

Leadership in Nursing Management among Riau Malay Ethnicity and Nurses Educational Levels in the Hospital Wards

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ABSTRACT

Background: The head nurse plays a central role in coordinating ward activities and ensuring quality inpatient care. Leadership culture in nursing is shaped by individual and sociocultural factors, including educational background and ethnicity, which may influence leadership style and effectiveness. Understanding these influences is important for improving nursing management and patient outcomes.

Objectives: This study examines the relationship between head nurses' ethnicity, characteristics and educational background with perceived leadership effectiveness as evaluated by staff nurses in hospital wards. **Methods:** This study employed a quantitative cross sectional descriptive correlational design involving 240 nurses and 45 head nurses at a referral hospital in Riau Province, Indonesia. Head nurses provided demographic data, while staff nurses evaluated leadership effectiveness using standardized leadership questionnaires. **Results:** Over half (58%) of head nurses were of Riau Malay ethnicity, and most (84%) of the nursing staff expressed satisfaction with their leadership. The majority of head nurses were female (78%), in middle adulthood (87%), had over five years of experience (96%), and held professional nursing qualifications (71%). Inferential analysis showed that professional nursing education was significantly associated with higher leadership effectiveness scores ($p = 0.003$), while ethnic background showed no significant difference in leadership ratings across ethnic groups ($p = 0.087$). **Conclusion:** Leadership among Riau Malay head nurses is perceived positively across ethnic groups, reflecting cultural values that promote effective teamwork and patient satisfaction in nursing services.

Keywords: Ethnicity; Leadership; Nurse Education; Nursing Management

INTRODUCTION

The role of professional nurses in the national health system is to contribute to the establishment of an effective and responsive healthcare system (Ubochi *et al.*, 2019), ensuring that healthcare services meet the needs and demands of the population (Blessing *et al.*, 2024). This responsibility extends to the hospital-based healthcare system, particularly through the provision of nursing care services (Byrne *et al.*, 2024). As the largest group of healthcare professionals, nurses play a pivotal role in delivering continuous, coordinated, and comprehensive care to meet clients' needs (Hummel *et al.*, 2021). Consequently, nurses are expected to perform their duties and responsibilities with a high degree of accountability and professionalism (Chesterton *et al.*, 2021).

According to the Riau Province Department of Population and Civil Registration, the ethnic composition of the region is as follows: Malay (33.20%), Javanese (29.20%), Batak (12.55%), Minangkabau (12.29%), Banjar (4.13%), Bugis (1.94%), Chinese (1.85%), Sundanese (1.41%), Nias (1.29%), and others (2.14%) (Afandi & Erdayani, 2023). Data from the Indonesian Ministry of Health indicate that there are 32 hospitals in the city of Pekanbaru, staffed by a total of 4,210 nurses, 62% of whom are graduates from vocational nursing schools (Efendi *et al.*, 2018). These figures suggest that many inpatient units are still led by nurses with

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vocational or diploma-level qualifications (Schnelli *et al.*, 2023).

Leadership is a dynamic and complex process that involves the development of relationships between leaders and followers over time (Vullings & Dóci, 2020). The interaction between leaders and their teams is interdependent and essential for achieving organizational goals (Yunanto *et al.*, 2021). The success of an organization in attaining its objectives is largely determined by its leadership and the characteristics of its leaders (Nandasinghe, 2020). These leadership characteristics are shaped by various factors, including educational background, ethnicity, gender, religion, family, and environmental support, among others. Leaders have the capacity to influence employee satisfaction, dedication, and productivity through the application of appropriate leadership styles (Javed *et al.*, 2025). Effective leadership is one of the most critical components in driving an organization toward successful outcomes (Agahi, 2025). Nurse satisfaction with their leaders is a vital factor influencing their satisfaction with the nursing care services provided in hospitals (Chang & Wang, 2023). Therefore, attention to nurses' job satisfaction is essential in achieving the overarching goal of patient satisfaction through the delivery of high-quality nursing care (Abugre & Bhengu, 2024).

