Mapping Interventions for Adolescent Mental Health: A Scoping Review Across Multiple Settings and Approaches

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ABSTRACT

Background: According to WHO, one in seven adolescents aged 10–19 experiences a mental disorder. Adolescent mental health issues—including mental disorders, substance abuse, and suicide—are increasing globally, affecting many youths in the U.S. and Indonesia. The WHO and Sustainable Development Goals (SDGs) emphasize the importance of preventive and promotive approaches through multi-level platforms such as schools, communities, digital platforms, and healthcare systems. While previous reviews have explored various intervention settings, this study applies the Institute of Medicine (IOM) framework to analyze global mental health programs. Objective: The aim is to identify and characterize adolescent mental health programs across different settings and evaluate their implementation strategies and effectiveness. Methods: This scoping review analyzed programs from 2015 to 2025, selecting 34 articles from an initial pool of 649, retrieved from PubMed, Science Direct, and SpringerLink. Results: Interventions were delivered through school-based (n=17), digital (n=12), community (n=4), and healthcare settings (n=2). School-based programs often integrate mental health prevention into curricula, focusing on bullying prevention, resilience, life skills, and social-emotional learning. Digital programs are influenced by user preferences and delivery methods. Community interventions are tailored to local needs and supported by experienced professionals and innovative approaches. In healthcare, cognitive-behavioral therapy and mindfulness techniques improve functioning and reduce psychological distress. Successful implementation is linked to accessibility, inclusivity, cultural sensitivity, trained facilitators, cross-sector collaboration, and ongoing monitoring. This review highlights various interventions addressing core issues and individual risks. Future research should focus on specific mental health conditions to refine intervention strategies.

Keywords: Adolescent, Intervention, Mental Health, Program, Scoping Review

INTRODUCTION

Mental disorders, substance abuse, and suicide have become major concerns among adolescents. Globally, one in seven people (14%) aged 10–19 experience mental disorders (Organization, 2022). In 2021–2022, 21% of adolescents aged 12–17 in the United States reported experiencing symptoms of anxiety, while 17% reported symptoms of depression in the past two weeks (National Center for Health Statistics, 2024). The 2022 Indonesia National Adolescent Mental Health Survey (I-NAMHS) revealed that one in three Indonesian adolescents (34.9%) experienced at least one mental health issue, with 5.5% suffering from a mental disorder in the past 12 months (I-NAMHS, 2022).

The Sustainable Development Goals (SDGs) target a one-third reduction in premature mortality from non-communicable diseases by 2030 through prevention, treatment, and the promotion of mental health and well-being

(Organization, 2018). HO emphasizes that promotion and preventive measures enhance individuals' emotional regulation capacity, provide alternatives to risk behaviors, build resilience to cope with challenges, and foster supportive social environments and networks. To achieve these goals, programs require multi-level approaches utilizing various platforms, including digital media, health or social service facilities, schools, and communities (WHO, 2024). A scoping review has previously outlined mental health interventions based on school, community, healthcare facility, and camp-based settings (Mabrouk *et al.*, 2022). However, it did not classify the interventions according to the framework established by the Institute of Medicine (IOM). This framework, adopted from Mrazek and Haggerty, includes prevention, treatment, and maintenance. Prevention is further divided into universal (targeting the entire population), selective (targeting individuals at higher risk), and indicated (targeting those with established risk factors and a high probability of developing a disorder) (Singh, Kumar and Gupta, 2022). In Indonesia, interventions based on the Code of Ethics for Indonesian Psychology can be carried out using psychoeducation (increasing understanding), counseling (developing positive potential), and therapy (treatment according to established procedures) (Indonesia, 2010).

