

# Analysis on the Key Role of Head Nurses' Leadership in Nursing Team Management and Its Realization Paths

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**Abstract:** As the core leader of the nursing team, head nurses play a vital role in improving the professional competence of the team, enhancing team cohesion, upgrading nursing quality, ensuring nursing safety, and promoting nursing innovation. This study takes 15 head nurses from different levels and departments as research subjects, and collects data through semi-structured interviews and observation methods. Combined with transformational leadership theory, social learning theory and organizational commitment theory, an “Input-Process-Output (IPO)” analytical framework is constructed. Through thematic induction and cross-case analysis, this paper systematically explores the mechanism and realization paths of head nurses' leadership in nursing team management. The results show that through exemplary leadership, scientific management and effective communication, head nurses not only improve the professional literacy and teamwork ability of nursing staff, but also promote the continuous optimization of nursing quality and safety management. This study further puts forward strategies to strengthen the capacity building of head nurses themselves, improve the management system and focus on personnel training, to provide theoretical support and empirical reference for nursing management practice and policy formulation.

**Keywords:** Head Nurse; Nursing Team Management; Transformational Leadership; Team Cohesion; Nursing Quality Management

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## 1. Introduction

Nursing is an important component of the medical service system, and its quality and efficiency are directly related to patients' rehabilitation outcomes and the overall level of medical care <sup>[1]</sup>. As the main implementers of nursing services, the professional quality, collaborative competence and job performance of the nursing team not only determine the quality of nursing services, but also affect patient satisfaction and the operational efficiency of medical institutions <sup>[2]</sup>. Within this system, head nurses, as the backbone and core managers of the nursing team, undertake multiple responsibilities including organizational coordination, quality monitoring, personnel training and innovation leadership <sup>[3,4]</sup>.

In recent years, academic and industry practices have paid increasing attention to nursing leadership. Especially under theoretical frameworks such as Transformational Leadership, Servant Leadership and Authentic Leadership, studies have found that head nurses' leadership styles and management strategies exert significant effects on nursing quality, patient safety and team stability <sup>[5,6]</sup>. Transformational leadership theory emphasizes that leaders can effectively boost team morale and

work performance through visionary motivation, intellectual stimulation and individualized consideration<sup>[7]</sup>. Social Learning Theory provides a theoretical basis for explaining the exemplary role of head nurses, in that team members form professional norms and value identity by observing and imitating leaders' behaviors<sup>[8]</sup>. In addition, Organizational Commitment Theory reveals the positive effects of leadership behaviors on employees' affective commitment, retention intention and work engagement<sup>[9]</sup>.

Although existing studies have provided important references for understanding the role of head nurses in nursing team management, two limitations remain. First, some studies focus on descriptive analysis and lack a systematic framework integrating multiple theories. Second, insufficient exploration has been conducted on the internal mechanisms of head nurses' leading roles across different functional dimensions (e.g., quality assurance, safety management, innovation promotion, etc.), making it difficult to provide an operable management model for practice. Based on the above deficiencies, this study proposes three core questions: (1) How do head nurses exert leadership in different contexts? (2) Through what process mechanisms are the effects of their leadership realized? (3) What strategies can optimize the leadership effectiveness of head nurses? To address these issues, this study constructs an Input–Process–Output (IPO) framework based on transformational leadership theory, social learning theory and organizational commitment theory, and collects evidence through semi-structured interviews and observational methods to explore the realization paths and functional mechanisms of head nurses' leadership in nursing team management.

## 2. Literature Review

### 2.1 Role Orientation of Head Nurses in Nursing Team Management

The nursing team constitutes an important part of the medical service system, and its work quality is directly related to patients' treatment outcomes and medical safety<sup>[1]</sup>. As core managers, head nurses are mainly responsible for formulating nursing work plans, arranging staff schedules reasonably, coordinating job connections, and ensuring efficient and orderly nursing services through scientific management<sup>[4]</sup>. In surgical wards of large general hospitals, nursing tasks cover multiple stages including preoperative, intraoperative and postoperative care. Head nurses need to allocate tasks scientifically and coordinate cross-departmental processes by comprehensively considering factors such as patients' conditions, surgical arrangements, professional skills of nursing staff and workload, to guarantee nursing quality and patient safety.

In foreign research, a cross-sectional survey of 12 countries by Aiken et al. showed that the level of nursing leadership is significantly positively correlated with patient safety, nursing quality and nurse satisfaction<sup>[6]</sup>. Domestic studies have mostly focused on post competency of head nurses<sup>[10]</sup>, leadership styles<sup>[11]</sup>, and the relationship between leadership and nursing quality<sup>[12]</sup>.

