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ORIGINAL RESEARCH

Impact of Implementing Checklist Management Combined with SOP on Nursing Quality Among ENT Surgery Nurses

Liyan Ren[1], Li Han[2], Fumin Ping[3], Yanli Yin[4], Tao Liang[5], Fang Wang[6]

[1]Operation Room, Affiliated Hospital of Hebei University of Engineering, Handan, 056002, People's Republic of China; [2]Department of Nephrology, Affiliated Hospital of Hebei University of Engineering, Handan, 056002, People's Republic of China; [3]Affiliated Hospital of Hebei University of Engineering, Handan, 056002, People's Republic of China; [4]Department of Breast Surgery, Affiliated Hospital of Hebei University of Engineering, Handan, 056002, People's Republic of China; [5]Department of Respiratory, Affiliated Hospital of Hebei University of Engineering, Handan, 056002, People's Republic of China; [6]Nursing Department, Affiliated Hospital of Hebei University of Engineering, Handan, 056002, People's Republic of China

Correspondence: Fang Wang, Email xowu842@163.com

Objective: Ear, nose and throat (ENT) surgeries require meticulous nursing care due to their complexity and risk of complications. Traditional nursing models often lack the standardization needed to ensure consistent quality and patient safety. This study aimed to explore the application and effectiveness of checklist management combined with Standard Operating Procedures (SOP) in ENT surgery nursing and its impact on nursing quality improvement.

Methods: This was an experimental study using a pretest-posttest control group design. A total of 200 patients undergoing ENT surgery in the Otolaryngology Department of our hospital from April 2023 to April 2024 were randomly divided into control group and intervention group, including 100 cases in each group. The control group received conventional nursing management, while the intervention group was subjected to checklist management combined with SOP. The intervention outcomes, nursing quality scores, and incidence of surgery-related adverse events were compared between the two groups.

Results: The baseline characteristics of the two groups showed no significant differences, indicating comparability ($P>0.05$). After the nursing intervention, the intervention group demonstrated better outcomes than the control group, with lower Tinnitus Handicap Inventory (THI) scores ($P<0.05$). The intervention group also showed higher General Comfort Questionnaire (GCQ) scores, indicating better comfort levels ($P<0.05$). The incidence of device-related adverse events in the intervention group was significantly lower than that in the control group ($P<0.05$). Additionally, the intervention group had higher physician satisfaction scores ($P<0.05$), higher patient satisfaction scores ($P<0.05$), better management effectiveness scores ($P<0.05$), and significantly improved nursing quality scores compared to the control group ($P<0.05$).

Conclusion: Checklist management combined with SOP demonstrates excellent effectiveness in ENT surgery nursing, enhancing patient comfort and satisfaction, significantly improving nursing quality, reducing the incidence of device-related adverse events, and substantially increasing physician satisfaction. It holds great potential for clinical application.

Keywords: otological surgery, checklist management, standard operating procedures, nursing quality, satisfaction, effectiveness

Introduction

Otological surgeries are characterized by their complexity and precision, requiring strict coordination within the medical team and high standards for nursing care. However, traditional nursing models often exhibit significant shortcomings in practice, such as inadequate preoperative preparation, untimely intraoperative assistance, or insufficient postoperative care. These issues can increase the risk of surgical failure and lead to negative patient experiences, ultimately compromising surgical outcomes and recovery.[1–3] With the continuous advancement of medical technologies, systematic and standardized management in surgical nursing has become increasingly important. The combined application of checklist management and Standard Operating Procedures (SOP) offers new strategies and tools for improving nursing quality. Practical applications of checklist management in healthcare have demonstrated its effectiveness in reducing

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adverse events caused by omissions or communication failures. Meanwhile, SOPs, as an essential tool in medical management, provide clear operational guidelines, enabling nursing staff to follow standardized workflows and behavioral norms.[4,5] In recent years, both checklist management and SOPs have achieved considerable success in their respective applications within healthcare. However, comprehensive studies on the combined use of these two approaches in the field of ENT surgery remain limited.

