Following the Science to Understand How to Reduce Prejudice and its Harmful Consequences

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Executive Summary

Background

"*Follow the Science*" was the cry heard around the world during the global pandemic. This approach was used to develop evidence-based prevention measures (e.g., social distancing, hand washing, and mask-wearing), covid treatments, and vaccines, and to prevent major declines in well-being. The PEEL LAB has adopted the "*follow the science*" approach to understand how to reduce prejudice and its harmful consequences in post-pandemic times.

Study Process

Our team conducted a multi-phase systematic review of 2,515 published peer-reviewed studies on the effectiveness of gender and race/ethnicity prejudice reduction interventions. The first phase reviewed meta-analyses and systematic review studies to identify major categories of prejudice reduction interventions. The second phase examined individual studies from the Phase 1 meta-analyses and reviews to identify exemplary evidence-based interventions for reducing prejudice and its harmful effects

Key Findings

The study identified the followings:
- Four salient categories of effective prejudice reduction intervention types emerged: 1) Contact interventions, 2) Perspective taking (i.e., Cognitive & Affective), 3) Interactive & narrative modalities, and 4) Multi-faceted interventions
- Six exemplary studies from various countries around the world, including U.S., Portugal, and Israel, with medium to high effect sizes

Extended Class Exchange Program
Berger et al., 2016
Israeli-Jewish, Israeli-Palestinian, Israeli-Ethiopian
Elementary students, Israel

Enacting Cultural Interests Project
Brannon & Walton, 2013
Latino American
Undergraduate students, U.S.

Narrative Fictions
Johnson et al., 2013
Arab Muslim
Undergraduate students, U.S.

Immersive Virtual Reality
Salmanowitz, 2018
Black American
Undergraduate students, U.S.

Prejudice Reduction through Music
Neto et al., 2016
African
Elementary students, Portugal

Multiculturalism Education
Yogeeswaran & Dasgupta, 2014
Hispanic American
Undergraduate students, U.S.

Phase I Study

Purpose: To identify major categories of effective prejudice reduction interventions for gender and race/ethnicity-based prejudice.

Step 01
Identification

Search Engines: Web of Science & Google Scholar

Meta-analyses and Systematic Review Papers Identified

(N = 2,515)

Step 02
Eligibility Screening

Keywords: Prejudice, discrimination, racism & Intervention, education, program in title or abstract

Focus: Evidence-based interventions aimed at reducing Gender/Race/Ethnicity related prejudice/discrimination

(N = 13)

Step 03
Analysis

Effective Prejudice Reduction Intervention Categories Identified

Contact Intervention (N = 11)
Perspective Taking (Cognitive & Affective) (N = 12)
Interactive & Narrative Modalities (N = 3)
Multi-faceted Intervention (N = 6)

Not mutually exclusive

Contact Intervention

Interventions based on direct and indirect contact are the most robust and commonly used evidence-based prejudice reduction interventions. Effect sizes of various forms of contact interventions vary (e.g., intergroup, fact-to-face) range from d=.23 and d=.46.

Perspective Taking

Also referred to as cognitive or affective interventions. Perspective-taking is the ability to understand how a situation appears to another person and how the person reacts cognitively and emotionally to the situation. Effect sizes range from d=.30 and d=.50.

Effective Prejudice Reduction Intervention Categories

Interactive & Narrative Modalities

Interactive & narrative interventions include digital interactive experiences in which users create or influence a dramatic storyline through their actions or literary narratives. They are often instructional or education based. Effect sizes reported around d=.43.

Multi-faceted Intervention

Interventions often use a multi-faceted approach (e.g., direct contact experiences along with social-cognitive training programs to promote perspective taking). Effect sizes average around d=.43.

Phase II Study

Purpose: To identify exemplary evidence-based intervention studies published within the last decade that were successful in reducing prejudice and its harmful effects.

Step 01
Quality Screening

Meta-analyses and Review Papers with High Quality

Selected Study 1 Meta-analyses and Systematic Review Papers that Implemented a Quality Assessment (e.g., Cochrane's)

| Meta Analyses (n = 3) | Systematic Review Papers (n = 2) |

Step 02
Identification

Pulled all individual sample studies from the selection of high-quality meta-analyses and review papers.