### 2.2 Manager and Supervisor of Nursing Quality

As the primary person responsible for nursing quality, head nurses are required to establish and improve nursing quality standards, standardize operational procedures, and ensure quality through regular inspections and performance evaluations<sup>[12, 6]</sup>. In practice, head nurses regularly organize nursing quality ward rounds to conduct systematic inspections of key links such as basic nursing, specialized nursing and nursing documents, and formulate improvement measures through Root Cause Analysis. This process not only improves nursing quality but also fosters a culture of continuous quality improvement with full participation<sup>[13]</sup>. For identified problems, head nurses organize nursing staff to analyze and discuss them, identify root causes, and develop corresponding improvement measures through continuous quality monitoring.

In recent years, leadership theories have been widely applied in the field of nursing management<sup>[14]</sup>. Among them, Transformational Leadership emphasizes enhancing team morale and performance through visionary inspiration, intellectual stimulation and individualized consideration<sup>[7]</sup>. A systematic review by Gebreheat et al. showed that transformational leadership can significantly improve nurses' job satisfaction and organizational commitment and reduce staff turnover<sup>[5]</sup>. Servant Leadership focuses more on subordinate development and well-being, and studies have shown that it can enhance nurses' professional well-being and team cohesion<sup>[15]</sup>. Authentic Leadership emphasizes leaders' self-awareness and transparent communication, which can strengthen trust and psychological safety within nursing teams<sup>[16]</sup>. In practice, it can effectively control risks, improve service content, and continuously upgrade the quality of nursing services.

### 2.3 Trainer and Mentor of Nursing Staff

Head nurses play a key role in the career development of nursing staff and need to design personalized training and guidance programs according to the needs of nurses at different career stages<sup>[17, 16]</sup>. Studies have shown that systematic post competency training can not only improve clinical skills but also enhance team members' professional confidence and retention intention<sup>[13]</sup>. For example, with the help of preceptorship, newly recruited nurses can master nursing procedures and standards more quickly and reduce errors caused by insufficient experience. Nurses in practice also undertake the important responsibility of cultivating and improving the professional quality of nursing staff. Scholars such as Ma Li et al. argued that personalized training plans should be formulated according to the actual situation and development needs of nursing staff, professional learning and skill training activities should be organized, and nursing staff should be guided to solve difficult problems encountered in work<sup>[17]</sup>.

At the initial stage of new nurses' employment, head nurses assign experienced preceptors to provide one-on-one guidance, helping new nurses become familiar with the working environment as soon as possible and master basic nursing skills and work procedures. At the same time, head nurses also need to regularly organize nursing lectures, case discussions, nursing skill competitions and other activities to encourage nursing staff to continuously learn new knowledge and skills and improve their professional competence.

In the long-term research on head nurse leadership and management, several theories have been summarized to support the interpretation of head nurses' exemplary role, as shown in Table 1:

(1) Transformational Leadership Theory: Explains how head nurses promote team initiative and innovation through strategic vision, exemplary role and incentive mechanisms<sup>[7]</sup>.

(2) Social Learning Theory: Points out that head nurses' behaviors provide observable and imitable learning models for team members, thereby influencing professional behaviors and values<sup>[18]</sup>.

(3) Organizational Commitment Theory: Emphasizes that leadership behaviors can strengthen team members' affective commitment and sense of belonging, thereby improving job performance and retention intention<sup>[9]</sup>.

*Table 1: Support of Relevant Theories for the Exemplary Role of Head Nurses*

Theory Name	Core Ideas	Interpretation & Application to Head Nurses' Exemplary Role
Transformational Leadership Theory	Visionary inspiration, intellectual stimulation, individualized consideration	Motivates team initiative and improves performance
Social Learning Theory	Formation of behavioral and value identity through observation and imitation	Exemplary behaviors shape team professional norms
Organizational Commitment Theory	Enhances affective commitment and sense of belonging	Improves employees' work engagement and retention intention

As shown in Table 1, transformational leadership theory, social learning theory and organizational commitment theory are generally summarized to provide theoretical support for the exemplary role of head nurses, explaining how leaders influence the management effectiveness of nursing teams through motivation, demonstration and affective commitment. These three theories fully explain the positive exemplary role of head nurses in the team.

Combined with the results of semi-structured interviews, head nurses from medical institutions at different levels show differentiated practices in nursing staff training, all centered on the core of "matching personalized needs". The head nurse of the ICU in a tertiary hospital (Interviewee 3) stated that a mode of "high-fidelity simulation training plus practical combat review" was adopted for critical care skills training. For instance, by simulating scenarios of "rescue of patients with multiple organ failure", nurses mastered core techniques such as CRRT operation and ventilator parameter adjustment through hands-on practice. After the training, the team rescue success rate increased from 88% to 95%. The head nurse of general practice in a community hospital (Interviewee 9), in response to the needs of elderly chronic disease management, designed "dialect versions of health education manuals plus practical guidance for home visits". After new nurses completed more than 30

home visits with senior nurses under the “preceptorship system”, the implementation rate of standardized chronic disease care rose from 78% to 92%.

