

## Postprint of a Study on Clinical Teaching Practice and Effectiveness for Newly Hired Nurses in Stomatology

**Authors:** Liang Yu, Li Jiahui, Cai Shuang, Solskjaer, Zhi Shengrui, Liu Xuewei, Liu Xuewei

**Date:** 2023-06-12T00:00:00+00:00

### Abstract

**Objective** To explore the methods and effects of stratified clinical teaching for newly recruited nurses in the department of stomatology.

**Methods** Using newly recruited nurses in the department of stomatology from the past 3 years as teaching subjects, stratified clinical teaching practice was conducted through various methods including improving teaching management systems, establishing teaching faculty teams, formulating teaching training plans, and comprehensive teaching evaluations.

**Results** Through stratified teaching, the results showed that the clinical nursing work assessment scores and year-end examination scores after training for the three groups of new nurses (bachelor's degree group, associate degree group, and technical secondary school group) were all superior to those before training, with statistically significant differences ( $P < 0.05$ ). The clinical nursing work assessment scores of the bachelor's degree group were superior to those of the associate degree group and technical secondary school group, with statistically significant differences ( $P < 0.05$ ).

**Conclusion** Stratified teaching can provide individualized instruction according to the different situations of nurses at three educational levels, demonstrating good teaching effects and warranting promotion in clinical stomatology teaching.

### Full Text

## Clinical Teaching Practice and Effectiveness Research for Newly Recruited Nurses in the Department of Stomatology

**Authors:** LIANG Yu, LI Jiahui, CAI Shuang, SUO Shuai, ZHI Shengrui, LIU Xuewei

**Affiliation:** Department of Stomatology, Dongfang Hospital, Beijing University of Chinese Medicine, Beijing

### Abstract

**Objective:** To explore the effectiveness of stratified clinical teaching methods for newly recruited dental nurses.

**Methods:** Newly recruited nurses in the Department of Stomatology over the past three years were selected as study participants. Stratified clinical teaching practice was implemented through various approaches, including improving the teaching management system, establishing a teaching faculty team, developing teaching and training plans, and implementing comprehensive teaching evaluations.

**Results:** Through stratified teaching, the results demonstrated that the clinical nursing performance and year-end examination scores of nurses in the undergraduate, junior college, and technical secondary school groups were all significantly better after training compared to before training ( $P < .$ ). The clinical nursing performance of the undergraduate group was superior to that of the junior college and technical secondary school groups ( $P < .$ ).

**Conclusion:** Stratified teaching enables tailored instruction according to the different circumstances of nurses at three educational levels, achieving favorable teaching outcomes and warranting promotion in clinical stomatology teaching.

**Keywords:** stomatology; nursing specialist; stratified teaching method; practical research

### Introduction

In recent years, with the continuous improvement of living standards, public concern for health has grown increasingly prominent, particularly regarding oral health, which has become a priority for many middle-aged, elderly, and minor populations. As a branch of clinical nursing, oral care nursing remains an emerging discipline with distinctive professional characteristics in China. Research in this field started relatively late, with limited relevant literature, and demands relatively high technical proficiency from nursing personnel. The recent explosive growth of stomatology in China has led to the establishment of numerous specialized dental hospitals and clinics, creating a surge in demand for dental nurses. However, most domestic medical colleges still do not place sufficient emphasis on dental nursing programs, with both curriculum design and student enrollment failing to adapt to the new situation. This has resulted in relatively inadequate overall quality and professional competence among dental nurses, unable to meet the needs of specialized oral medical institutions. Additionally, many general nursing personnel transitioning to dental nursing work lack foundational knowledge and practical operation skills. Therefore, the cultivation of dental nurses should not be limited to academic settings but must instead strengthen teaching and guidance in clinical practice. For newly recruited nursing personnel, combining clinical practice with theoretical teaching

through stratified teaching methods can enhance the overall competence of dental nurses to meet societal demands. This study examines the effectiveness of stratified clinical teaching practice for newly recruited nurses in the Department of Stomatology over the past three years.