We propose that SOPs can refine nursing requirements across various stages of ENT surgery, enhancing the professional skills and emergency response capabilities of nursing staff. Therefore, the objective of this study is to evaluate whether implementing checklist management combined with SOP can remarkably improve the quality of nursing care in ENT surgery. Based on this perspective, this study focuses on patients undergoing ENT surgeries to explore the effectiveness of combining checklist management with SOP in surgical nursing coordination. The primary objective of this study is to evaluate whether this integrated nursing management model can remarkably improve nursing quality, reduce the incidence of adverse events, and enhance patient satisfaction. The innovation of this study lies in the integration of the systematic nature of checklist management with the standardization of SOPs, aiming to comprehensively optimize the nursing process for ENT surgeries. By doing so, we seek to provide a scientific basis and theoretical support for nursing practice. We hope that the results of this study will offer new insights into ENT surgery nursing and promote further advancements in nursing management within the field of otolaryngology.

Materials and Methods

Study Data

This study recruited patients who met the inclusion criteria, initially selecting individuals undergoing ENT surgery in the Department of Otolaryngology at our hospital between April 2023 and April 2024. After applying comprehensive inclusion and exclusion criteria to ensure the representativeness of the sample, a total of 200 patients were included. Participants were randomly assigned into a control group and an intervention group, with 100 patients in each group. The control group received a conventional nursing management model, while the intervention group was managed using a combination of checklist management and Standard Operating Procedures (SOP). This study was approved by the ethics committee of Affiliated Hospital of Hebei University of Engineering. All patients were informed about the study and provided written informed consent. This study was conducted in accordance with the principles outlined in the Declaration of Helsinki.

This study adopted an experimental research design using a pretest-posttest control group format. Participants were randomly assigned to either the control or intervention group using a computerized random number table, ensuring baseline comparability. A priori sample size estimation was performed using G*Power 3.1 software. Based on a two-tailed *t*-test, with an effect size of 0.5 (moderate), a power of 0.8, and an alpha level of 0.05, the minimum sample size required per group was calculated to be 64. To increase statistical power and account for potential dropouts, 100 patients were ultimately recruited into each group.

Although the original inclusion criteria specified adult patients, a small number of adolescent patients aged 5–17 years who met all other clinical criteria were also included to reflect real-world surgical demographics in the department. For these patients, written informed consent was obtained from their parents or legal guardians in accordance with ethical requirements and institutional review board approval.

Inclusion Criteria

Inclusion criteria: Patients of any gender aged 5 years or older, presenting with varying degrees of auditory impairment or other symptoms during hospitalization, with a confirmed diagnosis of ENT disease through relevant clinical examinations. Surgery performed in compliance with the standards outlined in the 2021 Clinical Practice Guidelines: Postoperative Opioid Analgesics for General Otolaryngologic Surgery. Stable condition with no life-threatening risks. For patients under 18 years of age, written informed consent was obtained from a parent or legal guardian.

Exclusion Criteria: Presence of psychiatric disorders or cognitive impairments. Diagnosis of other systemic malignancies. Presence of other infectious diseases. Incomplete clinical data records. Participation in related clinical studies within the last three months.

Nursing Methods

The control group adopted a conventional nursing management model, including basic operations, psychological care, equipment checks, inspection of various tubes, and prevention of pressure injuries.

