

Enhancing Nurse Retention and Job Satisfaction through Transformational Leadership: A Management-Based Interventional Study on Head Nurse Leadership Style in Clinical Settings

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Abstract

Background: Nurse retention and job satisfaction are critical challenges in modern healthcare. Leadership style, particularly transformational leadership, plays a vital role in influencing workplace dynamics and staff outcomes.

Objective: This study aimed to evaluate the effectiveness of transformational leadership training for head nurses in improving nurse retention and job satisfaction.

Methods: A pre- and post-test design was employed involving 300 nurses across multiple hospitals in Bengkulu, Indonesia. The intervention consisted of structured transformational leadership training delivered to head nurses over a 6-week period. Job satisfaction and retention intention were measured using validated instruments before and three months after the intervention. Statistical analysis included paired t-tests and correlation tests. Ethical clearance was obtained [No. EC/3482/01/2024].

Results: Post-intervention, there was a statistically significant improvement in nurse job satisfaction [$p<0.001$] and retention scores [$p<0.001$]. A strong positive correlation [$r=0.82$] was observed between transformational leadership practices and nurse retention.

Conclusion: Transformational leadership training significantly enhances nurse satisfaction and retention, suggesting its incorporation into nurse manager development programs.

Keywords: Transformational Leadership, Nurse Retention, Job Satisfaction, Leadership Training, Head Nurse

Introduction

High turnover and low job satisfaction among nurses remain persistent challenges in healthcare systems worldwide, threatening both the continuity and quality of patient care. These issues are particularly pronounced in developing countries where resource constraints and management inefficiencies are more common [1,2]. Numerous studies have identified leadership style, particularly that of head nurses or nurse managers, as a key modifiable factor that significantly influences job satisfaction, organizational commitment, and retention rates among nursing staff [3,4].

Transformational leadership [TL], characterized by components such as inspirational motivation, idealized influence, intellectual stimulation, and individualized consideration, has gained recognition as a highly effective model in healthcare leadership

[5]. It fosters an empowering work culture, supports autonomy, and enhances the psychological well-being of staff, thereby reducing burnout and increasing retention [6,7]. A growing body of evidence has demonstrated that nurse leaders who adopt transformational practices are more likely to cultivate team cohesion, staff engagement, and clinical excellence [8,9].

In Indonesia, despite increasing awareness of modern leadership frameworks, the integration of structured leadership development programs for nurse managers remains limited, especially in regions such as Bengkulu. The hierarchical and transactional nature of traditional nursing leadership styles often fails to meet the emotional and professional needs of contemporary nursing staff [10]. Research conducted in similar low- and middle-income country settings shows that implementing TL training for nurse

leaders improves staff morale, reduces absenteeism, and boosts job satisfaction [11,12].

This study specifically aims to evaluate the effect of a structured transformational leadership training program for head nurses on nurse retention and satisfaction in Bengkulu. The intervention is expected to equip head nurses with skills to enhance communication, foster motivation, and create psychologically safe environments for nursing staff. Furthermore, by examining pre- and post-intervention outcomes, the study provides empirical insights into the viability of scaling such leadership models across other Indonesian provinces with similar healthcare workforce dynamics.

Methods

This study adopted a pre- and post-test interventional design to assess the effectiveness of transformational leadership training among head nurses on staff nurse outcomes. The research was carried out across five major government and private hospitals in Bengkulu Province, Indonesia, over a 12-month period from January to December 2024. This design allowed for the evaluation of within-subject changes in job satisfaction and retention levels following the intervention and is widely used in nursing research to determine causal effects of leadership-based interventions on workforce metrics [13,14].

Participants

A total of 300 registered nurses were recruited through stratified random sampling to ensure proportional representation across departments and shifts. Inclusion criteria included full-time employment status, a minimum of six months of continuous service under the same head nurse, and willingness to participate throughout the study. Exclusion criteria included nurses in probation periods, those undergoing transfer or administrative reassignment, and those enrolled in simultaneous leadership or professional development programs. This sampling approach ensured data reliability and minimized confounding variables, particularly those related to inconsistent leadership exposure [15].

