INPLASY PROTOCOL

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Review Stage at time of this submission: Preliminary searches.

Conflicts of interest:
None declared.

A systematic review of the use of computer-based simulation and virtual patients in pharmacy experiential education

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Review question / Objective: What are effective computer-based simulations and virtual patients that can be used to support student pharmacists' knowledge, skills, satisfaction, confidence, and engagement during their pharmacy practice experiences?

Eligibility criteria: Articles will be included if they are experimental, quasi-experimental, observational, descriptive, qualitative, mixed-methods, cohort, cross-sectional, case control studies, case reports, case studies, and randomized controlled trials evaluating effectiveness/benefits of computer-based simulation and virtual patients in helping student pharmacists' learning and skills during their professional practice experience. Exclusion criteria are as follows: (1) study with data not reliably extracted, duplicate, or overlapping data; (2) abstract-only papers as preceding papers, conference, editorial, and author response theses and books; (3) articles without full text available; (4) articles without population (P), intervention (I), and outcomes (O) data; and (5) systematic review studies.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 09 May 2023 and was last updated on 09 May 2023 (registration number INPLASY202350034).

INTRODUCTION

Review question / Objective: What are effective computer-based simulations and virtual patients that can be used to support student pharmacists' knowledge, skills, satisfaction, confidence, and engagement during their pharmacy practice experiences?

Condition being studied: We want to explore the use of computer-based simulation and virtual patients to prepare students for and in pharmacy experiential education.

METHODS

Participant or population: Student pharmacists who are participating in pharmacy experiential education, pharmacy practice experience, or interprofessional education before they become to license registered pharmacists.

Intervention: We will include any computer-based simulation and virtual patients that have been used as part(s) of student pharmacists' practice experiences.

Comparator: Traditional or no control.

Study designs to be included: Experimental, quasi-experimental, observational, descriptive, qualitative, mixed-methods, cohort, cross-sectional, case control studies, case reports, case studies, and randomized controlled trials.

Eligibility criteria: Articles will be included if they are experimental, quasi-experimental, observational, descriptive, qualitative, mixed-methods, cohort, cross-sectional, case control studies, case reports, case studies, and randomized controlled trials evaluating effectiveness/benefits of computer-based simulation and virtual patients in helping student pharmacists' learning and skills during their professional practice experience. Exclusion criteria are as follows: (1) study with data not reliably extracted, duplicate, or overlapping data; (2) abstract-only papers as preceding papers, conference, editorial, and author response theses and books; (3) articles without full text available; (4) articles without population (P), intervention (I), and outcomes (O) data; and (5) systematic review studies.

Information sources: Electronic databases: 5 relevant databases including Ovid MEDLINE, EMBASE, Scopus, Education Resources Information Center (ERIC), and Education Abstracts.

Main outcome(s): Knowledge and Professional skills.

Quality assessment / Risk of bias analysis: The methodological quality of the included studies was independently assessed by three authors (C.P., S.P., and R.M.) using Joanna Briggs Institute (JBI) checklists (Joanna Briggs Institute) which are available to evaluate cross-sectional, quasi-experimental, randomized controlled trial, qualitative research, cohort studies, case reports, and case-control studies. For mixed-method studies, we evaluated the quality using the mixed methods appraisal tool (MMAT) version 2018 (HONG et al., 2018). Descriptive Studies were assessed by a checklist of Infection Prevention and Control Guidelines, Public Health Agency of Canada, 2014 (Public Health Agency of Canada. Infectious Disease and Emergency Preparedness Branch, 2014).

Strategy of data synthesis: Not applicable.

Subgroup analysis: Not applicable.

Sensitivity analysis: Not applicable.

Language restriction: English only.

Country(ies) involved: Thailand and The United States.

Keywords: Virtual patient, Computer-based simulation, Experiential education, Student pharmacists.

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