The intervention group implemented a nursing model combining checklist management with Standard Operating Procedures (SOP). The detailed process is as follows: First, an analysis of adverse events in the hospital over the past year was conducted to identify root causes, with a focus on deficiencies in intraoperative nursing. The analysis revealed variations in the frequency of intraoperative nursing execution among different nurses. To address this issue, a brainstorming session was held with qualified circulating nurses. Relevant domestic and international literature was reviewed to investigate specific reasons for insufficient intraoperative nursing, including: Lack of clear departmental guidelines on the required frequency of intraoperative nursing. Numerous nursing tasks, making omissions more likely. Long surgical durations and changes in patient conditions, which increase the likelihood of neglecting equipment and tubing inspections. Low compliance among circulating nurses in performing equipment checks. To solve these problems, a nursing management team was established within the department. The team was tasked with improving intraoperative nursing policies, revising the duties and workflows of circulating nurses, training on new nursing knowledge, and overseeing nursing quality control. Based on the SOP directory for ENT surgeries and referencing Surgical Nursing, operating room nursing practice guidelines, and relevant literature, a detailed intraoperative nursing checklist was designed. This checklist covered three main areas: patient positioning, tube management, and equipment. It also refined key perioperative nursing steps. By standardizing surgical workflows, operational procedures, and nursing tasks, the critical points of ENT surgery nursing were quantified. The SOP documentation was formalized in written form and continually optimized through clinical practice to ensure its standardization and precision, resulting in a comprehensive SOP-guided checklist management system. The nursing management team organized training sessions for all operating room nurses. The initial training covered comprehensive theoretical knowledge and practical skills, followed by weekly reinforcement sessions focusing on specific theories and skills. Exams were conducted post-training to ensure nurses mastered the core content. Training topics included SOPs related to ENT surgeries, such as instrument handover, nursing collaboration, and treatment equipment usage. Various training methods were employed, including PPT presentations, short videos, small group teaching, and case studies. Sessions were held in a meeting room, and materials were uploaded to the department's WeChat platform for easy access by nurses. The head nurse conducted regular assessments to ensure nurses understood the SOPs. During clinical practice, circulating nurses printed the intraoperative nursing checklist and placed it on the treatment cart for easy access and recording. Nursing operations were carried out step by step according to the checklist. Initial records began when the patient entered the operating room, with an additional record made at the start of surgery, followed by inspections and recordings every 30 minutes. This ensured all nursing tasks were completed on time. The department's quality control team checked checklist compliance daily in the operating room and cross-checked time points against monitoring records before the end of the workday. SOP implementation was supervised, and deviations were immediately corrected. Nurses implementing the SOPs reported any issues to the head nurse for collaborative discussion to optimize the nursing workflow, ensuring the feasibility and effectiveness of the SOPs. Nurses failing to comply with requirements were publicly addressed during morning meetings. If a nurse failed quality control three times, their circulating nurse qualifications were revoked.

Observation Indicators

Intervention Effectiveness

The intervention's effectiveness was assessed by evaluating tinnitus severity. The Tinnitus Handicap Inventory (THI) was used to score patients' tinnitus conditions before and after nursing care. The THI scoring range is 0–100, with lower scores indicating less severe tinnitus and more significant intervention effects.

Comfort Level

Patients' physical and mental comfort levels were evaluated using the General Comfort Questionnaire (GCQ) before and after nursing care. The GCQ scoring range is 28–112, with higher scores indicating greater comfort and better nursing outcomes.

Adverse Events

Adverse events related to equipment were recorded during nursing care for both groups, including patient injuries, functional impairments, and operational errors. The incidence rates of adverse events were statistically analyzed.

Physician Satisfaction

Physician satisfaction was assessed using a self-designed questionnaire on ENT surgery satisfaction. The questionnaire covered four aspects:

Preparation of Items and Equipment

Completeness of specialized instruments, availability of surgical items, and readiness and functionality of equipment. Instrument Nurse Collaboration: Familiarity with surgical steps, timeliness and accuracy of instrument handover, and proficiency in equipment operation.

Circulating Nurse Collaboration

Proactiveness in patient positioning and appropriateness in the supply of surgical items.

Problem-Solving Ability

Proactivity and cooperation in handling intraoperative emergencies, coordination of visitors and assistants, and maintenance of cleanliness and quietness in the operating room. Each aspect was rated on a scale of 1 to 5, with higher scores indicating greater satisfaction.

Patient Satisfaction

Patient satisfaction with nursing care was evaluated using a questionnaire that categorized satisfaction into three levels: satisfied, basically satisfied, and dissatisfied. A detailed statistical analysis was conducted for each aspect of the nursing care provided.

Management Effectiveness

Management effectiveness was evaluated using a custom-developed scale that included four dimensions: behavioral intention, awareness, cognition, and attitude towards management. Each dimension was scored on a scale of 0–25, with a total score range of 0–100. Higher scores indicated better management effectiveness.

Nursing Quality

The quality of nursing care was assessed through on-site evaluations conducted by the nursing quality control team and head nurses. Evaluations covered five major areas: basic care, patient positioning, item preparation, equipment management, and physician-nurse collaboration. Each dimension was scored on a scale of 1–10, with a total possible score of 50. Higher scores indicated higher nursing quality.