Identified total sample studies
(n = 421)

Step 03
Eligibility Screening

Identify individual studies that met six criteria

1) **Study design:** Utilized RCT, Quasi-experimental design
2) **Study setting**: University, Lab, or Field setting
3) **Thematic area**: Gender (excluding sexuality) and/or Race/Ethnicity
4) **Outcomes**: Reduced prejudice (i.e., decrease in implicit or explicit bias)
5) **Results**: Reported significant outcomes associated with the intervention
6) **Time**: Study conducted during the last decade (i.e., 2013-23)

(n = 18)

Step 04
Analysis

Variables analyzed

1) **Country:** The country in which the intervention occurred
2) **Theory:** The theory behind the intervention
3) **Target population:** The target groups that the intervention attempted to study the prejudice
4) **Intervention type**: The intervention that the study used
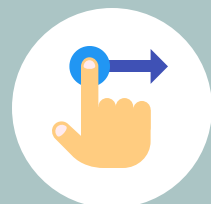5) **Effect size:** Reported effect sizes of the intervention

Step 05
Exemplar Selection

Exemplar Selection Criteria

Selected a representative study based on theory type, high effect size, and diverse representation of target group

(n = 6)

Phase II Findings: Exemplar Prejudice Reduction Interventions

Exemplar 1: Extended Class Exchange Program (Berger et al., 2016)

- **Country:** Israel
- **Target groups:** Israeli-Jewish, Israeli-Palestinian, Israeli-Ethiopian
- **Setting:** 3rd & 4th-grade students at an elementary school
- **Theory based on:** Contact Theory
- **Intervention:** In twelve 4-hour bi-monthly sessions, students were tasked with interacting with each other through creative activities, socializing and team building, and reflective activities.
- **Effect size:** 1) Reduced negative feelings toward the other, $\eta^2 = 0.48$; 2) Reduced negative stereotype toward the other, $\eta^2 = 0.38$

Exemplar 2: Enacting Cultural Interests Projects (Brannon & Walton, 2013)

- **Country:** United States
- **Target groups:** Latino Americans
- **Setting:** Undergraduate students through a university lab
- **Theory based on:** Contact Theory
- **Intervention:** Non-Latino American college students were paired with Latino-American or Portuguese confederates and tested whether one interest did or did not match the participant's interest. Shared interests created social connections.
- **Effect size:** 1) Less anti-Latino prejudice with the social connection in the Mexican condition, $d = 0.56$; 2) Less anti-Latino prejudice with no social connection in the Mexican condition, $d = 0.75$

Exemplar 3: Narrative Fictions (Johnson et al., 2013)

- **Country:** United States
- **Target groups:** Arab Muslims
- **Setting:** Undergraduate students on campus
- **Theory based on:** Perspective Taking Theory
- **Intervention:** Students were assigned to read a full narrative that included counter-stereotypical exemplars and exposure to Muslim culture filled with the richness of descriptive language, dialogue, and monologue. Students in the control groups were assigned either a one-page summary of the narrative without the richness of detail or a brief history of the automobile.
- **Effect size:** 1) Reduced implicit bias in the full narrative condition, $\eta^2 = .092$; 2) Reduced implicit bias in the condensed narrative condition, $\eta^2 = 0.076$

Exemplar Prejudice Reduction Interventions

Exemplar 4: Immersive Virtual Reality (Salmanowitz., 2018)

- **Country:** United States
- **Target groups:** Black/African American
- **Setting:** Undergraduate students at a university lab
- **Theory based on:** Perspective Taking Theory
- **Intervention:** Students were assigned a black avatar in their VR spaces and allowed to see their movements in a mirror reflecting their virtual selves. They were instructed to do creative tasks, including tasks that require them to touch themselves to provoke the body ownership illusion. Control groups were either assigned a black avatar but without a mirrored image of themselves or assigned a white avatar. Following their VR experience, participants were asked to do a Mock Crime Scenario.
- **Effect size:** 1) Effects on evaluation of evidence and comprehensive verdicts, $\eta^2 = .16$; 2) Reduced implicit bias, $\eta^2 = 0.07$

Exemplar 5: Prejudice Reduction through Music (Neto et al., 2016)

- **Country:** Portugal
- **Target groups:** Dark-skinned people (African)
- **Setting:** 6th-grade students at an elementary school
- **Theory based on:** Social Identity Theory
- **Intervention:** Students received 5-90 minute sessions of a cross-cultural music program, including both Portuguese (e.g., Fado) and Cape Verdean (e.g., Morna) songs.
- **Effect size:** 1) Reduced implicit anti-dark-skin prejudice at the end of the program, $\eta^2 = .43$; 2) Reduced implicit anti-dark-skin prejudice after 2 years, $\eta^2 = 0.21$

Exemplar 6: Multiculturalism Education (Yogeeswaran & Dasgupta, 2014)

- **Country:** United States
- **Target groups:** Hispanic Americans
- **Setting:** Undergraduate students at a university lab
- **Theory based on:** Cognitive Theory
- **Intervention:** Students were randomly assigned to either read about multiculturalism construed in an abstract manner, a concrete manner, or to read about something neutral and unrelated to multiculturalism
- **Effect size:** 1) Reduced prejudice toward ethnic minorities in an abstract multiculturalism, $\eta^2 = .19$; 2) Less threat to national identity in an abstract multiculturalism, $\eta^2 = 0.16$

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