This study will examine various programs, classifying them not only into four categories—school-based, digital, community-based, and health service facilities—but also based on the type of intervention. This approach aims to identify policies that may be suitable for implementation in Indonesia. The research question guiding this study is: *What is the impact of mental health programs on adolescents?*

METHODS

The research design employed is a scoping review. A scoping review is a study that gathers, selects, synthesizes, and evaluates scholarly works relevant to the subject of the study (Rusadi and Wati, 2024). The inclusion criteria for this study are research articles published within the last 10 years, focusing on mental health interventions or programs targeting adolescents aged 10-19 years. Eligible study designs include randomized controlled trials (RCTs), non-randomized controlled trials (non-RCTs), mixed methods studies, cohort studies, and case-control studies. The exclusion criteria are articles that do not address specific contexts, such as global outbreaks or wars. The primary outcomes examined in this study are mental health and well-being benefits. The thematic analysis is divided by intervention category: prevention, treatment, and maintenance. The gathered literature must pass a rigorous screening process, which includes evaluating methodological rigor, relevance, and credibility (Sukamto and Basrowi, 2023).

RESULTS AND DISCUSSION

The selection process followed the PRISMA flowchart (Figure 1). The literature search across three electronic databases—PubMed, Science Direct, and SpringerLink—initially identified 649 articles by FCW, UK, and AAP. After removing 20 duplicates and excluding 540 articles based on irrelevant titles and abstracts, 89 articles remained for full-text review. Ultimately, 34 articles met the inclusion criteria.

The studies originated from 18 countries, with the majority coming from Australia (39%) and the United States (33%). All studies were published between 2015 and 2025. The study designs were predominantly: cluster RCT (n=7), mixed methods (n=5), RCT (n=5), quasi-experimental (n=4), and single-arm design (n=3). Most programs were implemented in school settings (n=17), followed by digital platforms (n=12), community-based initiatives (n=4), and healthcare facilities (n=2). These interventions targeted diverse adolescent groups in school settings across various age ranges: 10-19 years (n=26), 7-22 years (n=6), grade 6-8 (n=1), and grade 7-8 (n=1).
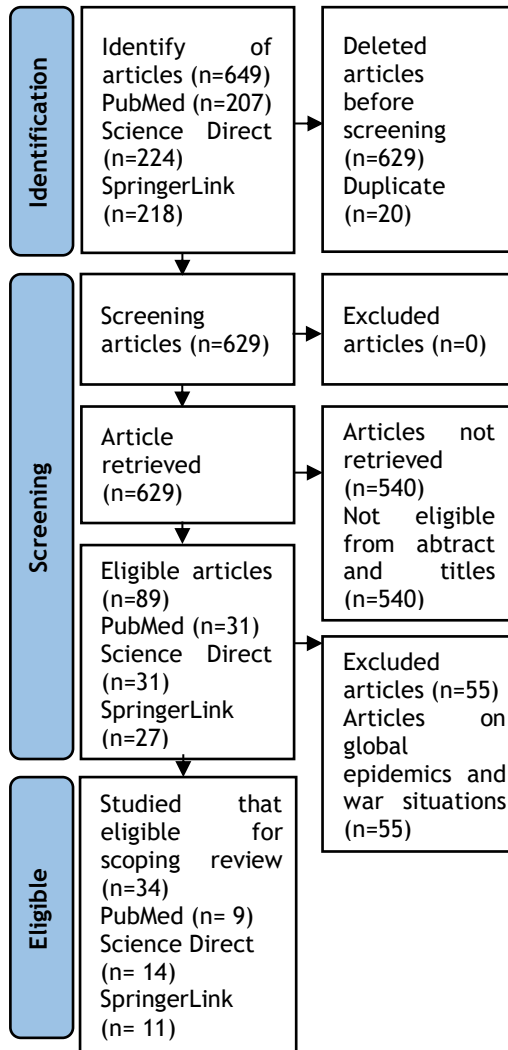
Figure 1. PRISMA Diagram

School-Based Interventions

School-based mental health interventions in the prevention category were categorized as follows: universal (n=11); indicated (n=2); universal, selective, and indicated (n=1); universal and indicated (n=1); universal and selective (n=1); and selective and indicated (n=1). Treatment categories included psychoeducation (n=5); psychoeducation with training (n=8); counseling (n=2); psychoeducation and counseling (n=1); and psychoeducation and psychotherapy (n=1). Maintenance categories were none (n=12); 6 months follow-up (n=2); 6 and 12 months follow-up (n=1); free to seek a specialist (n=1); and aftercare for high-risk students (n=1) (Table 1).

