

Interventions for promoting resilience among adolescents in South Asia: A scoping review

Ravi Sadhu^{a,*}, Priyanka Suneja^{b,1}, Brinda Singh Raikwar^{b,1}, Adarsh Ratnakaran^b, Kimberley Monteiro^b, Pattie Gonsalves^c, Vikram Patel^{b,d}, Ravindra Agrawal^{b,e,f}

^a Department of Global Health and Population, Harvard T.H. Chan School of Public Health, Boston, MA, United States

^b Sangath Goa Headquarters, Goa, India

^c Sangath Delhi Hub, New Delhi, India

^d Department of Global Health and Social Medicine, Harvard Medical School, Boston, MA, United States

^e Antarmam Centre, Goa, India

^f Manipal Hospital, Goa, India

ARTICLE INFO

Keywords:

Resilience
Adolescents
Interventions
South Asia
Review

ABSTRACT

Resilience has emerged as a crucial factor in healthy coping, navigating adversity, and protection against mental health problems, including suicidal ideation, among adolescents. The literature on programs and initiatives promoting adolescent resilience in South Asia, home to 350 million adolescents, is sparse and has not been systematically studied. This scoping review synthesises the evidence on resilience-promoting interventions targeting South Asian adolescents. Drawing on scoping review methodology, we searched 10 databases, including PubMed, CINAHL, and PsycINFO, to identify peer-reviewed studies published between January 1, 2000, and March 23, 2024. With no language barriers, we included studies targeting adolescents aged 10–19 with resilience identified as a primary or secondary outcome of interest. From 3987 searches, we identified 13 interventions from India, Pakistan, and Nepal targeting diverse subpopulations. Common active intervention components included mindfulness, art-based expression, and life skills training. Most interventions were delivered face-to-face through group lessons and activities, particularly in a classroom setting. Outside of the school setting, there is a need to adapt and scale multilevel community-led resilience-promoting interventions that enhance social scaffolding for adolescents in the region.

1. Introduction

South Asia has the world's largest adolescent population, totalling 350 million (UNICEF, 2021). The burden of mental health problems among South Asian adolescents is high (Hossain et al., 2020; Mudunna et al., 2025; Willmot et al., 2022). School-based studies have predicted that the prevalence of anxiety disorders is as high as 82 % in India and 68 % in Pakistan, while the highest prevalence of depression in the region is 58 % in Sri Lanka (Mudunna et al., 2025). Despite the need, public spending on adolescent mental health is minimal, most services are hospital-based, and there is a shortage of trained mental health providers – clinicians and non-specialist providers alike – who can specifically address the mental health challenges faced by adolescents in the region (Willmot et al., 2022). Concerningly, young people in the

region have faced economic recessions, natural disasters, climate change, and the COVID-19 pandemic over the past five years, challenges that have likely worsened mental health problems. Given resource constraints, it is crucial to explore how protective mental health factors such as resilience can be leveraged to promote the psychological well-being of adolescents in the region.

Resilience, while challenging to define, refers broadly to “positive adaptation, or the ability to maintain or regain mental health, despite experiencing adversity” (Herrman et al., 2011, p. 259). Apart from adolescents' individual and intrinsic abilities to respond to adversity, one's broader social ecology – including family, school, and community contexts – can influence resilience (Ungar et al., 2013). Relatedly, various factors are correlated with promoting adolescent resilience, including cognitive behavioural therapy, skill-building, mentorship and peer

* Correspondence to: 677 Huntington Avenue, Boston, MA 02115, United States

E-mail address: rsadhu19@cmc.edu (R. Sadhu).

¹ Priyanka Suneja and Brinda Singh Raikwar contributed equally as second authors.

support, and family cohesion (Llistosella et al., 2023; Métais et al., 2024; Pinto et al., 2021; Zimmerman et al., 2013). While some resilience-promoting interventions in South Asia have received attention (Dray et al., 2017; Llistosella et al., 2023; Métais et al., 2024; Tasijawa and Siagian, 2022), these have primarily been school-based randomized controlled trials. A comprehensive cross-country synthesis of all resilience-promoting interventions in the region, irrespective of study design and setting, has not been done. Notably, their targeted sub-populations and mental health issues, the contextual ingredients, how they were implemented, and a descriptive account of their effectiveness remain underexplored. Considering the region’s high health burden among adolescents outlined earlier, systematically mapping resilience-promoting interventions, including their delivery formats, and outcomes would help guide program and policy design in South Asia to boost adolescent mental health and well-being.

Responding to this gap, our scoping review addresses the following primary question: What evidence exists for interventions that aim to promote resilience among adolescents (ages 10–19) in South Asia? Additionally, it explores the following secondary questions: 1) Which clinical or demographic subpopulations of adolescents were targeted? 2) What are the active ingredients or components of the interventions, and how were they implemented? 3) What constructs or tools were used to measure resilience, and how did resilience change post-interventions?

2. Methods

Our study is aligned with the PRISMA Extension for Scoping Reviews reporting guidelines (Tricco et al., 2018). On March 31, 2024, we pre-registered our scoping review protocol on the Open Science Framework (OSF) (Sadhu et al., 2024). Since our review focused exclusively on published intervention studies, ethical approval was not required according to established guidelines for systematic and scoping reviews (Peters et al., 2024).

2.1. Eligibility criteria

Our inclusion and exclusion criteria were developed using the Population Concept Context (PCC) Framework as outlined in Chapter 10 of the 2024 Joanna Briggs Institute Manual for Evidence Synthesis (Peters et al., 2024). We focused on interventions targeting adolescents aged 10–19, consistent with the World Health Organization’s definition of adolescence (WHO, 2024). Without language restrictions, we comprehensively searched peer-reviewed studies published from January 1, 2000, to March 23, 2024 (studies in South Asia started to measure and utilize resilience as an intervention outcome post 2000). We excluded studies that mentioned adjacent constructs of resilience, such as grit and hardiness. We included interventions and experimental studies with a tested component across all study designs that measured resilience as either their primary or secondary outcome of interest. We considered all settings within the following countries: Afghanistan, Bangladesh, Bhutan, India, the Maldives, Nepal, Pakistan, and Sri Lanka. Table 1 highlights the detailed inclusion and exclusion criteria based on the PCC framework.

2.2. Search strategy

Given the interdisciplinary nature of this review, we selected 10 databases spanning public health, education, sociology, and spirituality. These included PubMed, Embase, CINAHL, Cochrane Central, PsycINFO, Web of Science, Sociological Abstracts, Applied Social Science Indexes and Abstracts, EconLit, and ERIC. The search strategy was executed uniformly across all databases on March 23, 2024. We used relevant descriptors to account for the following search terms: resilience, adolescents, interventions, and geographic location. Where appropriate, age and geographic region filters were applied. Table 2 provides our search strategy for the PubMed database.

