR	0.073	≤ 0.08
d-ULS	0.356	
d-G	0.241	
Chi-square	176.33	
NFI	0.799	≥ 0.90

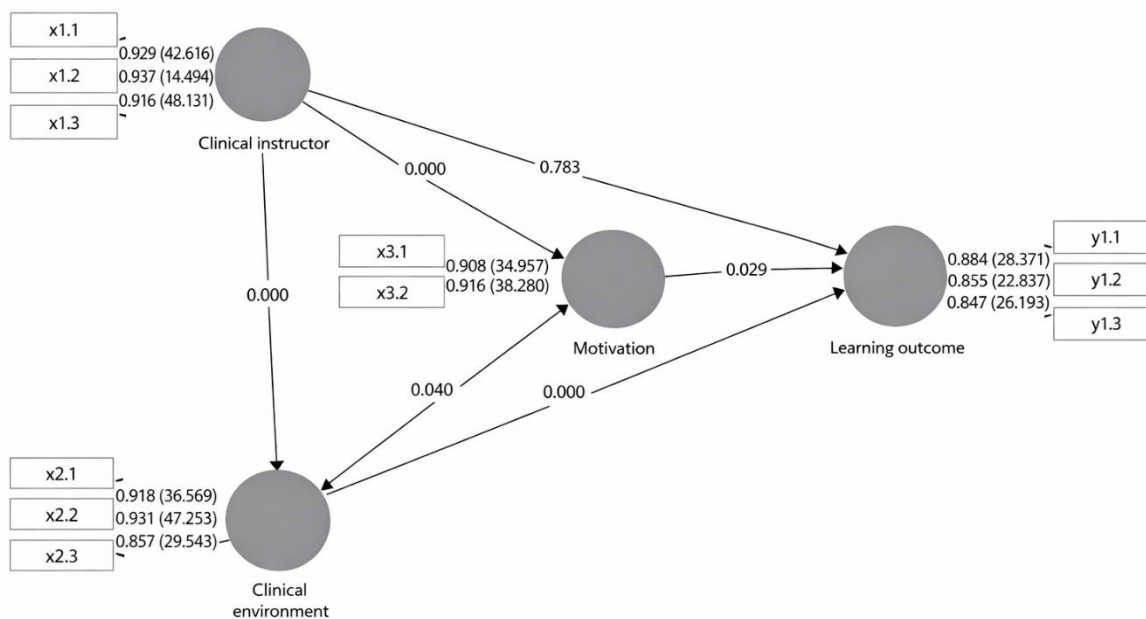


Figure 1. Structural Model of Clinical Instructor, Clinical Environment, Motivation, and Learning Outcome

This study tested hypotheses regarding the relationships between the clinical environment, student motivation, the role of clinical instructors, and learning outcomes in nursing clinical practice. The results of the path analysis are shown in Table 3.

This study shows that a supportive clinical environment significantly contributes to students' learning outcomes (original sample 0.667, t-statistic 8.447, $p = 0.000$) and also increases student motivation (original sample 0.209, t-statistic 2.000, $p = 0.040$). The role of clinical instructors significantly influenced students' perceptions of the clinical environment (original sample 0.550, t-statistic 7.481, $p = 0.000$) and increased student motivation (original sam-

ple 0.429, t-statistic 4.564, $p = 0.000$), although it did not significantly affect learning outcomes directly (original sample 0.020, t-statistic 0.280, $p = 0.785$). Student motivation significantly contributed to learning outcomes (original sample 0.207, t-statistic 2.318, $p = 0.029$).

Motivation did not mediate the relationship between clinical environment and learning outcomes (original sample 0.043, t-statistic 1.443, $p = 0.148$) but almost mediated the relationship between clinical instructors and learning outcomes (original sample 0.088, t-statistic 1.927, $p = 0.051$). Thus, improvements in the quality of clinical instructors can have a positive impact on learning outcomes by increasing student motivation.

The SRMR value of 0.073, indicates a good model fit, as it falls below the recommended threshold of 0.08. The d-ULS value of 0.356 and the d-G value of 0.241, both indicate a reasonably good fit to the data. The chi-square value of 176.33 indicates a fairly good fit with the model; the NFI value of 0.799 reflects a moderate fit with the base model (Table 4). Taken together, these measures show that the structural model examining the relationships between clinical environment, student motivation, clinical instructor role, and learning outcomes demonstrates an acceptable overall fit.