The Tinnitus Handicap Inventory (THI) and General Comfort Questionnaire (GCQ) used in this study were adopted from previously validated instruments used in clinical research.[6,7] The physician satisfaction and patient satisfaction questionnaires were self-developed by the research team in collaboration with domain experts. The management effectiveness scale was also developed for this study based on core themes in nursing management literature.[8] The THI and GCQ instruments used in this study have been widely validated in clinical settings. The Chinese versions of the THI and GCQ scales used were previously validated for internal consistency, with Cronbach's alpha coefficients reported as 0.91 and 0.88, respectively. The custom-designed physician satisfaction and patient satisfaction questionnaires were developed by an expert panel of otolaryngology surgeons and senior nurses and underwent content validation. Pilot testing was conducted with 20 patients and 10 physicians to assess clarity and reliability. The internal consistency for the physician satisfaction scale was 0.87, and for the patient satisfaction scale, 0.84.

Statistical Analysis

Image processing was performed using GraphPad Prism 8 software, and research data was organized and analyzed using SPSS 26.0. Measurement data were expressed as mean ± standard deviation (±s), and inter-group comparisons were conducted using a *t*-test. Count data were expressed as [n (%)], with inter-group comparisons performed using the chi-square (χ^2) test. A P-value of <0.05 was considered statistically significant.

Results

Baseline Data

The intervention group included 100 participants, consisting of 58 males and 42 females, aged 5–50 years, with a mean age of 36.12 ± 8.71 years. Disease types included 24 cases of deafness, 32 cases of otitis media, 13 cases of secretory otitis media, 6 cases of acoustic neuroma, and 25 cases of cholesteatoma. The control group included 100 participants, consisting of 55 males and 45 females, aged 5–50 years, with a mean age of 36.55 ± 8.24 years. Disease types included 21 cases of deafness, 33 cases of otitis media, 16 cases of secretory otitis media, 8 cases of acoustic neuroma, and 22 cases of cholesteatoma. The baseline data between the two groups showed no significant differences, indicating comparability (P > 0.05). See Table 1.

Intervention Outcomes

After nursing intervention, the intervention outcomes in the intervention group were superior to those in the control group, with THI scores being significantly lower in the intervention group (P < 0.05). See Figure 1.

Comfort Levels

After nursing intervention, the comfort levels of patients in the intervention group were better than those in the control group, with GCQ scores being significantly higher in the intervention group (P < 0.05). See Figure 2.

Adverse Events

The incidence of equipment-related adverse events in the intervention group was significantly lower than that in the control group (P < 0.05). See Table 2.

Physician Satisfaction

The physician satisfaction scores in the intervention group were significantly higher than those in the control group (P < 0.05). See Figure 3.

Table 1 Comparison of Baseline Data Between the Two Groups (N=200)

		Intervention Group	Control Group	Chi-square (χ^2)	*P*
Number of Cases	–	100	100	–	–
Gender	Male	58	55	0.26	0.611
–	Female	42	45	0.26	0.611
Age	–	5–50	5–50	–	–
–	Mean	36.12±8.71	36.55±8.24	0.359	0.020
Disease type	Deaf	24	21	0.070	0.001
–	Tympanitis	32	33	0.010	0.013
–	Secretory otitis media	13	16	0.035	0.055
–	Acoustic neuroma	6	8	0.070	0.001
–	Middle ear cholesteatoma	25	22	0.060	0.692

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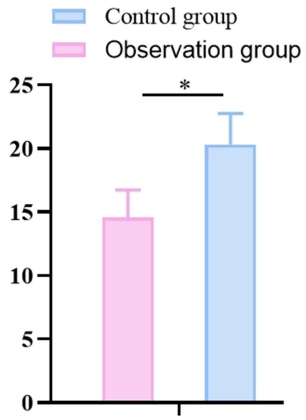

Figure 1 Comparison of THI Scores Between the Two Groups (N=200).
Notes: *Indicates a statistically significant difference, P < 0.05.