## Materials and Methods

### Study Participants

The participants in this teaching practice were newly recruited nurses in the Department of Stomatology over the past three years, all female, aged years. Based on educational background, they were stratified into three groups: undergraduate nurses (undergraduate group), aged years; junior college nurses (junior college group), aged years; and technical secondary school nurses (technical secondary school group), aged years.

### Teaching System Development

*Construction of Teaching Management Organization:* A three-level management structure was established. The first level consisted of the hospital nursing department's teaching group; the second level comprised the department's chief teaching supervisor (primarily the head nurse); and the third level included department clinical instructors (mainly experienced nurses). This structure ensured the implementation of teaching plans and achievement of teaching objectives.

*Development of Teaching Management Systems:* Relevant management systems were formulated, including job responsibility systems, internship management systems, and evaluation and selection systems, to safeguard the effective implementation of teaching practice through institutional mechanisms.

*Establishment of Dental Nursing Faculty Team:* First, annual centralized training was organized for specialized dental nurses, with knowledge competitions and speech contests held to strengthen theoretical foundations. Second, a "passing on experience" (传帮带) approach was adopted, where head nurses and senior nurses guided new nurses in clinical practice regarding operational skills and key considerations.

### Stratified Teaching Implementation

Based on the different educational backgrounds of newly recruited nurses, training curricula were developed specifically for undergraduate, junior college, and technical secondary school nurses, implementing stratified clinical instruction. Teaching was organized according to plan, with clinical teaching management files established for nurses at different levels, including relevant documents from higher authorities, departmental teaching plans, annual lecture schedules, teaching activity records, lesson plans, examination papers and scores for undergraduate and junior college/technical secondary school nurses, annual teaching summaries, and feedback forms from new nurses regarding the department and instructors.

The teaching focus was on developing specialized operational skills and clinical practice application abilities, primarily using objective-based teaching methods to reduce randomness and blindness in the teaching process.

### **Teaching Practice Plan**

*Schedule Arrangement:* For newly recruited nursing personnel in the Department of Stomatology, the teaching practice duration was approximately year, including months in outpatient clinics, months in wards, and months in operating rooms. Internship time in key specialized departments such as endodontics and prosthodontics was guaranteed to exceed months.

*Practice Implementation:* Each new nurse was assigned a fixed clinical instructor to ensure learning continuity. The Department of Stomatology organized weekly theoretical learning sessions of class hours and monthly clinical practice teaching sessions of class hours. All participating dental nurses were required to maintain diaries to summarize their daily learning experiences.

### **Teaching Practice Content**

*Theoretical Knowledge Teaching:* Newly recruited dental nurses must master the following theoretical knowledge: basic oral medicine knowledge, including oral pathology, nursing, anatomy, and radiology; and oral professional knowledge, primarily covering etiology, manifestations, clinical treatment, and nursing cooperation processes for oral diseases, as well as the “four-handed operation” technique.

*Clinical Practice Skills Teaching:* This included two main aspects: (1) Dental outpatient nursing skills, involving reception procedures for common oral diseases, patient oral health education, nursing plan formulation, and treatment outcome feedback; and (2) Dental ward nursing skills, encompassing more diverse aspects including postoperative education, nursing care, guidance, and treatment for common oral diseases, as well as basic nursing skills such as venous blood collection, sputum aspiration, catheterization, and intravenous infusion. Additionally, nurses were required to proactively learn new knowledge, theories, and operational standards for new instruments in oral medicine.

### **Stratified Teaching Approaches by Educational Level**

*Undergraduate Education:* Undergraduates demonstrated solid theoretical foundations, strong active learning motivation, and good comprehensive qualities. The focus was on cultivating their ability to solve problems independently and operational competence. Undergraduates were directly paired with physicians to treat patients, handling approximately cases per week, including oral health education, nursing plan development, and treatment feedback, with instructors providing guidance and supervision.

*Junior College Education:* Junior college students generally had moderate theoretical knowledge but strong hands-on abilities, high professional identity, and strong service awareness. The emphasis was on developing practical hands-on skills and condition observation abilities, focusing on accumulating clinical exper-

rience. Approximately cases per week were arranged for direct cooperation with physicians to complete treatments, highlighting problem-solving approaches to cultivate practically capable professionals.

