



## COMPARISON OF PRIMARY AND MODULAR NURSING METHODS ON NURSE WORK ENGAGEMENT, NURSE JOB SATISFACTION, PATIENT TRUST, AND PATIENT SATISFACTION IN A GENERAL HOSPITAL

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### ABSTRACT

Nursing care delivery models influence the continuity, quality, and outcomes of nursing care. Primary nursing and modular nursing present different approaches to responsibility distribution, care coordination, and nurse-patient interaction. However, evidence comparing their impact on nurse-related and patient-related outcomes remains limited in low- and middle-income countries. Aim to compare the effects of primary versus modular nursing methods on nurse work engagement, nurse job satisfaction, patient trust, and patient satisfaction in an inpatient setting. A cross-sectional comparative study was conducted among 60 nurses and 30 adult inpatients in a regional public hospital in Bali, Indonesia. Purposive sampling was used. Validated instruments were administered. Utrecht Work Engagement Scale (UWES) (Cronbach's  $\alpha = 0.80-0.90$ ), Mueller & McCloskey Satisfaction Scale (MMSS) (reliability ranges from  $\alpha = 0.78-0.89$ ), Patient Trust Scale (PTS) (reliability  $\alpha > 0.85$ ), and Patient Satisfaction with Nursing Care Quality Questionnaire (PSNCQQ) (reliability  $\alpha > 0.90$ ). Data were analyzed using Chi-square tests with  $\alpha=0.05$ . The primary nursing group demonstrated significantly higher levels of patient trust ( $p=0.038$ ), patient satisfaction ( $p=0.041$ ), nurse work engagement ( $p=0.027$ ), and nurse job satisfaction ( $p=0.016$ ) compared with the modular nursing group. Primary nursing consistently showed higher proportions in the "high" category across all measured outcomes. Primary nursing appears more effective than modular nursing in enhancing nurse work engagement and job satisfaction, while simultaneously improving patient trust and satisfaction. Wider adoption of primary nursing may support improvements in nursing care quality within hospital settings.

Keywords: job satisfaction; patient satisfaction; patient trust; primary nursing model; work engagement

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## INTRODUCTION

Nursing care delivery models play a critical role in shaping the quality, continuity, and outcomes of patient care in hospital settings. As healthcare systems face increasing complexity, nursing models that ensure clear responsibility, optimal communication, and efficient coordination have become essential to supporting high-quality care (Huber, 2021). Among the models widely used across healthcare institutions, primary nursing and modular nursing represent two contrasting approaches to organizing nursing care.

Primary nursing emphasizes individualized and continuous care, whereby a designated primary nurse assumes full accountability for planning, coordinating, and evaluating a patient's care throughout hospitalization. This model is associated with stronger therapeutic relationships, enhanced continuity, and improved perceptions of care quality (Finkelman, 2016; Wei et al., 2020). Leadership literature suggests that models which enhance professional responsibility and decision-making, such as primary nursing, align strongly with contemporary management functions and are more likely to produce high-performing nursing teams (Marquis & Huston, 2022). Conversely, modular nursing distributes responsibilities among small teams of nurses responsible for a specific

group of patients. Designed to improve task efficiency and teamwork, modular nursing may reduce workload fragmentation but may also limit individualized nurse–patient interactions (Laschinger et al., 2019). Existing reviews also report that team-based and modular approaches may improve operational efficiency, but their effects on relational aspects of care and individualized responsibility are less clear, warranting further empirical comparison with primary nursing (Setyawan et al., 2025; Sofiatun et al., 2022).

Growing evidence indicates that nurse-related outcomes, such as work engagement and job satisfaction are strongly influenced by the care delivery model used. High work engagement is associated with better safety culture, stronger commitment, and higher-quality nursing care (Sultan et al., 2023). Similarly, job satisfaction among nurses is known to improve patient experiences, enhance patient trust, and reduce turnover intention (Aiken et al., 2018; Saeed et al., 2022). From the patient perspective, trust in nurses is a key relational component that predicts treatment adherence, willingness to disclose sensitive information, and overall satisfaction with care (Bahari et al., 2024). Recent evidence also indicates that the primary nursing model positively influences multiple nursing outcomes, particularly autonomy, accountability, and care coordination, which ultimately enhance both nurse and patient results (Agustina et al., 2025). Models that promote continuity and therapeutic presence are therefore hypothesized to strengthen patient trust.

