

Return on investment from interventions to prevent common mental disorders among adolescents in Australia: a modelling study

Authors:

Thomas AJ¹, Reavley N³, Wickramarachi T¹, Sweeny K⁴, Azzopardi P^{3,5,6}, Sawyer S^{3,5,6}, Scott N^{1,2}

¹ Burnet Institute, ² Monash University, Melbourne, ³ The University of Melbourne, Parkville, ⁴ Victoria University, Melbourne, ⁵ Murdoch Childrens Research Institute, Parkville, ⁶ Centre for Adolescent Health Royal Children's Hospital, Parkville

Background: The prevalence of common mental disorders (CMDs) among Australian adolescents is increasing and evidence is needed to inform how prevention efforts can be focused for greatest impact on depression and anxiety. This study used a mathematical model to estimate how different investment envelopes could be optimally allocated across interventions to prevent CMDs in adolescents, and the corresponding health and economic benefits.

Methods: The Australian population 0-19 years was disaggregated by age category (0-9, 10-14, 15-19), sex (male, female) and CMD category (never experienced, currently experiencing, previously experienced). Targeted reviews identified 12 prevention interventions. The model was calibrated to Australian data on CMDs as well as sociodemographic risk factors that were relevant for the interventions (bullying, financial stress, poor school connectedness, racial discrimination, child maltreatment). An optimization algorithm estimated how additional investments, from \$50 million to \$1 billion per annum over 2024-2050, could be allocated across a basket of interventions to maximize the number of adolescents turning 20 without experiencing CMD.

Results: The benefit-cost ratios of interventions varied widely depending on whether they impacted CMDs directly or indirectly through reduction of a risk factor, and also whether CMD was their primary purpose or not (e.g. poverty interventions). Optimally investing \$50 million to \$1 billion per annum over 2024-2050 could lead to 69,000-506,000 fewer adolescents experiencing a CMD by age 20 (\$10,550-\$28,942 per lifetime CMD experience averted), with lower bound benefit-cost ratios ranging from 4.7 to 12.3. Optimally, budget allocations should include a combination of interventions targeting different age groups, sub-populations and risk factors.

Conclusions: Notwithstanding limited data, investing in evidence-based prevention interventions is likely to have a favourable return-on-investment for adolescent mental health.

Disclosure of Interest Statement:

The authors have no conflict of interest to disclose.