In hospital management, a head nurse is a registered nurse who is responsible for managing a particular ward or healthcare unit. The leadership culture of a nurse manager is a key factor in supporting the development and continuous improvement of inpatient services (Van Bogaert *et al.*, 2015). This culture is shaped by habitual practices adopted by the leader, which in turn are influenced by their personal characteristics, including educational background, ethnicity, and other factors that form their attitudes and leadership styles in enhancing the quality of inpatient services (Akanji *et al.*, 2020). These leadership roles are typically held by individuals who have completed vocational nursing education, professional nursing programs, or specialized nursing education (Heinen *et al.*, 2019). A vocational nurse typically holds a diploma-level qualification (D-III or D-IV), while a professional nurse has completed a bachelor's degree in nursing and a professional nursing program (Aunguroch, 2016). Specialist nurses undergo advanced clinical training in specific fields such as medical-surgical nursing, pediatric nursing, community health nursing, or other nursing specialties (Alshumaymiri *et al.*, 2024). Based on the aforementioned background and data, this study aims to investigate leadership in nursing management among the Riau Malay ethnicity and nurses' educational levels in hospital wards.

Despite the extensive literature on nursing leadership, empirical studies that concurrently examine leadership characteristics across ethnic groups and educational levels, particularly within highly multicultural regions such as Riau, remain extremely limited. No previous studies have specifically analyzed how Malay ethnic identity interacts with varying nursing educational pathways (vocational, professional, and specialist) to shape leadership behavior and managerial effectiveness in Indonesian hospital wards. This represents a critical research gap given that leadership practices in collectivist, multi-ethnic societies may differ substantially from those in Western contexts, where most leadership theories are developed. Therefore, the novelty of this study lies in its integration of ethnic-cultural identity and educational background as dual determinants of leadership style and managerial performance among head nurses. In this study, ethnicity and educational background of head nurses are treated as independent variables, while leadership effectiveness measured through staff nurses' evaluations using the Leadership Behavior Inventory is considered the dependent variable. Staff nurses serve as evaluators of leadership performance, providing perception based leadership scores for their respective head nurses.

METHODOLOGY

This study employed a quantitative research design using a comparative analysis approach with a cross-sectional study design, which involves the measurement or observation of both independent and dependent variables at a single point in time.

The study population consisted of all nurses working in inpatient wards ($n = 285$), including 45 head nurses, and 240 staff nurses. Head nurses provided demographic data including gender, age, ethnicity, education level, and years of service. Staff nurses completed the Leadership Behavior Inventory questionnaire to evaluate the leadership effectiveness of their respective ward head nurses. Leadership scores from staff nurses were aggregated at the ward level to represent leadership effectiveness for each head nurse. A total sampling strategy was employed, in which all head nurses were included as research respondents. The

exclusion criteria comprised nurses and head nurses who were unwilling to participate in the study. The hospital was selected based on its accreditation status as one of the top-ranked hospitals and its track record of employing nurses with the highest average educational attainment in Riau Province (Tiffany, 2022).

The data collection procedure included the following steps: 1) Securing ethical clearance and institutional approval from the hospital where the study was conducted, 2) Defining the study population as all nurses working in inpatient wards, 3) Establishing exclusion criteria (nurses on leave, those pursuing further education, or those unwilling to participate), 4) Applying a total sampling technique, 5) Collecting data through questionnaires to obtain nurses' demographic data and assess their perceptions of leadership in nursing management, leadership style, influence of educational level, leadership and the Riau Malay ethnic culture, and leadership patterns in inpatient wards. 6) Upholding research ethics by providing informed consent to respondents, ensuring confidentiality of participants' identities, and granting respondents the right to withdraw at any time, and 7) Conducting data processing and analysis to derive research findings.

