



UNIVERSITY OF  
OREGON

**HEDCO Institute**



# DO SCHOOL-BASED DEPRESSION PREVENTION PROGRAMS SUPPORT YOUTH?

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

The HEDCO Institute for  
Evidence-Based Educational  
Practice

College of Education  
University of Oregon

[hedcoinstitute.uoregon.edu](http://hedcoinstitute.uoregon.edu)

An Overview of  
Systematic Reviews  
with Meta-Analyses

# Do school-based depression prevention programs support youth?

The HEDCO Institute for Evidence-Based Educational Practice  
College of Education | University of Oregon

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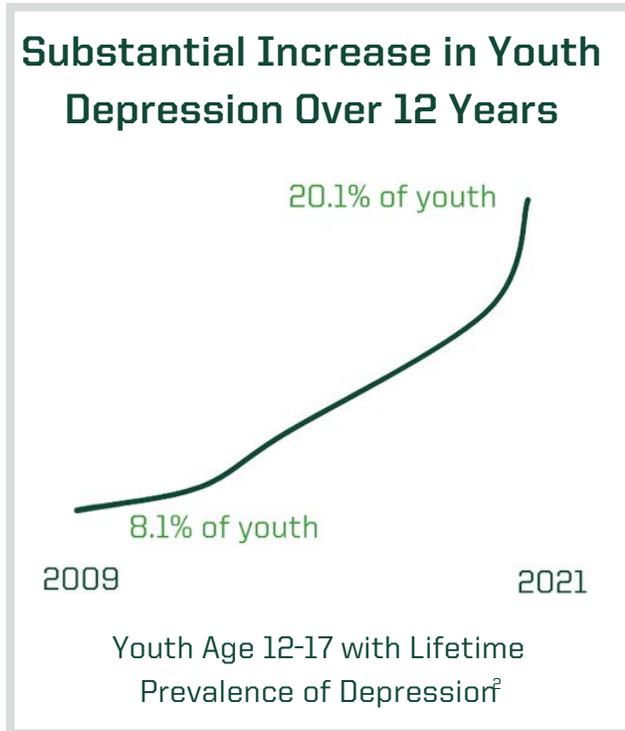
## Support

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# Why Depression Prevention?



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

Depression is one of the most common mental health challenges facing students today, affecting nearly 5 million youth.<sup>1</sup>

Depression is one of the most common mental health challenges facing students today, affecting nearly 5 million youth in 2021, according to the [SAMHSA National Survey on Drug Use and Health](#).

Additionally, the [2021 Youth Risk Behavior Survey](#) from the Centers for Disease Control and Prevention also found that 44% of high school students reported they persistently felt sad or hopeless during the past year, up from 28% in 2011.

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 depression prevention programs on youth depression and non-depression outcomes related to student well-being and educational achievement?”

# Why Schools?

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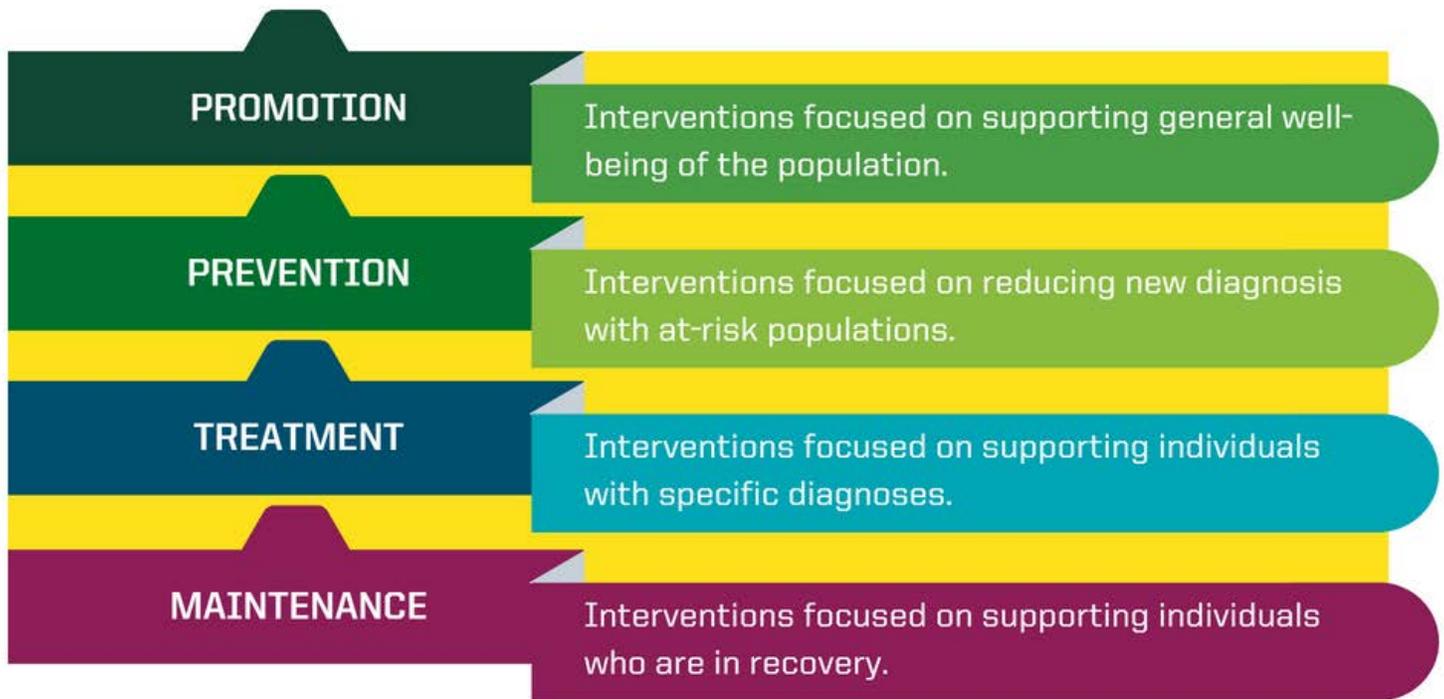
**Schools are one of the few places where nearly all children and adolescents can be reached.<sup>3</sup>**

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.<sup>4</sup>

“Depression 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).