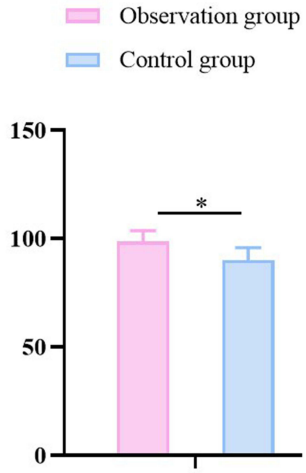

Figure 2 Comparison of GCQ Scores Between the Two Groups (N=200).
Notes: *Indicates a statistically significant difference, P < 0.05.

Patient Satisfaction

The patient satisfaction in the intervention group was significantly higher than that in the control group (P < 0.05). See Figure 4.

Table 2 Comparison of Equipment-Related Adverse Event Incidence Between the Two Groups (N=200)

	Intervention Group	Control Group	*T*	*P*
Number of Cases	100	100	–	–
Patient injury	0	0	–	–
Dysfunction	1	5	–	–
Improper operation	1	4	–	–
Total (%)	2.00%	9.00%	4.714	0.029

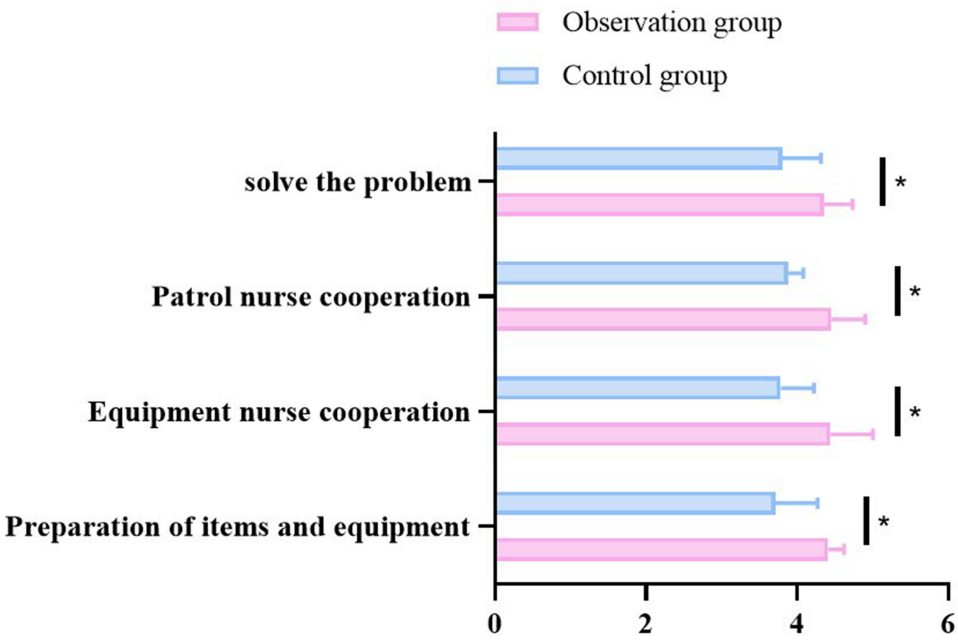

Figure 3 Comparison of Physician Satisfaction Scores Between the Two Groups (N=200).
Notes: *Indicates a statistically significant difference, P < 0.05.

