Effectiveness of Digital Health Interventions in Reducing Bullying and Cyberbullying: A Meta-Analysis

Aim:
To examine and compare the effectiveness of digital health interventions (DHIs) in reducing bullying and cyberbullying.

Hypothesis:
a. The effectiveness of DHIs varies between bullying and cyberbullying
b. The differences between DHIs derive from program and participant characteristics

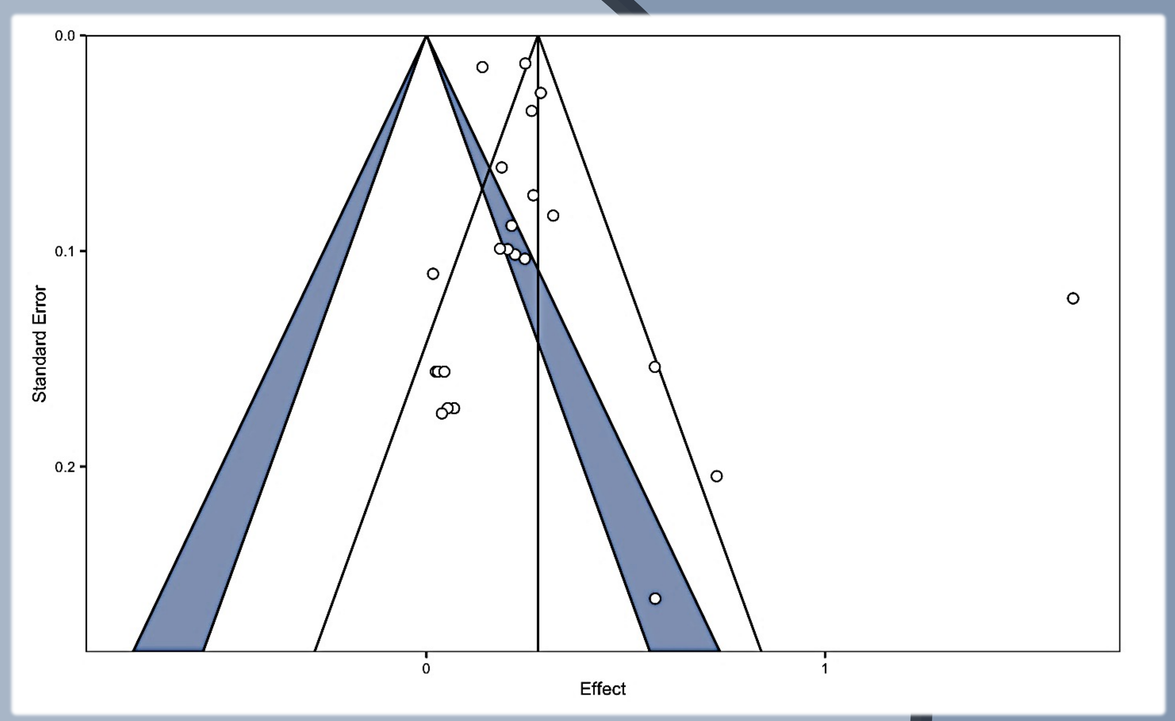
Key Terms:
a. digital, mhealth, ehealth, mobile, wearable system, wireless system, social media, technology, video, web, audio, multimedia, game, VR, Internet
b. bully*, victim, cyberbully, online bully, online conflict, cyber violence, cyber safety;
c. intervention, prevention, program, education, curriculum

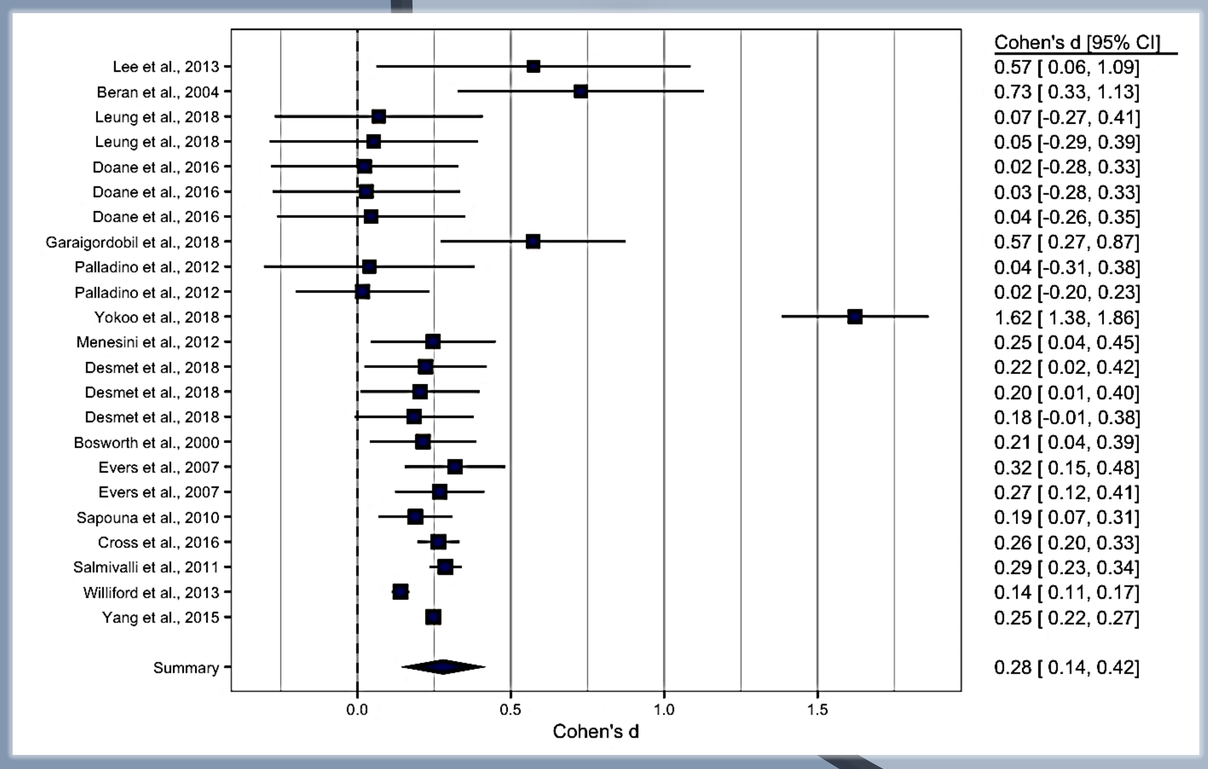
Search Databases:
PsycINFO, Social Service Abstracts, Sociological Abstracts, MEDLINE, ERIC, and EMBASE