Discussion

The results of this study confirm that the clinical environment plays a significant role in the learning outcomes of nursing students. Consistent with Learning Environment Theory, both the physical and social aspects of the learning environment directly influence the development of clinical competencies (Daniels & Heradien, 2023). While representative facilities enhance technical skills (Pitkänen et al., 2018), this study emphasizes that social dimensions, such as positive interactions with staff, instructors, and peers, are more crucial in fostering a sense of safety, emotional connectedness, and focus on learning (Daniels & Heradien, 2023; Kung et al., 2023; Brown et al., 2021). This suggests that providing physical facilities alone is insufficient; the quality of interpersonal relationships and a supportive atmosphere is central to learning success.

Baldwin and Ford's model further emphasizes that student characteristics, instructional design, and work environment must interact synergistically (Daniels & Heradien, 2023). This study found that motivation serves as a critical mediator between instructional support and clinical learning outcomes (Al-Osaimi & Fawaz, 2022; Brown et al., 2021). Hence, the role of clinical instructors cannot be limited to evaluation; they must act as facilitators of motivation by offering autonomy, constructive feedback, and supportive relationships. This aligns with

Self-Determination Theory and the ARCS Model (Tsai et al., 2022; Na et al., 2024). Self-Determination Theory posits that fulfilling the psychological needs for autonomy, competence, and relatedness increases self-confidence and learning satisfaction. Therefore, effective clinical learning depends not solely on instructor quality or facilities, but on the integration of these elements to foster students' internal motivation.

In this study, the role of the clinical instructor was not directly related to learning outcomes, but it significantly influenced student motivation, which acted as an important mediating factor. This finding is consistent with earlier research highlighting motivation as a crucial mechanism in translating instructional support into academic performance (Al-Rawajfah et al., 2022; Yildirim et al., 2020). The absence of a direct relationship may be explained by the Job Demands-Resources Model (JD-R), which posits that optimal outcomes arise when clinical demands are balanced with adequate resources (Bakker & Demerouti, 2018). In other words, supervision and feedback from the Clinical Instructor may be insufficient when not supported by adequate facilities, practice opportunities, or adequate mentoring time (Indriyawati et al., 2021).

Prior studies show that clinical instructors strengthen the Clinical Learning Environment (CLE) through accessibility, clear expectations, and feedback. Accessibility plays a pivotal role in creating a supportive climate that enhances student engagement, highlighting the significance of relational aspects of clinical teaching (Ahmad, 2018; Attia & Ibrahim, 2023). However, within the Indonesian context, the effectiveness of clinical instructors is often constrained by their dual responsibilities as ward heads or administrators. This role overlap may compromise instructional effectiveness, reduce mentoring continuity, and ultimately affect the quality and sustainability of faculty development initiatives (Mustika et al., 2024; Clarke et al., 2020). Cultural hierarchy also plays a role: rigid and respectful instructor-student relationships hinder two-way communication, meaning that

instructional support manifests more clearly in increased motivation, than in direct competency transformation. This difference in dynamics highlights an important distinction from Western studies, where instructor-student interactions tend to be more egalitarian and participatory.

Nonetheless, clinical instructors remain essential in building a positive CLE through respect, trust, and collaboration (Wakefield et al., 2023). They also act as cultural brokers, helping students navigating clinical complexities and facilitating social connectedness (Wakefield et al., 2023; See et al., 2023). Consequently, systemic interventions including structured preceptorship models, ongoing training, and better alignment of instructor roles and students' clinical activities are needed (Cockrell, 2024; Gcawu & van Rooyen, 2022). Through such strengthening, instructional support can enhance academic outcomes while also reinforcing students' professionalism, ethics, and preparedness for clinical practice. This study's novel contribution lies in demonstrating how motivation acts as a bridging mechanism explaining the relationship between instructional support, the clinical learning environment, and professional competence within a hierarchical culture.

Ultimately, this study demonstrates that the synergy between a supportive clinical environment, strong instructor roles, and sustained student motivation is pivotal for achieving optimal clinical learning outcomes. By clarifying these interconnected dynamics, the findings extend the nursing education literature beyond single-factor explanations and provide an integrated framework for maximizing learning. Practically, this evidence equips institutions to implement strategies that simultaneously strengthen the environment, pedagogy, and student motivation bridging the persistent gap between theory and practice.

Conclusion

This study identified a close relationship between the clinical environment and student learning

outcomes. A supportive environment, including physical facilities, a positive work atmosphere, and staff support, improved students' academic and clinical performance. Student motivation served as an important mediating variable: a positive environment increased intrinsic and extrinsic motivation, and higher motivation increased engagement and effort, thereby improving learning outcomes. The role of the clinical instructor is also important in improving motivation, although it did not show a direct relationship with learning outcomes. Overall, the findings illustrate a complex interaction between environmental factors and student motivation in shaping clinical learning outcomes.

Finally, the study showed that hospitals and educational institutions must work together to create a supportive learning environment, clinical instructors need strengthened training to enhance student motivation, and educational institutions should design targeted strategies to increase motivation through structured support and relevant programs.

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