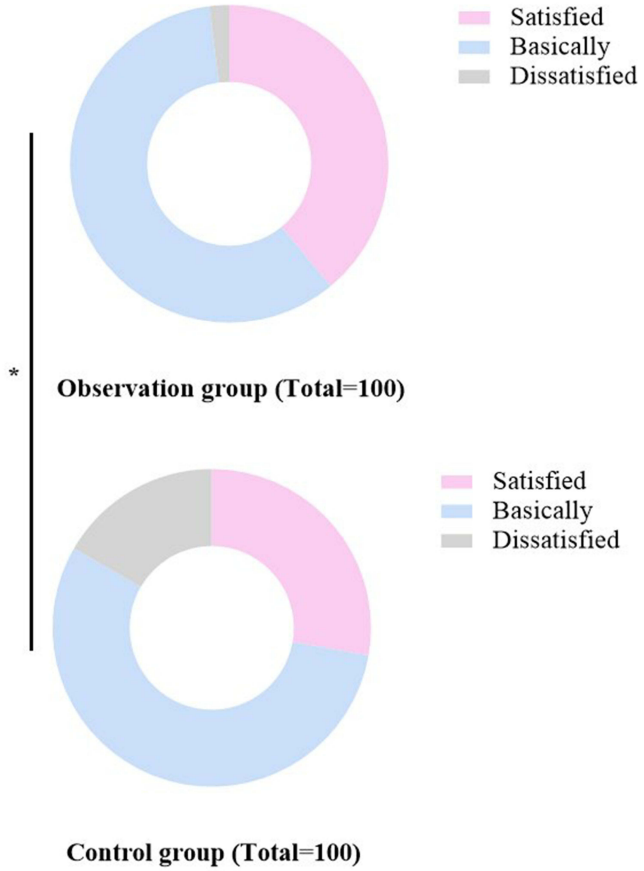

Figure 4 Comparison of Patient Satisfaction Between the Two Groups (N=200).
Notes: *Indicates a statistically significant difference, P < 0.05.

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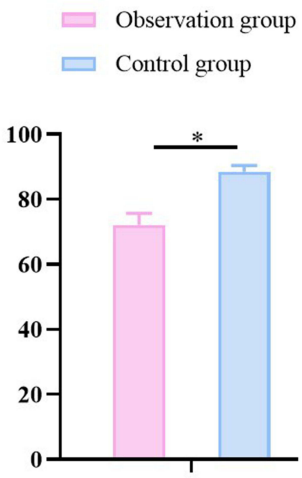

Figure 5 Comparison of Management Effectiveness Scores Between the Two Groups (N=200).
Notes: *Indicates a statistically significant difference, P < 0.05.

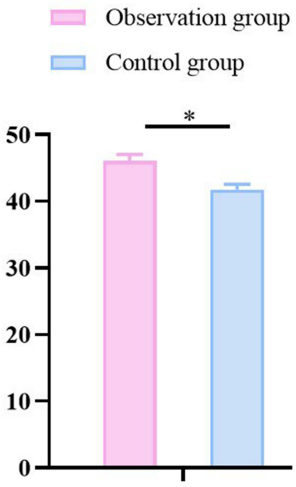

Figure 6 Comparison of Nursing Quality Scores Between the Two Groups (N=200).
Notes: *Indicates a statistically significant difference, P < 0.05.

Management Effectiveness

After the nursing intervention, the management effectiveness scores in the intervention group were higher than those in the control group (P < 0.05). See Figure 5.

Nursing Quality

After the nursing intervention, the nursing quality scores in the intervention group were significantly higher than those in the control group (P < 0.05). See Figure 6.

Discussion

In recent years, with changes in lifestyles and environmental factors, the number of patients with otorhinolaryngology (ENT) diseases has been steadily increasing. This trend poses higher demands on the quality of medical care and safety management. Nursing quality management is the core of nursing work, encompassing multiple aspects from processes to outcomes. Focusing solely on outcome-based quality evaluation can result in discontinuity and instability in nursing

quality. Therefore, enhancing process control throughout the entire nursing process is particularly important.[6,7] This approach not only improves nursing quality but also effectively reduces the incidence of intraoperative adverse events.

In the medical field, the operating room was among the first departments to introduce checklist management. The use of surgical safety checklists has successfully prevented major risks, such as errors in identifying surgical sites and patients.[8] However, operating room nursing is highly complex, involving collaboration across multiple departments and personnel. Any oversight in a single link may lead to serious consequences. Standard Operating Procedures (SOP) serve as a scientific management tool with numerous advantages, including preventing technical losses due to staff turnover, ensuring consistency and continuity of operations, improving management quality, and tracing the root causes of adverse events to provide a basis for quality improvement. As a result, SOP has been widely applied in Chinese healthcare institutions, demonstrating significant value, particularly in operating room nursing. SOP integrates all aspects of nursing quality control, refines and quantifies key control points in workflows, standardizes nursing practices, and ensures the efficient and safe operation of operating room nursing, ultimately providing higher-quality care to patients.[9–12]

This study systematically optimized the nursing process for ENT surgeries by combining checklist management with SOP, aiming to improve nursing quality, ensure patient safety, and enhance satisfaction among both medical staff and patients. The results indicate that this model achieved significant success in several areas, as discussed below.