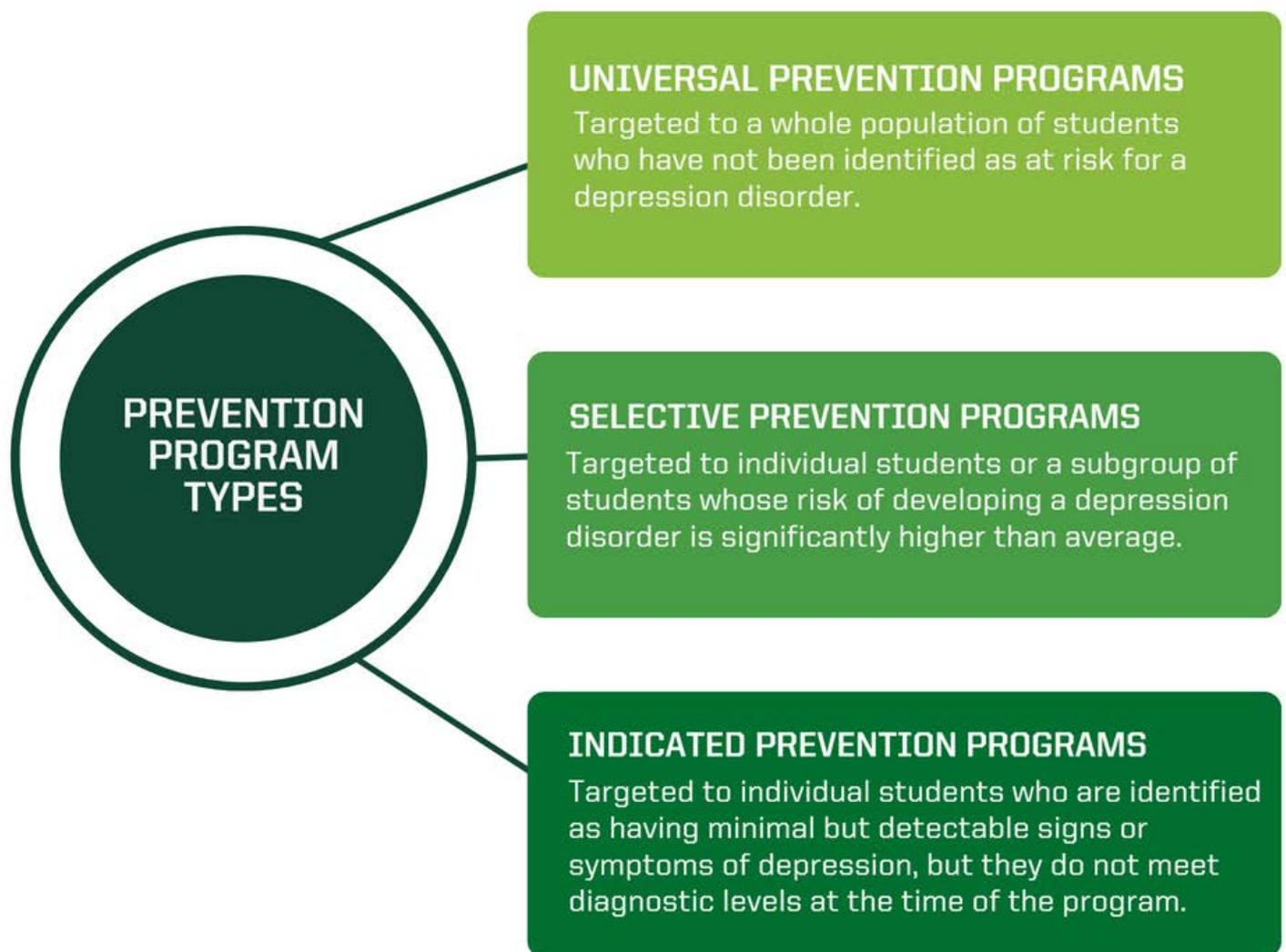
## Scope of Preventions

# 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?

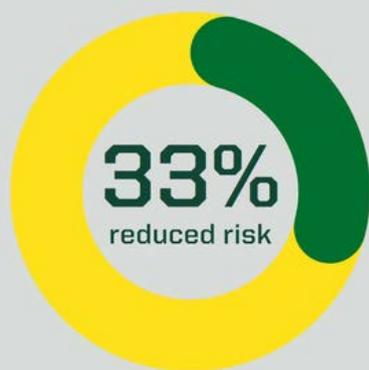
We reviewed prevention programs – universal, selective, and indicated – that were focused specifically on reducing depression and offered to students during the school day. We excluded studies that focused on health promotion, treatment, or maintenance of depression, or were offered outside of school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



# Do Programs Reduce Risk of Depression?

School-based depression prevention programs may reduce the risk of depression.

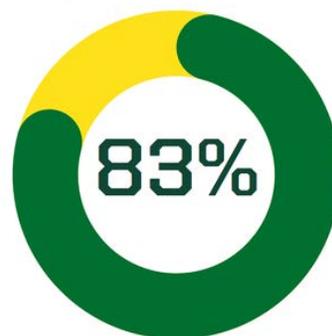
Data from 12 studies analyzed, representing 9,838 students.



On average, students in depression prevention programs had a 33% reduced risk of depression compared to students in control groups.

## Will these programs work for my school?

Assuming your school and students are similar to those in the review, you are more likely than not to benefit from implementing a program. However, we cannot guarantee that it will work. Future research is needed to better understand which students and schools benefit the most from which programs.



estimated probability that your students' average risk of depression will improve after program implementation

# Do Programs Reduce Depression Symptoms?

School-based depression prevention programs may reduce the severity of depression symptoms.

