UNIVERSITY OF OREGON

HEDCO Institute

HOW EFFECTIVE ARE SCHOOL-BASED ANXIETY PREVENTION PROGRAMS?

Analyzing School-Based Interventions for Primary and Secondary Prevention of Anxiety

The HEDCO Institute for Evidence-Based Educational Practice

College of Education
University of Oregon
hedcoinstitute.uoregon.edu

An Overview of Systematic Reviews with Meta-Analyses

How effective are school-based anxiety prevention programs?

The HEDCO Institute for Evidence-Based Educational Practice

College of Education | University of Oregon

Contributing Staff

Emily Tanner-Smith
Elizabeth Day
Joe Golfen
Sean Grant
Maria Schweer-Collins
Katarzyna Steinka-Fry
Shaina Trevino

Advisory Board

Nicole Butler-Hooton
Chelsea Crawford
Randy Kamphaus
Aliza Moschella
Mark Mulvihill
Alesha Moreno-Ramirez
Lizbeth Ramirez
Akisha Osei Sarfo
James Thurman
Tenneal Wetherell

Support

Research reported in this publication was supported by private donor funds to the University of Oregon's College of Education. This research project, and the findings reported in this publication, were neither determined nor influenced by the donors. The content of this publication is solely the responsibility of the authors and does not necessarily represent the official views of the University of Oregon. The authors certify that they have affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this publication.

Citation

Day, E., Golfen, J., L., Schweer-Collins, M., Grant, S., Trevino, S., Steinka-Fry, K., Tanner-Smith, E., (2024). How effective are school-based anxiety prevention programs? HEDCO Institute for Evidence-Based Educational Practice. Retrieved from hedcoinstitute.uoregon.edu/anxiety

https://doi.org/10.17605/OSF.IO/STVR6

How effective are school-based anxiety prevention programs?

Summary of findings

Findings from our review suggest anxiety prevention programs are likely to reduce anxiety and depression symptoms on average, but the effect is small.

- On average, students in intervention groups had 3.6 percentile points fewer anxiety symptoms compared to students in control groups.
- On average, students in intervention groups had 2.8 percentile points fewer depression symptoms compared to students in control groups.

Characteristics of Included Studies

- We included studies of prevention programs – universal, selective, and indicated – that were focused specifically on reducing anxiety and offered to students during the school day.
- Using established risk-of-bias tools, we found that most studies had a high risk of bias.

Studies took place in:

Australia :	Canada:	UK:	IRE:	Other*:
42.9%	14.3%	11.4%	5.7%	25.7%

None of the studies took place in the United States.

- This doesn't mean studies haven't happened in the U.S., it just means those that have been done didn't meet the inclusion criteria for our review.
- Findings should be interpreted in the context of international education systems.
- More research needs to be done in U.S. schools to get a clearer picture of how anxiety prevention programs would operate in the U.S. context.

*IRE = Ireland
Other = 1 study each for 9 different countries

Why Anxiety Prevention?

The goal of this study was to understand how school-based anxiety prevention programs might impact youth mental health and well-being outcomes.

Estimates suggest that 1 in 5 youth experience clinically-elevated anxiety symptoms [1]

Rates of anxiety disorders are twice as prevalent in adolescent populations compared to depression disorders. Anxiety, depression, and behavioral disorders are among the leading causes of illness and disability among youth worldwide.[2]

School-based interventions are a promising approach for supporting students in grades K-12. In this study, we asked "What are the effects of school-based anxiety prevention programs on youth anxiety and non-anxiety outcomes related to student well-being and educational achievement?"

Why Schools?

Schools are one of the few places where nearly all children and adolescents can be reached.[3]

Providing prevention services in the school setting can eliminate the many barriers families face when they seek out mental health support, such as time, transportation, stigma around seeking mental health support, staffing shortages, and scheduling challenges.[4]

"Anxiety prevention programs are one way that schools can help students directly and immediately, but it is important to note that these programs can only accomplish so much," said Sean Grant, Research Associate Professor at the HEDCO Institute.

"These programs are not designed to tackle the structural causes of the current youth mental health crisis. In addition to school-based programs, we need other interventions focused on the social determinants of youth mental health."

SOURCE: Adapted from Institute of Medicine (1994, p. 23).