Inclusion Criteria:
a. Use of an RCT or quasi-experimental design to evaluate intervention effectiveness;
b. Evaluation of interventions on bullying or cyberbullying;
c. Use of digital health-related approaches to deliver services;
d. Sufficient data to calculate an effect size.

Quality Assessment:
a. CONSORT checklist
b. Cohen's k weighted .96
c. Average score was 5.13/6.00

Statistical Analysis:
R 3.5.1, the ESC package's effect size estimation functions and the METAFOR package's random-effects model function





Results:
16 studies using quasi-experimental and randomized controlled trials (RCTs) published before 31 January 2021 were included

Overall Synthesis of Effect Size:
a. The overall effect size was 0.28 (95% CI [0.14, 0.42]), which is comparable to face-to-face intervention
b. The effect was 0.19 on cyberbullying and 0.41 on bullying

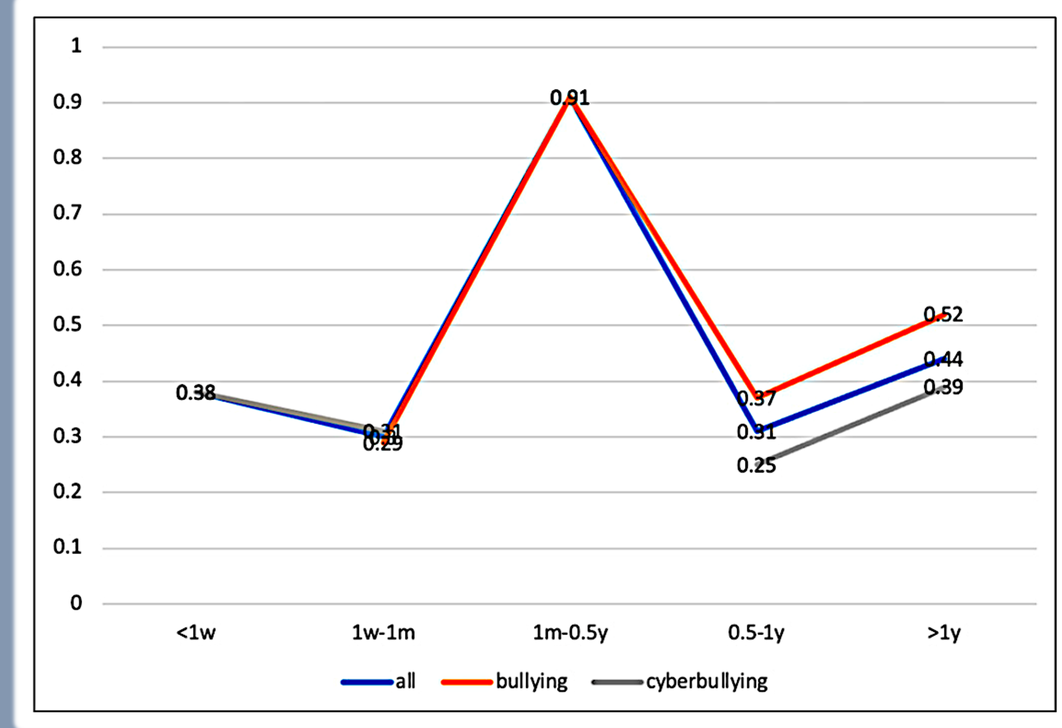
Critical Components of Effective DHIs:
a. The largest effect size was on cyberbullying knowledge (d = 0.56)
b. Empathy improvement in cyberbullying interventions, and coping skills improvement in bullying interventions
c. Training on bystander and bully–victim dual roles, coping skills, interactive serious games and online forums, and one-to 6-month intervention duration

Implications:

Research:
a. Direct comparison of bullying and cyberbullying interventions within the same program
b. Exploration of bystander intervention strategies
c. Test effects on bully–victim and bullying–cyberbullying dual roles

Practice:
a. A more systematic curriculum through primary to college
b. Booster session as maintenance strategies

Policy:
a. Note the potential of this cost-effective approach on child protection
b. Mitigate the economic and digital gap to achieve a more supportive infrastructure for the implementation of DHIs



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