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IMPACT OF CLINICAL LEADERSHIP TRAINING PROGRAM FOR HEAD NURSES ON STAFF NURSES' JOB SATISFACTION

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Abstract

Head nurses are the first-line leaders who shape the daily work experience of staff nurses, yet many assume their role without structured preparation in clinical leadership. This study aimed to investigate the impact of a clinical leadership training program for head nurses on staff nurses' job satisfaction. A quasi-experimental one-group pretest/posttest design was conducted at Al-Noor Specialist Hospital, Makkah, Saudi Arabia. Convenience samples of all available head nurses (n = 25) and staff nurses (n = 136) participated. A 12-hour program (six sessions over three weeks) based on Lewin's change model was delivered to head nurses. Data were collected before, immediately after, and three months after the program using a clinical leadership knowledge questionnaire, a clinical leadership skills observational checklist, and a 59-item, eight-dimension staff nurses' job satisfaction questionnaire. Head nurses' total knowledge mean score increased from 7.40 ± 1.53 before the program to 18.24 ± 10.74 immediately after and 16.12 ± 3.61 at three months ($F = 18.93$, $p < 0.001$); the proportion with satisfactory knowledge rose from 20.0% to 96.0%. Observed clinical leadership skills increased from 59.6 ± 9.22 to 76.0 ± 0.00 at both post-program assessments ($F = 80.19$, $p < 0.001$). Staff nurses' total job satisfaction mean score increased from 80.15 ± 34.56 to 117.80 ± 0.54 immediately after the program and remained higher at three months (110.98 ± 6.32; $F = 163.64$, $p < 0.001$), with significant improvement in all eight dimensions. High job satisfaction rose from 66.2% to 100% of staff nurses ($\chi^2 = 40.8$, $p < 0.001$). Job satisfaction did not differ significantly by staff nurses' personal characteristics. The clinical leadership-training program improved head nurses' clinical leadership knowledge and skills and was associated with a significant and sustained improvement in staff nurses' job satisfaction. Integrating structured clinical leadership development into continuing education for head nurses is recommended.

Index Terms: Clinical Leadership, Head Nurses, Job Satisfaction, Leadership Training Program, Lewin's Change Model, Nursing Management, Quasi-Experimental Design, Saudi Arabia, Staff Nurses.

1. INTRODUCTION

Health systems worldwide continue to struggle with nursing shortages and high turnover, and nurses' job satisfaction is consistently identified as one of the strongest modifiable determinants of whether nurses remain in their organizations and in the profession [1], [2]. Job satisfaction reflects nurses' evaluation of the rewards, conditions, schedules, recognition, professional opportunities, supervision, autonomy, and relationships that characterize their work.

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Among the factors that influence it, the leadership and management practices of nurse managers have emerged as particularly important; a recent meta-analysis confirmed a significant positive relationship between leadership and nurses' job satisfaction [3], and structural empowerment provided by managers is likewise strongly associated with satisfaction [4]. Interventions that target the nursing work environment, including its leadership component, have been shown to improve nurses' job satisfaction [5], [6].

Clinical leadership refers to leadership exercised at the point of care by clinicians who guide, support, and motivate others to deliver safe and high-quality patient care [7], [8]. Effective clinical leaders demonstrate high ethical standards, clinical competence, teamwork, flexibility, appreciation of others, and the ability to respond appropriately to changing clinical situations [9].

Head nurses, as first-line nurse managers, occupy a pivotal position for exercising clinical leadership because they link organizational goals with the daily work of staff nurses [10]. A realist review showed that local, first-line nurse leaders positively influence nurses' intention to stay through supportive relationships, visibility, recognition, and the creation of a positive unit climate [11]. Clinical leadership has also been associated with greater work engagement and better quality of care among frontline nurses [12].

Despite this importance, many nurse managers assume their positions without formal preparation in clinical leadership [13], and studies in Saudi Arabia have reported gaps in nurse managers' leadership practices and competencies [14], [15]. Such competency gaps are associated with higher turnover intention among staff nurses in Saudi tertiary hospitals [16].

Leadership education programs have been found to improve nurse leaders' knowledge, skills, and clinical practice [17]; however, most available studies in the Arab region are cross-sectional and describe clinical leadership levels or their correlates [18], [19], while fewer studies have tested whether training head nurses in clinical leadership translates into measurable improvements in the job satisfaction of the staff nurses they lead. Evaluating this link is important for nursing administrators who must decide where to invest limited development resources.