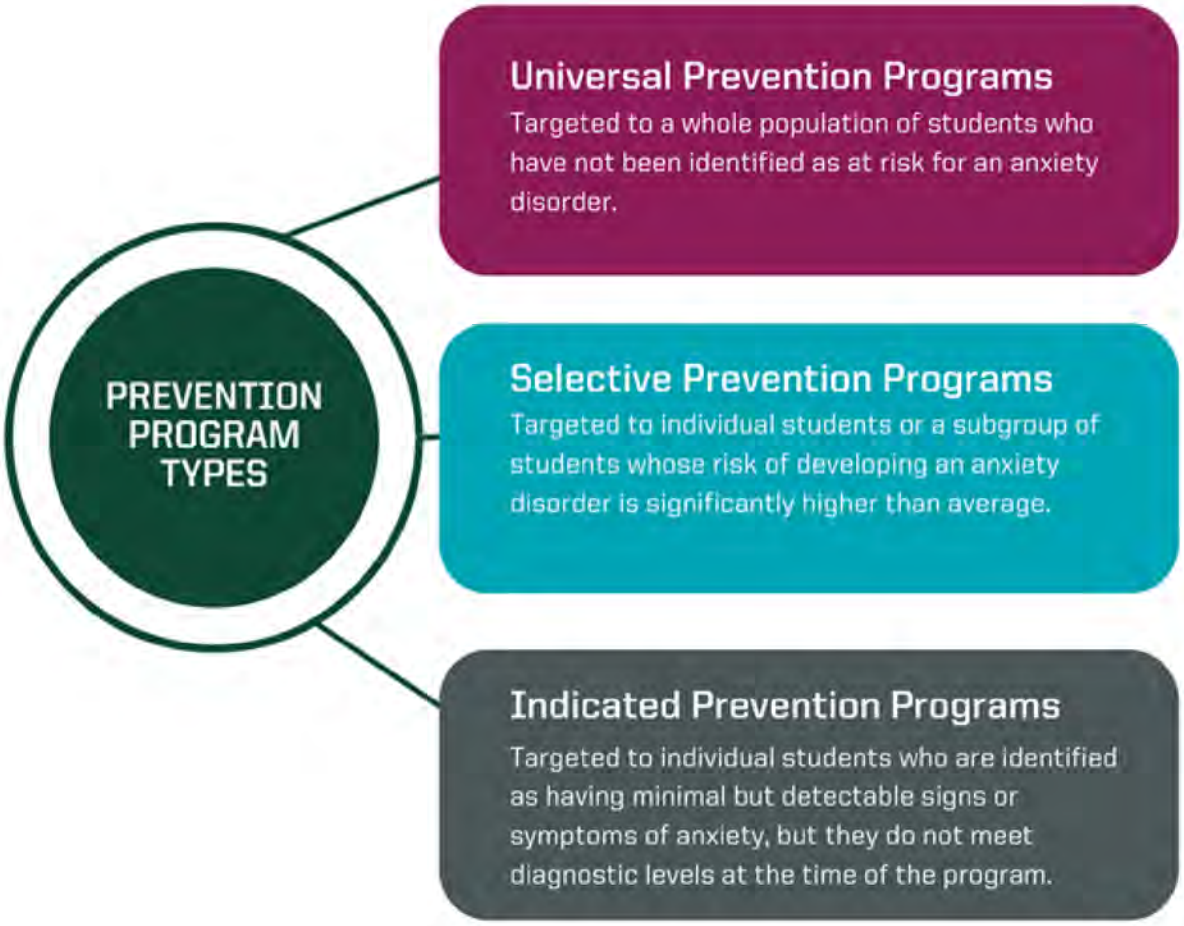
Levels of Intervention

What are the different types of mental health interventions?

Mental health interventions can be classified as health promotion programs, prevention programs, treatment, or maintenance programs. These differ based on their overarching goal and target populations. Health promotion aims to enhance self-esteem, mastery, well-being, social inclusion, and resilience. Prevention programs aim to reduce the occurrence of new diagnosed mental health disorders, while the goal of treatment is to diagnose and treat existing disorders. Maintenance programs include rehabilitation and aim to reduce relapse of disorders.

Which programs did we review?

We reviewed prevention programs – universal, selective, and indicated – that were focused specifically on reducing anxiety and offered to students during the school day. We excluded studies that focused on health promotion or treatment, or were offered outside of school hours. A full list of inclusion and exclusion criteria is in the appendix.



What programs were included in our study?

Most Programs Offered Universal (Primary) Prevention

Aussie Optimism Program

Cool Kids

e-couch Anxiety and Worry Program

FRIENDS Program Suite

Lessons for Living: Think Well, Do Well

Norwegian Universal Preventive Program for Social Anxiety

Taming Worry Dragons

Think, Feel, Do

Thiswayup! Schools

Unified Protocol for Transdiagnostic Treatment of Emotional Disorders in Adolescents

Other program approaches and techniques included:

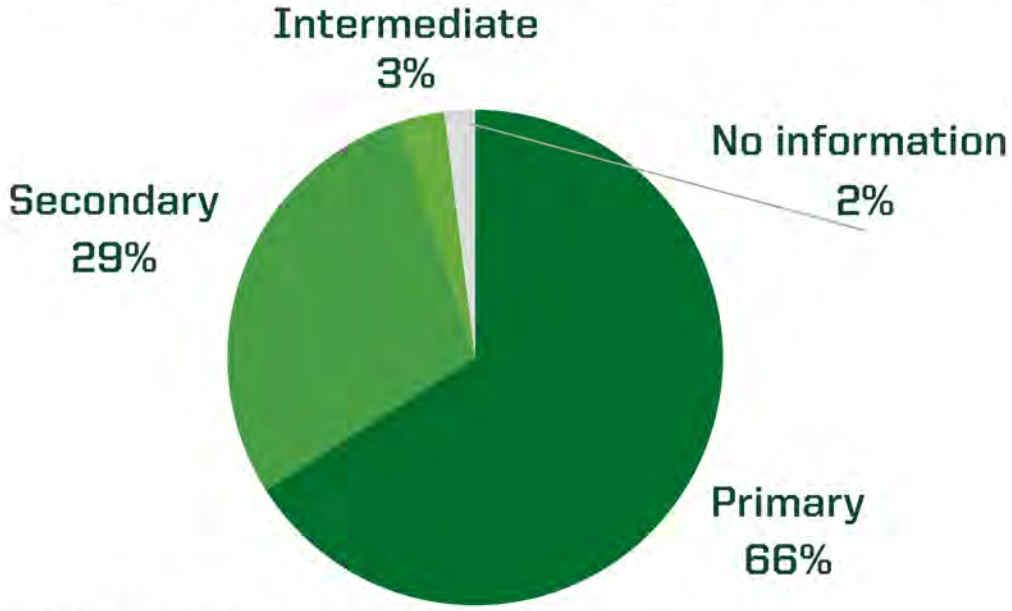
- Behavioral activation
- Cognitive behavioral intervention
- Emotion regulation
- Positive search training
- Well-being therapy

For additional information on select studies, view our Program Profiles on page 16

The HEDCO Institute is not affiliated with, nor have any financial interests, in any of the programs included in this review.