Despite these established relationships, comparative evidence between primary and modular nursing, especially regarding both nurse outcomes (work engagement, job satisfaction) and patient outcomes (trust, satisfaction), remains limited, particularly in low and middle income countries. Most existing studies focus on the effectiveness of individual models, while fewer investigations have directly compared these two models in real-world hospital settings. Furthermore, the implementation of nursing care delivery models in Indonesia varies widely across institutions, creating a need for empirical evaluation to guide policy and practice.

Although several studies in Indonesia have explored professional nursing practice models, findings remain inconsistent regarding their impact on nurse satisfaction and quality indicators, highlighting the need for comparative evaluations across different delivery models (Hasfya et al., 2023; Maemunah et al., 2021). This study was conducted to compare the effects of primary and modular nursing methods on nurse work engagement, nurse job satisfaction, patient trust, and patient satisfaction in an inpatient ward of a regional public hospital in Bali, Indonesia. Findings from this study are expected to contribute to the global discourse on effective nursing care models and provide evidence to inform decision-making in hospital nursing management.

## **METHOD**

A cross-sectional comparative study was conducted to examine differences in nurse and patient outcomes between primary and modular nursing care delivery models. This design was selected to allow simultaneous comparison of multiple outcome variables across two naturally existing groups within the hospital. The study was carried out in the inpatient wards of a regional public hospital in Bali, Indonesia. Data collection took place between August and September 2025. The hospital implements both primary and modular nursing models in different wards, enabling a natural comparative framework. Participants consisted of 60 nurses and 30 adult inpatients with purposive sampling, divided equally between the primary and modular nursing units. Nurse inclusion criteria: Worked in the inpatient ward for  $\geq 1$  year, provided direct patient care, willing to participate and provide informed consent. Patient inclusion criteria: Aged  $\geq 18$  years, hospitalized for  $\geq 3$  days, conscious and able to communicate, willing to participate. Purposive sampling was used to select participants who met the eligibility criteria in each nursing care model group.

Four validated instruments were used: 1) Utrecht Work Engagement Scale (UWES), measures nurse work engagement across vigor, dedication, and absorption. The UWES has demonstrated strong reliability (Cronbach's  $\alpha = 0.80$ – $0.90$ ); 2) Mueller & McCloskey Satisfaction Scale (MMSS),

assesses nurse job satisfaction across professional, organizational, and interpersonal domains. Reported reliability ranges from  $\alpha = 0.78-0.89$ ; 3) Patient Trust Scale (PTS), measures patient trust in nursing care, communication, and competence. Previous studies show reliability  $\alpha > 0.85$ ; 4) Patient Satisfaction with Nursing Care Quality Questionnaire (PSNCQQ), evaluates patient satisfaction with nursing care quality. Reliability typically  $\alpha > 0.90$ . All instruments used in this study had undergone cultural and linguistic adaptation prior to implementation.

Eligible nurses and patients were approached in their respective wards and provided with information about the study. After obtaining written informed consent, participants completed the questionnaires individually in a private setting to ensure confidentiality and minimize response bias. Data were analyzed using SPSS version 25. Descriptive statistics (frequency, percentage, mean, and range) were used to summarize participant characteristics. The Chi-square test was applied to compare categorical outcome variables between primary and modular nursing groups, with a significance level of  $\alpha = 0.05$ . The study received ethical approval from the Health Research Ethics Committee, Faculty of Medicine, Udayana University (Ref No. 1663/UN14.2.2.VII.14/LT/2025). Written informed consent was obtained from all participants. Participation was voluntary, and anonymity was assured.

## RESULT

The demographic characteristics of nurses (age, years of experience, gender, educational level, and unit) are presented in Table 1, and the demographic characteristics of patients (age, gender, and educational level) are presented in Table 2.

Table 1.