Several school-based mental health programs have been specifically designed to address autism spectrum disorders, racial backgrounds, and students who screened positive for psychological distress (Shochet *et al.*, 2022); (Chandrasekhar *et al.*, 2023); (Hamdani *et al.*, 2024). The RAP-ASD for Adolescents (RAP-A) program in Australia aims to support adolescents on the autism spectrum through a comprehensive prevention approach. It was conducted one-on-one, based on cognitive-behavioral therapy (CBT) and interpersonal psychotherapy (IP). Over three years, the study showed increased resilience among adolescents with autism, marked by improved coping skills, stronger school connectedness, and reduced anxiety and emotional or behavioral difficulties (Shochet *et al.*, 2022). The Building Resilience for Healthy Kids program in the United States is a school-based intervention focused on resilience development. The results indicated significantly larger improvements in resilience among adolescents identifying as Black, Native Hawaiian/Pacific Islander, Asian, American Indian, or of more than one race, compared to those identifying as non-Hispanic White or Hispanic (Chandrasekhar *et al.*, 2023). The EASE Program in Pakistan incorporated psychoeducation, problem-solving, stress management, behavioral activation, and relapse prevention. A three-month study resulted in significantly lower total distress scores, demonstrating its effectiveness in addressing psychosocial distress in school environments (Hamdani *et al.*, 2024).

Table 1. Thematic Analysis of IOM Interventions Framework

Author, year of publication, Country	Name of Program	Category of Intervention		
		Prevention	Treatment	Maintenance
School Settings				
(Calear *et al.*, 2016), **Australia**	The e-couch Anxiety and Worry	Universal	Psychoeducation and Psychotherapy (CBT, relaxation, physical activity)	None
(Shum *et al.*, 2019), Hong Kong	The Adventures of DoReMiFa*	Universal	Psychoeducation with training	Follow up 6 months after completion

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Author, year of publication, Country	Name of Program	Category of Intervention		
		Prevention	Treatment	Maintenance
(Cherewick et al., 2021), Tanzania	Discover*	Universal	Psychoeducation with training	None
(Diaz, Moreland and Wolfersteig, 2021), United States	Childhelp's Speak Up Be Safe (CHSUBS) curriculum*	Universal	Psychoeducation	None
(McGillivray et al., 2021), Australia	Youth Aware of Mental Health (YAM)*	Universal	Psychoeducation	6 months post-intervention follow-up.
(Casañas et al., 2022), Spain	EspaiJove.net*	Universal	Psychoeducation	6 and 12-month follow-up
(Colomeischi et al., 2022), Romania	Promoting Mental Health in Schools (PROMEHS)*	Universal	Psychoeducation	None
(Dixon et al., 2022), United States	Accept, identify, move (AIM) curriculum*	Universal	Psychoeducation with training	None
(Shochet et al., 2022), Australia	Resourceful Adolescent Program-Autism Spectrum Disorder (RAP-ASD)*	Indicated	Counselling	None
(Baskaran, Sekar and Kokilavani, 2023), India	Mental Health Programme*	Universal	Psychoeducation with training	None
(Canenguez et al., 2023), Chile	Skills for Life (SFL)*	Universal	Psychoeducation with training	None
(Chandrasekhar et al., 2023), United States	Building Resilience for Healthy Kid*	Selective, Indicated	Counseling	None
(Low, Van Ryzin and Roseth, 2023), United States	Cooperation learning (CL)*	Universal	Psychoeducation	None
(Aguilera et al., 2024), Spain	"*Escuelas Despiertas*" programs	Universal	Psychoeducation with training	None
(Hamdani et al., 2024), Pakistan	EASE (WHO-UNICEF Helping Adolescents Thrive Toolkit)*	Indicated	Psychoeducation with training	Free to seek specialist[a] if needed.
(Rombouts et al., 2025), Netherlands	Happy Lessons (HL)	Universal	Psychoeducation and counseling	Aftercare for high-risk students if needed
(Zuair, 2025), Saudi Arabia	The Reassured Self*	Universal	Psychoeducation with training	None
Digital Platform Setttings				
(Burckhardt et al., 2015), **Australia**	The positive psychology condition (Bite Back)	Universal	Psychoeducation with training	None
(Kuosmanen et al., 2017), **Ireland**	SPARX-R	Universal	Psychoeducation with training	None
(Lattie et al., 2017), United States	Teens Engaged in Collaborative Health (ProjectTECH)	Indicated	Psychoeducation with training	Follow up 1 month after intervention
(Puolakanaho et al., 2019), Central Finland	The Youth COMPASS	Selective, Universal	Psychoeducation with training	None
(Shum et al., 2019), Hong Kong	The Adventures of DoReMiFa	Universal	Psychoeducation with training	Follow up 6 months after completion
(Cliffe et al., 2020), United Kingdom	*Sleepio*	Indicated	Psychoeducation	None

