INPLASY

The impact of cultural sensitivity training on learning outcomes: A Meta-Analysis Protocol

INPLASY202580008
doi: 10.37766/inplasy2025.8.0008
Received: 2 August 2025
Published: 3 August 2025

Corresponding author:
Weenta-Letehans Yacob

weentayacob@gmail.com

Author Affiliation:
University of California, Los Angeles.

Yacob, W; Schwartz, ME; Paull, DE; Woo, D; Nishimoto, PW; Canuel, DE; Reyes, EC.

ADMINISTRATIVE INFORMATION

Support - N/A.

Review Stage at time of this submission - Data analysis.

Conflicts of interest - None declared.

INPLASY registration number: INPLASY202580008

Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 3 August 2025 and was last updated on 3 August 2025.

INTRODUCTION

Review question / Objective What is the measured impact of cultural sensitivity training for healthcare workers and students on learning and clinical outcomes?

Rationale Implicit biases and a lack of cultural awareness, sensitivity, and humility within healthcare workers have been reported as having a negative impact on patient outcomes in the care of an increasingly diverse patient population. Cultural training of healthcare students and workers has been implemented to mitigate these negative effects. Various formats and combination of methods of training have included didactic presentations, self-reflection, case study, simulation (including role play), and cultural immersion programs.

In this meta-analysis, we will review published studies from 2010-2024 for healthcare workers to explore quantitatively measured learning and patient outcomes as a result of the educational intervention. Sub-analyses will include Kirkpatrick level of learning outcome, type of intervention (e.g., in-person vs. online), and participants (e.g., inter- vs. uniprofessional). These data can inform leaders making decisions regarding the investment of funds, personnel time, and other resources to more effectively and efficiently address cultural challenges in patient care.

Condition being studied Healthcare workers' cultural awareness, competency, sensitivity, and humility measured before and after a learning activity (or study group vs. control group) will be studied to assess the effectiveness of the intervention.

METHODS

Search strategy A search strategy was generated to extract relevant articles pertaining to the effectiveness of educational efforts in overcoming implicit bias and cultural barriers. Learning outcomes and patient outcomes were assessed.

The following databases were searched: PubMed, CINAHL, Embase, and Cochrane.

The primary search strategy utilized a Boolean search method with a combination of 3 major concepts: implicit bias and cultural awareness, competency, sensitivity, and humility; training and education; and study design. Terms used to search include: implicit bias, cultural competency, cultural sensitivity, cultural diversity, systematic racism, structural racism, discrimination, prejudice, healthcare disparities, anti-racist, racist, racism, racial bias, training, educational intervention, intervention, workshop, program, trial, implementation, virtual patient simulation, didactics, experiential, table top exercises, virtual patient, observation, case studies, role model, shadowing, curriculum, online modules, observed structured clinical examination (OSCE), simulation, pedagog*, documentaries, non-feature films, secondary consultation, consultation models, case vignette, behavioral simulation, video demonstration, and clinical teaching.

Participant or population Healthcare students and workers (e.g., physicians, nurses, and all other allied health professionals).

Intervention Interventions (e.g., in-person workshops, lectures, etc.) that aim to improve cultural awareness, competency, sensitivity, and humility.

Comparator Learning outcomes for a group before (i.e., pre) and after training (i.e., post); or between a group receiving training (i.e., study group) and a group not receiving training (i.e., control group).

Study designs to be included Pre/post (i.e., dependent) and study/control (i.e., independent) designs were included. Data for dependent and independent studies were examined separately.

Eligibility criteria Studies included were restricted to the timeframe of January 1, 2010 through June, July, or August 2024, depending on when the database was searched.

The inclusion criteria were based on the PICO model for evidence-based medicine studies.

The PICO refers to the following:
1) Population – Healthcare workers (e.g., physicians, nurses, allied healthcare professionals) providing health services and students in training thereof.
2) Intervention – Implicit bias and cultural awareness, competency, sensitivity, and/or humility training for healthcare workers providing health services.
3) Comparison – Quantitative measured learning and/or patient outcomes for a study group before and after receiving training, or between a study group after receiving training and a control group.
4) Outcome – Primary learning outcomes including healthcare worker/student self-confidence/satisfaction survey data, scores on knowledge-based tests, observed individual behaviors to overcome cultural barriers either in simulation or in vivo, and patient outcomes including patient satisfaction.

Information sources Information sources included the following bibliographic databases: PubMed, CINAHL, Embase, Cochrane, and additional sources. Additional sources included relevant references from other articles found through the original bibliographic databases listed.