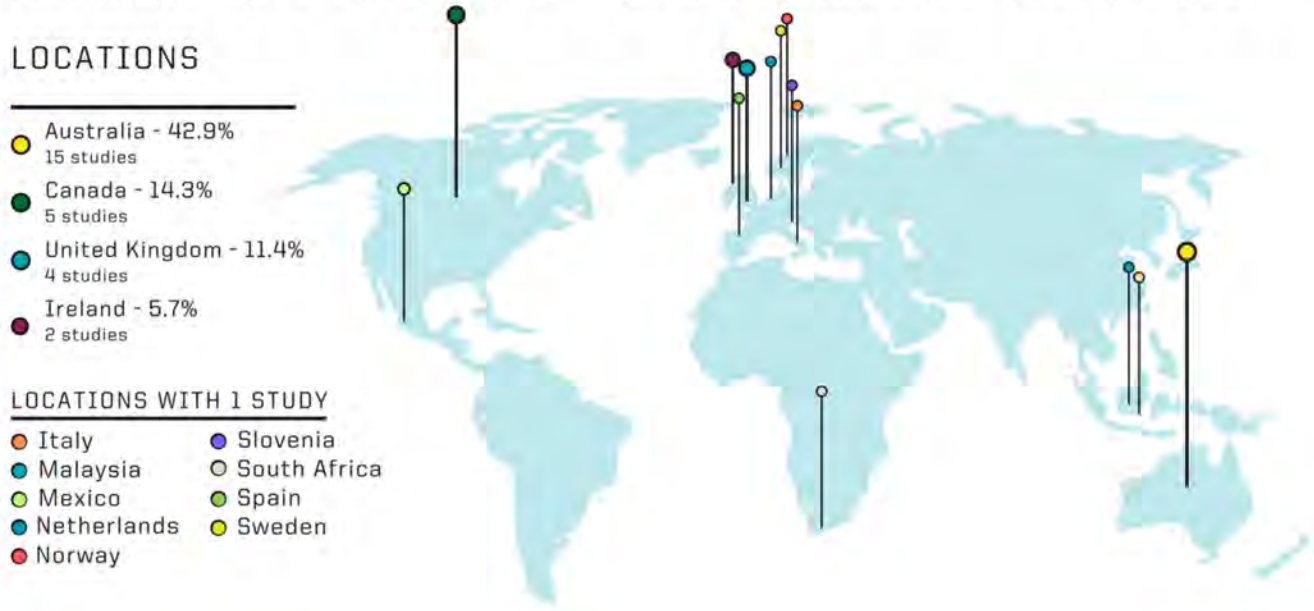
What schools were included in our study?

The majority of studies took place in primary schools.



Locations

The majority of studies took place in Australia and Canada.



Why no U.S. studies?

Interestingly, our search, screening, and selection process resulted in studies that all took place outside the United States. This doesn't mean studies haven't happened in the United States, it just means those that have been done didn't meet the rigorous quality inclusion criteria for our review.

We also heard from educational stakeholders that schools in the United States often focus on broader health promotion programming, not standalone anxiety prevention programs, which may also help explain the international focus of the findings.

> **"For implementation on a broader scale, I wouldn't focus just on [a single mental health condition]. I would focus on a broader set of what I call 'fellow travelers:' depression, anxiety, and insomnia... those disorders go together like peanut butter and jelly."**
> **-Educational stakeholder**

What does this mean for our findings?

- **Findings should be interpreted in the context of international education systems.**
  School settings vary greatly from country to country, so while these programs may still be beneficial for U.S. students, we can only say from our findings that there may be a small benefit on average for students in other countries.

- **More research needs to be done in U.S. schools to get a clearer picture of how anxiety prevention programs would operate in the U.S. context.**
  For example, Australian studies often took place in Health and Physical Education courses that already have content focusing on mental health and wellbeing. It is possible that effects could be larger in the United States where students may only receive content on nutrition and physical health.

Results

Anxiety Symptoms

Data from 28 studies analyzed, representing 14,844 students.

Average standardized mean difference = -0.09
95% CI [-0.16, -.01], 95% PI [-0.38, 0.21]
I^2 = 18%, τ^2 = 0.01

On average, students in intervention groups had 3.6 percentile points fewer anxiety symptoms compared to students in control groups.

What does this mean?

Future programs are likely to decrease anxiety symptoms, but not by much.

3.6
percentile points fewer symptoms for intervention students

Depression Symptoms

Data from 17 studies analyzed, representing 12,007 students.

Average standardized mean difference = -0.07
95% CI[-0.13, -0.01], 95% PI [-0.27, 0.13]
I^2 = 0%, τ^2 = 0

On average, students in intervention groups had 2.8 percentile points fewer depression symptoms compared to students in control groups.

What does this mean?

Future programs are likely to decrease depression symptoms, but not by much.

2.8
percentile points fewer symptoms for intervention students

Results

Anxiety Diagnoses

Data from 8 studies analyzed, representing 5,286 students.

Estimated risk ratio for average effect = 0.65
95% CI [0.42, 1.01], 95% PI [0.34, 1.26]
I^2 = 17%, τ^2 = 0.06

Students had a 35% reduced risk of anxiety, but this was not statistically significant.

What does this mean?
Future programs may or may not be associated with anxiety diagnoses.

Well-Being Outcomes

Data from 5 studies analyzed, representing 4,388 students.