Author, year of publication, Country	Name of Program	Category of Intervention		
		Prevention	Treatment	Maintenance
(Albritton *et al.*, 2021), United States	Be Present	Universal	Psychoeducation with training	None
(O'Dea *et al.*, 2021), Australia	Smooth Sailing	Universal	Psychoeducation, Conselling	None
(Golan *et al.*, 2022), Israel	Favoring Myself-Young	Universal	Psychoeducation with training	None
(Tuijnman *et al.*, 2022), Netherland	Moving Stories*	Universal	Psychoeducation	Contacted by phone by clinically trained member to seek professional help
(R Pozuelo *et al.*, 2024), Uganda	The Kuamsa program	Universal	Psychoeducation with training, Therapy (BAT)	None
(Gaete *et al.*, 2025), Chile	The Reframe-IT program*	Universal	Psychoeducation with training, Therapy (CBT)	None
Community Settings				
(Cai and Fung, 2016), Singapore	The Response, Early Assessment and Intervention in Community Mental Health (REACH)*	Universal	Psychoeducation with training	Medications and intensive multidisciplinary treatment
(Dowell *et al.*, 2021), Australia	The RISE Program*	Universal	Psychoeducation	Tailored individual care[b]
(Bohr *et al.*, 2023), Canada	The Smart, positive, Active, Realistic, X-Factor thoughts (SPARX)	Universal	Psychoeducation	None
(Macdonald *et al.* 2023), Australia	Culture Dose for Kids*	Selective	Psychoeducation with training	None
Facility-Based Healthcare Settings				
(Lorentzen *et al.*, 2022), Norway	*Structured Material for Therapy* (SMART) Programs	Indicated	Psychotherapy (Transdiagnostic CBT)	6 months follow up
(Vo *et al.*, 2024), Canada	Mindful awareness and resilience skills for adolescents (MARS-A)	Indicated	Psychotherapy (Modification MBSR and MBCT)	None

Note: *significant; [a]psychologist or psychiatrist; [b]follow up call, emailed, contact option for seeking assistance; BAT, Behavioral Activation Therapy; CBT, Cognitive behavioral therapy; MBSR, Mindfulness Based Stress Reduction; MBCT, Mindfulness-Based Cognitive Therapy;.

The Cooperative Learning (CL) approach in the United States involves small-group or peer learning strategies. This approach demonstrated significant positive effects on peer support groups, effectively decreasing instances of victimization. CL can serve as a mental health prevention strategy and help identify high-risk adolescents who may need referral to treatment services (Low, Van Ryzin and Roseth, 2023).

Furthermore, bullying can lead to long-term psychological harm. Childhelp's Speak Up Be Safe (CHSUBS) initiative in the United States was designed for learners from early childhood through grade 12, focusing on combating all forms of abuse and maltreatment, such as neglect and cyberbullying. The CHSUBS program showed statistically significant gains in both child-maltreatment knowledge and resistance skills from pre- to post-test, while the control group exhibited no significant change (Diaz, Moreland and Wolfersteig, 2021).

Prolonged bullying may increase the risk of suicidal thoughts among adolescents. The Youth Aware of Mental Health (YAM) program in Australia was specifically designed to improve early

detection and management of suicide risk among adolescents by increasing their awareness and knowledge of mental health, teaching help-seeking and peer support skills, and strengthening their ability to cope with difficult and stressful life situations. Implementation results demonstrated significant reductions in suicidal ideation, decreased depression severity scores, increased help-seeking intentions, and no reported suicide deaths following the intervention (McGillivray *et al.*, 2021).