Data from 60 studies analyzed, representing 37,705 students.

**On average, students in depression prevention programs had less severe depression symptoms compared to students in control groups.**

(0.12 standardized deviations lower)

This effect is of medium magnitude, relative to other school-based programs for student well-being.<sup>5</sup>

## Will these programs work for my school?

Assuming your school and students are similar to those in the review, you are more likely than not to benefit from implementing a program. However, we cannot guarantee that it will work. Future research is needed to better understand which students and schools benefit the most from which programs.



estimated probability that your students' average symptoms will improve after program implementation

## Anxiety Symptoms:

We analyzed data from 23 studies, representing 20,386 students. Programs may have little to no average effect on anxiety symptoms, though the evidence is very uncertain.

A full list of supplemental analyses is in the appendix.

## Additional Analyses:

There was no evidence of differences in outcomes based on a variety of factors including school (level and type), program (level of prevention and type of comparison group), and study (country, publication year, and risk of bias) characteristics. 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 educational achievement, self-harm, substance use, suicidal ideation, and well-being. There was not enough information provided to formally analyze the effects of programs on these outcomes because only a small number of studies measured the effect of depression prevention programs on these other outcomes.

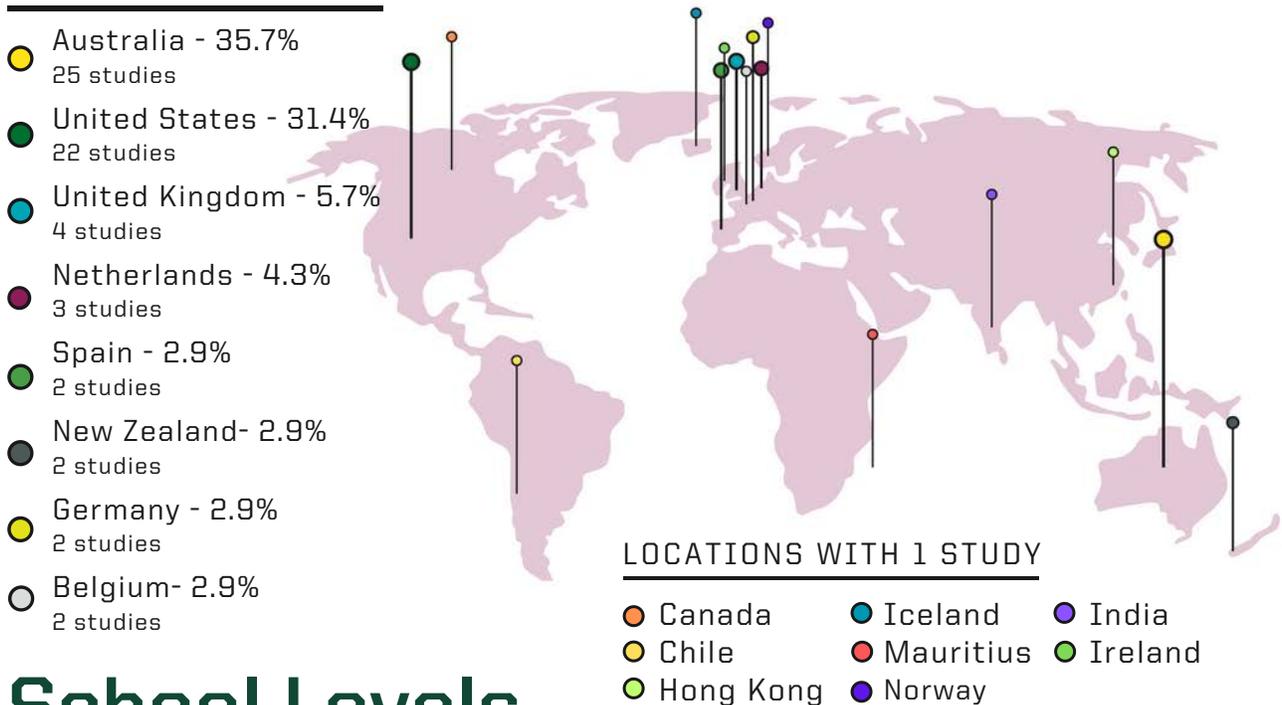
## Other Considerations:

- 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.
- There was no evidence of differences in depression symptoms based on family involvement in programs.
- There was no evidence of differences in depression symptoms based on program fidelity monitoring or problems detected in program delivery.

# Locations

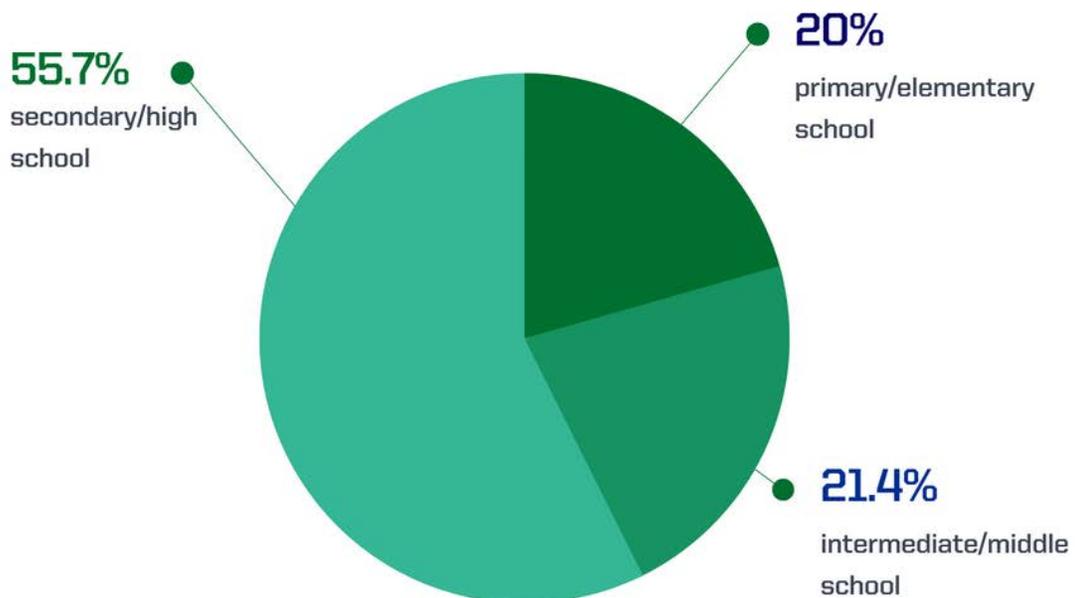
The majority of studies took place in Australia and the U.S.