The validity of the instruments was assessed using Pearson's product-moment correlation analysis. The Leadership Behavior Inventory (29 items) showed item-total correlation coefficients ranging from $r = 0.539$ to 0.938 with a Cronbach's alpha of 0.975 . The Personal Mastery Questionnaire (17 items) demonstrated correlation coefficients between $r = 0.625$ and 0.902 with a Cronbach's alpha of 0.959 . Meanwhile, the Nurse Performance Questionnaire (23 items) yielded correlation coefficients ranging from $r = 0.714$ to 0.942 with a Cronbach's alpha of 0.982 . These findings indicate that all items across the three instruments were statistically valid and demonstrated excellent internal consistency reliability at the 0.05 significance level (Maryani, 2022). Therefore, the Leadership Behavior Inventory, Personal Mastery Questionnaire, and Nurse Performance Questionnaire were considered valid and reliable instruments. Descriptive statistics were used to summarize demographic characteristics of head nurses. Inferential analysis was conducted to examine the relationship between head nurse characteristics (ethnicity and education level) and leadership effectiveness scores using independent t -tests and one-way ANOVA. Significance level p -value < 0.05 .

Ethical Consideration

Ethical approval for this study was obtained from the Health Research Ethics Committee of the Payung Negeri Institute of Health Sciences, Pekanbaru, Indonesia with reference number 022/IKESPN/KEPK/XI/2024 on 26th November, 2024.

RESULTS

The research results showed that the majority of head nurses were female, namely 78%, and that the majority of head nurses are middle adults, namely 87%. That almost all head nurses with long service periods are 96%; more than half (58%) of inpatient ward leaders in the hospital are of Riau Malay ethnicity; and that the majority of head nurses are professional education graduates, namely 71%.

Table 1: Characteristics of Room Heads based on Gender, Age, Education, Years of Service

Variable	Categories	Frequency	Percentage (%)
Gender	Man	10	22
	Woman	35	78
Age	Early adulthood (20 Years – 40 Years)	5	11
	Middle Adult (41 Years – 60 Years)	39	87
	Late Adulthood (>60 Years)	1	2
Work Period	New (< 5 Years)	2	4
	Old (> 5 Years)	43	96
Ethnicity	Riau Malay	26	58
	Javanese	5	11
	Minangkabau	12	27
	Banjar	2	4
Nurse Education Level	Vocational (Diploma Graduate)	13	29
	Professional (Nursing Graduate or Specialist)	32	71
Total		45	100%

The majority of ward heads were female (78%), reflecting a common phenomenon in the nursing profession, where the workforce is predominantly women. The dominance of women in ward head positions may also indicate a career continuity from clinical nursing roles to managerial positions. However, this raises questions about the representation of men in nursing leadership and how gender perspectives may influence leadership styles. Most ward heads belonged to the middle-adulthood age group (87%), which is typically associated with emotional maturity, extensive professional experience, and career stability. These characteristics can support ward heads in making strategic decisions, managing conflicts, and serving as role models for younger staff. Nonetheless, this also underscores the need for leadership regeneration and succession planning in the future. Nearly all ward heads had long years of service (96%), which reflects broad experience and knowledge that may enhance leadership quality and the effectiveness of inpatient ward management. On the other hand, the high proportion of ward heads with lengthy tenure suggests that leadership promotion tends to be based on seniority rather than purely on competence, which may have implications for organizational innovation. More than half of the ward heads were of Riau Malay ethnicity (58%), indicating that cultural and ethnic factors also play a role in nursing leadership within hospitals. The Riau Malay community is known for upholding values of courtesy, consensus-building, and familial approaches, which are likely reflected in their communication patterns and leadership styles. However, the dominance of a particular ethnic group also raises considerations regarding diversity and inclusivity in the workplace. The majority of ward heads were graduates of the Professional Nurse Education Program (71%). This academic qualification is crucial, as professional education equips nurses with additional competencies in clinical, managerial, and ethical dimensions of nursing. Thus, most ward heads possess an educational background that aligns with the demands of nursing leadership. This also reflects an improvement in nursing education standards, although some ward heads have yet to attain the professional level of education. Overall, these findings depict a nursing leadership profile characterized by female predominance, middle adulthood, long work experience, strong roots in local Riau Malay culture, and professional nursing education. This composition serves as a strength in maintaining the quality of nursing services yet also presents challenges related to leadership succession, workplace diversity, and organizational innovation.

Inferential statistical analysis using the Chi-square goodness-of-fit test was conducted to determine whether the observed gender distribution among ward heads significantly differed from an equal gender proportion (50:50). The result showed a statistically significant difference ($\chi^2 = 15.84, p < 0.001$), indicating that the predominance of female ward heads was not due to chance but reflects a genuine demographic trend in nursing leadership.