Several adolescents suffer from anxiety and depressive symptoms. The Happy Lessons (HL) program in the Netherlands was a school-based intervention designed to prevent depressive symptoms and enhance adolescent well-being. The HL program showed no significant impact on depressive symptoms, well-being, or life satisfaction among Dutch pre-vocational students; however, moderate positive effects were observed in teacher support, with the intervention group faring better than the control group (Rombouts *et al.*, 2025).

In addition, the e-couch Anxiety and Worry program implemented in Australia consists of psychoeducation and evidence-based toolkits for anxiety (e.g., CBT, relaxation, and physical activity). The program did not produce significant results regarding mental health outcomes related to anxiety, depression, or well-being (Calear *et al.*, 2016).

Beyond these issues, stigma plays a significant role in shaping negative perceptions of mental health. The intervention carried out by (Casañas *et al.*, 2022) through the EspaiJove.net program aimed to increase knowledge about mental health and help-seeking behavior and to decrease stigma associated with mental disorders in school settings in Spain. The results indicated that none of the interventions were effective in improving mental health literacy, reducing stigma, or promoting help-seeking behaviors. Importantly, direct interactions with individuals experiencing mental health conditions did not lead to a decrease in stigmatizing attitudes. This highlights the importance of exploring the variability among mental health literacy (MHL) interventions (e.g., conceptual frameworks, duration, implementation approaches) and identifying which specific elements of stigma-reduction strategies may produce beneficial effects (Casañas *et al.*, 2022).

Life Skills and Emotional Resilience

Life skills and emotional resilience play a critical role in promoting mental well-being and empowering individuals to manage emotional difficulties. A school-based mental health program in India focused on three core life skills: communication, emotional regulation, and stress management. The program was delivered through 16 one-hour sessions over six weeks and resulted in significant improvements in overall mental health indicators (Baskaran, Sekar and Kokilavani, 2023).

While life skills provide practical tools for daily challenges, emotional resilience helps individuals recover from setbacks and manage stress effectively. The Reassured Self Program was culturally adapted in Saudi Arabia and grounded in self-compassion, integrating local cultural and religious values with evidence-based approaches. Designed to enhance mental and emotional resilience, the program also promoted peer support among participants. It was effective in reducing anxiety and gaming addiction among female students (Zuair, 2025).

Mindfulness and Compassion

Mindfulness combined with compassion promotes a balanced mental state and supports healthier interpersonal relationships. The "Escuelas Despiertas" program in Spain was an initiative that integrated mindfulness and compassion to improve adolescent mental health. The program involved six dimensions of mindful living, highlighting physical, cognitive, emotional, social, environmental, and global aspects. It focused on experiential exercises related to mindfulness and meditation practices.

The intervention group experienced a slight, but statistically significant, increase in GHQ-12 scores and relaxation habits. The program produced small short-term improvements in psychological distress and relaxation habits among adolescents, which were not significant compared to a relaxation intervention (control). These results may have been influenced by the small sample size (Aguilera *et al.*, 2024).

Another program in the United States, Accept, Identify, Move (AIM), was

organized into thematic modules delivered over five days. The curriculum included 175 Acceptance and Commitment Therapy/Training (ACT) lessons taught across three intensity levels. After a year of implementation, participants showed increased psychological flexibility and mindfulness. The AIM curriculum was effective in large school settings, was easily applied by school personnel to address student needs, and supported improved academic performance (Dixon *et al.*, 2022).

Social-Emotional Skills and Competencies

Social-emotional skills and competencies play a vital role in personal development and building resilience. The Discover program was a social emotional learning intervention to support development of social emotional mindsets and skills in Dar es Salaam, Tanzania. The learning materials consisted of six modules focused on developing a growth mindset, curiosity, generosity, persistence, a sense of purpose, and teamwork. The data showed signifcant improvements in social emotional, mindsets and skills outcomes. The findings also highlight the value of mixed-gender group learning in early adolescent development. Research supports the inclusion of parents, guardians, and community members in adolescent programs (Cherewick *et al.*, 2021).