Table 1
Inclusion and exclusion criteria.

Framework	Inclusion	Exclusion
Population		
Age Group	Study participants are primarily adolescents aged 10–19 (We did include studies with a mean age of +/- 1 year range)	Most study participants do not fall in the age range 10–19 and are not adolescents (children, university or medical students)
Residence	Adolescents who live in South Asia and have a South Asian heritage, ethnicity, or cultural background.	1. Refugees from South Asia in resettled high-income countries 2. South Asian immigrant or diasporic adolescents 3. Children from foreign military families (mainly adolescents from American families in Afghanistan)
Concept		
Study Design	1) All intervention study designs with a tested component (RCT, non-RCT, pre-post, quasi-experimental, and prospective cohort studies). 2) Intervention studies use mixed-method and qualitative research methods.	Studies that are proposals for interventions or are in the formative phase and reviews.
Outcome	Interventions that seek to promote resilience and include measuring resilience scores as their primary or secondary outcome of interest	Studies and interventions that merely have implications for resilience but do not substantially conceptualize or measure resilience as a primary or secondary parameter of interest.
Context		
Countries	All interventions conducted in any geographic location in South Asia. List of countries classified as South Asia: Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka.	Intervention conducted in non-South Asian countries.
Setting	All community, school, health, or online settings	None
Time Frame	Studies published in the year 2000 and after	Studies published before 2000

2.3. Study selection

We inputted the search results into the Covidence software for abstract screening and review, which automatically removed duplicate abstracts (Veritas Health Innovation, 2024). Each remaining abstract was screened by two of five reviewers (RS, PS, BSR, AR, and KJM) and classified with a “yes,” “no,” or “maybe” vote based on the a priori eligibility criteria. Before the abstract screening, we conducted several rounds of group practice exercises involving independent voting to thoroughly train and familiarise all reviewers with the inclusion and exclusion criteria. The team only proceeded with screening when all reviewers voted identically for 85 % of the abstracts. All discrepancies in voting were resolved through consensus among the entire team. Following cross-referencing of systematic reviews, meta-analyses, scoping reviews, and narrative reviews for any relevant interventions,

Table 2
Key search terms for the pubmed database.

Search No.	Concept	Search Terms with Boolean Operators
#1	Resilience	resilien*
#2	Age Group	adolescen* OR youth* OR "young people" OR student* OR teenage* OR child* OR "young adult"
#3	Study Design	program* OR promotion* OR initiative OR intervention* OR education* OR strategy OR evaluation* OR training OR trial OR therap* OR counsel*
#4	Location	"Afghan*" OR "Bangladesh*" OR "Bhutan*" OR "India*" OR "Maldives" OR "Nepal*" OR "Pakistan*" OR "Sri Lanka*" OR "Asia, Southern"[Mesh]
	Final	#1 AND #2 AND #3 AND #4
Filters Applied: Species [Humans]; Age Group [Child: 6–12 years, Adolescent: 13–18 years, Young Adult: 19–24 years]; Date of Publication [Jan 1, 2000– March 23, 2024]		

we excluded these studies. After the abstract screening, we conducted a full-text review of the remaining studies. Out of the five team members (RS, PS, BSR, AR, and KJM), one independently documented whether intervention studies were duplicates or did not meet our inclusion criteria, while a second checked this documentation for accuracy. All conflicts were resolved as a team.

2.4. Data extraction and synthesis

After systematically selecting the intervention studies, we extracted the key information into an Excel sheet. This included location, socio-demographic characteristics of the treatment and control groups, intervention setting and design, targeted mental health and social issues, modes and agents of delivery, measurement of resilience, and study outcomes (Table 3). Out of five team members (RS, PS, BSR, AR, and KJM), data were extracted for each eligible study by one team member, and a second team member cross-verified the entries.

3. Results

3987 articles through our database search. After removing 762 duplicates, 3225 unique records remained for title and abstract screening. Of these, 3180 were excluded based on predefined eligibility criteria, resulting in 45 articles for full-text review. A detailed breakdown of the screening process and reasons for exclusion is presented in Fig. 1.

Finally, 13 studies met our inclusion criteria (Table 3). Most studies were published in the last decade, with nearly half published in or after 2020 (n = 6) (Table 3). Sample sizes varied significantly, ranging from 37 (Vineetha and Velayudhan, 2021) to 3786 (Pandya, 2017), with study populations primarily targeting individuals aged 10–17. The studies spanned three countries: India (n = 9) (Bhatia et al., 2023; Chhajera and Hira, 2024; Dabas and Singh, 2018; Leventhal et al., 2015; Pandya, 2017; Pandya, 2023; Peter et al., 2022; Sarkar et al., 2017; Vineetha and Velayudhan, 2021), Nepal (n = 2) (Jordans et al., 2010; Ramaiya et al., 2022), and Pakistan (n = 2) (Amin et al., 2020; Arif and Mirza, 2017), with two being multi-country, cross-continental investigations (n = 2) (Pandya, 2017; Pandya, 2023). Intervention settings varied widely in terms of population size and urbanization, ranging from megacities such as Delhi (Dabas and Singh, 2018) and Lahore (Arif and Mirza, 2017) to small rural settlements in Nepal (Ramaiya et al., 2022). While two interventions were implemented in community-based settings (Bhatia et al., 2023; Vineetha and Velayudhan, 2021), the remaining interventions were school-based.

3.1. Study populations

The reviewed interventions targeted diverse adolescent sub-populations, many identified as vulnerable due to specific life

circumstances (Table 3). These included adolescents who had experienced sexual abuse (n = 1) (Vineetha and Velayudhan, 2021), exposure to natural disasters (n = 2) (Amin et al., 2020; Ramaiya et al., 2022), who resided in conflict-affected areas (n = 1) (Jordans et al., 2010), or who faced difficult family situations, i.e., having single or divorced parents (n = 2) (Pandya, 2017; Pandya, 2023). A few interventions were gender-specific, focusing on promoting resilience among adolescent girls (n = 3) (Bhatia et al., 2023; Leventhal et al., 2015; Vineetha and Velayudhan, 2021) and boys (n = 1) (Arif and Mirza, 2017). Some studies recruited based on mental health indicators such as PTSD and anxiety (n = 2) (Amin et al., 2020; Peter et al., 2022), as well as a higher risk of academic failure (n = 2) (Arif and Mirza, 2017; Jordans et al., 2010). Others were based on socioeconomic statuses or classes, including adolescents from upper-class backgrounds and tribal communities (n = 3) (Pandya, 2017; Pandya, 2023; Sarkar et al., 2017).