## LOCATIONS



# School Levels

The majority of studies took place in secondary/high schools



# Student Demographics

70 included primary studies provided data on 44,519 students

## Age

Median Age

13.6

The average age of students ranged from 8.8 to 17.3

## Race/Ethnicity

69%

of studies didn't report any race/ethnicity

Across studies that reported race/ethnicity - just 31% of studies - on average, 51% of students were white (SD = 37.8%).

209

students per study

Median: 209  
students per study  
Range: 15 to 5,634

332

classrooms included

Median: 13  
classrooms per study  
Range: 0 to 66

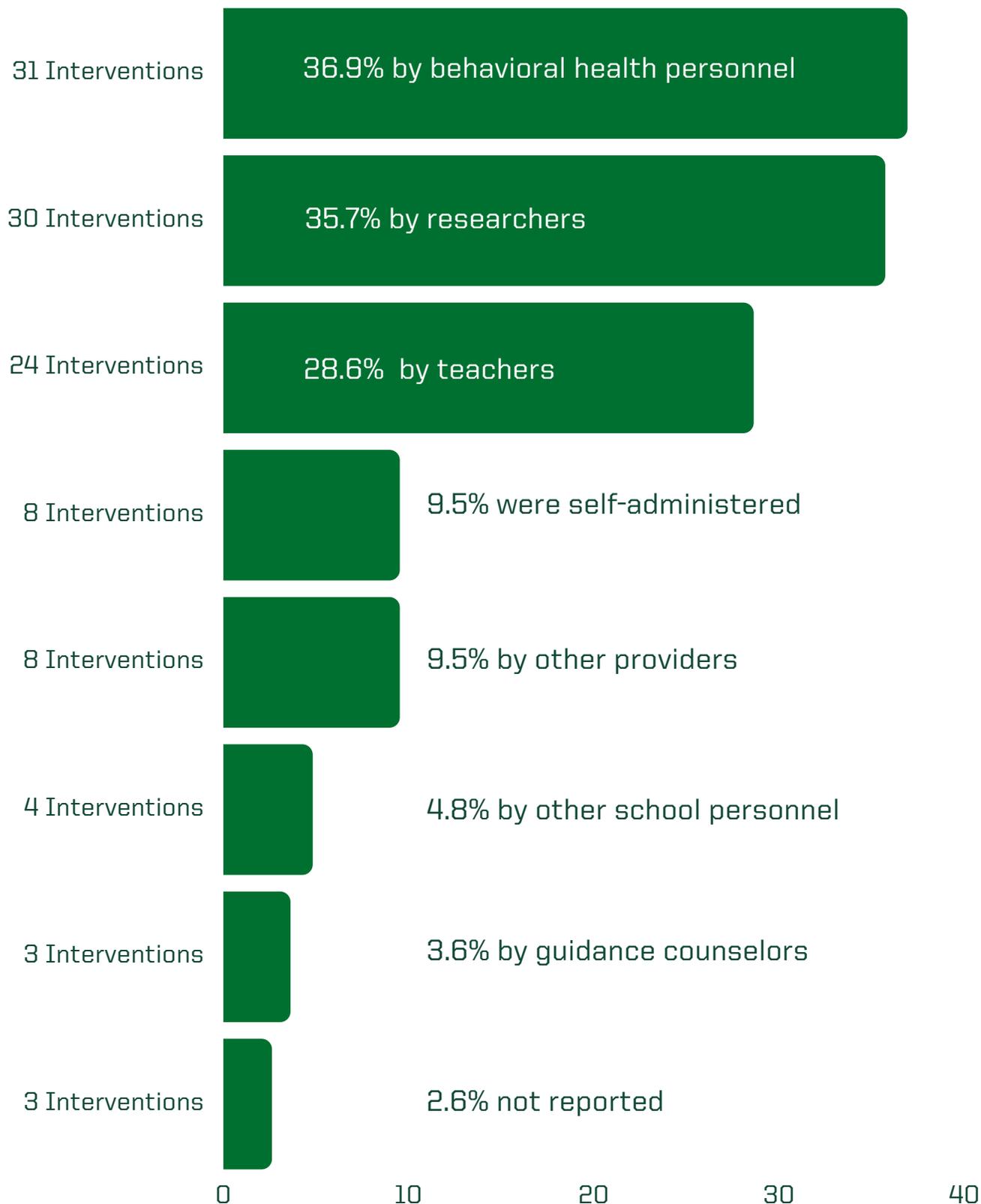
570

schools included

Median: 4  
schools per study  
Range: 1 to 63

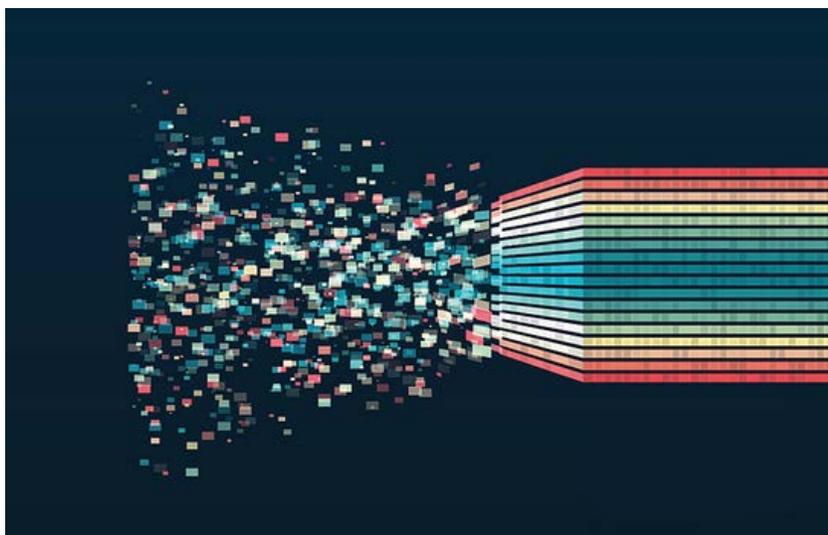


## The majority of programs were facilitated by teachers, behavioral health personnel, or researchers.



# 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.

## Evidence Review Process



# Citations:

1. Substance Abuse and Mental Health Services Administration. (2021). National Survey on Drug Use and Health Detailed Tables. [samhsa.gov/data/report/2021-nsduh-detailed-tables](https://www.samhsa.gov/data/report/2021-nsduh-detailed-tables)
2. Daly, M. (2022). Prevalence of depression among adolescents in the US from 2009 to 2019: Analysis of trends by sex, race/ethnicity, and income. *Journal of Adolescent Health*, 70(3), 496-499. [doi.org/10.1016/j.jadohealth.2021.08.026](https://doi.org/10.1016/j.jadohealth.2021.08.026)
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. [doi.org/10.1007/s12310-019-09314-4](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. [doi.org/10.1016/j.cpr.2021.102079](https://doi.org/10.1016/j.cpr.2021.102079)
5. Tanner-Smith, E. E., Durlak, J. A., & Marx, R. A. (2018). Empirically based mean effect size distributions for universal prevention programs targeting school-aged youth: A review of meta-analyses. *Prevention Science*, 19(8), 1091-1101. [doi.org/10.1007/s11121-018-0942-1](https://doi.org/10.1007/s11121-018-0942-1)

# Product Profiles

## Which program should I use?

We don't know.

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 well-respected and high-quality U.S.-based 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.

# Adolescents Coping with Depression

## Description

The Adolescent Coping With Depression Course (CWD-A) is a cognitive-behavioral group intervention that targets problems typically experienced by adolescents living with depression. These problems include discomfort and anxiety, irrational/negative thoughts, poor social skills, and limited experiences of pleasant activities. The program teaches eight core cognitive-behavioral skills including mood monitoring, social skills, relaxation techniques, constructive thinking, communication, negotiation and problem solving, and maintenance of gains.

## Program Features



**Student Age**  
Adolescents 13 - 19



**Delivery Method**  
In-person to small groups  
(4-8 students)



**Timing**  
Sixteen 2-hour  
sessions



**Cost**  
\$328 for training and  
all program materials

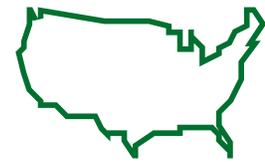
## Summary of Findings

There is inconsistent evidence this program may decrease depression diagnoses and depression symptoms. The majority of participants in studies included in the clearinghouse evaluation have been non-Hispanic white adolescents.