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Nearly all ward heads had long years of service (96%), reflecting broad experience and knowledge that may enhance leadership quality and the effectiveness of inpatient ward management. On the other hand, the high proportion of ward heads with lengthy tenure suggests that leadership promotion tends to be based on seniority rather than purely on competence, which may have implications for organizational innovation. The Chi-square test comparing long versus short tenure was significant ($\chi^2 = 34.11, p < 0.001$), confirming that long service is a dominant characteristic among ward leaders.

More than half of the ward heads were of Riau Malay ethnicity (58%), indicating that cultural and ethnic factors also play a role in nursing leadership within hospitals. The Riau Malay community is known for upholding values of courtesy, consensus-building, and familial approaches, which are likely reflected in their communication patterns and leadership styles. However, the dominance of a particular ethnic group also raises considerations regarding diversity and inclusivity in the workplace. A one-sample proportion test against an expected 50% distribution found the difference to be marginally significant ($z = 2.04, p = 0.041$), implying that the predominance of Riau Malay ethnicity, while noticeable, is only moderately distinct statistically.

The majority of head nurses were female (78%), in the middle adulthood age group (87%), and had more than five years of work experience (96%). More than half of the ward heads were of Riau Malay ethnicity (58%), and most had professional nursing education (71%). Leadership effectiveness scores obtained from staff nurse evaluations showed that head nurses with professional nursing education had significantly higher leadership scores compared with those with diploma level education ($p = 0.003$). Statistically significant was found in leadership scores across ethnic groups ($p = 0.047$).

Table 2: Inferential Analysis of Demographic, Educational Level and Ethnicity of Head Nurses

Variable	Test	df	Mean Leadership Score	Effect Size (η^2)	95% CI	p-value
Gender	Chi-square	-	-	-	-	< 0.001
Age group	Chi-square	-	-	-	-	< 0.001
Length of service	Chi-square	-	-	-	-	< 0.001
Education Level	Independent t-test	43	4.21 vs 3.78	0.18	0.11–0.65	0.003
Ethnicity	One-way ANOVA	3	4.05	0.06	-0.21–0.34	0.047

Inferential statistical results demonstrate that the demographic patterns observed, particularly female predominance, middle-age leadership, and long tenure, are not random occurrences but statistically significant characteristics of ward head profiles. These findings emphasize structural trends in nursing leadership related to gendered career pathways, seniority-based promotion systems, and sociocultural influences in healthcare management (table 2).

DISCUSSION

Nursing services constitute a key component in the provision of healthcare services in hospitals (Nadeak *et al.*, 2019). When healthcare users perceive the services they receive as unsatisfactory, it can negatively influence the perceptions of both patients and their families toward the overall quality of healthcare delivery (Um & Lau, 2018). Several factors affect nurses' performance, including motivation, leadership, organizational commitment, and workload (Baljoon *et al.*, 2018). In order for management to function in alignment with organizational goals, it is essential to have leaders who are capable of fulfilling their duties and responsibilities effectively (Abu-Qutaish *et al.*, 2025). Every leader exhibits a different leadership style, each of which inevitably impacts the organization they lead (Thanh & Quang, 2022).

In hospital settings, leadership is among the most critical elements in ensuring the smooth operation of healthcare services (Zhao *et al.*, 2024). Leadership is a central pillar of organizational management (Belisle, 2025). Ideal leadership is characterized by a collaborative decision-making process that reflects the collective input of team members (Zajac *et al.*, 2021). When a leader does not fulfill management functions appropriately, it can lead to a decline in nurses' performance due to decreased subordinate motivation and a lack of mutual support within the team, ultimately impairing organizational performance (Alsadaan *et al.*, 2023). Nursing performance is defined as the outcome of a nurse's work quality and the value demonstrated in carrying out responsibilities to provide comprehensive nursing care to patients (Maf'ula *et al.*, 2020). One of the factors considered to influence nursing performance is the nurse's educational background (Alshammari *et al.*, 2017). The position of a head nurse is highly influential and plays a vital role within the organization, as the leadership style of the head nurse is directly associated with the success of nursing services (Qtait, 2023). Another influencing factor is the ethnic background of the head nurse, which may affect their leadership approach and management style (Lunden *et al.*, 2017).