When taken together, the evidence shows a dual landscape: universal programs delivered to general school populations (n = 4) (Chhajera and Hira, 2024; Dabas and Singh, 2018; Leventhal et al., 2015; Sarkar et al., 2017) exist alongside selective or targeted interventions aimed at high-risk groups outlined in the previous paragraph, such as trauma-exposed adolescents (n = 4) (Amin et al., 2020; Jordans et al., 2010; Ramaiya et al., 2022; Vineetha and Velayudhan, 2021). This highlights that resilience promotion in South Asia has been attempted across both universal preventive and selective targeted settings.

3.2. Study components and delivery

Key content areas included mindfulness practices (n = 4) (Chhajera and Hira, 2024; Peter et al., 2022; Ramaiya et al., 2022; Vineetha and Velayudhan, 2021), social-emotional learning (n = 3) (Chhajera and Hira, 2024; Dabas and Singh, 2018; Leventhal et al., 2015), spiritual and religious teachings (n = 3) (Dabas and Singh, 2018; Pandya, 2017; Pandya, 2023), psychoeducation, cognitive restructuring, and exposure techniques (n = 3) (Amin et al., 2020; Jordans et al., 2010; Leventhal et al., 2015), and life skills (n = 2) (Leventhal et al., 2015; Sarkar et al., 2017) (Table 3). Activities supporting these objectives included experiential exercises (n = 5) (Amin et al., 2020; Arif and Mirza, 2017; Chhajera and Hira, 2024; Leventhal et al., 2015; Ramaiya et al., 2022), creative expression through arts and performance (n = 5) (Arif and Mirza, 2017; Chhajera and Hira, 2024; Jordans et al., 2010; Pandya, 2023; Vineetha and Velayudhan, 2021), didactic learning and classroom lectures (n = 5) (Amin et al., 2020; Pandya, 2017; Pandya, 2023; Ramaiya et al., 2022; Sarkar et al., 2017), and youth leadership activities (n = 1) (Bhatia et al., 2023).

All interventions were delivered in-person, with one providing additional virtual support (Pandya, 2017), and delivered in a group format, with many incorporating goal setting and reflection (n = 6) (Pandya, 2017; Pandya, 2023; Peter et al., 2022; Ramaiya et al., 2022; Sarkar et al., 2017; Vineetha and Velayudhan, 2021). Intervention duration ranged from 5 days (Chhajera and Hira, 2024) to 50 weeks (Pandya, 2023), with variability in frequency and session length across studies.

Intervention delivery agents varied significantly in terms of their prior experience with mental health, education, and facilitation skills, and included highly experienced facilitators (n = 4) (Chhajera and Hira, 2024; Pandya, 2017; Pandya, 2023; Sarkar et al., 2017); researchers or research assistants (n = 3) (Arif and Mirza, 2017; Jordans et al., 2010; Ramaiya et al., 2022), trained clinicians (n = 2) (Amin et al., 2020; Peter et al., 2022), experienced members of spiritual organizations (n = 1) (Pandya, 2023), and teachers (n = 1) (Amin et al., 2020). Two studies employed community-based facilitators (n = 2) (Bhatia et al., 2023; Leventhal et al., 2015), one of which was led by youth team leaders (Bhatia et al., 2023). Two studies (n = 2) did not provide information on the delivery agents or their backgrounds (Dabas and Singh, 2018; Vineetha and Velayudhan, 2021).

Overall, most programs were group-based and delivered in schools,

Table 3
Study and intervention characteristics.

Author (Year)	Location	Intervention Description	Intervention Delivery Characteristics	Study Design	Sample Size	Age Range or Mean (SD)	% Girls	Resilience Tool	Resilience Outcomes	Other Study Outcomes
Amin et al., (2020)	Multan, Pakistan	Support for Students Exposed to Trauma (SSET) A social emotional learning intervention., focused on psychoeducation, strategies for relaxation, cognitive restructuring, and exposure to trauma memory	Delivered to schoolchildren with post-traumatic symptoms in flood-affected rural areas through 10 weekly 45-minute in-person group sessions by trained clinicians and teachers.	Randomized Control Trial (RCT)	75 (I=38, C=37)	11.4 (1.4)	34.7 %	Child and Youth Resilience Measure (CYRM–28)	Improvement in resilience	Reduction in PTSD symptoms and increase in perceived social support.
Arif and Mirza, (2017)	Lahore, Pakistan	An academic program to promote academic resilience through building creativity, self-esteem, self-efficacy, internal locus of control, autonomy, problem-solving and coping skills	Delivered to at-risk 9th and 10th grade boys in a high-failure secondary school through daily 60-minute in-person group sessions over three months by a PhD scholar and professor.	Pre-Post Study Design (PPSD)	64 (I=32, C=32)	14–16	0.0 %	Resilience Assessment Scale (developed by authors)	Increased resilience of at-risk students	Increase in self-esteem, self-efficacy, lower stress, better coping skills, and sense of purpose in life.
Bhatia et al. (2023)	Singhbum, Jharkhand, India	Jharkhand Initiative for Adolescent Health (JIAH) A community program to improve school attendance, dietary diversity, and mental health, through participatory adolescent groups, youth leadership activities, and livelihood promotion.	Delivered to adolescent girls in rural communities through 15 monthly in-person group sessions led by local youth team leaders from the community	Cluster Randomized Control Trial (CRCT)	1478 (I=587, C=576)	10–19	100.0 %	CYRM –11	Slight increase in resilience (not significant)	No significant improvement in dietary diversity, mental health, and school attendance.
Chhajer and Hira, (2024)	Indore, India	Two intervention arms in outdoor “natural” setting - <i>Positive Psychology (PPI) arm</i> : exercises focused on identifying strengths, constructive responding, and recognizing resilience. - <i>Mindfulness-based practices (MBI) arm</i> : mindfulness exercises, body scan, art, and emotional regulation building.	Delivered to 11th and 12th-grade urban students through five daily 60-minute in-person group sessions by an experienced well-being facilitator.	PPSD	180 (I Arm 1 =60, I Arm 2 =60, C=60)	17–20	51.1 %	Connor Davidson Resilience Scale (CD RISC)–10	Resilience improved significantly in both intervention groups	Enhanced student well-being, gratitude, and connection with self and nature.
Dabas and Singh (2018)	National Capital Region (NCR), India	Religious learning program to enhance hope, optimism, and resilience.	Delivered to students with minimal religious education in three semi-urban secondary schools with high rates of behavioral issues, through weekly in-person group 120-minute sessions over 12 weeks.	Quasi-Experimental (QE)	N = 630 (3 groups of 210)	13–16	Missing %	Adolescent Resilience Scale	Indian intervention significantly improved resilience, hope, and optimism	Increase in hope and optimism.
Jordans et al., (2010)	Banke, Dang, Bardia, and Kailali Districts, Nepal	Creative-expressive experiential therapy to reduce psychiatric symptoms and promote resilience that combines psychoeducation, movement/dance, cognitive behavioural therapy, group cohesion, stress inoculation, and trauma-processing activities.	Delivered to students in eight conflict-affected rural schools through 15 in-person group sessions (60 min each) by research assistants with prior experience and a bachelor's degree.	CRCT	325 (I=164, C=161)	11–14	48.6 %	Two resilience indicators: - Hope (Children's Hope Scale) - Prosocial Behaviour (Concern for	- Girls improved more on prosocial behaviour, boys on psychological difficulties and aggression - Older children reported more hope	Treatment was more beneficial for girls on prosocial behaviour and beneficial for boys on psychological