Therefore, this study aimed to investigate the impact of a clinical leadership training program for head nurses on staff nurses' job satisfaction. The following research hypotheses were tested:

1. H1: After implementing the clinical leadership training program, head nurses' clinical leadership knowledge scores will differ from pre-program scores.
2. H2: After implementing the clinical leadership training program, head nurses' clinical leadership skills mean scores will differ from pre-program scores.
3. H3: After implementing the clinical leadership training program, staff nurses' job satisfaction mean scores will differ from pre-program scores.

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2. METHODS

2.1 Design

A quasi-experimental one-group pretest/posttest design was used, with three assessment points: before the program, immediately after the program, and three months after the program.

2.2 Setting

The study was conducted at Al-Noor Specialist Hospital, a 500-bed governmental specialist hospital located near the Muzdalifah site in Makkah Al-Mukarramah, western Saudi Arabia, operating under the supervision of the Directorate of Health Affairs in Makkah. Data were collected from the medical (132 beds), surgical (146 beds), orthopedic (45 beds), neurosurgery (43 beds), urology (25 beds), burn (21 beds), pediatric (20 beds), plastic surgery (10 beds), cardiovascular (4 beds), oncology (13 beds), and ophthalmology (41 beds) departments. All patient-related procedures in the hospital are documented electronically.

2.3 Participants

Two convenience samples were included: 1) all head nurses (n = 25) working in the selected departments at the time of data collection, and 2) all staff nurses (n = 136) working in the same departments. Participants were required to be able to read and write English.

2.4 Data Collection Tools

Five tools were used. The first was a head nurses' personal characteristics sheet covering age, gender, marital status, educational level, years of experience in the hospital and in the current workplace, and previous clinical leadership training. The second was a head nurses' clinical leadership knowledge questionnaire developed by the researchers based on the relevant literature [9]. It consisted of 25 items in four dimensions: concept of clinical leadership (5 items), importance (6 items), characteristics (6 items), and components (8 items).

Each correct answer scored one and each incorrect answer zero; total scores were converted to percentages, and a score of 60% or higher was considered satisfactory. The third was a head nurses' clinical leadership skills observational checklist developed by the researchers. It included 38 items in five dimensions: demonstrating personal qualities (8 items), working with others (6 items), managing services (8 items), improving services (8 items), and setting direction (8 items).

Each item was scored two when done, one when not done, and zero when not applicable (maximum 76). Scores of 75% or higher were considered high, 50% to less than 75% moderate, and below 50% low. The fourth was a staff nurses' personal characteristics sheet covering age, gender, marital status, educational level, work unit, type of shift, and years of experience in the hospital and in the current unit.

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The fifth was a staff nurses' job satisfaction questionnaire, modified by the researchers from Spector's Job Satisfaction Survey [20] and the McCloskey/Mueller Satisfaction Scale [21]. It consisted of 59 items in eight dimensions: extrinsic rewards (9 items), work condition/balance (7 items), scheduling (6 items), recognition/praise (6 items), professional opportunities (7 items), supervision (7 items), control/responsibility (10 items), and coworker relations (7 items). Responses were rated on a three-point scale (disagree, neutral, agree), giving a maximum total score of 118. Total scores were converted to percentages; 60% or higher indicated high job satisfaction and less than 60% indicated low job satisfaction.

2.5 Validity and Reliability

Face and content validity were established by a panel of three experts in nursing administration from the Faculty of Nursing, Cairo University, who reviewed the tools for content coverage, clarity, wording, length, and format; minor modifications such as paraphrasing of some items were made accordingly. Internal consistency was tested using Cronbach's alpha, which was 0.95 for the knowledge questionnaire, 0.89 for the skills observational checklist, and 0.96 for the job satisfaction questionnaire.

2.6 Clinical Leadership Training Program

The program was designed according to the needs identified in the pre-program assessment and aimed to improve head nurses' clinical leadership knowledge and skills. Its objectives were to identify the concept and importance of clinical leadership, explain the roles and characteristics of clinical leaders, discuss the components of clinical leadership, differentiate between leadership and clinical leadership, identify its principles, analyze barriers to it, and apply strategies that enhance it. The program comprised six two-hour sessions delivered over three weeks (two sessions per week, 12 hours in total) during morning and afternoon shifts:

1) Aim of the program, definition of clinical leadership, and its importance in healthcare.
2) Roles and characteristics of clinical leaders.
3) Elements and components of clinical leadership.
4) Principles of clinical leadership and the difference between leadership and clinical leadership.
5) Barriers and challenges to clinical leadership.
6) Strategies for enhancing clinical leadership.