Demographic Characteristics of Nurses (n = 60)

Variable	f (%)	Mean (Min-Maks)
Age (years)		35,78 (22-48)
Years of Work Experience (years)		11,17 (2-37)
Gender		
Male	18 (30)	
Female	42 (70)	
Education Level		
Diploma in Nursing	24 (40)	
Bachelor of Nursing	4 (6,66)	
Professional Nurse	32 (53,33)	
Unit/ Ward		
Cempaka	12 (20)	
Dahlia	6 (10)	
Nusa Indah	20 (33,33)	
Jempiring	5 (8,33)	
ICU/ICCU	7 (11,66)	
VVIP	10 (16,66)	

Table 2.

Demographic Characteristics of Patients (n = 30)

Variable	f (%)	Mean (Min-Maks)
Age (years)		47,34 (18-63)
Gender		
Male	15 (50)	
Female	15 (50)	
Education Level		
No Formal Education	1 (6,66)	
Elementary School	3 (10)	
Junior High School	2 (16,66)	
Senior High School	5 (10)	
Bachelor's Degree	6 (26,66)	

A total of 60 nurses and 30 patients participated in the study. The mean age of nurses was 35,78 years (range: 22–48), with an average work experience of 11.17 years (range: 2–37). Most nurses were female (70%) and held either a diploma in nursing (40%) or a professional nursing degree (53,3%). Nurses were distributed across six inpatient units implementing either primary or modular nursing. The patient group had a mean age of 47,34 years (range: 18–63), with an equal distribution of males and females. Educational backgrounds varied, with the majority having completed secondary or higher education.

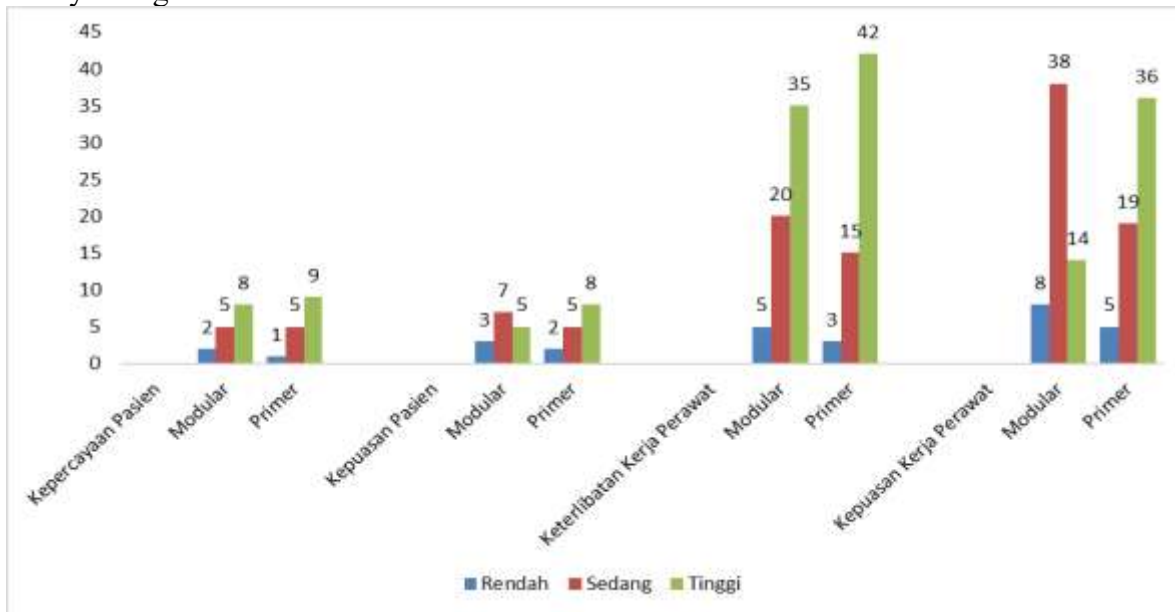


Figure 1. Frequency Distribution of Patient Trust, Patient Satisfaction, Nurse Work Engagement, and Nurse Job Satisfaction in Modular and Primary Nursing Care Delivery Models (Nurses n=60, Patients n=30)

Table 3.