Intervention

The transformational leadership intervention was delivered over six weeks and was structured around the core elements of the Multifactor Leadership Model [MLQ-5X], which operationalizes transformational leadership into measurable dimensions such as idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration [16]. The training consisted of interactive workshops, scenario-based mentoring, leadership simulations, and real-time clinical application supported by expert facilitators. Previous research has emphasized the effectiveness of experiential learning models in enhancing leadership competency among nurse managers [17]. To ensure fidelity, weekly coaching logs and reflection journals were reviewed, and participants completed post-session assessments to measure engagement and conceptual assimilation [18].

Data Collection

Data were collected using two well-validated instruments:

- The Minnesota Satisfaction Questionnaire [MSQ] – A 20-item tool widely used in nursing management studies to assess both intrinsic and extrinsic dimensions of job satisfaction [19].
- The Nurse Retention Index [NRI] – A structured instrument evaluating intent to stay, organizational commitment, and job embeddedness. The NRI has been previously validated in the Indonesian context for sensitivity to leadership-related changes [20].

Baseline data were collected one week before the intervention, and follow-up data were gathered four weeks after the intervention concluded. All data were collected anonymously and coded to ensure confidentiality and prevent interviewer bias.

Statistical Analysis

Quantitative analysis was conducted using SPSS version 25. Paired t-tests were applied to assess differences in job satisfaction and retention indices before and after the intervention. Additionally, Pearson correlation coefficients were calculated to examine the relationships between perceived transformational leadership behaviors and the outcome variables. Statistical significance was set at $p < 0.05$. Effect sizes were also calculated to assess the magnitude of change, as recommended for intervention studies in nursing leadership research [21]. Reliability coefficients [Cronbach's alpha] for both MSQ and NRI were above 0.85, indicating high internal consistency.

Ethical Consideration

Ethical approval was obtained from the Ethics Committee of Poltekkes Kemenkes Bengkulu under registration number EC/3482/01/2024. Written informed consent was secured from all participants. Confidentiality, voluntariness, and the right to withdraw without consequences were ensured throughout the study period. This study adhered to the ethical guidelines for human subject research in accordance with the Declaration of Helsinki and Indonesian national regulations [22].

Results

The analysis was conducted to evaluate the impact of transformational leadership training among head nurses on staff nurses' job satisfaction and retention levels. Data were collected from a total of 300 participants who met the inclusion criteria and completed both pre- and post-test assessments. The demographic characteristics of the participants are summarized in Table 1.

Descriptive analysis revealed that the majority of the participating nurses were female and had an average age of approximately 32 years, indicating a relatively young workforce in the studied hospitals. The distribution of clinical experience was balanced, with nearly 73% of nurses having more than five years of experience, reflecting a mature professional background suitable for assessing changes in job-related attitudes.

Comparative analysis using paired t-tests was conducted to assess differences in job satisfaction and retention scores before and after the intervention. As shown in Table 2, both outcome measures demonstrated statistically significant improvements post-intervention [$p < 0.001$], suggesting that transformational leadership training had a positive effect on nurses' perceptions of their work environment and their intention to remain in their current roles.

Further analysis using Pearson correlation was conducted to explore the relationship between perceived leadership practice [as reported post-intervention] and the outcome variables. As presented in Table 3, there was a strong positive correlation between transformational leadership behaviors and both job satisfaction [$r = 0.79, p < 0.001$] and retention scores [$r = 0.82, p < 0.001$]. These findings indicate that higher levels of perceived transformational leadership were associated with greater satisfaction and stronger retention intentions among nurses, reinforcing the central role of leadership style in shaping workforce outcomes in clinical settings.

Table 1: Demographic Characteristics of Participants [n=300]

Variable	Frequency	Percentage [%]
Gender [Female]	258	86.0
Age [mean \pm SD]	32.4 \pm 6.1	
Years of Experience		
1–5 years	82	27.3
6–10 years	119	39.7
>10 years	99	33.0

Table 1 presents the demographic profile of the 300 nurses who participated in the study. The majority of the participants were female, accounting for 86.0% [n=258] of the sample, which reflects the gender composition commonly observed in nursing professions in Indonesia and globally. The mean age of the participants was 32.4 years with a standard deviation [SD] of 6.1 years, indicating that most respondents were in their early to mid-career stages.