Teaching methods included lectures, group discussion, and brainstorming, supported by handouts, PowerPoint presentations, brochures, and video films. Each session began with an overview of its objectives and ended with participants' feedback.

2.7 Procedure

The study followed Lewin's three-phase change model. In the preparatory (unfreezing) phase, from mid-June to mid-July 2025, the tools were developed and validated, head

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nurses' knowledge and skills were assessed, and staff nurses' baseline job satisfaction was measured; the program was then planned. In the implementation (change) phase, from mid-July to the end of August 2025, the program was delivered to head nurses. In the evaluation (refreezing) phase, the same tools were re-administered two weeks after program completion (end of August to end of September 2025) and again three months later (end of December 2025 to end of January 2026).

2.8 Ethical Considerations

Ethical approval was obtained from the Scientific Research Ethics Committee of the Faculty of Nursing, Cairo University, and official permission was obtained from the hospital administration. Participation was voluntary, and written informed consent was obtained from all participants after the purpose and nature of the study were explained. Confidentiality was assured, and participants were informed of their right to withdraw at any time without consequences.

2.9 Statistical Analysis

Data were analyzed using IBM SPSS version 29.0. Descriptive statistics (frequencies, percentages, means, and standard deviations) were calculated. Differences in mean scores across the three assessment periods were tested using analysis of variance (F test), differences in categorical levels were tested using the chi-square test, and Pearson's correlation coefficient was used to examine relationships between variables. A p-value of less than 0.05 was considered statistically significant.

3. RESULTS

3.1 Personal Characteristics

Table 1 shows that almost half of the head nurses (48.0%) were aged 30 to less than 40 years, 60.0% were female, 56.0% were married, and 60.0% held a master's degree in nursing. More than half (52.0%) had 5 to less than 10 years of experience in their current workplace, and 52.0% had never attended clinical leadership training. Among staff nurses, the majority were female (87.4%) and married (85.9%), 42.8% were aged 30 to less than 40 years, 70.4% held a bachelor's degree, 55.6% worked night shifts, and 43.0% had 5 to less than 10 years of experience in their current unit. Staff nurses were distributed almost equally across the nine study units (10.4% to 11.9% each).

Table 1: Personal Characteristics of Head Nurses and Staff Nurses

Head nurses (n = 25)			Staff nurses (n = 136)		
Characteristic	**No.**	**%**	**Characteristic**	**No.**	**%**
Age (years)			Age (years)		
30–<40	12	48.0	20–<30	23	17.0
40–<50	9	36.0	30–<40	58	42.8
50–<60	4	16.0	40–<50	48	35.4
Gender			50–<60	7	4.9
Male	10	40.0	Gender		
Female	15	60.0	Male	17	12.6
Marital status			Female	119	87.4

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Single	11	44.0	Marital status		
Married	14	56.0	Single	8	5.9
Educational level			Married	117	85.9
Bachelor of nursing	10	40.0	Divorced	11	8.1
Master of nursing	15	60.0	Type of shift		
Experience in the hospital (years)			Morning	60	44.4
5–<10	11	44.0	Night	76	55.6
10–<15	7	28.0	Experience in current unit (years)		
≥15	7	28.0	<5	13	9.6
Experience in current workplace (years)			5–<10	58	43.0
<5	4	16.0	10–<15	43	31.9
5–<10	13	52.0	≥15	21	15.6
10–<15	3	12.0			
≥15	5	20.0			
Previous clinical leadership training					
Yes	12	48.0			
No	13	52.0			

Staff nurses' educational level: bachelor 70.4%, master 13.3%, diploma 16.3%; work units: nine units, 10.4%–11.9% each.

3.2 Head Nurses' Clinical Leadership Knowledge and Skills

As shown in Table 2, there were highly statistically significant differences in all dimensions and in the total score of head nurses' clinical leadership knowledge across the three assessment periods ($p < 0.001$). The total knowledge mean score increased from 7.40 ± 1.53 before the program to 18.24 ± 10.74 immediately after the program, with a slight decline to 16.12 ± 3.61 at three months. Before the program, 80.0% of head nurses had an unsatisfactory knowledge level, whereas 96.0% achieved a satisfactory level immediately after the program and at the three-month follow-up ($\chi^2 = 94.9$, $p < 0.001$).