The practice of the head nurse of pediatrics in a secondary hospital (Interviewee 15) further verified the effectiveness of training. Through “cartoon teaching tools plus staged assessment” — newly recruited nurses focused on basic puncture and communication skills, while nurses with 3–5 years of experience focused on specialized neonatal care — the success rate of intravenous puncture increased from 85% to 96%, and parents’ satisfaction with nursing services improved from 82% to 94%. The above interview results are consistent with the viewpoint of “personalized training plans” proposed by Ma Li et al. and supplement the implementation paths in different medical scenarios, providing practical evidence for the improvement of the nursing staff training system<sup>[17]</sup>.

## 2.4 Promoter and Maintainer of Team Building

Head nurses should emphasize the construction of nursing teams, create a positive, united and collaborative working atmosphere, and enhance team cohesion and self-efficacy<sup>[19,20]</sup>. By organizing team activities and caring for the personal lives and career development of nursing staff, head nurses can stimulate nurses’ enthusiasm and initiative and improve overall team effectiveness. Effective team building includes not only worklevel collaboration but also the establishment of emotional support and interpersonal trust<sup>[21]</sup>. Through team-building activities and career development guidance, head nurses can cultivate mutual trust and cooperation among members, thereby improving team resilience and overall performance.

In long-term practice, head nurses can regularly organize outdoor team-building activities for nursing teams to strengthen communication and trust among members. They can also pay attention to nurses’ career development needs, provide promotion opportunities and career planning guidance for potential nurses, and make nursing staff feel cared for and supported by the team. In this way, nurses will be more willing to contribute to the development of the team.

## 2.5 Deficiencies in Current Research

Although existing studies have provided important references for understanding the role of head nurses in nursing team management, several deficiencies remain:

First, most studies focus on descriptive discussions and lack a systematic analytical framework integrating multiple theories, resulting in a disconnect between theory and practice.

Second, research on the exemplary role of head nurses mostly concentrates on its positive impacts on nursing quality and team performance, while in-depth analysis of its differences across different contexts (such as hospital levels, department types, and cultural backgrounds) is insufficient.

Third, some studies ignore the potential negative effects of exemplary leadership, such as reduced team autonomy caused by excessive reliance on individual leadership, and conflicts between management and clinical roles.

Therefore, it is necessary to integrate multiple leadership theories and combine the contextual characteristics of nursing management to construct an analytical framework with stronger explanatory power and practical guidance, so as to systematically explore the multidimensional impacts and optimization paths of head nurses’ exemplary role.

Based on the above research gaps and theoretical analysis, under the comprehensive guidance of transformational leadership theory, social learning theory and organizational commitment theory, this study focuses on five core dimensions — “improving professional competence, enhancing team cohesion, upgrading nursing quality, ensuring nursing safety, and promoting nursing innovation” — to deeply elaborate the importance of head nurses’ exemplary role in nursing team management and its realization mechanism.

## 3. Research Methods and Data Collection

This study adopts a mixed method combining semi-structured interviews and on-site observations, with head nurses as the core research subjects, and the sample size is set at 15. Interviewees are head nurses from different hospital levels (tertiary hospitals, secondary hospitals, and community health institutions), different departments (surgery, internal medicine, ICU, pediatrics, etc.) and with different years of working experience, to ensure sample diversity. The research focuses on exploring the decision-making logic of leadership implementation, difficulties encountered, and optimization experience.

(1) Data collection: Interviews were conducted in March 2024, each lasting approximately 60 minutes. With the consent of

the interviewees, the whole process was recorded and transcribed (see Table 3). Observations were mainly carried out during nursing ward rounds and regular quality management meetings, and observation notes were formed accordingly.

(2) Data analysis: Data analysis was performed through the three-step process of open coding, axial coding, and selective coding based on grounded theory, and main categories were extracted using thematic induction. To ensure the credibility of the results, the research team conducted triangulation verification and, when necessary, followed up with interviewees for member checking. Data saturation was reached at the 13th interviewee, and no new themes emerged from the subsequent two interviewees.

(3) Reliability assurance: The transparency and credibility of the research were ensured through cross-validation among researchers, recording of the analysis process in research diaries, and discussions within the research team.