(continued on next page)

Table 3 (continued)

Author (Year)	Location	Intervention Description	Intervention Delivery Characteristics	Study Design	Sample Size	Age Range or Mean (SD)	% Girls	Resilience Tool	Resilience Outcomes	Other Study Outcomes
Leventhal et al., (2015)	Patna, Bihar, India	Girls First Resilience Curriculum (RC) A positive psychology life-skills intervention, focused on coping skills, character strengths, identifying and managing difficult emotions, social-emotional learning, problem-solving and conflict resolution.	Delivered to 7th and 8th grade girls in 57 rural government schools through 23 weekly 60-minute peer group sessions led by local women aged 18 + with at least a 10th grade education.	RCT	2387 (I=1681, C=706)	13.0 (1.2)	100.0 %	Others Scale–10) CD RISC–10	Girls who received the curriculum had higher emotional resilience scores.	difficulties and aggression. Improvement in self-efficacy, social-emotional assets, and psychological and social well-being,
Pandya (2017)	Multicountry (India + 14)	Spiritual education program to promote resilience through value based spirituality, spiritual strengths and mindfulness practices.	Delivered to adolescents with divorced parents from 150 upper- and middle-class schools through four daily 30-minute sessions using a hybrid format (class lectures, virtual support, and experiential group/ individual exercises) by experienced members of spiritual organizations.	Post-Test Experimental	3786 (I=1893, C=1893)	9–12	42.0 %	CYRM –28	Higher resilience scores in intervention group, especially among frequent/self-practicing participants	Higher strength assessment scores.
Pandya, (2023)	Mumbai, India and Pretoria, South Africa	Spiritual education intervention to enhance school connectedness, well-being, and resilience - <i>Spiritual education lessons:</i> meditation, relational consciousness, and mindfulness (Arm 1) - <i>Creative arts activities:</i> free expression of drawing and art (Arm 2)	Delivered to 7th–9th grade urban students from single-parent middle- and upper-class families through 50 weekly 30-minute group sessions with individual homework, led by experienced trainers with graduate degrees.	PPSD	136 (Spiritual = 36, Arts = 36, Control = 64)	N/A	58.8 %	Resilience Scale for Adolescents (READ)	The spiritual lessons were more effective in increasing resilience compared to the creative arts activities.	Improvements in academic engagement and well-being.
Peter et al., (2022)	Ghaziabad, Uttar Pradesh, India	A manualized psychotherapy intervention (MBCT-C) with an emphasis on mindful practice	Delivered to students with more than mild anxiety through 12 weekly 90-minute in-person group sessions with individual tasks, led by trained clinical psychologists.	RCT	65 (I=33, C=32)	10–14	52.3 %	Bharathiar University Resilience Scale–30	Increase in resilience for both interventions	Increased mindfulness, reduced anxiety symptoms.
Ramaiya et al., (2022)	Sankhu, Nepal	Regulating Emotions through Adapted Dialectical Behavior Skills for Youth (READY-Nepal) A life skills education-based	Delivered to secondary school students in a 2015 earthquake epicenter through eight 50-minute classroom group sessions	Non-Randomized Controlled Trial	102 (I=40, C=62)	13–17	50.0 %	Wagnild and Young Resilience Scale–7	No improvement in resilience (4 weeks follow-up)	No significant differences in other primary

(continued on next page)

Table 3 (continued)

Author (Year)	Location	Intervention Description	Intervention Delivery Characteristics	Study Design	Sample Size	Age Range or Mean (SD)	% Girls	Resilience Tool	Resilience Outcomes	Other Study Outcomes
Sarkar et al., (2017)	Purulia, West Bengal, India	health empowerment intervention to promote resilience through mindfulness practices, building stress tolerance, emotional awareness and regulation, and mastery of interpersonal relationships. Life-skills program to promote resilience by integrating motivation, discipline, nutrition and health counselling, social responsibility, relationships and sexuality, and goal setting	over four weeks, led by non-specialist researchers and a DBT-trained doctoral student, with skill training, behavioral analysis, activities, and homework. Delivered to 6th–9th grade students in rural and tribal villages through twice-weekly group sessions (45–120 min) over three months by a specialist intervention trainer.	QE	742 (I=381, C=361)	11–17	36.5 %	CYRM –28	Increased resilience; greater increase for tribal adolescents	Increased internal “health locus of control” and self-determination
Vineetha and Velayudhan, (2021)	Kollam, Kerala, India	Community program to enhance self-efficacy and resilience by blending art and solution-focused therapy, mindfulness meditation, and Yoga.	Three in person 30 min sessions (each held daily) delivered to sexually abused adolescent girls in a nursing home.	PPSD	37 (I=37, No C)	10–18	100.0 %	Resilience Scale–30 Self-Efficacy Scale – 10	Increase in resilience (post-test and follow-up)	Increase in self-efficacy.

with a strong dependence on professionals or experienced trainers such as clinical psychologists or trained teachers/clinicians (n = 2) (Peter et al., 2022; Amin et al., 2020), experienced trainers / spiritual educators (n = 2) (Pandya, 2023; Dabas and Singh, 2018). Three studies tested community-based or peer / non-specialist models such as local youth team leaders (Bhatia et al., 2023), local women facilitators (Leventhal et al., 2015), or non-specialist researchers (Ramaiya et al., 2022) and demonstrated that non-specialist delivery is possible.