The introduction of checklist management clarified critical points and timing requirements in nursing, while the application of SOP provided standardized workflows, breaking complex nursing tasks into manageable steps. This combination effectively addressed inconsistencies in intraoperative nursing frequency and the omission of essential tasks.[13–15] By standardizing nursing processes, clarifying roles and responsibilities, and implementing regular supervision, the model reduced the error rate in intraoperative nursing and the incidence of equipment-related adverse events, thereby further ensuring patient safety during surgery.

Notably, ENT surgeries are highly specialized due to the anatomical complexity of the ear canal and the diversity of procedures involved, requiring advanced nursing expertise. In such scenarios, operating room nurses need to possess solid theoretical knowledge and technical skills specific to ENT, especially when performing delicate operations under a microscope. Surgeons often cannot look away from the microscope eyepiece, requiring surgical instrument nurses to be not only proficient in surgical assistance but also familiar with the surgeon's habits to maintain continuity and efficiency during the procedure.[2,16,17]

The nursing team plays a critical role during surgery, and the combination of checklist management and SOP significantly improved the staff's mastery of intraoperative tasks and workflows, enhancing collaboration efficiency between circulating nurses and instrument nurses. By incorporating specific nursing processes and key points into the responsibilities of circulating nurses and combining them with standardized training,[18,19] checklist management provided clear goals and execution standards. Nurses could follow checklist content to complete nursing tasks on time, record their completion, and continuously optimize processes under the guidance and supervision of quality control personnel. This approach enabled timely identification and resolution of issues, effectively improving nursing quality, ensuring patient safety, and significantly reducing the occurrence of intraoperative adverse events. The study results demonstrate a significant improvement in physicians' satisfaction with aspects such as equipment preparation, intraoperative collaboration, and problem-solving. This reflects how the management model optimized collaboration between medical staff and nurses, reducing disruptions caused by inadequate material preparation or improper operations, thereby providing robust support for smooth surgical procedures.[20,21] Moreover, checklist management is not merely a tool for institutional management; it embodies a culture of self-discipline, safety, and teamwork. It plays a dual role of reminder and supervision in intraoperative nursing. The implementation of SOP further standardized specialized procedures, reinforced the learning of specialized knowledge, and significantly enhanced the quality of specialized nursing cooperation.

Instrument nurses, by becoming familiar with surgical steps and the surgeon's habits, took a more proactive approach to surgical assistance. Circulating nurses were able to monitor surgical progress closely, manage material supplies accurately, and assess and address intraoperative issues effectively.[22–24] This not only improved nurses' awareness of active collaboration and rapid response capabilities but also ensured smoother surgical processes, thereby significantly increasing physician satisfaction with nursing quality.

By establishing a nursing management team, the nursing checklist and SOP were continuously optimized, and training and evaluations were conducted to enhance nurses' professional skills and execution. The nursing checklist designed in this study covered critical aspects such as positioning management, catheter care, and equipment handling, quantifying the operational content based on actual surgical needs, making nursing work more precise and controllable. Regular inspections and feedback mechanisms by the department's quality control team ensured effective implementation of the checklist and SOP, creating a closed-loop nursing quality management system.[25–27]

Additionally, the study showed a significant reduction in Tinnitus Handicap Inventory (THI) scores among patients after nursing intervention, indicating that standardized nursing effectively alleviated tinnitus symptoms. Simultaneously, scores on the General Comfort Questionnaire (GCQ) significantly increased, reflecting noticeable improvements in patients' physical and psychological comfort. This not only highlights the effectiveness of nursing interventions in providing high-quality technical support during surgery but also underscores the importance of preoperative and post-operative psychological support and humane care in enhancing patients' nursing experience and satisfaction.

The optimization of nursing processes guided by SOP was a key factor in achieving these outcomes. SOP refined the critical points and priorities of perioperative care, preventing randomness and blind spots in nursing work and providing patients with more precise services. This standardized nursing process helped patients better understand their conditions, enhanced their self-care skills, and encouraged the adoption of health behaviors conducive to recovery of the affected ear, thereby reducing unnecessary harm.[28,29] Ultimately, this comprehensive nursing model effectively alleviated patients' tinnitus symptoms, improved their physical and psychological state, and provided strong support for the success of nursing interventions, significantly enhancing patient satisfaction.