Table 2: Interview Outline (Partial)

Core Module	Questions for Head Nurses
Perception of Leadership Role	1. What do you believe is your most effective exemplary behavior when improving the professional competence of your team? Please provide one specific case. 2. How do you judge whether team cohesion has improved? What data or phenomena can support this?
Implementation Details of Paths	1. When establishing a nursing quality management system, how do you encourage nurses to participate voluntarily rather than implement passively? 2. Faced with the training needs of different nurses, how do you balance “unified requirements” and “personalized design”?
Contextual Differences and Challenges	1. Compared with other departments (or hospitals of different levels), what are the special characteristics of leadership implementation in your department? 2. What is your greatest difficulty in balancing clinical work and management responsibilities?

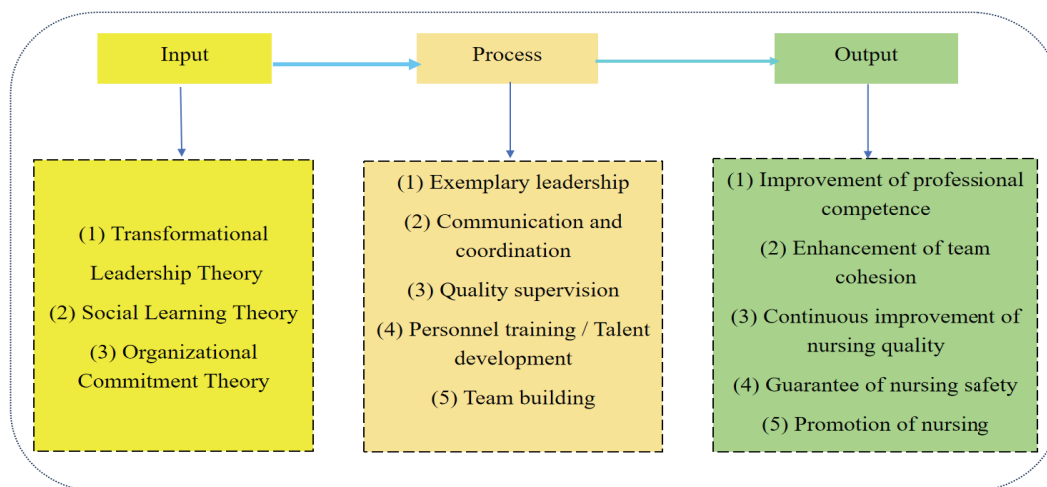
Table 3: Summary of Basic Information of Interviewees

No.	Interviewee	Hospital Level	Department	Years of Employment	Interview Location
1	Head Nurse Zhang	Tertiary Hospital	Surgery	8 years	Head Nurse Office, Surgery Department
2	Head Nurse Li	Tertiary Hospital	Internal Medicine	6 years	Conference Room, Internal Medicine Department
3	Head Nurse Wang	Tertiary Hospital	ICU	5 years	Medical Office, ICU
4	Head Nurse Zhao	Tertiary Hospital	Pediatrics	7 years	Head Nurse Office, Pediatrics Department
5	Head Nurse Sun	Secondary Hospital	Surgery	4 years	Conference Room, Surgery Department
6	Head Nurse Zhou	Secondary Hospital	Internal Medicine	3 years	Head Nurse Office, Internal Medicine Department
7	Head Nurse Wu	Secondary Hospital	Obstetrics and Gynecology	6 years	Conference Room, Obstetrics and Gynecology Department
8	Head Nurse Zheng	Secondary Hospital	Emergency Department	5 years	Medical Office, Emergency Department
9	Head Nurse Qian	Community Hospital	General Practice	10 years	Conference Room, Community Hospital
10	Head Nurse Feng	Community Hospital	Geriatrics	8 years	Head Nurse Office, Geriatrics Department
11	Head Nurse Chen	Tertiary Hospital	Obstetrics and Gynecology	9 years	Head Nurse Office, Obstetrics and Gynecology Department
12	Head Nurse Chu	Secondary Hospital	ICU	4 years	Conference Room, ICU
13	Head Nurse Wei	Community Hospital	General Practice	7 years	Medical Office, Community Hospital
14	Head Nurse Jiang	Tertiary Hospital	Emergency Department	6 years	Head Nurse Office, Emergency Department
15	Head Nurse Shen	Secondary Hospital	Pediatrics	5 years	Conference Room, Pediatrics Department

### 4. The Importance of Head Nurses’ Exemplary Role in Nursing Team Management

To systematically demonstrate the realization mechanism of head nurses’ exemplary role, this study constructs an Input–Process–Output (IPO) analytical framework based on transformational leadership theory, social learning theory and organizational commitment theory (see Figure 1). The framework clearly shows how the theoretical foundation (input) is transformed into specific management behaviors of head nurses (process), and ultimately promotes the improvement of nursing team professionalism, team cohesion, nursing quality and other aspects (output).