3.3. Resilience and other outcomes

Except for one study that used hope and prosocial behaviour as proxy indicators of resilience (Jordans et al., 2010), all remaining studies employed standardized quantitative tools to measure resilience (Table 3). Overall, resilience levels improved post-intervention in all but two studies (Bhatia et al., 2023; Ramaiya et al., 2022). Most interventions yielded significant outcomes in addition to resilience, including improved self-efficacy (n = 3) (Arif and Mirza, 2017; Leventhal et al., 2015; Vineetha and Velayudhan, 2021), enhanced well-being (n = 3) (Chhajer and Hira, 2024; Leventhal et al., 2015; Pandya, 2023), and reduced psychiatric symptoms (n = 2) (Amin et al., 2020; Peter et al., 2022).

There were notable differences in the resilience outcomes between intervention subgroups. For instance, two studies found that adolescents receiving spiritual lessons exhibited greater improvements in resilience than those in other intervention or control arms (Dabas and Singh, 2018; Pandya, 2023). Another study found that tribal adolescents demonstrated greater gains in resilience than their non-tribal peers (Sarkar et al., 2017). In another study, an intervention resulted in a greater increase in prosocial behaviour (a proxy indicator of resilience) among girls than among boys (Jordans et al., 2010).

When taken together, these findings suggest a broad trend: most programs (11 of 13) reported some improvement in resilience, with two notable exceptions (Bhatia et al., 2023; Ramaiya et al., 2022). Interventions that included spiritual or values-based components (n = 2) (Dabas and Singh, 2018; Pandya, 2017; Pandya, 2023), or that targeted specific high-risk groups such as tribal communities or girls in conflict settings (n = 2) (Jordans et al., 2010; Sarkar et al., 2017), tended to show more noticeable gains. However, because the studies used different tools and designs, and differ in methodological rigor and quality, it is not possible to say with confidence which approach is “best.”

4. Discussion

Our study reviews the specific subpopulations, active components, and methods of delivering 13 resilience-promoting interventions for adolescents aged 10–19 in South Asia. Enhancing resilience has improved school attendance, decreased behavioural disorders, and increased self-esteem among adolescents worldwide (Dray et al., 2017; Fritz et al., 2018; Mesman et al., 2021). Considering the high burden of mental health problems among adolescents in South Asia, as outlined in the Introduction, promoting resilience is not only a protective factor but also a proactive strategy that can help prevent the onset of mental health problems and improve the quality of life for adolescents in South Asia. This makes resilience promotion a critical area for investment by policymakers and practitioners.

Across studies, school-based programs were by far the most common (Arif and Mirza, 2017; Amin et al., 2020; Chhajer and Hira, 2024; Dabas and Singh, 2018; Jordans et al., 2010; Leventhal et al., 2015; Pandya, 2023; Peter et al., 2022; Ramaiya et al., 2022; Sarkar et al., 2017), while only two took place in community settings (Bhatia et al., 2023; Vineetha and Velayudhan, 2021). The interventions most frequently used mindfulness practices (Chhajer and Hira, 2024; Peter et al., 2022; Ramaiya et al., 2022; Vineetha and Velayudhan, 2021), spiritual or values-based lessons (Dabas and Singh, 2018; Pandya, 2017; Pandya, 2023), and

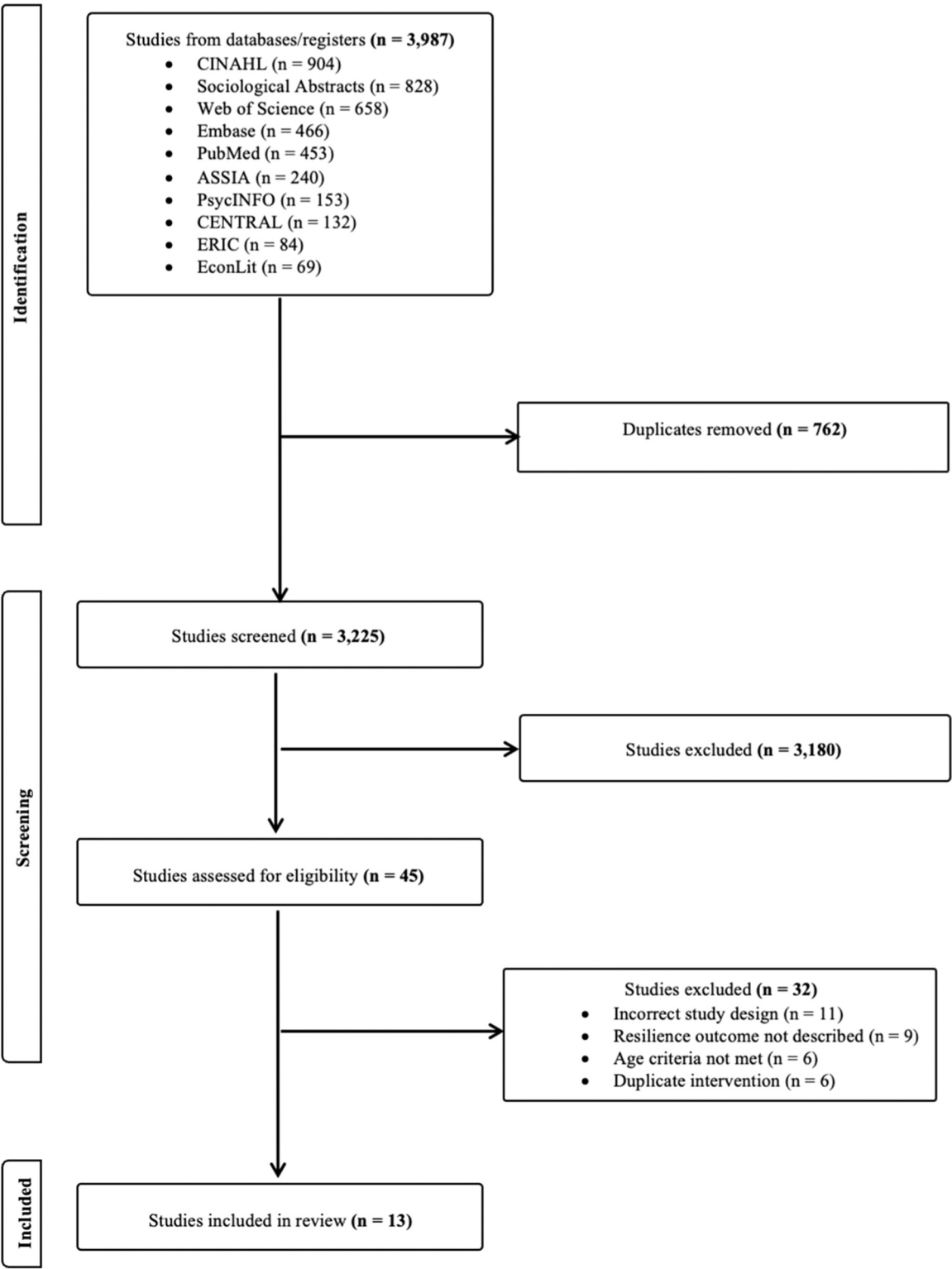


Fig. 1. Prisma ScR flow chart demonstrating study selection.