In terms of clinical experience, a diverse range was represented. Approximately 27.3% [n=82] of nurses had between 1 to 5 years of work experience, suggesting early professional exposure. A larger portion, 39.7% [n=119], reported 6 to 10 years of experience, representing mid-level clinical practitioners. Meanwhile, 33.0% [n=99] had more than 10 years of experience, indicating the presence of a seasoned and experienced nursing cohort. This distribution supports the robustness of the study findings, as it captures perspectives from nurses across different career stages and levels of professional maturity.

The demographic diversity of the sample—particularly in terms of age and years of experience—provided a rich basis for evaluating the impact of leadership practices on job satisfaction and retention, offering insights applicable to a broad spectrum of nursing personnel in hospital settings.

Table 2: Pre- and Post-Test Scores of Job Satisfaction and Retention

Measure	Pre-Test Mean [\pm SD]	Post-Test Mean [\pm SD]	p-value
Job Satisfaction Score	68.3 [\pm 7.2]	81.5 [\pm 6.5]	<0.001
Retention Score	62.9 [\pm 8.1]	78.2 [\pm 7.0]	<0.001

Table 2 displays the comparative results of job satisfaction and retention scores measured before and after the implementation of the transformational leadership training program. The data demonstrate a statistically significant improvement in both outcome variables following the intervention.

The mean job satisfaction score increased from 68.3 [\pm 7.2] in the pre-test to 81.5 [\pm 6.5] in the post-test. This substantial rise [$p<0.001$] indicates that nurses perceived a marked enhancement in their work satisfaction after their head nurses participated in the leadership training. The improvement is consistent with previous literature, which suggests that transformational leadership fosters a supportive and motivating environment conducive to professional fulfillment.

Similarly, the mean retention score improved from 62.9 [\pm 8.1] to 78.2 [\pm 7.0] post-intervention, also reaching statistical significance [$p<0.001$]. This finding reflects a strengthened intention among nurses to remain in their current positions, which is a critical indicator of organizational stability and staff commitment. The significant gain in retention scores suggests that transformational leadership practices—such as providing individualized support and articulating a shared vision—can directly influence nurses' sense of belonging and loyalty to the institution.

Overall, these results validate the hypothesis that transformational leadership training for head nurses positively impacts both the satisfaction and retention of clinical nursing staff. The statistically significant changes underscore the practical value of investing in leadership development as a strategic approach to improve workforce outcomes in hospital settings.

Table 3: Correlation between Leadership Practice and Nurse Outcomes

Variable	r-value	p-value
Leadership Practice vs. Satisfaction	0.79	<0.001
Leadership Practice vs. Retention	0.82	<0.001

Table 3 presents the results of Pearson correlation analyses examining the relationship between perceived transformational leadership practices and two key nurse outcome variables: job satisfaction and retention. The findings indicate strong, positive, and statistically significant correlations between leadership behavior and both outcomes.

Specifically, the correlation coefficient between leadership practice and job satisfaction was $r = 0.79$ with a p-value of <0.001 , indicating a strong and significant relationship. This suggests that as nurses perceived higher levels of transformational leadership behavior from their head nurses—such as clear communication of vision, personalized support, and encouragement of innovation—their job satisfaction tended to increase correspondingly. This finding supports prior evidence that transformational leaders are effective in nurturing positive work environments that fulfill both intrinsic and extrinsic motivational needs of nursing staff [13,14].

Similarly, the correlation between leadership practice and retention was even stronger, with an r -value of 0.82 and a p-value of <0.001 . This indicates that transformational leadership practices are strongly associated with higher intentions among nurses to remain in their current roles. Leaders who engage in empowering behaviors and recognize individual contributions may enhance staff loyalty, reduce turnover intention, and foster a sense of organizational commitment. These outcomes are essential in ensuring staffing continuity, reducing recruitment costs, and maintaining the quality of patient care [15,16].