Read more about the program and its evidence base:  
[California Evidence-Based Clearinghouse for Child Welfare](#)

## Country (number of studies)

United States (3)



## Race/Ethnicity of Participants

One study reported race/ethnicity. One hundred percent of student participants were American Indian.

## Facilitators and Training

CWD-A can be incorporated into the practice of any licensed mental health professional. Students and teachers who do not have a mental health background should only conduct the course under the supervision of a licensed mental health professional. Training costs \$249 per person.

## Cultural Adaptation

None reported.

## Risk of Bias\*

3 studies of CWD-A were included in the review

**Low Risk:** x

**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

This program was developed by researchers at the Oregon Research Institute and is housed at Saavvus Inc.

For more details, visit:

<https://www.saavvus.com/adolescent-coping-with-depression-course>

## Full Depression Review

Read the full [HEDCO Institute review of School-Based Interventions for Primary and Secondary Prevention of Depression](#).

# .b (Dot Be)

## Description

.b (pronounced 'dot-be') is designed to introduce knowledge and skills to youth to help them support their own mental health and wellbeing. The course combines focusing on key areas of the brain and how these areas relate to everyday experiences. The program includes mindfulness practices students can draw upon as they navigate the inevitable ups and downs of life. Themes explored include: training the attention, bringing awareness to everyday activities, improving sleep, working with powerful emotions, and noticing the 'good stuff' in life.

This program is not widely offered in the U.S.

## Program Features



**Student Age**  
Youth 11-18



**Delivery Method**  
In-person to full classroom



**Timing**  
Ten sessions with an optional four follow-up sessions



**Cost**  
£760 for training and access to materials for 6 months

## Summary of Findings

There is evidence this program may lower depression symptoms for youth.

Read more about the program and its evidence base:  
[CASEL Program Guide](#)

## Country (number of studies)

Australia (2)



## Race/Ethnicity of Participants

Zero studies reported race/ethnicity.

## Facilitators and Training

Training is available onsite in-person, virtually, or offsite. The cost of training is £760.

There are free and reduced-price spots for teachers working at schools who meet certain criteria [found here](#).

## Cultural Adaptation

Translated materials for .b are available in Chinese, Danish, Dutch, Finnish, French, German, Icelandic, Italian, Polish, Spanish, and Welsh.

## Risk of Bias\*

2 studies of .b were included in the review

**Low Risk:** None

**Some Risk:** None

**High Risk:** ✘ ✘

**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

.b is one program in a suite of programs offered by the Mindfulness in Schools Project.

For more details, visit:

<https://mindfulnessinschools.org/>

## Full Depression Review

Read the full [HEDCO Institute review of School-Based Interventions for Primary and Secondary Prevention of Depression](#).