social-emotional/asset-building approaches (Chhajer and Hira, 2024; Leventhal et al., 2015). Life-skills and youth leadership components appeared less often but showed promise in specific groups, such as tribal communities and adolescent girls (Bhatia et al., 2023; Jordans et al., 2010; Leventhal et al., 2015; Sarkar et al., 2017).

The studies we reviewed demonstrated some key strengths. Nearly all studies involved group exercises and peer engagement, which have advantages in fostering collaboration, shared learning, and facilitating

accountability to oneself and peers (Puchol-Martínez et al., 2023). Additionally, the majority of interventions are school-based, which is both convenient and scalable (Ungar et al., 2023). Finally, most interventions were expert-led with specialized and active engagement from trained personnel.

However, these strengths also reveal key challenges in implementation at a large scale. We found only a handful of resilience-promoting interventions, and a heavy dependence on specialists for

delivery, which creates scalability challenges in resource-constrained settings (Rahman, 2024). This underscores a broader gap, namely that resilience is not yet fully recognised or leveraged as a “preventive” strategy for mental health promotion and early intervention. This gap is further exacerbated by the shortage of trained mental health providers, geographic and sociodemographic inequities in access to specialist services, disproportionate resources in schools and communities, limited human resource capacity, and inadequate implementation of national adolescent mental health programs in the region (Mudunna et al., 2025; Willmot et al., 2022).

Addressing these barriers requires innovative models such as deploying “task sharing” to shift the responsibility of delivery from specialists to trained non-specialists, including teachers, community workers, and peers, thereby increasing local access, expanding reach, reducing stigma, and helping with long-term sustainability (Raviola et al., 2019). Harnessing increased access to technology in the region to deliver multimedia content, such as role-play videos, can enhance coverage and engagement (Wani et al., 2024), and upscaling resilience promotion linked with existing government programmes can reduce depression, anxiety, and a poorer quality of life among adolescents. The third approach will require government willingness and capacity building. It is also imperative that policymakers recognise the strategic value of resilience promotion as a cost-efficient public health investment that can reduce the downstream burden of mental health problems. Furthermore, schools are likely to embrace such programs given the evidence that non-specialist providers can effectively deliver resilience promotion in a global context (Raviola et al., 2019) and the potential to lower human resource costs while still improving student well-being.

Additionally, though nearly all studies involved group exercises and peer engagement, few targeted the social environments of adolescents themselves. This was also reflected in the intervention setting: most studies were school-based. Only four interventions provided social scaffolding, including strategies such as offering parental support, livelihood training, peer advocacy, and mentorship by youth (Amin et al., 2020; Bhatia et al., 2023; Jordans et al., 2010; Leventhal et al., 2015). Multilevel interventions outside school settings that integrate individual resources alongside family and community support may yield even greater returns in enhancing resilience than school-based settings alone. Focusing primarily on school-based resilience promotion, while convenient for scale-up, risks excluding out-of-school children who are among the most vulnerable and most in need of such interventions. Globally, an estimated 250 million children are out of school, with more than one-third from central and South Asia (UNESCO, 2023). Therefore, future resilience-promoting programs must prioritise this critical population. Policy makers, service providers, and funders need to collaboratively plan, advocate, and invest in community-based approaches.

Our review has some shortcomings. We found limited evidence from countries apart from India, Nepal, and Pakistan. A few studies lacked information on intervention components and sample demographics, which hinders an exhaustive understanding of intervention mechanisms. Also, we excluded grey literature, which may highlight more community-based evidence. Studies used different standardized scales to measure resilience, differed in intervention duration and length, and targeted different subpopulations across age groups and gender, all of which may have impacted the generalizability of resilience outcomes across studies. Since this was a scoping review, we did not assess the quality or bias of the studies. As a result, the outcomes we highlight should be interpreted with caution and do not confirm the effectiveness of the interventions. Finally, we relied on researchers to identify and measure resilience as a salient outcome of interest. Though many intervention studies do not measure resilience directly (as it is often considered a mediator), pathways of other adolescent interventions addressing mental health problems are likely relevant to resilience promotion.

In conclusion, we provide information on the target populations, components of care, and outcomes of resilience-promoting interventions

among adolescents in South Asia. Furthermore, we identify key gaps, namely the need for more social scaffolding, the expansion of interventions to community-based settings, and a reduced reliance on professional experts. The practical implication of these findings is that key stakeholders (policymakers, planners, and service providers) should collaboratively invest in community-based models, train non-specialists and peers as delivery agents, and integrate resilience promotion into existing government programs to enable scale-up. As the resilience landscape gathers more evidence through high-quality trials, the literature can be further supplemented through a systematic review to build on the evidence we highlight and test the effectiveness of resilience-promoting interventions in South Asia. There already are promising programs in the formative stage, such as Health Action in Schools for a Thriving Adolescent Generation (HASHTAG), Adolescents’ Resilience and Treatment Needs for Mental Health in Indian Slums (ARTEMIS) (Laurenzi et al., 2024; Mukherjee et al., 2024). Future studies would also need to adopt an implementation lens, exploring which delivery agents, whether non-specialists or peer facilitators, are most effective, paying close attention to cost-efficiency, sustainability of impact, and adjusting for differences in contexts in the region.

Funding disclosure

R.S. received the Lakshmi Mittal and Family South Asia Institute Summer Grant from Harvard University to support his research efforts; the funding source did not influence the study. Other authors received no external funding.