Similarly, all dimensions of observed clinical leadership skills improved significantly (Table 2). The total skills mean score increased from 59.6 ± 9.22 before the program to the maximum score of 76.0 ± 0.00 immediately after the program and was maintained at three months ($F = 80.19$, $p < 0.001$). Before the program, 60.0% of head nurses demonstrated a high skill level and 40.0% a moderate level; after the program, all head nurses (100%) demonstrated a high level at both post-program assessments ($\chi^2 = 23.1$, $p < 0.001$). A statistically significant positive correlation was found between head nurses' clinical leadership knowledge and skills ($r = 0.57$, $p < 0.001$).

Table 2: Head Nurses' Clinical Leadership Knowledge and Observed Skills across the Three Assessment Periods (N = 25)

Dimension	Pre-program		Immediately post		Three months later		F	p
	Mean	SD	Mean	SD	Mean	SD		
Clinical leadership knowledge (max 25)								
Concept (5 items)	1.40	1.91	3.60	2.30	3.76	0.77	106.56	<0.001*
Importance (6 items)	2.00	2.82	4.36	2.74	4.68	1.24	98.14	<0.001*
Characteristics (6 items)	1.60	2.00	4.36	2.74	4.60	1.65	156.23	<0.001*
Components (8 items)	2.40	3.32	5.92	3.60	3.08	1.49	173.75	<0.001*
Total knowledge	7.40	1.53	18.24	10.74	16.12	3.61	18.93	<0.001*
Clinical leadership skills (max 76)								

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Demonstrating personal qualities	9.68	5.62	16.00	0.00	16.00	0.00	85.94	<0.001*
Working with others	9.92	1.20	12.00	0.00	12.00	0.00	96.33	<0.001*
Managing services	14.00	0.80	16.00	0.00	16.00	0.00	72.12	<0.001*
Improving services	12.00	0.80	16.00	0.00	16.00	0.00	74.48	<0.001*
Setting direction	14.00	0.80	16.00	0.00	16.00	0.00	72.12	<0.001*
Total skills	59.60	9.22	76.00	0.00	76.00	0.00	80.19	<0.001*

**Statistically significant at $p < 0.05$.*

3.3 Staff Nurses' Job Satisfaction

Table 3: Staff Nurses' Job Satisfaction Dimensions Across the Three Assessment Periods (N = 136)

Dimension	Pre-program		Immediately post		Three months later		F	p
	Mean	SD	Mean	SD	Mean	SD		
Extrinsic rewards (max 18)	11.98	5.72	17.80	0.54	17.43	1.14	146.16	<0.001*
Work condition/balance (max 14)	8.82	4.63	14.00	0.00	13.10	0.71	152.79	<0.001*
Scheduling (max 12)	7.65	3.53	12.00	0.00	12.00	0.00	203.48	<0.001*
Recognition/praise (max 12)	8.71	3.23	12.00	0.00	9.58	2.04	123.00	<0.001*
Professional opportunity (max 14)	9.06	4.55	14.00	0.00	14.00	0.00	162.47	<0.001*
Supervision (max 14)	9.22	4.06	14.00	0.00	14.00	0.00	200.78	<0.001*
Control/responsibility (max 20)	14.16	5.29	20.00	0.00	17.77	1.72	178.44	<0.001*
Coworker relations (max 14)	10.55	3.55	14.00	0.00	13.10	0.71	142.04	<0.001*
Total job satisfaction (max 118)	80.15	34.56	117.80	0.54	110.98	6.32	163.64	<0.001*