Additionally, the Promoting Mental Health in Schools (PROMEHS) program in Romania aimed to support socio-emotional development and prevent psychosocial issues in youth through a curriculum centered on social-emotional learning (SEL), resilience, and the prevention of emotional and behavioral difficulties. The results demonstrated significant positive effects in improving mental health by enhancing social-emotional skills while reducing internalizing and externalizing difficulties. The PROMEHS program can serve as a solution to prioritize mental health promotion through active involvement of school managers and policymakers, supporting teacher training, and allocating time and space within the curriculum (Colomeischi *et al.*, 2022).

Key Emotional and Cognitive Skills for Personal Development

Key emotional and cognitive skills are fundamental for personal development

and successful social interactions. The Adventures of DoReMiFa program in Hong Kong was a digital game-based and school-based mental health enhancement program designed and developed by multidisciplinary professionals, including clinical psychologists, social workers, counselors, and educators. The program adopted cognitive-behavioral therapy (CBT) and positive psychology as its theoretical frameworks. This year-long intervention demonstrated significant improvements in mental health knowledge and perspective-taking among students. However, it was not effective in reducing anxiety symptoms or negative thinking among participating students.

Early intervention and prevention programs in schools have proven to be effective approaches for educating students about the importance of maintaining good mental health (Shum *et al.*, 2019). In addition, Chile's national Skills for Life (SFL) program delivers workshops focused on developing interpersonal, social, cognitive, and affective skills relevant to positive classroom adaptation and psychosocial adjustment. The study found that participation in these workshops was significantly associated with improved school attendance and better peer relationships (Canenguez *et al.*, 2023).

Integration of Mental Health Programs in Schools

Adolescent mental health programs commonly integrate prevention strategies into the school curriculum, emphasizing bullying prevention, resilience, life skills, and socio-emotional learning. Inclusive and culturally relevant approaches, supported by trained facilitators and multisectoral collaboration (e.g., health, education, parents, community, government, NGOs), have been shown to optimize positive outcomes. Additionally, regular monitoring and evaluation are often linked to increased effectiveness and long-term sustainability.

Digital-Based Interventions

Digital platform-based programs in the prevention category were primarily universal (n=9), with some targeting indicated populations (n=2), and one employing a combined selective and universal approach. In the treatment category, studies utilized psychoeducation

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(n=2), psychoeducation with training (n=7), a combination of psychoeducation with training and therapy (n=2), and a combination of psychoeducation with training and counseling (n=1). Three studies included maintenance components, such as follow-up after the intervention (n=2) and contact by clinically trained personnel to encourage seeking professional help (n=1).

Most of these digital mental health programs utilize internet-based platforms accessible via mobile devices and websites, incorporating various interactive formats such as games, animated videos, instructional content, and structured modules (Kuosmanen *et al.*, 2017); (Lattie *et al.*, 2017); (Shum *et al.*, 2019); (Gaete *et al.*, 2025). This likely explains why digital-based programs have a universal target for prevention, regardless of physical risk, enabling them to reach broad audiences without geographical or demographic restrictions.

Several digital programs have been specifically developed for treatment to enhance adolescent well-being and happiness in school settings, including Bite Back, Youth COMPASS, and The Adventures of DoReMiFa (Burckhardt *et al.*, 2015); (Puolakanaho *et al.*, 2019); (Shum *et al.*, 2019). The psychoeducation combined with positive psychology-based Bite Back program demonstrated significant improvements in life satisfaction among Australian high school students following a six-week implementation. However, comparative analysis with control groups revealed no statistically significant differences in depressive symptoms or stress levels, suggesting limited effectiveness for widespread curriculum integration. Implementation challenges, particularly regarding online delivery limitations and logistical constraints, were noted.

Similarly, The Adventures of DoReMiFa proved ineffective in reducing anxiety symptoms and negative thoughts but did lead to significant improvements in mental health literacy. In contrast, Youth COMPASS, which targeted prevention through web and mobile platforms facilitating guided discussions about adolescent life, yielded positive outcomes—particularly in enhancing academic resilience among students experiencing high stress—highlighting its suitability for promoting adolescent well-being in school settings.