Average standardized mean difference = -0.06
95% CI [-0.18, 0.06], 95% PI [-0.18, 0.06]
I^2 = 0%, τ^2 = 0

On average, students in intervention groups had 2.39 percentile points lower scores on well-being but this was not statistically significant.

What does this mean?
Future programs may or may not be associated with well-being.

Additional Analyses:

A full list of supplemental analyses is in the appendix.

There was no evidence of differences in outcomes based on a variety of factors including school (level and type), program (level of prevention), and study (country, publication year, and risk of bias) characteristics. The moderator test was statistically significant for the type of assignment to intervention the study utilized ($F[1,18.65] = 68.1$, $p < 0.0001$): trials using random assignment had significantly lower effect sizes (i.e., greater reductions in anxiety symptoms) compared to the one study using non-random assignment (non-random SMD = 0.22; random SMD = -0.31, 95% CI [-0.39 to -0.23]).

Studies did not report enough information to test differences by student race or ethnicity, sex, or cultural specificity of programs.

Other Outcomes:

We also looked at other outcomes, including well-being, educational achievement, self-harm, substance use, and suicidal ideation.

There was not enough information provided to formally analyze the effects of programs on other outcomes because only a small number of studies measured the effect of anxiety prevention programs on these other outcomes.

Other Considerations:

Our review does not include studies taking place post-COVID-19, so we are unable to explore the impacts of COVID-19 on programs and outcomes.

Other study characteristics

35 included primary studies provided data on 17,950 students. No studies took place in the United States.