**Statistically significant at $p < 0.05$.*

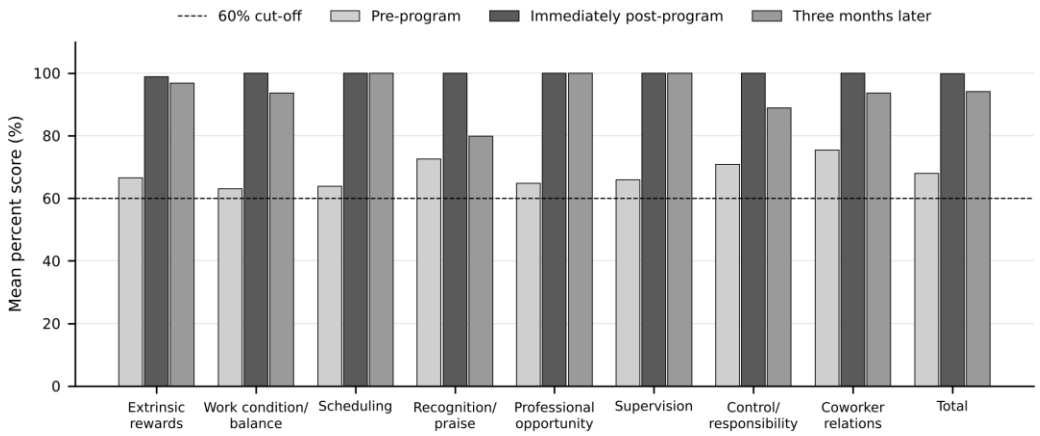

Figure1: Staff Nurses' Mean Percent Job Satisfaction Scores by Dimension across the Three Assessment Periods (N = 136). The Dashed Line Marks The 60% Cut-Off for High Job Satisfaction; Scheduling, Professional Opportunity, And Supervision Were Fully Sustained At Three Months, While Recognition/Praise Showed the Largest Decline

Table 3 shows highly statistically significant differences in all eight dimensions and in the total score of staff nurses' job satisfaction across the three assessment periods ($p < 0.001$). The total job satisfaction mean score increased from 80.15 ± 34.56 before the

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program to 117.80 ± 0.54 immediately after the program; it declined slightly to 110.98 ± 6.32 at three months but remained well above the pre-program level ($F = 163.64$, $p < 0.001$). Scheduling, professional opportunity, and supervision reached their maximum scores immediately after the program and remained at that level three months later. The recognition/praise and control/responsibility dimensions showed the largest decline at follow-up (from 12.00 to 9.58 and from 20.00 to 17.77, respectively), although both remained above their baseline values (Fig. 1).

Table 4 indicates that 66.2% of staff nurses had a high job satisfaction level before the program, whereas 33.8% had a low level. Immediately after the program and three months later, all staff nurses (100%) had a high job satisfaction level ($\chi^2 = 40.8$, $p < 0.001$).

Table 4: Staff Nurses' Job Satisfaction Levels Across the Three Assessment Periods (N = 136)

Job satisfaction level	Pre-program		Immediately post		Three months later		χ^2	p
	No.	%	No.	%	No.	%		
High (≥60%)	90	66.2	136	100.0	136	100.0	40.8	<0.001*
Low (<60%)	46	33.8	0	0.0	0	0.0		

**Statistically significant at $p < 0.05$.*

3.4 Job Satisfaction and Staff Nurses' Personal Characteristics

No statistically significant differences in staff nurses' job satisfaction were found according to gender ($F = 0.01$, $p = 0.80$), age ($F = 0.02$, $p = 0.90$), marital status ($F = 0.06$, $p = 0.90$), educational level ($F = 0.02$, $p = 0.90$), work unit ($F = 0.01$, $p = 0.90$), type of shift ($F = 0.07$, $p = 0.90$), years of experience in the hospital ($F = 0.05$, $p = 0.90$), or years of experience in the unit ($F = 0.01$, $p = 0.90$).

4. DISCUSSION

This study examined whether strengthening head nurses' clinical leadership through a structured training program would be reflected in the job satisfaction of the staff nurses they lead. The findings support all three hypotheses: head nurses' clinical leadership knowledge and observed skills improved significantly after the program, and staff nurses' job satisfaction improved significantly in every dimension, with most of the gain sustained three months later.

The profile of head nurses, most of whom were in early-to-middle adulthood with fewer than ten years in their current managerial post and more than half without previous clinical leadership training, mirrors reports from Saudi Arabia and Türkiye that many nurse managers lack formal clinical leadership education [13], [15]. This baseline explains the low pre-program knowledge observed in the present study, as 80% of head nurses had an unsatisfactory knowledge level. The marked post-program improvement and its retention at three months suggest that the content, the interactive teaching methods, and the opportunity to relate concepts to daily unit practice were effective. This is consistent with the integrative review by Page et al. [17], who concluded that nurse leadership

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education improves leaders' knowledge, skills, and clinical practice. The slight decline in knowledge at three months is expected in the absence of reinforcement and indicates a need for periodic refresher activities.