Figure 1: Schematic Diagram of the IPO Theoretical Framework



#### 4.1 Improving the Professional Level of the Nursing Team

With solid professional knowledge and rich clinical experience, head nurses play an important exemplary and leading role for nursing staff [22]. In daily management and clinical work, head nurses provide direct learning opportunities for team members by personally participating in nursing practice and handling complex nursing problems. For example, in the care of critically ill patients, head nurses can quickly assess changes in the patient’s condition and formulate scientific nursing plans [23]. Through collaborative work, nursing staff can receive on-the-job training in clinical decision-making and operational skills, thereby improving their professional competence.

At the same time, head nurses actively participate in academic research and continuing education activities, introduce the latest nursing concepts and technologies into the department, and organize group study and discussions to promote the clinical application of new knowledge and techniques. This continuous knowledge updating mechanism helps improve the professional literacy of nursing staff and enhances the overall clinical competence and adaptability of the team. As shown in Table 4, the core responsibilities and corresponding management measures of head nurses in nursing team management reflect how head nurses effectively improve the professionalism and overall effectiveness of nursing services through scientific organization, quality control, personnel training and team building.

Table 4: Responsibilities of Head Nurses and Corresponding Management Measures

Head Nurse Responsibilities	Specific Management Measures	Expected Outcomes
Nursing planning	Reasonable scheduling, coordination of handovers	Efficient and orderly nursing services
Nursing quality management	Establish quality standards, regular ward rounds, root cause analysis	Steady improvement of nursing quality
Training and guidance for nursing staff	Organize professional training, preceptorship, one-on-one guidance	Improved skills and confidence of nursing staff
Team building and communication	Organize team activities, support career development of nurses	Enhanced team cohesion and solidarity
Safety management and risk prevention	Safety education, standardized operation procedures, risk screening	Reduced nursing errors and ensured patient safety

Semi-structured interviews further verified the actual effects of the management measures listed in Table 4. All 15 head nurses mentioned that “exemplary leadership plus systematic training” constitutes the core approach to improving the professional level of nursing teams, with differing practice priorities across hospital levels:

The head nurse of obstetrics and gynecology in a tertiary hospital (Interviewee 11) adopted “demonstration of emergency care for high-risk pregnant women plus multidisciplinary collaborative drills.” As a result, the team’s emergency response time for massive hemorrhage caused by pernicious placenta previa was shortened from 20 minutes to 10 minutes, with a rescue success rate of 98%.

The head nurse of the emergency department in a secondary hospital (Interviewee 8) organized targeted training on “one-minute rapid assessment” for nurses to improve trauma triage efficiency. With the help of “mnemonics plus flowcharts,” triage accuracy increased from 88% to 96%.

The head nurse of geriatrics in a community hospital (Interviewee 10) provided “hands-on demonstration of pressure injury care for disabled elderly patients plus family collaborative guidance.” The standardized implementation rate of pressure injury prevention in the team rose from 82% to 95%, and the incidence of pressure injuries among elderly patients decreased from 12% to 3%.

#### **4.2 Enhancing Cohesion and Solidarity of the Nursing Team**

The leadership style and management approach of head nurses directly affect the cohesion and organizational solidarity of nursing teams<sup>[20]</sup>. Leaders with strong communication skills, attention to staff care, and leading by example can often gain the trust and respect of team members and create a positive and harmonious working atmosphere. When facing clinical and management challenges, the sense of responsibility and execution of head nurses can invisibly strengthen team members’ work engagement and willingness to cooperate.

In the process of team building, head nurses establish a supportive management mechanism by focusing on the career development and personal needs of nursing staff. They provide timely guidance and resource support for setbacks encountered at work, and offer appropriate care and assistance for personal difficulties. Such measures can improve nurses’ sense of organizational belonging and identity, thereby enhancing team cohesion and collaborative stability.

Interview results show that empathic management and risk sharing are key mechanisms for enhancing team cohesion. Most head nurses emphasized that leaders’ personal participation in high-pressure situations can effectively improve the team’s willingness to cooperate. For example, the head nurse of the emergency department in a tertiary hospital (Interviewee 14) coordinated the division of labor and participated in rescue operations at the first-time during mass casualty treatment, resulting in a 100% voluntary overtime rate among nurses. The head nurse of the ICU in a secondary hospital (Interviewee 12) continuously took night shifts during periods of sudden patient surge, leading to a significant reduction in the team’s job burnout.

Cross-case comparison reveals differences in pathways to enhance cohesion across hospital levels: tertiary hospitals focus more on high-intensity emergency collaboration, secondary hospitals emphasize daily work pressure sharing, and community hospitals prioritize humanistic care and flexible scheduling. This difference indicates that head nurses’ leadership presents diverse pathways in different organizational contexts and needs to be optimized according to local conditions.