Distribution of Variables Based on Nursing Care Delivery Method (Nurses N = 60, Patients N = 30)

Variable	Metode	Low	Moderate	High	P Value
Patient Trust	Modular	2	5	8	0,041*
	Primary	1	5	9	
Patient Satisfaction	Modular	3	7	5	0,038*
	Primary	2	5	8	
Nurse Work Engagement	Modular	5	20	35	0,029*
	Primary	3	15	42	
Nurse Job Satisfaction	Modular	8	38	14	0,015*
	Primary	5	19	36	

Analysis demonstrated significant differences in patient trust and patient satisfaction between the two nursing care delivery models. Patients cared for under the primary nursing model were more likely to report high levels of trust ( $p = 0,038$ ) compared with those in modular care. Similarly, patient satisfaction was significantly higher in the primary nursing group ( $p = 0,041$ ). The primary nursing model consistently showed a greater proportion of participants in the “high” satisfaction and trust categories.

Significant differences were also observed in nurse outcomes. Work engagement was higher among nurses working under the primary nursing model ( $p = 0,027$ ), with more nurses reporting high engagement levels compared to those in modular care. Similarly, nurse job satisfaction was significantly greater in the primary nursing group ( $p = 0,016$ ). A higher proportion of nurses in primary care units reported high satisfaction, whereas nurses working under the modular model were more frequently represented in the low to moderate satisfaction categories. Across all four outcomes, patient trust, patient satisfaction, nurse work engagement, and nurse job satisfaction, the primary nursing model consistently demonstrated superior results. All between-group differences

were statistically significant at  $\alpha = 0,05$ , supporting the conclusion that primary nursing is associated with more favorable nurse and patient outcomes compared with modular nursing.

## **DISCUSSION**

This study examined the effects of primary and modular nursing care delivery models on patient trust, patient satisfaction, nurse work engagement, and nurse job satisfaction. The results demonstrated that the primary nursing model produced significantly higher scores across all outcome variables.

### **Patient Trust**

Patient trust refers to a patient's belief that the nurse is competent, reliable, honest, and acts in the patient's best interests. Trust is relational and develops over time through repeated, meaningful interactions. In this study, patient trust was significantly higher in the primary nursing model. This aligns with research demonstrating that continuity of care, where the same nurse consistently interacts with the patient, allows for the development of a therapeutic relationship based on familiarity, personalized care, and mutual understanding (Wei et al., 2020; Bahari et al., 2024). The structure of primary nursing inherently supports trust-building because a single nurse assumes full responsibility for planning, coordinating, and delivering care. Patients in such settings often perceive the nurse as more accountable, more present, and more invested in their well-being. Prior studies have similarly found that relational continuity increases confidence in nurse competence, emotional safety, and willingness to share sensitive information (Kim & Oh, 2020; Al-Dossary, 2021).

In contrast, modular nursing involves several nurses caring for the same patient across a shift or week. While this model supports team efficiency, the frequent change in caregivers may weaken relational depth and reduce opportunities for consistent communication. Fragmentation of responsibility may also cause patients to perceive inconsistencies in care delivery, which can undermine trust. Overall, the findings reinforce that trust is deeply rooted in the stability of nurse–patient interactions, the perceived reliability of the nurse, and the sense of individualized attention—core strengths of the primary nursing model.

### **Patient Satisfaction**

Patient satisfaction, unlike trust, reflects the patient's evaluation of the quality and experience of care received. It is influenced by responsiveness, comfort, communication clarity, timeliness, and how well care aligns with expectations. In this study, patient satisfaction was significantly higher in the primary nursing group. Primary nursing is well-positioned to improve satisfaction because it emphasizes holistic care planning, consistent monitoring, and seamless communication. Continuous involvement by a single nurse reduces the likelihood of missed care, improves the coordination of interventions, and enhances clarity during health education, all aspects known to drive satisfaction (Ventura-Silva et al., 2024; Gonçalves et al., 2023). In addition, patients often report higher satisfaction when they feel their needs are anticipated, their priorities are understood, and their concerns are addressed promptly. These conditions are more readily achieved when a dedicated nurse is familiar with the patient's trajectory over time (Sultan et al., 2023).