Several school-based digital programs have targeted depressive symptoms, including ProjectTECH (United States), Kuamsha (Uganda), and SPARX-R (Ireland) (Kuosmanen *et al.*, 2017); (Lattie *et al.*, 2017); (R Pozuelo *et al.*, 2024). Longitudinal assessments showed reductions in self-reported depressive symptoms across all programs: ProjectTECH (40 lessons) and Kuamsha (6 modules) both demonstrated declines, although only ProjectTECH achieved statistically significant improvements. While both programs were deemed feasible and acceptable, Kuamsha requires further validation through randomized controlled trials (RCTs) to establish efficacy (Lattie *et al.*, 2017); (R Pozuelo *et al.*, 2024).

SPARX-R, a revised version of the original SPARX intervention, was specifically designed to address mild-to-moderate depression in adolescents experiencing sadness, anger, or stress. Results showed significant improvements in emotion regulation, underscoring its potential clinical utility (Kuosmanen *et al.*, 2017).

For adolescents experiencing sleep difficulties or comorbid insomnia symptoms, the Sleepio program from the United Kingdom was developed. Sleepio is a psychoeducation intervention based on cognitive-behavioral therapy for Insomnia (CBT-I). It is highly interactive, with content delivered through an animated cartoon therapist. Significant improvements were observed following the intervention, including reductions in depressive symptoms (Cliffe *et al.*, 2020).

Beyond addressing mental health at the individual level, the Be Present program was designed to recruit and train adolescents as peer health educators (peer leaders) to prevent youth suicide. Participants undergo an electronic learning course with two levels: Be Present Friend and Be Present Advocates (Albritton *et al.*, 2021). Another suicide prevention program, Reframe-IT in Chile, involves eight CBT modules, each lasting eight hours, delivered by school psychologists. This program has proven effective in reducing suicidal thoughts among school-aged adolescents (Gaete *et al.*, 2025).

Adolescents are also taught to seek mental health support when experiencing

psychological distress. The Australian program Smooth Sailing has been shown to increase help-seeking intentions among students, thereby improving access to mental health care (O'Dea *et al.*, 2021).

The Moving Stories program in the Netherlands also helps reduce personal stigma. Adolescents are encouraged to talk about depression through games, videos, and discussion sessions with individuals who have lived experience with depressive disorders (Tuijnman *et al.*, 2022). Another program, Favoring Myself–Young from Israel, provides adolescents with access to information related to self-care, media literacy, self-esteem, and positive body image. This program also involves parents in the educational process. However, it has shown limited effectiveness among adolescents, as they were assigned tasks or homework, which reduced engagement (Golan *et al.*, 2022).

Digital-based programs are often shaped by user preferences and delivery methods that extend beyond content alone, involving parents, teachers, and significant figures alongside professionals in program monitoring. The success of these programs is also linked to internet and device accessibility. Additionally, paying attention to socio-economic and cultural contexts has helped improve understanding of program limitations.

Community-Based Interventions

The community-based programs identified in this study are as follows. In the prevention category, three studies used universal prevention, and one used selective prevention. In the treatment category, two studies used psychoeducation, and two combined psychoeducation with training. In the maintenance category, one study involved medications and intensive treatment, and another provided personalized individual care.

The first evidence-based program using cognitive-behavioral therapy (CBT) is called Response, Early Assessment, and Intervention in Community Mental Health (REACH). This program offers individual care within families and works with local organizations, school counselors, psychiatrists, and residents. It uses psychoeducation and training based on guidelines from the Australian Department of Health. The results showed improvements in behavior, emotions, hyperactivity, peer relationships, and prosocial behavior (Cai and Fung, 2016).

A similar approach and outcomes were observed in the Nunavut community in Canada through the Smart, Positive, Active, Realistic, X-Factor thoughts (SPARX) program. Results indicated that participating adolescents experienced reduced feelings of hopelessness, less self-blame, and improved self-reflection. However, participants did not show a significant reduction in depressive symptoms. SPARX is a psychoeducational game consisting of seven modules specifically designed to address symptoms of depression. It served as a promising first step in supporting local (Inuit) youth by helping them develop emotional regulation skills, challenge negative thoughts, and practice deep breathing and behavior management (Bohr *et al.*, 2023).