## Description

moodgym is a self-paced interactive internet program that aims to help people identify problems with depression, overcome these problems, and develop coping skills.

moodgym is both skills- and knowledge-focused and contains information, demonstrations, questionnaires (e.g. about depression and anxiety levels) and practice exercises (e.g. relaxation, problem-solving, cognitive restructuring, assertiveness, self-esteem training, and coping with relationships).

## Program Features



**Student Age**  
Secondary school students



**Delivery Method**  
Self-paced internet program



**Timing**  
Five modules that each take 30-60 minutes to complete



**Cost**  
\$27 for 12 months of access

## Summary of Findings

There is evidence this program may be effective in reducing depressive symptoms.

Read more about the program and its evidence base: [CDC Promising Practices Registry](#).

## Country (number of studies)

Australia (3)



## Race/Ethnicity of Participants

Zero studies reported race/ethnicity.

## Facilitators and Training

Not applicable. This program is entirely online.

## Cultural Adaptation

There is also a German version of moodgym, but no information is provided on other cultural adaptations.

## Risk of Bias\*

3 studies of moodgym were included in the review

**Low Risk:** None

**Some Risk:** ✘

**High Risk:** ✘

**Critical Risk:** ✘

\*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

moodgym was originally developed by researchers at the Australian National University. moodgym is now overseen by e-hub Health - an ANU spin-off company.

For more details, visit: <https://moodgym.com.au/>

## Full Depression Review

Read the full [HEDCO Institute review of School-Based Interventions for Primary and Secondary Prevention of Depression](#).

# Penn Resiliency Program

## Description

The Penn Resiliency Program (PRP) is a group intervention that teaches cognitive behavioral and social problem-solving skills. PRP strives to teach students to think flexibly and accurately about the challenges and problems they face. Students learn about (a) the link between beliefs, feelings, and behaviors, (b) cognitive styles, and (c) cognitive restructuring skills, including how to challenge negative thinking by evaluating the accuracy of beliefs and generating alternative interpretations. Students also learn a variety of techniques for coping and problem-solving, including assertiveness, negotiation, decision making, and relaxation. Students apply the cognitive and problem-solving techniques in their lives through group discussions and weekly homework assignments.

## Program Features



**Student Age**  
Youth 5-14



**Delivery Method**  
In-person to small groups



**Timing**  
Twelve 90-minute sessions



**Cost**  
Not reported

## Summary of Findings

There is some evidence PRP is effective in keeping adolescents mentally healthy compared to no program at all.

Read more about the program and its evidence base: [CDC Promising Practices Registry](#)

## Country (number of studies)

Netherlands (3), Australia (2), United States (2), United Kingdom (1)



## Race/Ethnicity/Nationality of Participants

Six studies reported nationality or race/ethnicity. The majority of student participants were Australian, native Dutch, or white. In two studies, 100% of students identified as Black or Latinx.

## Facilitators and Training

Penn uses a train-the-trainer model, in which they train people how to teach the resilience skills to others.

No information was reported regarding the cost of training.

## Cultural Adaptation

Op Volle Kracht (OVK; On Full Power) is a Dutch adaptation that incorporates cultural and content-related modifications. The program has also been used in the UK with some adaptations: UK Resiliency Programme (UKRP).

## Risk of Bias\*

8 studies of PRP were included in the review

**Low Risk:** None

**Some Risk:** x x x x x

**High Risk:** 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

PRP is based at the University of Pennsylvania Positive Psychology Center.

To request additional information, visit: <https://ppc.sas.upenn.edu/services/penn-resilience-training>

## Full Depression Review

Read the full [HEDCO Institute review of School-Based Interventions for Primary and Secondary Prevention of Depression](#).

# Resourceful Adolescent Program

## Description

The RAP-A Program draws on the metaphor in the children's story of the "Three Little Pigs" in which only the house made of bricks withstood the attacks of the Big Bad Wolf. Each week, participating adolescents develop their own personal 'RAP-A house' by laying down different personal resource bricks (e.g. 'Personal Strength Bricks', 'Keeping Calm Bricks,' 'Problem Solving Bricks'), as the program unfolds. The program also teaches techniques for cognitive restructuring and problem solving, stresses the importance of promoting harmony and dealing with conflict and role disputes by developing an understanding of others. The common thread that runs through the program is the teaching of techniques to maintain self-esteem in the face of a variety of stressors.

## Program Features



**Student Age**  
Adolescents 12 - 16



**Delivery Method**  
In-person to small groups  
(8-16 students)



**Timing**  
Eleven 50-minute  
sessions



**Cost**  
\$142 for all  
program materials

## Summary of Findings

There is evidence this program may decrease depression diagnoses, depression symptoms, and anxiety symptoms.

Read more about the program and its evidence base:  
[California Evidence-Based Clearinghouse for Child Welfare](#)

## Country (number of studies)

Australia (5), United Kingdom (2), Mauritius (1),  
New Zealand (1)



## Race/Ethnicity of Participants

Six studies of RAP-A reported race/ethnicity. The majority of student participants were white, Caucasian, or of Anglo-Saxon origin.

## Facilitators and Training

Group leaders need to be educational or mental health workers with training in the facilitation of RAP-A. Training events are offered at regular intervals in Australia. Individual or small group Skype training is available for overseas consumers. Training costs range from \$370-\$420 per participant.

## Cultural Adaptation

RAP-A offers an Indigenous Supplement. This manual is used in conjunction with the RAP-A Group Leaders Manual and provides guidelines for the adaptation of RAP-A for Indigenous adolescents.

## Risk of Bias\*

9 studies of RAP-A were included in the review

**Low Risk:** None

**Some Risk:** x x x

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

**Critical Risk:** x

\*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 RAP programs are based at the School of Psychology and Counselling at Queensland University of Technology, Australia.

For the full curriculum and information regarding training and costs, visit:  
[rap.qut.edu.au](http://rap.qut.edu.au)

## Full Depression Review

Read the full [HEDCO Institute review of School-Based Interventions for Primary and Secondary Prevention of Depression](#).