In addition, in response to the potential problem of “excessive team reliance on individual decision-making”, some head nurses (such as Interviewees 3 and 7) have begun to establish a hierarchical decision-making mechanism: routine issues are discussed under the leadership of charge nurses, and complex issues are determined through multidisciplinary meetings, gradually cultivating team autonomy. This practice also provides a direction for further optimizing management pathways.

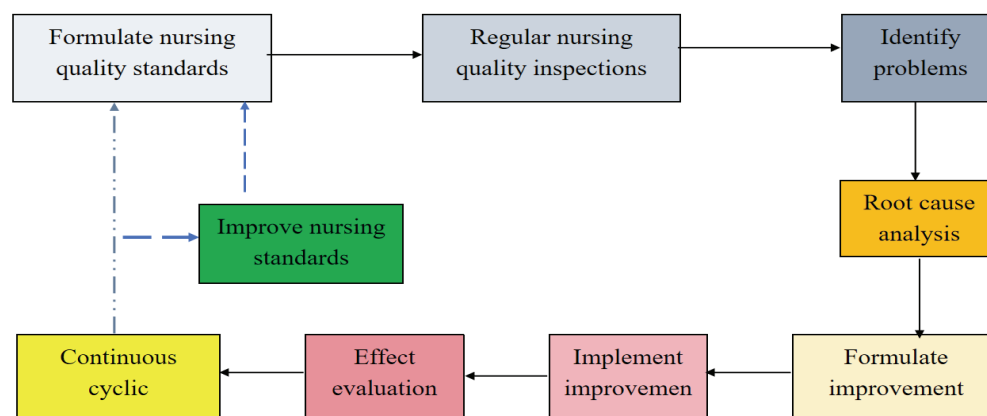
#### **4.3 Promoting Continuous Improvement of Nursing Quality**

As the main manager and supervisor of nursing quality, the management intensity and implementation level of head nurses directly determine the stability and improvement potential of nursing quality<sup>[6]</sup>. By establishing a systematic nursing quality management system and formulating clear quality standards and assessment systems, head nurses can monitor and evaluate nursing work in the whole process and in all aspects to ensure that all links meet the established standards.

In practice, regular quality inspections and performance appraisals help identify potential problems and formulate targeted

improvement measures. At the same time, guiding nursing staff to participate in quality improvement activities and forming a culture of continuous improvement with full participation can optimize nursing processes, reduce error risks, and overall improve patient care experience and safety.

Figure 2: Flow Chart of Nursing Quality Management



Combined with the interview results, the core of head nurses' promotion of quality improvement lies in problem tracing plus full participation, and the improvement priorities of different departments are highly consistent with the "nursing quality management" measures in Table 2. The head nurse of obstetrics and gynecology in a tertiary hospital (Interviewee 7) addressed abdominal distension after cesarean section by implementing "shortened fasting time plus early mobilization guidance," reducing the incidence of abdominal distension from 25% to 10%. During this process, nurses' suggestions on "adjusting analgesic dosage" were incorporated into the improvement plan. The head nurse of internal medicine in a secondary hospital (Interviewee 6) implemented "timesegmented medicine boxes plus family reminders" to tackle missed oral medications among elderly patients, lowering the misseddose rate from 15% to 5%. Nurses' enthusiasm for participation in improvement was further stimulated through "point rewards." The head nurse of geriatrics in a community hospital (Interviewee 10) carried out "home safety hazard inspection plus antislip equipment recommendation," reducing the incidence of falls in elderly patients from 20% to 8%. The formulation of improvement measures fully absorbed opinions from nurses and family members.

Nursing quality management is a dynamic circular process (see Figure 2), covering the complete workflow from formulating nursing quality standards to continuous improvement. Through strict inspection, root cause analysis, and continuous improvement, head nurses ensure the safety and high quality of nursing services, thereby improving patient satisfaction and treatment outcomes.

#### 4.4 Ensuring Nursing Safety and Reducing Nursing Errors

Nursing safety is one of the core objectives of nursing management, directly related to patients' life, health and overall medical safety<sup>[24]</sup>. Head nurses undertake key responsibilities in safeguarding nursing safety. Their main measures include strengthening safety education, standardizing operational procedures, and establishing a sound risk prevention and control system to reduce the incidence of nursing errors. Regular safety training can improve nursing staff's safety awareness and risk prevention capabilities; strict compliance with regulations helps reduce nonstandard operations. In addition, regular inspection and maintenance of the working environment and equipment can eliminate potential hazards in a timely manner and ensure that facilities and instruments are in good condition. For example, timely handling of highrisk factors such as wet floors and setting warning signs, as well as periodic maintenance of nursing equipment, can effectively reduce the probability of safety incidents.