students per study
Range: 20 to 2,288

Median: 8 classrooms per study
Range: 2 to 32

Median: 7 schools per study
Range: 1 to 63

37% of studies did not report number of classrooms

Few studies reported student race/ethnicity

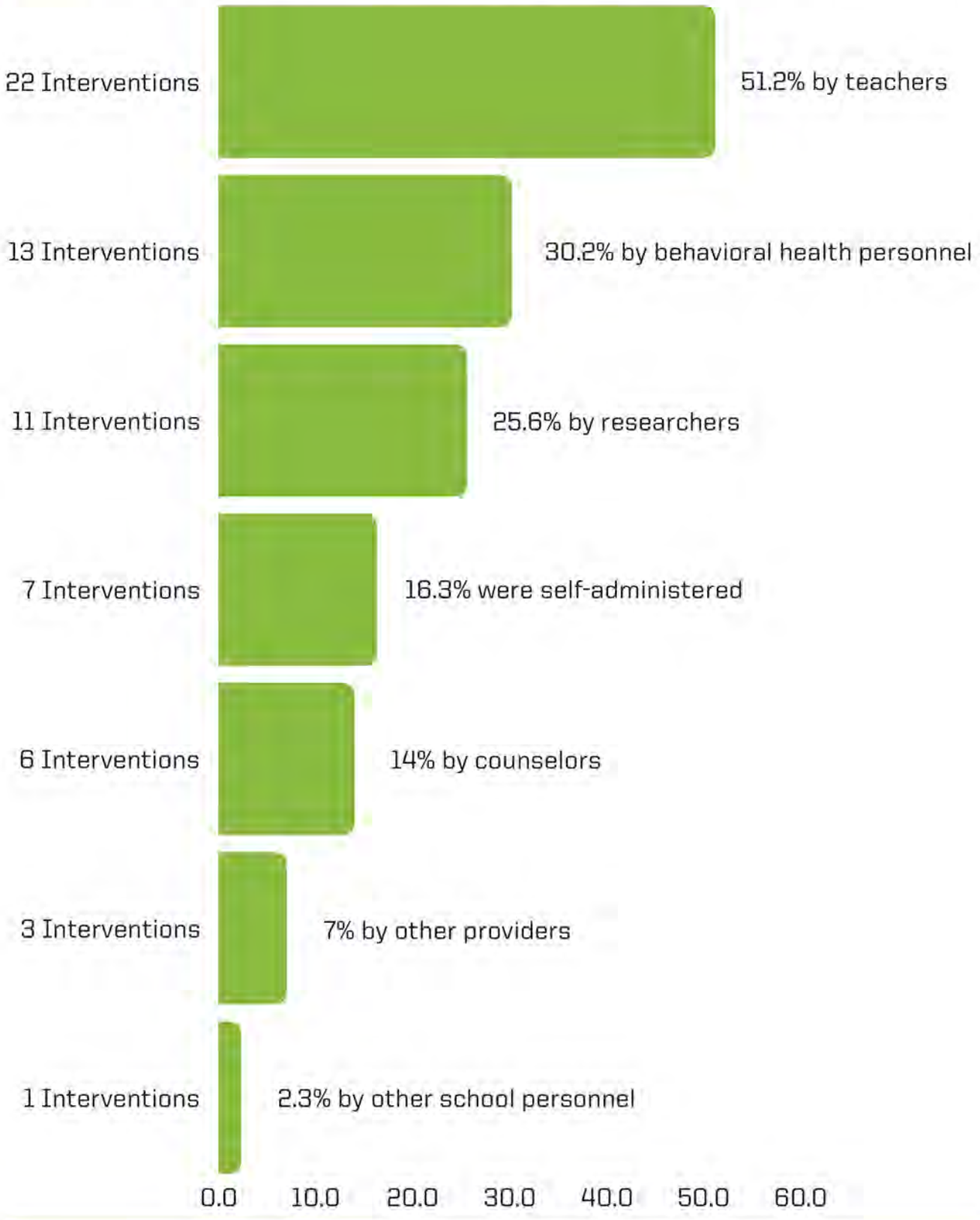
Race/Ethnicity

85.7%

of studies didn't report any race/ethnicity

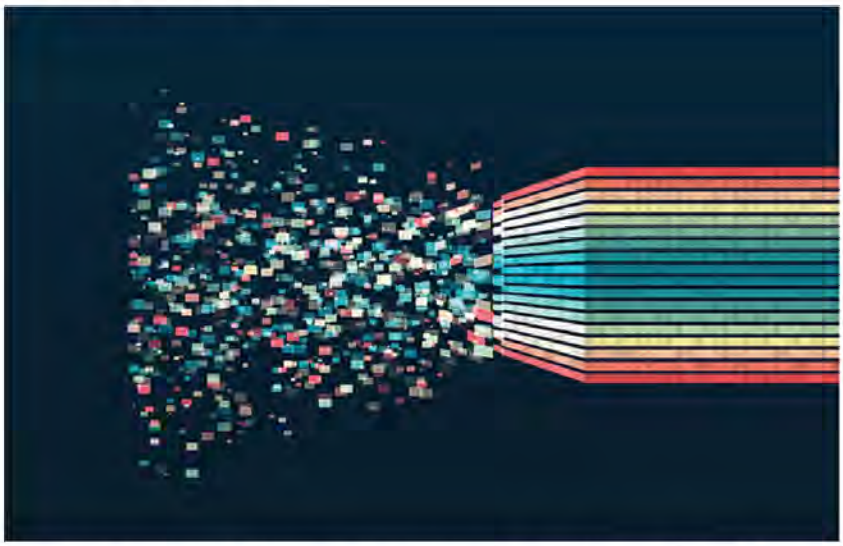
Median percent white race/ethnicity 89%. Average white race/ethnicity is 69.3%. (SD 46.4%)

The majority of programs were facilitated by teachers, behavioral health personnel, or researchers.



What's meta-analysis?

Meta-analysis is a statistical method for formally combining findings from an entire body of literature. Conducting a meta-analysis is often part of a systematic review – a formal process to find all research on a specific topic. During the review process, the review team collects data on program impacts from each eligible research study. Meta-analysis synthesizes the impacts across studies, which allows us to draw conclusions about overall program effectiveness.



Evidence synthesis allows us to combine (or "synthesize") data from multiple research studies of the same intervention used in various contexts. Synthesizing data allows us to better understand the effectiveness of the intervention and who might benefit most.

Citations:

1. Racine, N., McArthur, B. A., Cooke, J. E., Eirich, R., Zhu, J., & Madigan, S. (2021). Global prevalence of depressive and anxiety symptoms in children and adolescents during COVID-19: A meta-analysis. JAMA Pediatrics, 175(11), 1142-1150.

2. World Health Organization (2021). Mental health of adolescents. Retrieved from: https://www.who.int/news-room/fact-sheets/detail/adolescent-mental-health

3. Arora, P. G., Collins, T. A., Dart, E. H., Hernández, S., Fetterman, H., & Doll, B. (2019). Multi-tiered systems of support for school-based mental health: A systematic review of depression interventions. School Mental Health, 11(2), 240–264. https://doi.org/10.1007/s12310-019-09314-4

4. Werner-Seidler, A., Spanos, S., Calear, A. L., Perry, Y., Torok, M., O'Dea, B., Christensen, H., & Newby, J. M. (2021). School-based depression and anxiety prevention programs: An updated systematic review and meta-analysis. Clinical Psychology Review, 89, 102079. https://doi.org/10.1016/j.cpr.2021.102079

Anxiety Prevention Program Profiles

For more information about school-based anxiety prevention programs please visit hedcoinstitute.uoregon.edu/anxiety

Which program should I use?

It depends.

The findings from this review can't point to the benefits of one program over another. However, we have compiled details of the programs included in this review that have accessible curricula. These program profiles include a summary of findings on the effectiveness of specific programs that are offered in evidence clearinghouses.

What's an evidence clearinghouse?

Evidence clearinghouses compile available effectiveness data for individual programs. Researchers evaluate the quality of the evidence and designate ratings for the level of evidence that supports a program.

The scales differ from one clearinghouse to another, but still offer a useful tool for assessing if a program has been formally evaluated and what the evidence tells us about its effectiveness.

Note: Some programs were included in studies we used in our analysis, but aren't included in these profiles because they were not branded, not in clearinghouses or did not have publicly available details.

Aussie Optimism Program

Prevention Level: Universal

Description

Aussie Optimism Program (AOP) comprises six classroom-based programs, each developmentally appropriate for different grade levels. The program takes a positive psychology approach, helping to build core competencies in students. These competencies include how to identify and manage feelings, make and maintain friends, solve social problems, think optimistically to promote self-esteem, and bounce back from difficulties.

Program Features

Student Age
5 - 18

Delivery Method
Integrated into curriculum during class time

Timing
Ten 60-minute sessions

Cost
$24 per student

Summary of Findings

There is some evidence this program may decrease symptoms of depression and anxiety.

Read more about the program and its evidence base:
The Australian Government's Positive Choices Database

Country (number of studies)

Australia (4)

Race/Ethnicity of Participants

No studies provided race/ethnicity data.

Facilitators and Training

Group leaders must attend a one-day training workshop. These workshops are held at Curtin University three times a year. Alternatively, the Aussie Optimism team can organize an online workshop. Training costs $150 per person.

School Type

Urban public schools

Primary schools

Risk of Bias*

4 studies of AOP were included in this review.

Low Risk: None

Some Risk: None

High Risk: x x x x

Critical Risk: None

*Risk of bias helps us understand whether there is any risk of bias in the included studies' results that could distort the review's results.
Measure used: Cochrane's RoB2 tool

Full Program Details

AOP was developed by researchers in the School of Population Health at Curtin University.