# Additional Programs in the Review

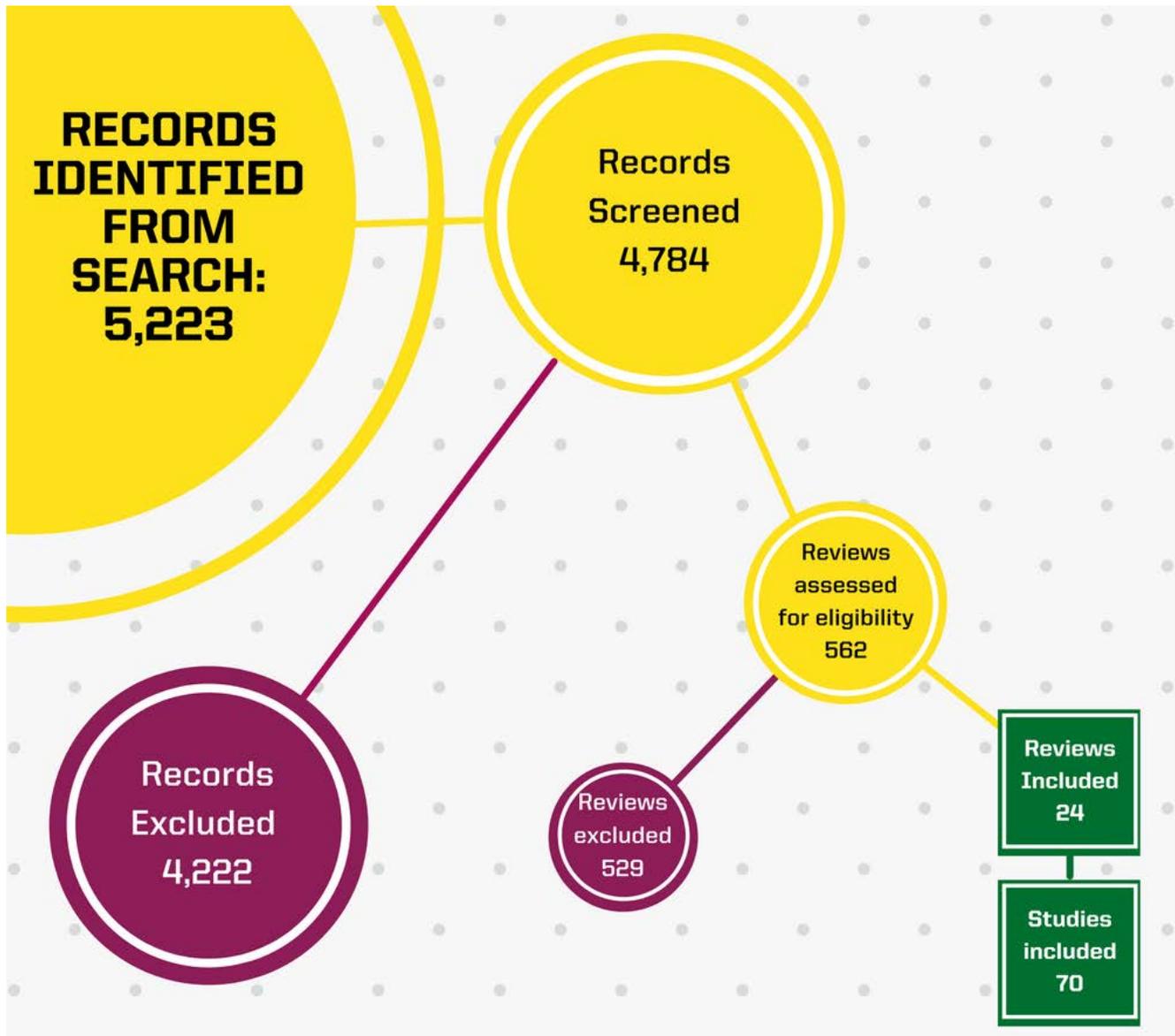
Ten additional programs in the review offer publicly accessible curricula. They were excluded from our Program Profiles because only one study in our review assessed their effectiveness or they are not included in a U.S.-based evidence clearinghouse. .

Program Name	Study Location	School Level	Resources
Aussie Optimism Program	Australia	Primary and Secondary	<a href="#">Aussie Optimism</a>
Beyond Blue	Australia	Secondary	<a href="#">Anxiety, depression and suicide prevention support - Beyond Blue</a>
DISCOVER	United Kingdom	Secondary	<a href="#">DISCOVER is an innovative school-based workshop programme for 6th form students (slam.nhs.uk)</a>
EMOTION	Norway	Primary	<a href="#">Workbook Publishing, Inc.</a>
LARS&LISA	Germany, United States	Primary and Secondary	Contact the developer for more information: Patrick Pössel, <a href="mailto:patrick.posssel@louisville.edu">patrick.posssel@louisville.edu</a>
SPARX-R	Australia	Secondary	<a href="#">SPARX-R</a>
Teaching Kids to Cope	United States	Secondary	<a href="#">kpu (pitt.edu)</a>
The Little Prince is Depressed	Hong Kong	Primary	<a href="#">The Storm - Little Prince is Depressed (hku.hk)</a>
The Thiswayup Schools Programs	Australia	Secondary	<a href="#">Online Programs &amp; Tools for Your Mental Health   THIS WAY UP</a>
Unified Protocol for Transdiagnostic Treatment of Emotional Disorders in Adolescents	Spain	Secondary	<a href="#">Unified Protocols for Transdiagnostic Treatment of Emotional Disorders in Children and Adolescents: Therapist Guide (Programs That Work)</a>