The strength of these correlations reinforces the conclusion that leadership style is not only a determinant of staff morale but also a strategic driver of workforce stability. These findings underscore the critical importance of developing leadership competencies

among head nurses as part of broader efforts to improve nurse retention and organizational performance.

Discussion

This study confirms the hypothesis that transformational leadership training significantly improves job satisfaction and retention among nurses. The observed post-intervention improvements align with a growing body of global evidence that supports the strategic role of leadership development in achieving workforce stability. In particular, the marked gains in job satisfaction and retention scores affirm the effectiveness of transformational leadership principles when applied in clinical settings [23,24].

The strong, positive correlation between perceived leadership practices and both job satisfaction and retention outcomes underscores the importance of empowering head nurses as change agents within healthcare organizations. When head nurses adopt visionary and empathetic leadership behaviors, they cultivate environments where nurses feel appreciated, psychologically safe, and intrinsically motivated. These conditions have been shown to mitigate emotional exhaustion and strengthen professional commitment [25,26].

Bass and Avolio's seminal work [1994] has laid the foundation for understanding how transformational leadership functions through dimensions such as idealized influence, inspirational motivation, and individualized consideration. This theoretical model remains widely validated in nursing contexts. More recent empirical studies have built upon this foundation, showing that transformational leadership directly contributes to reduced burnout rates, improved communication, and enhanced interdisciplinary collaboration among staff nurses [27].

In the context of resource-constrained settings such as Bengkulu, Indonesia, the scalability of leadership interventions presents a promising opportunity for health systems development. The cost-effectiveness and high-impact nature of leadership training make it particularly suitable for low- and middle-income countries [LMICs], where workforce retention is critical but often underprioritized [28]. Leadership capacity-building should therefore be positioned as a core strategy within institutional human resource planning and clinical governance frameworks.

Hospital administrators and policymakers are encouraged to formalize leadership development pathways as part of ongoing professional development for nurse managers. Integrating such programs can lead to long-term benefits including enhanced patient care quality, reduced staff turnover, and the creation of resilient, adaptive healthcare teams. This approach is also in line with recent recommendations by global nursing bodies that emphasize leadership as an essential pillar of health system strengthening [29,30].

Conclusion

This study provides robust evidence that transformational leadership training for head nurses significantly enhances job satisfaction and retention among clinical nursing staff. The substantial improvements observed in both outcome measures, coupled with strong positive correlations between leadership behaviors and staff responses, underscore the critical role of leadership style in shaping workforce dynamics. In resource-constrained healthcare settings such as Bengkulu, implementing structured leadership development programs is not only feasible but also highly impactful. Empowering nurse leaders through targeted training can create supportive, engaging, and sustainable work environments, ultimately contributing to organizational

stability and improved patient care quality. These findings highlight the need for hospital administrators and policymakers to institutionalize leadership training as a core element of strategic human resource development in nursing.

Limitation of the Study

While the findings of this study offer valuable insights into the impact of transformational leadership training on nurse retention and job satisfaction, several limitations must be acknowledged. First, the study employed a pre- and post-test design without a control group, which limits the ability to attribute observed changes solely to the intervention. External factors, such as concurrent organizational changes or individual life events, may have influenced participants' responses.

Second, data collection relied on self-reported measures, which may be subject to response bias, particularly social desirability or recall bias. Although validated instruments were used, participants' perceptions might not fully capture objective organizational outcomes.

Third, the study was conducted in only five hospitals within a single Indonesian province [Bengkulu], which may limit the generalizability of the findings to other regions or healthcare systems with differing leadership cultures, staffing patterns, or resource availability.

Lastly, the follow-up period after the intervention was relatively short, which constrains the ability to assess the long-term sustainability of the leadership training effects. Future research should consider longitudinal designs with control groups and objective outcome measures to validate and expand upon these findings.

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Conflict of Interest Statement

The authors declare that there is no conflict of interest regarding the publication of this manuscript.

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