All 15 head nurses interviewed emphasized the importance of "strengthening safety awareness and rigidifying procedures," and their practical measures were consistent with the core requirements of "nursing safety management." The head nurse of the ICU in a tertiary hospital (Interviewee 3) established a "safety early warning mechanism" with red labeling for highrisk patients and key inspections by nurses every shift, reducing the incidence of catheterrelated infections from 5%

to 2%. The head nurse of pediatrics in a secondary hospital (Interviewee 15) implemented “electronic medical orders plus doublechecking by reading aloud” to address medication errors, eliminating medication errors completely from 8%. The head nurse of general practice in a community hospital (Interviewee 9) launched a “quick photo of home safety hazards” campaign, shortening the response time for nurses to identify and rectify problems such as wet floors and equipment abnormalities from 30 minutes to 10 minutes.

Meanwhile, head nurses generally followed a nonpunitive principle in handling safety incidents. For instance, Interviewee 8 (emergency department, secondary hospital), after an infusion error, prioritized analyzing “process loopholes” rather than blaming individuals. By revising the “regulations on medication administration periods,” no similar incidents occurred in the following six months, which also enhanced nurses’ willingness to participate in safety management.

#### **4.5 Promoting Nursing Innovation and Advancing Nursing Discipline**

With continuous advances in medical technology and diversified patient needs, nursing innovation has become an important driving force for the development of nursing discipline<sup>[25]</sup>. As team leaders, head nurses need keen industry insight and innovative awareness to identify new trends and demands in clinical nursing and guide the team in relevant exploration and practice. In promoting innovation, head nurses support research projects, introduce new technologies and new service models, and foster autonomy and creativity in solving clinical problems. For example, targeting the high incidence of pressure injuries in longterm bedridden patients, the team is organized to conduct research on the effectiveness of interventions, develop scientific and effective pressure injury prevention protocols, and promote their application in the department. Such innovative practices not only improve nursing quality but also provide theoretical and methodological references for nursing discipline.

Interview results show that head nurses focus innovation on solving clinical pain points plus resource integration, with different innovation pathways across hospital levels. The head nurse of the emergency department in a tertiary hospital (Interviewee 14) cooperated with the information department to develop a “rescue module layout system,” shortening the time for nurses to retrieve instruments from 5 minutes to 2 minutes, with relevant achievements winning a provincial nursing innovation award. The head nurse of the ICU in a secondary hospital (Interviewee 12) designed a “simplified ICU vital signs record form,” reducing recording time by 50% and improving data accuracy from 90% to 98%. The head nurse of geriatrics in a community hospital (Interviewee 10) created a “simple turning aid belt,” shortening the time for nurses to assist disabled elderly patients in turning over from 10 minutes to 3 minutes and reducing physical exertion.

In addition, head nurses also act as “experience disseminators” in discipline development. For example, Interviewee 11 (obstetrics and gynecology, tertiary hospital) organized the “ERAS nursing pathway for highrisk pregnant women” into standardized materials and promoted them among regional hospitals, promoting homogeneous nursing quality. This verifies the bridging role of head nurses in nursing discipline construction.

### **5. Strategies and Methods to Give Play to the Exemplary Role of Head Nurses**

#### **5.1 Strengthen SelfConstruction and Improve Comprehensive Quality**

Head nurses should continuously update their professional knowledge and follow the latest developments in nursing discipline to maintain a high professional level<sup>[26]</sup>. Meanwhile, they should systematically study management and leadership knowledge to continuously improve organizational coordination and leadership capabilities. Participating in professional training, academic exchanges, and reading authoritative literature in the field can expand knowledge and vision, laying a foundation for fulfilling dual responsibilities of management and clinical practice.

In terms of professional ethics, head nurses should adhere to integrity and lead by example. With a stable, rational working attitude and proactive responsibility, they establish a professional role model to enhance trust and recognition among team members.

#### **5.2 Establish a Scientific and Reasonable Management Mechanism**

Head nurses should, based on departmental realities, construct scientific and operable nursing management systems and workflows, clarify job responsibilities and work standards, to institutionalize and standardize management. An assessment and incentive mechanism based on objective indicators should be established to ensure a fair and transparent evaluation process, with corresponding rewards and punishments according to assessment results, thereby improving nursing staff’s

work motivation and sense of responsibility.

During system formulation, opinions and suggestions from nursing staff should be solicited to enhance their participation and ownership. Meanwhile, systems and procedures should be regularly revised and optimized according to actual operational effects to ensure continuous adaptation to clinical needs and management goals.

### 5.3 Focus on Talent Training and Build a HighQuality Nursing Team

Head nurses should attach great importance to the career development of nursing staff and formulate targeted training programs and development paths based on individual characteristics and career plans<sup>[13]</sup>. Through professional training, skill competitions, academic exchanges and other forms, diverse learning opportunities should be provided to continuously improve nursing staff's professional ability and comprehensive quality.