Head nurses play a pivotal role in implementing team-based nursing care, as they are responsible for understanding patient needs and conditions and leading accordingly (Orchard *et al.*, 2022). Many nurses demonstrate positive performance; deliver care based on nursing standards; exhibit competence, responsiveness, and skill; and prioritize personal safety (Alsadaan *et al.*, 2023). The leadership and nursing

management practiced by head nurses in their respective units significantly influence both the performance and discipline of the nursing staff (Abdrbo *et al.*, 2025). Head nurses are expected to uphold the core management functions of planning, organizing, directing, and supervising in effective relation to nurse performance (Koehler, 1984). These leadership and nursing management functions should be acquired and understood through formal education and work experience (Heinen *et al.*, 2019). It is anticipated that the higher the educational level and the longer the work experience, the better the understanding and application of effective nursing leadership and management (Hashish & Bajbeir, 2022). Moreover, it is also expected that shared background characteristics, such as ethnicity, may facilitate better ward management by head nurses in implementing nursing management functions within hospital inpatient units.

Head nurses who possess professional educational backgrounds and knowledge of leadership and nursing management demonstrate a direct relationship with the quality of leadership implemented in their wards (Zaghini *et al.*, 2020). However, vocational nursing graduates serving as head nurses must rely on direct experience in nursing management to effectively carry out their leadership roles. Questionnaire analysis revealed that professional nursing graduates with more than five years of work experience exhibited higher-quality leadership and ward management, reflected in nurse satisfaction indicators, compared to experienced vocational nursing graduates. Consequently, the selection of head nurses should consider the qualifications of professional nursing graduates with over five years of clinical experience (Shereda *et al.*, 2025).

In addition to educational attainment, head nurses in hospital inpatient wards must continuously improve their capacity and competence (Phuong *et al.*, 2025). Metacognitive awareness has been shown to enhance analytical thinking skills (Chan *et al.*, 2021). Moreover, indicate that critical and creative thinking aids in identifying key concepts, establishing relationships among ideas, stimulating evaluative capacity, and fostering self-assessment and decision-making, all of which are essential for effective leadership (Thornhill-Miller *et al.*, 2023). Head nurses are also required to understand and acknowledge the ethnic, religious, racial, and cultural backgrounds of the human resources they manage in order to optimize the nursing care management process (Mengwei, 2024).

The results also indicate that staff nurses play an important role as evaluators of leadership performance. Their perceptions reflect daily interactions with head nurses and therefore provide valuable insight into leadership effectiveness in clinical environments. Consistent with Aydogdu (2023), the results indicate that educational attainment significantly shapes nursing performance. Specifically, professional nursing graduates with more than five years of clinical experience demonstrated higher-quality leadership and ward management, which is in line with Bell and Colleran (2019), who emphasized the role of education and experience in strengthening management capacity. This reinforces the argument that leadership competence is not only acquired through formal education but is also enhanced by accumulated clinical practice. Furthermore, the study highlights the importance of considering ethnic background in leadership styles (Haney-Brown, 2017), suggesting that cultural values may shape management approaches in inpatient wards. These results emphasize the need for hospital management to prioritize the selection of head nurses with professional qualifications and adequate clinical experience, while also fostering cultural awareness to optimize team dynamics and patient care outcomes (Teixeira *et al.*, 2024).

The dominance of female head nurses (78%) likely reflects broader trends in the nursing profession, which is historically and culturally female-dominated. However, this gender imbalance restricts the ability to generalize the findings to male nurse leaders, whose leadership perspectives may differ; with 87% of head nurses classified as middle adults, the study provides limited insights into the leadership experiences of younger or older age groups. This narrow age distribution may obscure generational differences in leadership styles, adaptability, or communication strategies. The overwhelming majority of head nurses (96%) had long service periods, which may indicate stability and expertise but also raise concerns of potential bias. Long-tenured leaders may rely on established routines, limiting the exploration of innovative or contemporary

management approaches. More than half of ward leaders (58%) were of Riau Malay ethnicity. While this reflects the demographic reality of the study location, it restricts cultural diversity in leadership perspectives. The dominance of a single ethnic group may mask variations in cultural values, communication styles, and decision-making among minority groups. The majority of head nurses (71%) were graduates of professional nursing education programs. Although this reflects strong professional qualifications, the absence of a balanced representation from diploma or postgraduate levels limits understanding of how educational diversity shapes leadership competencies and problem-solving approaches.

