INPLASY PROTOCOL

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None declared.

Effects of five teaching methods in clinical nursing teaching: A protocol for systematic review and network meta-analysis

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Review question / Objective: **In this study, network Meta-analysis was used to comprehensively evaluate the application effects of five teaching methods in four aspects: nursing students' theoretical knowledge examination scores, operational skills assessment results, satisfaction with teaching methods and patients' satisfaction with nursing students.**
Condition being studied: **Clinical nursing teaching is an essential part of nursing education. It has become a focus of nursing educators to flexibly select appropriate teaching methods. In recent years, various teaching methods have been applied, such as clinical pathway, problem-based learning, standardized patients, situational-based learning and mentor-based learning. Despite characteristics and advantages of each teaching method, the effect of their application is inconclusive. Therefore, it is of theoretical and practical significance to evaluate the effects of different teaching methods in clinical nursing teaching.**

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 08 December 2021 and was last updated on 08 December 2021 (registration number INPLASY2021120040).

INTRODUCTION

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METHODS

Search strategy: #1 Students, Nursing OR Pupil Nurses OR Student, Nursing OR Nurses, Pupil OR Nurse, Pupil OR Pupil Nurse OR Nursing Student OR Nursing Students #2 Critical Pathways OR Critical Pathway OR Pathway, Critical OR Pathways, Critical OR Critical Paths OR Critical Path OR Path, Critical OR Paths, Critical OR Clinical Paths OR Clinical Path OR Path, Clinical OR Paths, Clinical OR Clinical Pathways OR Clinical Pathway OR Pathway, Clinical OR Pathways, Clinical #3 Problem-Based Learning OR Learning, Problem-Based OR Problem Based Learning OR Curriculum, Problem-Based OR Curriculum, Problem Based OR Problem-Based Curriculum OR Problem-Based Curricula OR Curricula, Problem-Based OR Problem Based Curricula OR Experiential Learning OR Learning, Experiential OR Active Learning OR Learning, Active #4 Patient Simulation OR Patient Simulations OR Simulation, Patient OR Simulations, Patient #5 simulation-based learning OR simulation teaching method #6 Mentors OR Mentor OR Mentorships OR Mentorship
#7 #2 OR #3 OR #4 OR #5 OR #6
#8 Randomized Controlled Trials OR Random*
#9 #1 AND #7 AND #8.

Participant or population: Students majoring in nursing.

Intervention: Using clinical pathway, problem-based learning, standardized patients, situational-based learning or mentor-based learning in clinical nursing teaching.

Comparator: Traditional teaching method.

Study designs to be included: Randomized Controlled Trial.

Eligibility criteria: The study included only randomized controlled studies in English and Chinese, and there was no restriction on the year of publication. Inclusion and exclusion criteria were based on the PICOs principles. In addition, literature using combined teaching methods was excluded.

Information sources: This study will search the following databases: PubMed, Embase, Web of Science, The Cochrane Library, China National Knowledge Infrastructure Database, China Biology Medicine disc, Wanfang Database and VIP Chinese Science and Technique Journals Database.

Main outcome(s): Nursing students' theoretical knowledge examination scores and operational skills assessment results.

Additional outcome(s): Nursing students' satisfaction with teaching methods and patients' satisfaction with nursing students.

Quality assessment / Risk of bias analysis: According to the Cochrane Handbook for Systematic Reviews of Interventions, two authors will independently perform the risk of bias analysis of included study. The tool evaluates the following items: sequence generation, allocation concealment, blinding of participants and personnel, blinding of outcome assessment, incomplete outcome data, selective outcome reporting, and other potential sources of bias. We will grade each item as "low risk", "high risk", or "unclear". Disagreements will be resolved by discussion or another author.

Strategy of data synthesis: The pairwise meta-analysis will be performed by Rev Man 5.3. Effects will be estimated as standardized mean difference (SMD) or odds ration (OR) along with 95%

confidence intervals. For heterogeneity test, if P>0.10, I2<50% will select fixed effects model, otherwise the random effects model. Meanwhile, we will draw network evidence diagram by Stata 16.0 and carry out network meta-analysis by GeMTC software and R software. Besides, homogeneity tests, similarity tests, consistency tests, model fit tests and degree of convergence will be completed. And we will present value of the Surface Under the Cumulative Ranking (SUCRA) curve for each teaching method as well as their rankings.

Subgroup analysis: Subgroup analysis will be conducted to explore sources of heterogeneity in pairwise comparison. If sufficient studies are available, we will conduct subgroups analysis such as intervention timing and intervention duration.

Sensitivity analysis: To examine the impact of bias on study results, sensitivity analyses will be performed excluding studies deemed at high risk of bias. We will compare results to determine whether lower-quality studies should be excluded.

Country(ies) involved: China.

Keywords: Teaching Method; Clinical Nursing Teaching; Network Meta-analysis.

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