In the training process, emphasis should be placed on developing teamwork and communication skills, promoting knowledge sharing and mutual support among members. Meanwhile, promotion opportunities and career guidance should be provided to potential staff to fully leverage talent advantages and elevate the overall level of the team.

Table 5: Talent Training System for Nursing Teams

Training Stage	Main Contents	Objectives and Effects
Training for New Nurses	Preceptorship, one-to-one guidance, basic skill training	Quickly adapt to the post and master basic operations
On-the-Job Skill Improvement	Professional training, skill competitions, academic lectures	Improve professional competence and enhance teamwork
Training for Potential Talents	Career planning guidance, promotion opportunities, leadership training	Promote talent echelon construction and enhance core competitiveness of the team

As shown in Table 5, the main stages of talent training in the nursing team and their corresponding objectives are systematically summarized. Through multi-level and multi-form training, head nurses effectively promote the professional growth of nursing staff and the improvement of the team's comprehensive quality, which can enhance the team's capacity for sustainable development.

Semi-structured interviews further enriched the practical details in Table 5, and training measures for different career stages have been implemented and verified in hospitals at all levels:

- (1) Training for newly recruited nurses: The head nurse of pediatrics in a secondary hospital (Interviewee 15) adopted a "one-on-one preceptorship plus 30 practical assessments", which shortened the time for new nurses to independently complete venipuncture from 2 weeks to 1 week, meeting the objective of "quickly adapting to the post" in Table 3;
- (2) On-the-job skill improvement: The head nurse of the ICU in a tertiary hospital (Interviewee 3) organized "difficult case review meetings plus special skill competitions", raising nurses' mastery rate of core skills from 90% to 100%, in line with the requirement of "improving professional competence";
- (3) Training of potential talents: The head nurse of general practice in a community hospital (Interviewee 13) provided key nurses with "district-level training plus the leading role in health education", enabling two nurses to become community nursing instructors, thus achieving the goal of "talent echelon construction" in Table 5.

### 5.4 Strengthen Communication and Collaboration to Create a Favorable Working Atmosphere

Head nurses should improve the communication mechanism with nursing staff, understand their work and living conditions, listen to their opinions and suggestions, and provide timely support when problems or difficulties arise<sup>[16]</sup>. At the same time, they should actively promote collaboration with other members of the medical team, establish stable doctor-nurse, nurse-patient and cross-departmental cooperative relationships to jointly improve the quality of patient care.

In communication practice, appropriate communication skills should be used, maintaining a sincere, equal and respectful attitude, focusing on listening and providing timely feedback<sup>[27]</sup>. A sound environment for communication and collaboration helps build a harmonious working atmosphere and improve team operation efficiency and service quality<sup>[28]</sup>.

## 6. Conclusion

Within the qualitative sample of this study, head nurses demonstrate significant leadership and exemplary roles in nursing team management, particularly in professional guidance, team building, quality management, safety assurance, and innovation promotion. This finding supports the importance of head nurses' leadership in nursing management practice, yet its mechanism and scope of influence still require further verification with larger samples and in multiple contexts<sup>[29]</sup>. These roles are not only related to the quality of nursing services and patient safety, but also directly affect the sustainable development of the nursing discipline. Medical institutions should attach great importance to the development of the head nurse team, and give full play to their exemplary role through institutional guarantees and capacity-building measures. Meanwhile, head nurses themselves need to continuously update their professional and management knowledge, and improve their leadership and execution ability to perform their duties effectively in the ever-changing medical environment. Through joint efforts, it is possible to better meet the needs of medical services in the new era and provide patients with high-quality, efficient and safe nursing care.

Based on semi-structured interviews and observations of 15 head nurses, this study verifies the applicability of the Input-Process-Output (IPO) framework in nursing team management, and reveals the important role of head nurses' leadership in professional guidance, team building, quality management, safety assurance and innovation promotion. However, this study still has limitations: the sample size is limited, so the qualitative results are not generalizable; there is a lack of longitudinal tracking data; and some findings need further validation through large-scale quantitative research. Future studies may adopt questionnaires or mixed methods to explore the differences and long-term effects of head nurses' leadership across hospital levels. Interviews also revealed that head nurses still face challenges in practice such as "limited innovation resources" and "insufficient decision-making ability of young nurses", which also points out directions for follow-up research: it is necessary to further explore leadership adaptation models in different medical scenarios and how to provide more innovation support for head nurses through institutional design. Overall, the interview findings and the theoretical framework mutually confirm each other, providing more operable references for nursing management practice and reinforcing the conclusion that "head nurses' leadership is a core element in constructing a high-quality nursing system".

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## Conflict of Interests

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