Main outcome(s) This meta-analysis selectively evaluated studies with the highest Kirkpatrick learner outcome focused on cultural awareness, competence, sensitivity, or humility. Summary statistics for learning outcomes in studies were used whenever possible. Data (including mean, standard deviation, and number of participants) were compiled for the study group pre and post training, or for the study group post training and the corresponding control group.

Additional outcome(s) Additional outcomes extracted from each full-text article include (but are not limited to): study design; number of participants; learner characteristics and specialties; and intervention features (e.g., didactics, online modules, simulation, etc.) and highest Kirkpatrick learning outcome level evaluated (e.g., satisfaction, knowledge, performance, or patient outcome).

Data management Microsoft Excel was used to tabulate search results, compile associated data, and monitor status for all articles. After generating the total number of articles and excluding duplicates, five reviewers independently screened the abstracts of all articles to exclude irrelevant articles and invalid search results. Remaining articles were assessed in their entirety using the PICO criteria, with those failing excluded. For articles satisfying PICO criteria, raw data (including mean, standard deviation, and number of participants) for each study were then extracted by one reviewer and the compiled data independently reviewed for completeness by two additional

reviewers. Remaining studies were further reduced by selecting the one study within each article with the highest Kirkpatrick learner outcome focused on cultural awareness, competence, sensitivity, or humility. Final determination as to suitability for inclusion of each study was by consensus. Data from included studies were input to Meta-Essentials for meta-analysis.

Quality assessment / Risk of bias analysis The Medical Education Research Study Quality Instrument (MERSQI) was used to assess the quality of each included article, evaluating study design, sampling, type of data, validity of evaluation instrument, data analysis, and outcome. Additionally, the risks for selection, attrition, detection, performance, and reporting biases were rated for each study as low, high, or unclear utilizing the Cochrane tool for assessing the risk of bias.

Strategy of data synthesis Individual study data were synthesized deploying a random-effects model (Dettori, Norvell, & Chapman, 2022) using Meta-Essentials software to display a forest plot and calculate an overall effect size (Suurmond, van Rhee, & Hak, 2017). Heterogeneity across studies was tested by computing I^2 (Higgins et al., 2003).

Dettori, J.R., Norvell, D.C., & Chapman, J.R. (2022). Fixed-effect vs. random-effects models for meta-analysis: 3 points to consider. Global Spine Journal, 12(7), 1624-1626.
Higgins, J.P., Thompson, S.G., Deeks, J.J., Altman, D.G. (2003). Measuring inconsistency in meta-analysis. BMJ, 327, 557-560.
Suurmond, R., van Rhee, H., & Hak, T. (2017). Introduction, comparison, and validation of Meta-Essentials: A free and simple tool for meta-analysis. Research Synthesis Methods, 8(4), 537-553.

Subgroup analysis In progress at time of application of the meta-analysis for registration.

Sensitivity analysis In progress at time of application of the meta-analysis for registration.

Language restriction English.

Country(ies) involved USA.

Keywords cultural awareness; cultural competence; cultural humility; cultural sensitivity; healthcare disparities; implicit bias; training.

Dissemination plans Publication in a peer-reviewed journal and presentation at a national conference or meeting.

Contributions of each author

Author 1 - Weenta-Letehans Yacob - Weenta-Letehans Yacob contributed to the conceptualization, data curation, investigation, methodology, project administration, validation, visualization, and writing – original draft. All listed author roles are described using the CRediT (Contributor Roles Taxonomy). (2025). National Information Standards Organization (NISO).
Email: weentayacob@gmail.com
Author 2 - Miriam Schwartz - Miriam E Schwartz, MD, PhD, MBA contributed to the conceptualization, data curation, investigation, methodology, project administration, supervision, validation, visualization, writing – original draft preparation, and writing – review and editing.
Email: mcschwartz@mednet.ucla.edu
Author 3 - Douglas Paull - Douglas E. Paull, MD, MS contributed to the conceptualization, data curation, formal analysis, methodology, investigation, project administration, resources, software, supervision, validation, visualization, writing – original draft preparation, and writing – review and editing.
Email: dp812@georgetown.edu
Author 4 - Deborah Woo - Deborah Woo, Ph.D. contributed to data curation, formal analysis, visualization, writing – original draft preparation, and writing – review and editing.
Email: debwoo@gmail.com
Author 5 - Patricia Nishimoto - Patricia W. Nishimoto contributed to the investigation process and visualization of data.
Email: patricianishimoto215@gmail.com
Author 6 - David Canuel - David E. Canuel, MSM, MS contributed to the formal analysis, investigation, and validation of statistical data.
Author 7 - Ethan Reyes - Ethan Connor Reyes contributed to data curation, investigation, resources, and validation.
Email: ecreyes25@gmail.com