The RISE and Culture Dose for Kids (CDK) programs aimed to enhance adolescent well-being and mental health across rural, urban, and metropolitan areas of Australia. The main difference is that RISE was specifically designed for adolescent boys, while CDK targets both boys and girls. Both programs involve key figures such as parents or caregivers, coaches, and staff. RISE focuses on measuring mental health indicators such as anxiety, depression, and anger, while CDK assesses anxiety, mood, self-confidence, sense of empowerment, resilience, and overall mental well-being. The RISE intervention includes training modules, referrals, and follow-up for high-risk individuals. In contrast, CDK incorporates art-based interventions, asking participants to engage deeply with artworks and then discuss their impressions.

Results from the RISE program showed a significant reduction in adolescent anxiety and improvements in persistence among urban youth. However, only a downward trend was observed for depression. Similarly, the CDK program resulted in a significant decrease in anxiety, along with improvements in mood, self-confidence, resilience, and mental well-being. Overall, both RISE and CDK were well-received and had a positive impact on reducing adolescent anxiety in Australia (Dowell *et al.*, 2021); (Macdonald *et al.*, 2023).

Community-based programs are often developed based on an

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understanding of the prevalence of mental health issues within the community. They tend to emphasize multisectoral and multidisciplinary integration to form balanced teams of experienced professionals employing innovative strategies. These programs typically include diverse service agendas such as education, social services, and health, frequently adopting culturally competent approaches by engaging cultural organizations.

Facility-Based Health Care Interventions

Facility-based health care interventions for prevention were noted (n=2). In the treatment category, two studies used psychotherapy (n=2). No studies were found in the maintenance category, although one involved a 6-month follow-up (n=1). The types of psychotherapy included transdiagnostic cognitive-behavioral therapy (CBT), as well as modified Mindfulness-Based Stress Reduction (MBCT) and Mindfulness-Based Cognitive Therapy (MBSR), called Mindful Awareness and Resilience Skills for Adolescents (MARS-A) (see Table 1).

The transdiagnostic CBT used in the SMART program led to significant improvements in all measured areas, especially in overall functioning and emotional health. Waiting six weeks for treatment did not significantly affect long-term outcomes. The adolescents were informed about the waiting period and the treatment process, which allowed them to read about CBT before starting therapy.(Lorentzen *et al.*, 2022).

The MARS-A program, an innovative outpatient intervention in Canada, was referral-based and designed for adolescents experiencing psychological distress with or without chronic illness or chronic pain. The program demonstrated improvements in well-being and functioning, such as increases in positive affect and self-compassion, as well as reductions in depressive symptoms, stress, resilience, and psychosocial functional disability. Mindfulness appears to be an effective method for addressing the widespread issues faced by adolescents in clinical populations (Vo *et al.*, 2024).

Healthcare policies have commonly incorporated cognitive-behavioral therapy (CBT) to enhance general functioning and emotional well-being in adolescents. Additionally, mindfulness-based interventions have been employed to alleviate psychological distress, particularly among those with chronic illnesses or pain in clinical settings.

CONCLUSION

The selection of mental health programs for adolescents is often guided by core issues and individual risk levels. School-based programs typically integrate mental health prevention into the curriculum, emphasizing bullying prevention, resilience, life skills, and social-emotional learning. These programs are frequently designed to be inclusive, culturally sensitive, and delivered by well-trained facilitators, with collaboration across sectors. Additionally, consistent monitoring and evaluation are associated with improved effectiveness and long-term sustainability of these interventions.

Digital programs generally consider user preferences and delivery methods, involving parents, teachers, and key figures alongside professionals. These programs often ensure access to devices and internet connectivity. Attention to socio-economic and cultural factors also helps address potential limitations of the programs.

Community-based programs are usually guided by an understanding of local needs, involving multidisciplinary and cross-sector collaboration, and including experienced professionals who employ innovative strategies. These efforts often integrate education, social, and health services while adopting culturally sensitive approaches through engagement with cultural organizations.

Healthcare policies frequently incorporate cognitive-behavioral therapy (CBT) to improve overall functioning and emotional health in adolescents. Mindfulness-based approaches are commonly used to reduce psychological distress, particularly in clinical settings for individuals with chronic illnesses or pain. Future literature reviews should focus on specific mental health issues affecting adolescents to further refine and enhance intervention strategies.

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