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# 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	<ul style="list-style-type: none"> <li>• K-12 students</li> </ul>	<ul style="list-style-type: none"> <li>• Pre-K and college students</li> </ul>
Interventions	<ul style="list-style-type: none"> <li>• Universal prevention</li> <li>• Selective prevention</li> <li>• Indicated prevention</li> </ul>	<ul style="list-style-type: none"> <li>• Screening-only interventions</li> <li>• Treatment interventions</li> <li>• Not directed to students</li> </ul>
Comparators	<ul style="list-style-type: none"> <li>• Any comparator</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>
Outcomes	<ul style="list-style-type: none"> <li>• Depression diagnosis</li> <li>• Subsyndromal depression</li> <li>• Depressive symptoms</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>
Timing	<ul style="list-style-type: none"> <li>• Timing of follow-up not limited</li> </ul>	<ul style="list-style-type: none"> <li>• None</li> </ul>
Setting	<ul style="list-style-type: none"> <li>• K-12 schools</li> </ul>	<ul style="list-style-type: none"> <li>• Out-of-school-time only</li> </ul>
Study design and publications	<ul style="list-style-type: none"> <li>• Systematic reviews with meta-analysis</li> <li>• English only</li> <li>• Published 1990 and after</li> </ul>	<ul style="list-style-type: none"> <li>• Full report not available</li> </ul>

# Supplemental Analyses

## Educational Achievement

Two studies (2.9%) comprised of 1,930 students (4.3%) reported meta-analyzable data on educational achievement. However, the degrees of freedom are below the threshold to use robust variance estimation, so results are reported narratively. Perry et al. (2017) reported data on the Australian Tertiary Admission Rank and found that academic outcomes did not differ between the intervention and comparison groups at 40-weeks post-intervention ( $p = 0.41$ ). Tak et al. (2016) reported data on the last grades students obtained on a variety of subject-specific tests. They found students in the depression prevention program to have slightly lower school grades than the comparison group immediately at post-intervention ( $p < 0.001$ ), though no differences were found at two-year follow-up ( $p = 0.112$ ).

## Self-Harm

One study (1.4%) comprised of 5,030 students (11.3%) reported meta-analyzable data on self-harm. However, the degrees of freedom are below the threshold to use robust variance estimation, so results are reported narratively. Stallard et al. (2012) reported data on self-harming thoughts and self-harming behaviors at 6- and 12-months post-intervention. Among students at high risk of depression at baseline, they found a potentially beneficial effect of classroom-based cognitive behavioral therapy (relative to usual school provision) on self-harming thoughts at 6-months post-intervention, though they found no significant differences at 12-months post-intervention, relative to an attention control, and on self-harming behaviors.

## Stress

Three studies (4.3%) comprised of 1305 students (2.9%) reported meta-analyzable data on stress. However, the degrees of freedom are below the threshold to use robust variance estimation, so results are reported narratively. Singhal et al. (2014) did not find significant differences between intervention and comparison groups on the Scale for Assessing Academic Stress immediately at post-intervention and at 3-month follow-up. Wong et al. (2012) also found no significant differences between intervention and comparison groups on the Depression Anxiety Stress Scale immediately at post-intervention. Similarly, Wong et al. (2014) found no significant differences between intervention and comparison groups on the six-item short form of the Kessler Psychological Distress Scale immediately at post-intervention.



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# Supplemental Analyses

## Subgroup Differences

No statistically significant difference in program effects according to:

School factors:

- school level
- school type

Program factors:

- Baseline differences in depression symptoms, that is, whether or not a student entered the study with higher or lower levels of depression symptoms
- level of prevention
- comparator type, for example, whether a student received another intervention, or a health class as usual

Study factors:

- study/publication year
- risk of bias of each study
- country

Because several studies did not report the following information, we did not have enough information to reliably test programs differences by:

- race/ethnicity
- percent female
- cultural specificity of interventions

# References for Supplemental Analyses

Perry, Y., Werner-Seidler, A., Calear, A., Mackinnon, A., King, C., Scott, J., Merry, S., Fleming, T., Stasiak, K., Christensen, H., & Batterham, P. J. (2017). Preventing Depression in Final Year Secondary Students: School-Based Randomized Controlled Trial. *Journal of Medical Internet Research*, 19(11), e8241. <https://doi.org/10.2196/jmir.8241>

Tak, Y. R., Lichtwarck-Aschoff, A., Gillham, J. E., Van Zundert, R. M. P., & Engels, R. C. M. E. (2016). Universal School-Based Depression Prevention 'Op Volle Kracht': A Longitudinal Cluster Randomized Controlled Trial. *Journal of Abnormal Child Psychology*, 44(5), 949-961. <https://doi.org/10.1007/s10802-015-0080-1>

Stallard, P., Sayal, K., Phillips, R., Taylor, J. A., Spears, M., Anderson, R., Araya, R., Lewis, G., Millings, A., & Montgomery, A. A. (2012). Classroom based cognitive behavioural therapy in reducing symptoms of depression in high risk adolescents: Pragmatic cluster randomised controlled trial. *BMJ*, 345, e6058. <https://doi.org/10.1136/bmj.e6058>

Singhal, M., Manjula, M., & Vijay Sagar, K. J. (2014). Development of a school-based program for adolescents at-risk for depression in India: Results from a pilot study. *Asian Journal of Psychiatry*, 10, 56-61. <https://doi.org/10.1016/j.ajp.2014.03.011>

Wong, P. W. C., Fu, K.-W., Chan, K. Y. K., Chan, W. S. C., Liu, P. M. Y., Law, Y.-W., & Yip, P. S. F. (2012). Effectiveness of a universal school-based programme for preventing depression in Chinese adolescents: A quasi-experimental pilot study. *Journal of Affective Disorders*, 142(1), 106-114. <https://doi.org/10.1016/j.jad.2012.03.050>

Wong, N., Kady, L., Mewton, L., Sunderland, M., & Andrews, G. (2014). Preventing anxiety and depression in adolescents: A randomised controlled trial of two school based Internet-delivered cognitive behavioural therapy programmes. *Internet Interventions*, 1(2), 90-94. <https://doi.org/10.1016/j.invent.2014.05.004>