For full cost and training details, visit:
https://aussieoptimism.com.au/

Full Anxiety Review

Read the full HEDCO Institute review of "How effective are school-based anxiety prevention programs?"

Cool Kids Program

Prevention Level: Targeted

Description

Cool Kids is a cognitive behavioral therapy program that teaches children and their parents how to manage anxiety. This includes learning about feelings and anxiety, learning to think more realistically, fighting fear and facing fear, and learning coping skills such as social confidence.

Program Features

Student Age
7 - 17

Delivery Method
In-person or online

Timing
10-session program run over a minimum of 10 weeks

Cost
$65 per program kit

Summary of Findings

There is some evidence this program may decrease symptoms of anxiety and anxiety diagnoses.

Read more about the program and its evidence base: Healthy Communities Institute

Country (number of studies)

Australia (1)

Race/Ethnicity of Participants

This study did not provide race/ethnicity data

Facilitators and Training

Facilitators must have a four-year undergraduate or two-year postgraduate degree in health or education, as well as additional training in cognitive-behavioral therapy. Trainers must complete online training ($300) and an online accreditation process ($300).

School Type

Public school

Primary school

Risk of Bias*

1 study of Cool Kids was included in this review.

Low Risk: None

Some Risk: None

High Risk: x

Critical Risk: None

*Risk of bias helps us understand whether there is any risk of bias in the included studies' results that could distort the review's results.

Measure used: Cochrane's RoB2 tool

Full Program Details

The Cool Kids suite of programs was developed by Macquarie University Centre for Emotional Health, which also distributes training and program materials.

https://www.ceh-shop.mq.edu.au/

Full Anxiety Review

Read the full HEDCO Institute review of "How effective are school-based anxiety prevention programs?"

e-couch Anxiety and Worry program

Prevention Level: Universal

Description

e-couch is an online, self-directed training program which provides interactive self-help and evidence-based information to help users to understand and manage symptoms associated with common mental issues.

Program Features

Student Age
16+

Delivery Method
Online

Timing
Free

Cost
Self-paced over seven modules

Summary of Findings

There is some evidence to that e-couch may be effective in the treatment of anxiety disorder for young adults in the short-term.

Read more about the program and its evidence base:
Beacon Clearinghouse, Centre for Mental Health Research at the Australian National University

Country (number of studies)

Australia (2)

Race/Ethnicity of Participants

No studies provided race/ethnicity data.

Facilitators and Training

This program is entirely self-directed online; there is no facilitator or training requirement.

School Type

Rural and urban schools, both public and parochial

Secondary schools

Risk of Bias*

2 studies of e-couch were included in this review.

Low Risk: None

Some Risk: None

High Risk: x x

Critical Risk: None

*Risk of bias helps us understand whether there is any risk of bias in the included studies' results that could distort the review's results.
Measure used: Cochrane's RoB2 tool

Full Program Details

e-couch was originally developed by researchers at the Australian National University - the same team that developed the well-known moodgym program for depression and anxiety. The development and delivery of e-couch is now undertaken by e-hub Health – an ANU spin-off company. e-hub Health is part of the Dialogue group of companies.

Full Anxiety Review

Read the full HEDCO Institute review of "How effective are school-based anxiety prevention programs?"

FRIENDS for Life

Prevention Level:
Universal or Targeted

Description

FRIENDS for Life is a social skills and resilience curriculum set to prevent anxiety for children. FRIENDS for Life empowers participants to cope with the emotions of themselves and others by engaging with positive thoughts, emotions, and self-regulation strategies. The program also teaches creative alternatives to solving problems they would have previously shied away from, fostering the development of confidence and self-esteem.

Program Features

Student Age
4 - 18+

Delivery Method
In-person

Timing
Flexible:
1.5 hour weekly sessions
over a single school term

Cost
Not Available

Summary of Findings

There is some evidence that versions of this program for children age 8 - 17 may decrease internalizing symptoms.

Read more about this program and its evidence base:
California Evidence-Based Clearinghouse
Clearinghouse for Military Family Readiness

Country (number of studies)

Australia (5), Canada (4), Ireland (2)

1 study: Mexico, Scotland, Slovenia, South Africa, United Kingdom

Race/Ethnicity of Participants

Three studies reported race/ethnicity, with the majority of students identifying as white.

Facilitators and Training

Facilitators must be registered health or education professionals. Training is delivered online. Organizations that become licensed partners can also implement Train the Trainer training for additional facilitators.

School Type

Rural, suburban, and urban schools, including public, private, and parochial

Primary and secondary schools

Risk of Bias*

17 studies of FRIENDS were included in this review.

Low Risk: None

Some Risk: x x x x x x

High Risk: x x x x x x x x x x x

Critical Risk: None

*Risk of bias helps us understand whether there is any risk of bias in the included studies' results that could distort the review's results.
Measure used: Cochrane's RoB2 tool

Full Program Details

Dr. Paula Barrett developed the FRIENDS suite of programs. For a detailed biography and more information, visit https://friendsresilience.org/author.

Full Anxiety Review

Read the full HEDCO Institute review of "How effective are school-based anxiety prevention programs?"

This Way Up!

Prevention Level:
Universal

Description

This Way Up! is an online course designed to teach proven strategies for tackling symptoms of anxiety and teaching students how to work with their thoughts, emotions, and behaviors to make a positive change in how they feel.

Program Features

Student Age
14 - 16

Delivery Method
Online

Timing
Four hours per week for six weeks

Cost
$59 without a prescription; Free with clinician referral

Summary of Findings

There is some evidence that This Way Up! program may reduce symptoms of anxiety.