CRediT authorship contribution statement

Ravi Sadhu: Writing – review & editing, Writing – original draft, Visualization, Software, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Priyanka Suneja:** Writing – review & editing, Visualization, Methodology, Investigation, Formal analysis, Data curation. **Brinda Singh Raikwar:** Writing – review & editing, Visualization, Methodology, Investigation, Formal analysis, Data curation. **Adarsh Ratnakaran:** Writing – review & editing, Visualization, Methodology, Investigation, Formal analysis, Data curation. **Kimberley Monteiro:** Writing – review & editing, Visualization, Methodology, Investigation, Formal analysis, Data curation. **Pattie Gonsalves:** Writing – review & editing, Resources, Methodology, Conceptualization. **Vikram Patel:** Writing – review & editing, Resources, Methodology, Conceptualization. **Ravindra Agrawal:** Writing – review & editing, Visualization, Supervision, Resources, Project administration, Methodology, Conceptualization.

Declaration of Competing Interest

The authors declare that they have no competing financial interests or personal relationships that could be perceived to have influenced the work reported in this paper.

Acknowledgements

None.

Author contributions

R.S., R.A., P.G., and V.P. conceptualized the review. R.S. wrote the protocol and designed the search strategy in collaboration with P.S., B.S. R., K.M., and A.R. Under the supervision of R.A., R.S., P.S., B.S.R., K.M., and A.R. conducted title and abstract screening and data extraction. R.S. wrote the initial draft, and all provided editorial input to the manuscript. None of the authors has any potential conflicts of interest, either real or perceived. All authors share responsibility for the final version of the work submitted and published.