*Technical Secondary School Education:* Technical secondary school students were characterized by weaker theoretical foundations, less developed hands-on abilities, good service awareness, employment pressure, and susceptibility to occupational fatigue. Instructors provided more care and enthusiastic guidance to help them establish professional identity and understand their psychological dynamics. Approximately cases per week were arranged for cooperation with physicians to complete treatments. Additionally, when demonstrating operational procedures, instructors first guided new nurses to review textbooks to understand the concepts before demonstration, employing appreciative education with frequent praise.

### Statistical Methods

SPSS software was used for data analysis. Measurement data were expressed as mean  $\pm$  standard deviation ( $\bar{x}\pm s$ ). One-way ANOVA was used for multi-group comparisons, and independent samples t-test was used for two-group comparisons. The significance level was set at  $\alpha=0.05$ .

### Evaluation Methods

*Supervisor Evaluation:* The nursing department conducted annual assessments of newly recruited dental nurses, including clinical nursing work evaluation and year-end examinations. The clinical nursing work evaluation was based on performance and feedback during work, conducted at three stages: pre-training, mid-training, and post-training, with a full score of 100 points. Assessment items included: professional knowledge mastery, learning initiative, oral expression ability, clinical thinking ability, and teamwork spirit. The year-end examination consisted of theoretical knowledge tests and practical operation assessments (initial assessment before training with a full score of 100 points). Practical operations selected routine clinical procedures including alginate impression material mixing, glass ionomer cement mixing, model pouring, root canal treatment nursing preparation, and assisting physicians in tooth extraction. After the year-end examination, the nursing department provided comprehensive evaluations based on these two scores, which served both as guidance for future teaching practice and directly impacted nurses' career development and whether they needed to continue participating in the next year's teaching practice.

*Two-Way Evaluation:* This involved mutual scoring between instructors and students. Clinical instructors scored new nurses' performance (full score of 100 points) across various aspects including theoretical knowledge learning, practical operation, communication, and discipline compliance. Simultaneously, nurses participating in teaching practice scored clinical instructors (full score of 100 points) on teaching delivery, plan implementation, guidance provision, and standardization of clinical operations.

## Results

### Overall Assessment Performance

After a period of teaching practice, the teaching effectiveness was remarkable, with satisfactory overall assessment results. Among the three groups, the undergraduate group demonstrated better daily performance than the junior college and technical secondary school groups at pre-training, mid-training, and post-training stages, with statistically significant differences ( $P < .$ ). All three groups showed improved daily performance after training compared to before training, with statistically significant differences ( $P < .$ ).

shows the clinical nursing work assessment scores for nurses in different groups ( $\bar{x} \pm s$ ). Note: \* $P < 0.05$  for undergraduate group compared with junior college and technical secondary school groups; # $P < 0.05$  for post-training compared with pre-training.

### Year-End Examination Performance

All three groups showed significantly better year-end assessment results compared to pre-training assessment results. Significant differences existed among the three groups in both pre-training and year-end assessments, with the undergraduate group outperforming the junior college group, which in turn outperformed the technical secondary school group ( $P < .$ ). Newly recruited nurses demonstrated significant improvement in both theoretical knowledge and practical operation skills.

shows the year-end examination scores for nurses in different groups ( $\bar{x} \pm s$ ). Note: \* $P < 0.05$  for year-end assessment compared with initial assessment; # $P < 0.05$  for inter-group comparisons.

### Two-Way Evaluation Results

Two-way evaluation results showed that all three groups had higher scores after training compared to before training, with statistically significant differences ( $P < 0.05$ ).

shows the scores given by instructors to nurses in different groups ( $\bar{x} \pm s$ ). Note: \* $P < 0.05$  for post-training compared with pre-training.

shows the scores given by nurses to instructors in different groups ( $\bar{x} \pm s$ ). Note: \* $P < 0.05$  for post-training compared with pre-training.