Read more about the program and its evidence base: Beacon Clearinghouse, Centre for Mental Health Research at the Australian National University

Country (number of studies)

Australia (1)

Race/Ethnicity of Participants

This study did not provide race/ethnicity data.

Facilitators and Training

This program is entirely self-directed online; there is no facilitator or training requirement.

School Type

Urban private school

Risk of Bias*

1 study of This Way Up! was included in this review.

Low Risk: None

Some Risk: None

High Risk: x

Critical Risk: None

*Risk of bias helps us understand whether there is any risk of bias in the included studies' results that could distort the review's results.

Measure used: Cochrane's RoB2 tool

Full Program Details

This Way Up! was developed through a joint initiative of St. Vincent's Hospital and the University of New South Wales. It is funded by the Australian Government Department of Health and Aged Care. For more information, visit: https://thiswayup.org.au/

Full Anxiety Review

Read the full HEDCO Institute review of "How effective are school-based anxiety prevention programs?"

Unified Protocol for Transdiagnostic Treatment of Emotional Disorders

Prevention Level: Universal

Description

The Unified Protocol for Transdiagnostic Treatment of Emotional Disorders for Adolescents (UP-A) are therapeutic strategies for helping youth reduce the intensity and frequency of negative emotions by extinguishing the distress and anxiety these emotions produce.

Program Features

Student Age
12 - 17

Delivery Method
In-person, individual or group

Timing
Flexible timing; individual therapy with adolescent clients

Cost
Unclear; therapist manual is $45 and the workbook is an additional $45

Summary of Findings

There is some evidence this program may decrease symptoms of anxiety compared to those in a waitlist control condition.

Read more about the program and its evidence base: California Evidence-Based Clearinghouse

Country (number of studies)

Spain (1)

Race/Ethnicity of Participants

This study did not provide race/ethnicity data.

Facilitators and Training

Trainings are offered by the developers as requested by trainees. Visit https://camat.psy.miami.edu/up-c-and-up-a-training/index.html to submit a request for training.

School Type

Urban school

Secondary school

Risk of Bias*

1 study of UP-A was included in this review.

Low Risk: None

Some Risk: x

High Risk: None

Critical Risk: None

*Risk of bias helps us understand whether there is any risk of bias in the included studies' results that could distort the review's results.

Measure used: Cochrane's RoB2 tool

Full Program Details

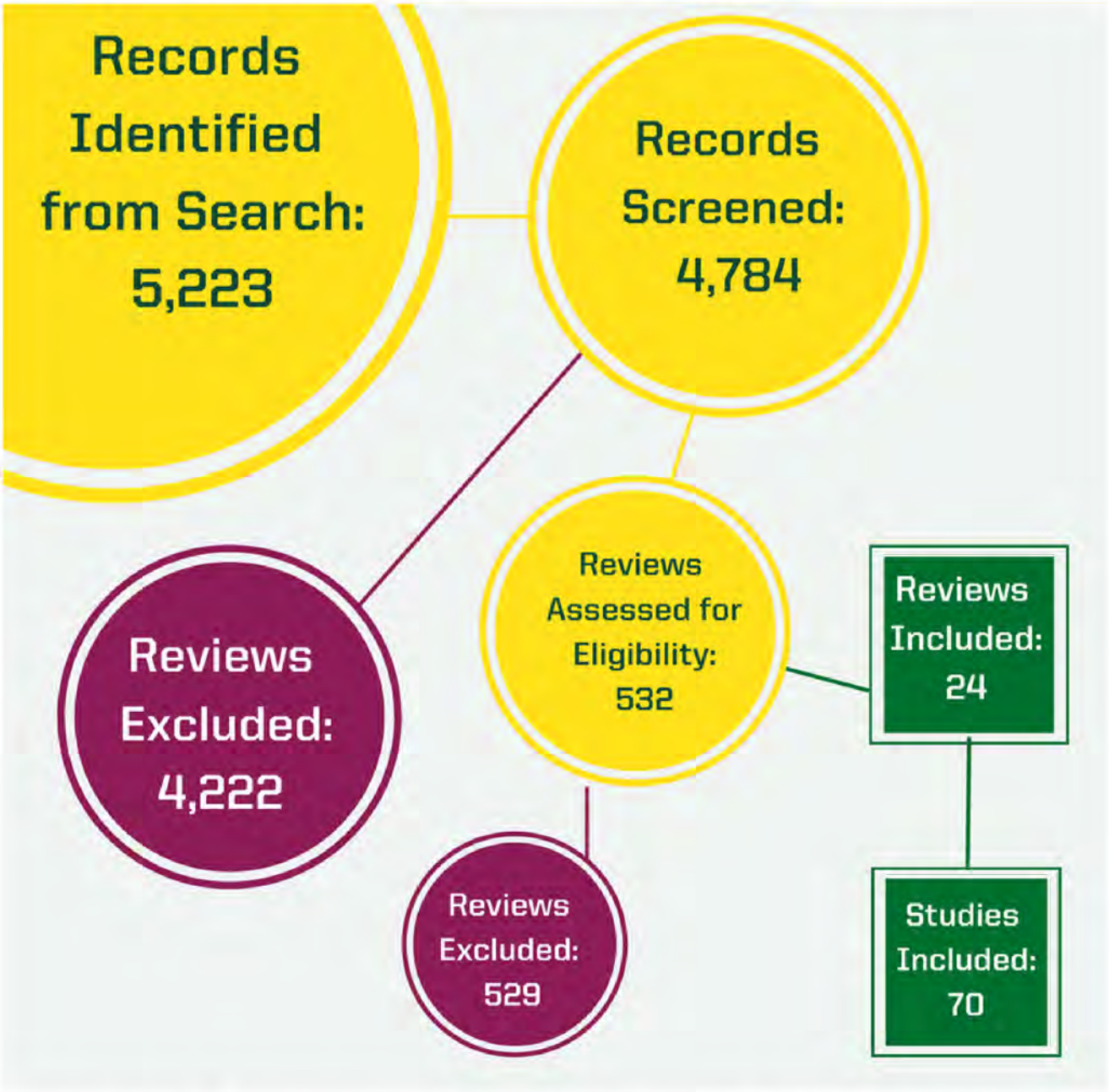
UP-A was developed by Dr. Jill Ehrenreich-May and colleagues at the University of Miami.