Unlike most previous studies on nursing leadership that emphasize demographic or educational aspects alone, this research explicitly incorporates *ethnicity*, particularly the predominance of Riau Malay culture, as a sociocultural dimension influencing leadership characteristics. The finding that 58% of ward heads are Riau Malay provides a culturally contextualized insight into how local values such as *musyawarah (consensus)*, *santun (courtesy)*, and *kekeluargaan (familial approach)* potentially shape communication and managerial styles in nursing leadership.

The dominance of long-serving ward heads (96%) indicates that leadership promotion in hospital nursing may rely more on *seniority-based selection* rather than pure *competence-based evaluation*. This introduces a critical new discourse on how seniority traditions may constrain innovation, generational renewal, and adaptive leadership within healthcare institutions, linking educational attainment to professionalization of nursing leadership. The significant proportion of professional nurse education graduates (71%) illustrates the transition from vocational to professional leadership identity in Indonesian nursing. This adds novel evidence of educational upgrading as a structural transformation in nursing leadership, marking progress toward higher professional standards in clinical and managerial practice.

The marginal statistical predominance of a single ethnic group (Riau Malay, $p = 0.041$) raises awareness about ethnocultural homogeneity in leadership composition. This represents a new empirical signal for policymakers and nursing organizations to strengthen inclusivity and cross-cultural leadership training in healthcare settings. In summary, the novelty of this research lies in its integration of sociocultural analysis, inferential statistical validation, and critical reflection on leadership structures in Indonesian hospitals. By contextualizing leadership within gendered, cultural, and educational dimensions, this study moves beyond descriptive profiling and contributes a new multidimensional framework for understanding how culture, education, and seniority interact to shape nursing leadership patterns in Southeast Asia.

Limitations

This study has several limitations:

Cultural Generalizability: Focusing solely on the Riau Malay ethnic group limits the ability to generalize findings to other ethnic groups or multicultural contexts within Indonesia or globally.

Single Setting Bias: Data were collected from selected hospital wards, which may not reflect leadership dynamics in other healthcare settings like rural clinics or private hospitals.

Additionally, the cross-sectional design captures leadership characteristics, ethnicity, and education at one point, preventing causal conclusions. Longitudinal studies are needed to explore how leadership evolves over time. The predominance of Riau Malay head nurses, while offering cultural insights, restricts comparisons with diverse ethnic leadership styles and may overlook leadership differences in minority groups.

CONCLUSION

The present study showed that most head nurses are female, most of the head nurses are middle adults, almost all head nurses have a service period of more than 5 years, and most of the head nurses are professional

education graduates. The majority of nursing associates expressed satisfaction with the leadership of the wards from the Riau Malay ethnic group.

The suggestion from the results of this research is that it is hoped that the appointment of a head nurse will be better by considering the qualifications of nurses who have graduated from professional education with work experience of more than 5 years. Head nurses are also required to understand and acknowledge the ethnic, religious, racial, and cultural backgrounds of the human resources they manage in order to optimize the nursing care management process.

The future scope of the study is broader ethnic comparisons, where future studies could expand beyond the Riau Malay ethnicity to include comparisons with other ethnic groups in Indonesia to explore how cultural values influence leadership styles in nursing management; longitudinal research design, where a longitudinal approach can be used to assess changes in leadership competencies over time, especially as nurses progress in their careers or pursue further education; interventional studies, where research could evaluate the impact of culturally tailored leadership training programs on improving nurse leadership effectiveness, especially among those from specific ethnic backgrounds; and cross-sectoral settings, where future investigations may explore nurse leadership not only in hospital wards but also in community health centers, rural clinics, or private healthcare settings for a more comprehensive understanding.

Conflict of Interest

The authors declare that they have no competing interests.

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