## Discussion

This study's results indicate that standardized departmental teaching management, stratified clinical instruction, and emphasis on teaching evaluation can mobilize student learning enthusiasm and enhance clinical internship motivation. Post-training clinical nursing work assessment scores were significantly higher than pre-training scores ( $P < 0.05$ ). Stratified teaching prevented the decline in student enthusiasm during mid-to-late training stages while simultaneously enhancing instructors' teaching motivation and continuously improving

their teaching capabilities. The combination of supervisor assessment and two-way evaluation compelled the hospital's dental department to attach greater importance to teaching practice and better supervise clinical instructors, ensuring newly recruited nurses actively participated in teaching practice.

Through evaluation and analysis, we identified both commonalities and differences among nurses at different educational levels. On one hand, all groups valued nursing internships and hoped to improve theoretical levels through clinical practice; on the other hand, they universally exhibited insufficient theoretical knowledge and lack of initiative. Instructors should emphasize integrating theory with practice and provide tailored guidance regarding case selection, relevant basic knowledge, teaching formats, and techniques based on each group's characteristics.

All participating nurses had completed basic courses in nursing schools before entering clinical practice. However, technical secondary school nurses entered nursing schools after junior high school without systematic senior high school education, resulting in relatively limited comprehensive knowledge. Additionally, technical secondary school students generally completed approximately years of basic courses before clinical internship, junior college students completed approximately years, and undergraduate students completed approximately years. Consequently, undergraduate nurses received the most basic course instruction, possessing solid foundational medical and nursing theoretical knowledge that could be fully integrated with clinical practice. Therefore, we recommend supplementing additional basic medical theoretical knowledge for junior college and technical secondary school groups.

A sound management system and institutional framework are fundamental prerequisites for ensuring smooth work progress. Before implementing teaching practice for newly recruited dental nurses, the hospital had established a three-level management system and formulated a series of rules and regulations to ensure teaching plan implementation and guarantee effective teaching practice. In this teaching practice, through the "passing on experience" (传帮带) approach by outstanding staff, young newly recruited nurses could learn from experienced employees' work techniques while receiving repeated training and improvement in practical operations. Meanwhile, senior nurses could review theoretical knowledge and operational procedures to achieve excellence and self-improvement. This virtuous cycle mechanism establishes a tradition and culture of senior-junior mentorship, which can also attract more outstanding dental nursing students to employment.

Regarding teaching content organization, theoretical and practical teaching can be advanced separately. For theoretical teaching, models, videos, and multimedia can be fully utilized to enhance interest. For practical teaching, new nurses can first observe operations, with instructors repeatedly explaining key points and precautions during nursing procedures. Once ready, new nurses can perform operations independently under real-time guidance and supervision from department instructors. This study employed a combined evaluation approach

of supervisor assessment and two-way evaluation to prevent teaching practice from becoming superficial and avoid degeneration into mere shadowing.

In summary, the teaching practice results demonstrate that implementing stratified teaching and providing tailored instruction according to the different circumstances of three educational levels has achieved favorable teaching outcomes and warrants promotion in clinical teaching applications.

**Conflict of Interest Statement:** The authors declare no conflicts of interest.

### References

- [1] JIANG H H, CHENG L, CHEN W. Clinical teaching practice and effect analysis in teaching of newly recruited dental nurses[J]. China Health Care Nutr, .(in Chinese)
- [2] LI H Q, WANG Y N, REN J X, et al. Optimizing method of nursing teaching in the Central Sterile Supply Department[J]. Chin J Integr Nurs, .(in Chinese)
- [3] ZHONG C P, PENG Y H, REN Q, et al. Discussion and practice of phased and systematic teaching mode for practice nurses in stomatology clinic of general hospital[J]. Chongqing Med, .(in Chinese)
- [4] XU Q H, LIN J, ZHAO F R. Teaching practice of standardized training for dental nurses[J]. Chin Gen Pract Nurs, .(in Chinese)
- [5] LI H, YIN X Y, LI X E, et al. Practice of clinical teaching for nursing students in stomatological hospitals[J]. Chin J Nurs Educ, .(in Chinese)
- [6] XU Q H, CHEN E, LIU M C. Clinical teaching practice of four-handed operation technique in oral care[J]. Chin J Mod Nurs, .(in Chinese)

*Note: Figure translations are in progress. See original paper for figures.*

*Source: ChinaXiv — Machine translation. Verify with original.*