References

- Adolescent health in the South-East Asia Region. World Health Organization (WHO). 2024. <https://www.who.int/southeastasia/health-topics/adolescent-health>.
- Adolescents in South Asia. United Nations Children's Fund (UNICEF). Updated December 2021. Accessed March 1, 2025. <https://www.unicef.org/rosa/what-we-do/adolescents>.
- Amin, R., Nadeem, E., Iqbal, K., Asadullah, M.A., Hussain, B., 2020. Support for students exposed to trauma (SSET) program: an approach for building resilience and social support among Flood-Impacted children. *Sch. Ment. Health* 12 (3), 493–506. <https://doi.org/10.1007/s12310-020-09373-y>.
- Arif, M.I., Mirza, M.S., 2017. Effectiveness of an intervention program in fostering academic resilience of students at risk of failure at secondary school level. *Bull. Educ. Res.* 39 (1), 251–264.
- Bhatia, K., Rath, S., Pradhan, H., Samal, S., Copas, A., Gagrai, S., et al., 2023. Effects of community youth teams facilitating participatory adolescent groups, youth leadership activities, and livelihood promotion to improve school attendance, dietary diversity, and mental health among adolescent girls in rural eastern India (JIAH trial): a cluster-randomised controlled trial. *SSM Popul. Health* 21, 101330. <https://doi.org/10.1016/j.ssmph.2022.101330>.
- Chhajer, R., Hira, N., 2024. Exploring positive psychology intervention and mindfulness-based intervention in nature: impact on well-being of school students in India. *Front. Public Health* 12, 1297610. <https://doi.org/10.3389/fpubh.2024.1297610>.
- Covidence systematic review software. Veritas Health Innovation. 2024. www.covidence.org.
- Dabas, P., Singh, A., 2018. Bhagavad Gita teachings and positive psychology: efficacy for semi-urban Indian students of NCR. *Cogent Psychol.* 5 (1), 1467255. <https://doi.org/10.1080/23311908.2018.1467255>.
- Dray, J., Bowman, J., Campbell, E., Freund, M., Wolfenden, L., Hodder, R.K., et al., 2017. Systematic review of universal resilience-focused interventions targeting child and adolescent mental health in the school setting. *J. Am. Acad. Child Adolesc. Psychiatry* 56 (10), 813–824. <https://doi.org/10.1016/j.jaac.2017.07.780>.
- Fritz, J., Graaff, A.M., de, Caisley, H., Harmelen, A., van, Wilkinson, P.O., 2018. A systematic review of amenable resilience factors that moderate and/or mediate the relationship between childhood adversity and mental health in young people. *Front. Psychiatry* 9 (230). <https://doi.org/10.3389/fpsy.2018.00230>.
- Herrman, H., Stewart, D.E., Diaz-Granados, N., Berger, E.L., Jackson, B., Yuen, T., 2011. What is Resilience? *Canadian J. Psych.* 56 (5), 258–265. <https://doi.org/10.1177/070674371105600504>.
- Hossain, M.M., Purohit, N., Sultana, A., Ma, P., McKyer, E.L.J., Ahmed, H.U., 2020. Prevalence of mental disorders in south Asia: an umbrella review of systematic reviews and meta-analyses. *Asian J. Psychiatry* 51, 102041. <https://doi.org/10.1016/j.ajp.2020.102041>.
- Jordans, M.J., Komproe, I.H., Tol, W.A., Kohrt, B.A., Luitel, N.P., Macy, R.D., et al., 2010. Evaluation of a classroom-based psychosocial intervention in conflict-affected Nepal: a cluster randomized controlled trial. *J. Child Psychol. Psychiatry* 51 (7), 818–826. <https://doi.org/10.1111/j.1469-7610.2010.02209.x>.
- Laurenzi, C.A., du Toit, S., Mawoyo, T., Luitel, N.P., Jordans, M.J.D., Pradhan, I., et al., 2024. Development of a school-based programme for mental health promotion and prevention among adolescents in Nepal and South Africa. *SSM Ment. Health* 5, 100289. <https://doi.org/10.1016/j.ssmmh.2023.100289>.
- Leventhal, K.S., Gillham, J., DeMaria, L., Andrew, G., Peabody, J., Leventhal, S., 2015. Building psychosocial assets and wellbeing among adolescent girls: a randomized controlled trial. *J. Adolesc.* 45, 284–295. <https://doi.org/10.1016/j.adolescence.2015.09.011>.
- Listosella, M., Goni-Fuste, B., Martín-Delgado, L., Miranda-Mendizabal, A., Franch Martínez, B., Pérez-Ventana, C., et al., 2023. Effectiveness of resilience-based interventions in schools for adolescents: a systematic review and meta-analysis. *Front. Psychol.* 14, 1211113. <https://doi.org/10.3389/fpsyg.2023.1211113>.
- Mesman, E., Vreeker, A., Hillegers, M., 2021. Resilience and mental health in children and adolescents: an update of the recent literature and future directions. *Curr. Opin. Psychiatry* 34 (6), 586–592. <https://doi.org/10.1097/YCO.0000000000000741>.
- Métais, C., Waters, L., Martin-Krumm, C., Tarquinio, C., Burel, N., 2024. A scoping review of universal school-based resilience programs for adolescents. *Sch. Psychol.* <https://doi.org/10.1037/spq0000659>.
- Mudunna, C., Weerasinghe, M., Tran, T., Antoniadis, J., Romero, L., Chandradasa, M., et al., 2025. Nature, prevalence and determinants of mental health problems experienced by adolescents in south Asia: a systematic review. *Lancet Reg. Health Southeast Asia* 33 (2025), 100532. <https://doi.org/10.1016/j.lansea.2025.100532>.
- Mukherjee, A., Yatirajula, S.K., Kallakuri, S., Paslawar, S., Lempp, H., Raman, U., et al., 2024. Protocol for process evaluation of ARTEMIS cluster randomised controlled trial: an intervention for management of depression and suicide among adolescents living in slums in India. *BMJ Open* 14 (5), e081844. <https://doi.org/10.1136/bmjopen-2023-081844>.
- Pandya, S.P., 2023. Adolescents raised by single parents: examining the impact of spiritual education lessons on school connectedness, wellbeing, and resilience. *Child. Youth Serv. Rev.* 148, 106885. <https://doi.org/10.1016/j.childyouth.2023.106885>.
- Pandya S.P., 2017. Spirituality for building resilience in children of divorced parents: a Cross-Country experimental study. *J. Divorce Remarriage* 58 (6), 447–468. <https://doi.org/10.1080/10502556.2017.1343554>.
- Peter, A., Srivastava, R., Agarwal, A., Singh, A.P., 2022. The effect of Mindfulness-based cognitive therapy on anxiety and resilience of the school going early adolescents with anxiety. *J. Indian Assoc. Child Adolesc. Ment. Health* 18 (2), 176–185. <https://doi.org/10.1177/09731342221127959>.
- Peters, M.D.J., Godfrey, C., McInerney, P., Munn, Z., Tricco, A.C., Khalil, H., 2024. Scoping reviews. In: Aromataris, E., Lockwood, C., Porritt, K., Pilla, B., Jordan, Z. (Eds.), *JBI Manual for Evidence Synthesis*, p. 2024. <https://doi.org/10.46658/JBIMES-24-09>.
- Pinto, T.M., Laurence, P.G., Macedo, C.R., Macedo, E.C., 2021. Resilience programs for children and adolescents: a systematic review and Meta-Analysis. *Front. Psychol.* 12, 754115. <https://doi.org/10.3389/fpsyg.2021.754115>.
- Puchol-Martínez, I., Fernández, Ó.V., Santed-Germán, M.A., 2023. Preventive interventions for children and adolescents of parents with mental illness: a systematic review. *Clin. Psychol. Psychother.* 30 (5), 979–997. <https://doi.org/10.1002/cpp.2850>.
- Rahman, A., 2024. Editorial: equity/inequality, diversity and inclusion in child and adolescent mental health - a perspective from the south asian region. *Child Adolesc. Ment. Health* 29 (2), 197–199. <https://doi.org/10.1111/camh.12702>.
- Ramaiya, M.K., McLean, C.L., Pokharel, M., Thapa, K., Schmidt, M.A., Berg, M., et al., 2024. Feasibility and acceptability of a School-Based emotion regulation prevention intervention (READY-Nepal) for secondary school students in Post-Earthquake Nepal. *Int. J. Environ. Res. Public Health* 19 (21). <https://doi.org/10.3390/ijerph192114497>.
- Raviola, G., Naslund, J.A., Smith, S.L., Patel, V., 2019. Innovative models in mental health delivery systems: task sharing care with Non-specialist providers to close the mental health treatment gap. *Curr. Psychiatry Rep.* 21 (44). <https://doi.org/10.1007/s11920-019-1028-x>.
- Sadhu, R., Suneja, P., Raikwar, B.S., Ratnakaran, A., Monteiro, K., Gonsalves, P., et al., 2024. Resilience-promoting interventions targeting adolescents in south. Asia A scoping Rev. <https://doi.org/10.17605/OSF.IO/HGEUK>.
- Sarkar, K., Dasgupta, A., Sinha, M., Shahbabu, B., 2017. Effects of health empowerment on resilience of adolescents in a tribal area: a study using the solomon four-groups design. *Soc. Sci. Med.* 190, 265–274. <https://doi.org/10.1016/j.socscimed.2017.05.044>.
- Tasijawa, F.A., Siagian, I., 2022. School-based interventions to improve adolescent resilience: a scoping review. *Open Access Maced. J. Med. Sci.* 10, 33–40. <https://doi.org/10.3889/oamjms.2022.8063>.
- Tricco, A.C., Lillie, E., Zarin, W., O'Brien, K.K., Colquhoun, H., Levac, D., et al., 2018. PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation. *Ann. Intern. Med.* 169 (7), 467–473. <https://doi.org/10.7326/M18-0850>.
- Two hundred fifty million children out-of-school: What you need to know about UNESCO's latest education data. United Nations Educational, Scientific, and Cultural Organization (UNESCO). <https://www.unesco.org/en/articles/250-million-children-out-school-what-you-need-know-about-unescos-latest-education-data>. Updated September 21, 2023. Accessed September 17, 2025.
- Ungar, M., Ghazinoor, M., Richter, J., 2013. Annual research review: what is resilience within the social ecology of human development. *J. Child Psychol. Psychiatry* 54 (4), 348–366.
- Ungar, M., Theron, L., Höltge, J., 2023. Multisystemic approaches to researching young people's resilience: discovering culturally and contextually sensitive accounts of thriving under adversity. *Dev. Psychopathol.* 35 (5), 2199–2213. <https://doi.org/10.1017/S0954579423000469>.
- Vineetha, V., Velayudhan, A., 2021. Enhancing self efficacy and resilience through integrated intervention among sexually abused girl children. *Med. Leg. Update* 21 (3), 87–92. <https://doi.org/10.37506/mlu.v21i3.2968>.
- Wani, C., McCann, L., Lennon, M., Radu, C., 2024. Digital mental health interventions for adolescents in Low- and Middle-Income countries: scoping review. *J. Med. Internet Res* 26 (9801). <https://doi.org/10.2196/51376>.
- Willmot, R.A., Sharp, R.A., Amir Kassim, A., Parkinson, J.A., 2022. A scoping review of community-based mental health intervention for children and adolescents in south Asia. *Glob. Ment. Health* 10, e1. <https://doi.org/10.1017/gmh.2022.49>.
- Zimmerman, M.A., Stoddard, S.A., Eisman, A.B., Caldwell, C.H., Aiyer, S.M., Miller, A., 2013. Adolescent resilience: promotive factors that inform prevention. *Child Dev. Perspect.* 7 (4), 215–220. <https://doi.org/10.1111/cdep.12042>.