A study evaluated the implementation of the WHO Surgical Safety Checklist in otorhinolaryngology-head and neck surgery. The checklist was found to reduce postoperative morbidity and mortality, and its integration into ENT surgical procedures improved awareness of safety-related issues among the surgical team.[30] Scholars assessed the impact of the WHO safety checklist on patient safety awareness in otorhinolaryngology and customized it for the specialty. The findings indicated that the checklist enhanced communication and minimized complications during ENT surgeries.[31] A systematic review highlighted that surgical checklists are associated with increased detection of potential safety hazards, decreased surgical complications, and improved communication among operating room staff. The review emphasized the importance of effective implementation strategies for the success of checklists.[32] A study implemented a preoperative surgical safety checklist tailored for otolaryngology patients, aiming to improve perioperative teamwork and communication. The checklist was perceived positively by nurses, otolaryngologists, and anesthesiologists, leading to enhanced operative safety.[33]

The combination of checklist management and SOP represents an innovative nursing management model, with its core advantage being the integration of systematic and standardized approaches, making it particularly suitable for the complex and high-risk field of ENT surgeries. Compared to traditional nursing models, the comprehensive management model in this study not only improved nursing quality but also provided a reference framework for nursing management in other medical fields, offering significant potential for wider application.

Although this study yielded positive results, it also has certain limitations. First, the sample size is limited, as the study is based on practices from a single institution, and the generalizability of the conclusions needs further validation. Additionally, the applicability of combining checklist management with SOP in other types of surgeries will require larger-scale, multi-center studies in the future. Furthermore, as the study concentrated specifically on otologic procedures, the applicability of the findings to rhinologic and laryngologic surgeries remains uncertain and requires separate investigation.

Conclusion

The application of the nursing model combining checklist management and SOP in ENT surgery has shown significant effects, not only significantly improving nursing quality but also reducing the incidence of equipment-related adverse events. It also greatly enhanced patient comfort and satisfaction, while doctors' satisfaction with nursing cooperation was also significantly improved. This model optimized nursing processes, clarified responsibilities, and strengthened teamwork, effectively improving the overall nursing experience for patients and enhancing the collaboration efficiency of the

medical team. It provides a new optimized pathway for surgical nursing management. Furthermore, the successful application of this model in ENT surgery demonstrates its high clinical value and potential for broader application. This not only provides a reference for nursing management in other types of surgeries but also opens up new directions for improving nursing quality management. From a practical standpoint, the findings highlight the importance of process standardization and checklist-based monitoring in reducing variability in nursing performance. The adoption of this model in clinical nursing practice may lead to more consistent care delivery, enhanced nurse accountability, and improved patient safety outcomes. Moreover, integrating SOP and checklist training into nurse education and onboarding programs can strengthen nurses' clinical competencies and preparedness for high-risk surgical environments. These insights underscore the need for nursing leaders to prioritize structured workflow design and regular performance evaluations as part of quality improvement initiatives.

Based on the study findings, it is recommended that medical institutions, especially those involved in complex ENT surgeries, implement the combined checklist management and SOP nursing model to enhance intraoperative safety, nursing quality, and overall satisfaction among patients and physicians. Nursing administrators should incorporate checklist protocols and SOP content into regular training, continuing education, and onboarding programs to strengthen the clinical competency and preparedness of surgical nursing staff. To evaluate the broader applicability of this model, future research should involve multi-center studies across different surgical departments and patient populations. Additionally, integrating digital systems for checklist execution and SOP management may facilitate real-time monitoring, streamline implementation, and support data-driven quality improvement efforts. Establishing dedicated nursing management teams to periodically update SOP content, supervise adherence, and assess nursing outcomes is also essential for sustaining improvements. Furthermore, aligning SOPs and checklist items with individualized patient needs, such as incorporating psychological support and comfort-enhancing measures, can further elevate the quality and responsiveness of perioperative care.

In summary, the combination of checklist management and SOP is a scientific and efficient nursing management model, worthy of promotion and application in a wider range of medical fields.

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Disclosure

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