Head nurses' observed skills improved in all five dimensions, reaching the maximum possible score after the program. Interestingly, the largest baseline deficit was in demonstrating personal qualities, whereas managing services and setting direction were relatively strong before training. Effective clinical leadership is characterized by ethical standards, teamwork, appreciation of others, and the ability to set an example [9], and these behaviors appear amenable to training. The positive correlation between knowledge and skills ($r = 0.57$) indicates that improved understanding of clinical leadership was translated into observable practice, in line with evidence that clinical leadership competencies depend on both knowledge and supportive organizational conditions [19], [18].

The central finding of this study is the significant improvement in staff nurses' job satisfaction following the training of their head nurses. Overall job satisfaction rose from about two-thirds of the maximum possible score to nearly the maximum, and the proportion of nurses with high satisfaction rose from 66.2% to 100%. This finding is consistent with the meta-analysis by Özen and Kantek [3], which established a positive relationship between leadership and nurses' job satisfaction, and with Brady et al. [6], who found that planned changes to nurse leadership and staffing improved the work environment and job satisfaction. It also accords with the systematic review by Gutiérrez-Fernández et al. [5], which reported that interventions targeting the nursing work environment can enhance job satisfaction. Because head nurses directly shape unit-level communication, workload distribution, recognition, and decision-making, improving their clinical leadership is a plausible mechanism through which staff nurses' perceptions of their work improve [11], [12].

At the dimension level, the improvement in supervision, which reached its maximum score and was fully sustained, is particularly meaningful because supervision is the dimension most directly influenced by head nurses' behavior. Supervisor support is positively associated with nurses' job satisfaction [22], and social support from managers and coworkers is related to nurses' motivation and intention to remain in the workplace [23].

The improvement in coworker relations may likewise reflect head nurses' strengthened ability to promote teamwork and manage conflict. The significant gains in control/responsibility are consistent with Pursio et al. [24], who reported that nurse management and leadership support professional autonomy, which in turn is associated with job satisfaction, and with evidence that structural empowerment enhances satisfaction [4].

The sustained improvement in scheduling satisfaction supports the view that fair and responsive scheduling practices are central to nurses' job and schedule satisfaction [25], [26]. The improvement in professional opportunity is in line with findings that career development opportunities support nurses' satisfaction and intention to stay [2]; however,

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Ahn and Choi [27] found that the mere availability of a career ladder system was not significantly associated with job satisfaction, suggesting that it is the manager's active facilitation of development, rather than formal structures alone, that matters. Recognition/praise showed the largest decline at three months. Recognition from supervisors is significantly associated with nurses' job satisfaction [28], and the partial decline may indicate that recognition behaviors are harder to maintain without organizational reinforcement. Similarly, the slight decline in control/responsibility and extrinsic rewards may reflect organizational factors, such as incentive systems and staffing, that lie beyond head nurses' direct control.

Job satisfaction did not differ significantly according to staff nurses' personal characteristics, which suggests that the improvement was broad-based across age groups, units, shifts, and experience levels rather than confined to a particular subgroup. This supports the interpretation that unit leadership, rather than individual characteristics, was the main driver of change. Given that leadership competency gaps among nurse managers in Saudi hospitals are associated with staff nurses' turnover intention [16], and that job satisfaction is a key predictor of retention [1], [2], these findings have practical value for nursing administrators in the region.

4.1 Limitations

The one-group pretest/posttest design without a control group limits causal inference, as other organizational changes during the study period may have contributed to the observed improvement. The study was conducted in a single hospital with convenience samples, which limits generalizability. Job satisfaction was self-reported and may be subject to social desirability bias, and the ceiling effect observed after the program (very small standard deviations) may limit the sensitivity of the instrument for detecting further change. Finally, the follow-up period was limited to three months; longer follow-up is needed to determine whether the improvement is sustained.

4.2 Implications for Nursing Management

Hospital nursing administrations should integrate clinical leadership development into the orientation and continuing education of head nurses, with periodic refresher sessions to sustain knowledge and practice. Particular attention should be given to sustaining recognition practices and to aligning organizational incentive and staffing policies with head nurses' leadership efforts. Future studies should use controlled designs, multiple sites, and longer follow-up periods, and should examine the effect of clinical leadership training on patient outcomes and actual retention.

5. CONCLUSION

The clinical leadership training program significantly improved head nurses' clinical leadership knowledge and skills, and these improvements were accompanied by a significant and largely sustained increase in staff nurses' job satisfaction across all eight dimensions, regardless of nurses' personal characteristics. Investing in the clinical

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leadership development of head nurses is therefore a practical strategy for enhancing staff nurses' job satisfaction in hospital settings.

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