Full Anxiety Review

Read the full HEDCO Institute review of "How effective are school-based anxiety prevention programs?"

Appendix

Identification of reviews via databases and registers



This chart demonstrates the number of records that were screened using our protocol before analysis began.

All Inclusion and Exclusion Criteria

Criteria	Include	Exclude
Populations	• K-12 students	• Pre-K and college students
Interventions	• Universal prevention • Selective prevention • Indicated prevention	• Screening-only interventions • Treatment interventions • Not directed to students
Comparators	• Any comparator	• None
Outcomes	• Depression diagnosis • Subsyndromal depression • Depressive symptoms	• None
Timing	• Timing of follow-up not limited	• None
Setting	• K-12 schools	• Out-of-school-time only
Study design and publications	• Systematic reviews with meta-analysis • English only • Published 1990 and after	• Full report not available

Supplemental Analyses for Anxiety Symptoms

Educational Achievement

Three studies (9%) comprised of 2,402 students (13%) reported outcome data on educational achievement. Skryabina et al. (2016) found national standardized test scores in reading, writing, and math did not differ between groups at 52-week follow-up. Collins et al. (2014) found no significant differences in spelling between the psychologist-led anxiety prevention program and comparison group students, but they did find significant differences between the teacher-led anxiety prevention program and comparison group students. Ahlen et al. (2018) found no significant difference between groups on teacher-rated academic performance at post-intervention and 52-week follow-up.

Suicidal Ideation

One study (3%) comprised of 2,288 students (13%) reported outcome data on suicidal ideation. However, the degrees of freedom are below the threshold to use robust variance estimation (Tipton, 2015), so results are reported narratively. Roberts et al. (2018) found significantly lower incidence rates of suicidal ideation at post-intervention and 52-weeks follow-up among students receiving anxiety prevention programs compared to control group students.

Well-Being

Five studies (14%) comprised of 4,388 students (24%) reported meta-analyzable data on well-being. However, the degrees of freedom are below the threshold to use robust variance estimation (Tipton, 2015), so results are reported narratively. Two studies (40%) measured well-being using the Warwick-Edinburgh Mental Well-being Scale (WEMWBS), while one study each (20% each) used the Culture-free Self Esteem Questionnaire, Kessler psychological distress scale - short form (K6), and Total Life Satisfaction questionnaire. We did not detect statistically significant differences between groups on student well-being (SMD = -0.06, 95% CI [-0.18, 0.06], 95% PI [-0.18, 0.06], I^2= 0%, τ^2= 0). The TOST procedure indicated that the observed effect size (d = -0.06) was not significantly within the equivalent bounds of SMD +/- 0.10 (Z = -0.64, p = 0.261).

No studies provided outcome data on self-harm, stress, or substance use.

Supplemental Analyses

Tests for residual heterogeneity remained significant in all meta-regression models (i.e., in every model, the variability in the observed effect sizes not accounted for by the moderator included in the model is larger than would be expected based on sampling variability alone).

For type of type of assignment to interventions (randomized or not), the moderator test was statistically significant ($F[1,18.65] = 68.1$, $p < 0.0001$): trials using random assignment had significantly lower effect sizes (i.e., greater reductions in anxiety symptoms) compared to the one study using non-random assignment (non-random SMD = 0.22; random SMD = -0.31, 95% CI [-0.39 to -0.23]).

The moderator test was also statistically significant for type of school ($F[1, 16.3] = 7.9$, $p = 0.01$): studies including public schools had significantly higher effect sizes (i.e., smaller reductions in anxiety symptoms) compared to studies not including public schools (no public schools SMD = -0.21, 95% CI [-0.36 to -0.06; public schools SMD = -0.002, 95% CI [-0.08 to 0.09]). Based on this meta-regression results, we conducted the TOST procedure on studies that included public schools, which indicated that the observed effect size was significantly within the equivalent bounds of SMD +/- 0.10 ($Z = -2.674$, $p = 0.004$)—suggesting a null effect on average in studies that included public schools. As "studies including public schools" involved studies with a mix of public and other school types, we ran an additional exploratory analysis with five moderator levels: studies with public schools only, private schools only, parochial schools only, mix of school types, and "cannot tell" type of school. The moderator test for this analysis was not statistically significant ($F[5, 1.17] = 11.2$, $p = 0.185$). We did not detect statistically significant associations between anxiety symptoms and school level (secondary or not), country (Australia or not), level of prevention (universal or targeted), type of comparator (business as usual or not), years since publication, percent female in the sample, and risk of bias (high or not).

UNIVERSITY OF OREGON | HEDCO Institute

HEDCO Institute for Evidence-Based Educational Practice

College of Education | University of Oregon

The HEDCO Institute for Evidence-Based Educational Practice is dedicated to strengthening connections between research and practice in K-12 education in the United States.

Part of the University of Oregon's College of Education, the institute provides education leaders with relevant, accessible, and reliable information about the latest research so they can implement evidence-informed practices and policies.

hedcoinstitute.uoregon.edu

hedcoinstitute@uoregon.edu

linkedin.com/showcase/hedco-institute