By contrast, modular nursing may introduce variability in how instructions are communicated, how symptoms are monitored, or how priorities are interpreted by different nurses in the team. Such inconsistencies can diminish a sense of comfort and continuity, contributing to lower satisfaction scores. Previous studies have similarly found that task-based team approaches, while operationally efficient, may compromise the personal and emotional dimensions of patient care (Indrawati & Erlena, 2023; Nugrahini et al., 2024). Therefore, while trust is relational and rooted in continuity, satisfaction is evaluative and tied to service consistency and responsiveness, both of which are more effectively supported by the primary nursing model.

### **Nurse Work Engagement**

Nurses working under the primary nursing model exhibited significantly higher levels of work engagement. Primary nursing grants nurses greater autonomy, accountability, and involvement in decision-making, all of which are known predictors of engagement (Sultan et al., 2023). The model encourages continuous involvement in the patient's care trajectory, which may enhance a sense of professional purpose and ownership. Recent research suggests that nurses who experience higher engagement demonstrate better adherence to safety procedures, stronger commitment to the organization, and better patient outcomes (Mao et al., 2021). The higher levels of work engagement observed in the primary nursing group are consistent with prior findings that emphasize the role of professional autonomy and continuous responsibility in fostering nurse motivation and performance (Rahayu et al., 2025; Agustina et al., 2025).

In contrast, modular nursing may limit professional autonomy due to more rigid task allocation and shared responsibility structures. While teamwork is a recognized strength of modular approaches, the dilution of individual responsibility can reduce opportunities for nurses to exercise professional judgment, potentially affecting their engagement levels. The current findings align with previous studies indicating that empowerment and role clarity are essential in fostering engagement in nursing practice (Laschinger et al., 2019). Furthermore, research on professional nursing practice models indicates that structures emphasizing accountability and role clarity, such as primary nursing, are strongly associated with improved nurse performance and care quality (Silaban & Sitorus, 2021).

### **Nurse Job Satisfaction**

This study also found higher job satisfaction among nurses using the primary nursing model. Job satisfaction has consistently been linked to positive organizational outcomes, including lower turnover, better teamwork, and improved patient care quality (Aiken et al., 2018; Saeed et al., 2022). The autonomy and continuity inherent in primary nursing may contribute to greater professional fulfillment, as nurses can observe the impact of their care more directly and develop deeper clinical reasoning.

In modular nursing, variations in workload distribution, frequent handovers, and potential team conflicts may contribute to lower satisfaction. Similar findings have been reported in studies suggesting that inconsistent care assignments and fragmented workflows may decrease nurses' sense of control and professional achievement (Indrawati & Erlena, 2023). The results of this study further underscore the central role of work environment structure in shaping job satisfaction in hospital settings.

The findings have several practical implications: 1) Strengthening continuity of care. Hospitals may benefit from expanding primary nursing to enhance patient trust and satisfaction; 2) Promoting autonomous professional practice. Primary nursing supports clinical decision-making and fosters accountability, which may improve nurse engagement and retention; 3) Optimizing organizational workflow. While modular nursing may remain appropriate in high-acuity or high-volume settings, elements of relational continuity should be integrated to mitigate its limitations; 4) Policy considerations. Hospital leaders should consider combining strengths of both models by developing hybrid approaches that balance teamwork with patient-centered continuity.

This study has several limitations. First, the use of a cross-sectional design limits the ability to establish causality. Second, the sample was drawn from a single hospital, which may reduce generalizability to other healthcare settings. Finally, the relatively small patient sample may limit the power of some comparisons. Future studies should consider multi-center designs, longitudinal approaches, and larger sample sizes to better assess causal pathways. Additionally, qualitative studies exploring nurse and patient experiences of both models could provide deeper insights into mechanisms influencing outcomes.

## CONCLUSION

This study demonstrates that the primary nursing care delivery model is more effective than the modular model in enhancing key nurse and patient outcomes. Primary nursing was associated with higher patient trust and satisfaction, as well as greater work engagement and job satisfaction among nurses. These findings underscore the importance of continuity, individualized responsibility, and relational care in improving the quality of nursing practice. Hospitals are encouraged to expand or strengthen primary nursing implementation as a strategy to promote positive patient experiences and support a more engaged and satisfied nursing workforce.

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