RESEARCH PAPER

Enhancing Adolescent Resilience through Multicomponent Psychosocial Interventions: Insights from Urban India

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ABSTRACT

Background: Adolescent mental health has emerged as a critical public health concern in rapidly urbanizing India. Urban adolescents experience increasing psychosocial stressors related to academic pressure, social media exposure, and changing family dynamics. This review synthesizes evidence from the last decade (2015–2025) on multicomponent psychosocial interventions targeting Indian adolescents, with a focus on peer-, family-, and school-based frameworks that enhance resilience and emotional well-being.

Methods: A narrative review guided by PRISMA 2020 principles was conducted using PubMed, Scopus, SpringerLink, and PsycINFO. Studies addressing psychosocial or school-based interventions among Indian adolescents (12–18 years) reporting measurable mental health or resilience outcomes were included. Two reviewers independently screened and assessed study quality using the Mixed Methods Appraisal Tool (MMAT, 2018). Thematic synthesis followed Thomas and Harden's framework to classify interventions into peer-, family-, school-based, and integrated typologies. Inter-rater agreement was assessed using Cohen's kappa.

Results: Across 28 included studies encompassing RCTs, cohort studies, quasi-experimental designs, and mixed-method evaluations, peer-led interventions improved empathy and social connectedness ($d = 0.46–0.52$), family-based psychoeducation enhanced emotional regulation ($d = 0.39–0.47$), and school-based programs reduced anxiety and depression ($\eta^2 = 0.31$). Integrated multicomponent models demonstrated the strongest and most sustainable effects ($d = 0.68–0.72$). Thematic synthesis revealed three cross-cutting themes: socio-cultural adaptability, scalability through digital platforms, and policy alignment.

Conclusions: Adolescent psychosocial well-being is optimized through multi-level, context-sensitive interventions grounded in ecological and positive youth development frameworks. Findings support embedding psychosocial programming within India's National Education Policy (2020) and RKSK, and scaling hybrid digital delivery models. Limitations include heterogeneity in study designs and the absence of long-term follow-up, which precluded meta-analysis.

Keywords: Adolescent mental health; psychosocial intervention; resilience; school-based programs; India; MMAT quality assessment; narrative review

How to cite this article: Guruprasad P, Pruthvish S, Jalihal V, Harave VS. Enhancing Adolescent Resilience through Multicomponent Psychosocial Interventions: Insights from Urban India. Int J Drug Deliv Technol. 2026;16(38s): 942-952. DOI: 10.25258/ijddt.16.38s.101

1. Introduction

1.1 Background and Rationale

Adolescence (ages 12–18 years) represents a pivotal developmental phase characterized by profound socioemotional, cognitive, and identity transitions. Globally, approximately 10–20% of adolescents experience a diagnosable mental health condition, with the majority remaining untreated due to stigma, resource scarcity, and fragmented health systems (WHO, 2023). In India, which is home to the world's largest adolescent population (253 million), the burden of adolescent mental ill-health is compounded by rapid urbanization, digital transformation, competitive academic environments, and evolving joint-to-nuclear family transitions (Patel et al., 2018).

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Urban Indian adolescents face a unique intersection of stressors: academic performance pressure amplified by competitive examination culture, peer dynamics mediated through social media, parental occupational migration, and exposure to socioeconomic disparities. These stressors collectively increase vulnerability to anxiety disorders, depression, and emotional dysregulation, underscoring the urgent need for evidence-based, contextually adapted psychosocial interventions (Narayan et al., 2021).

Despite a growing body of global literature on school-based mental health programming, the Indian evidence base remains fragmented, with interventions often implemented in isolation — targeting only the individual, the peer group, or the family — without ecological integration. The shift toward multicomponent interventions, which simultaneously engage peer networks, family systems, school environments, and digital platforms, has emerged as a promising paradigm in international literature (Fergusson & Zimmerman, 2022). However, a comprehensive synthesis of this evidence within the Indian urban context has not yet been conducted.

1.2 Theoretical Framework

This review is anchored in two complementary theoretical frameworks. Bronfenbrenner's Ecological Systems Theory posits that adolescent development occurs within nested systems: microsystem (family, peers, school), mesosystem (interactions between these), exosystem (community institutions), macrosystem (cultural norms), and chronosystem (temporal changes). Effective interventions must therefore address multiple ecological levels rather than singular contexts.

The Positive Youth Development (PYD) model (Lerner et al., 2019) complements this by emphasizing the cultivation of strengths — competence, confidence, connection, character, and caring — as protective factors against psychosocial adversity. Together, these frameworks inform the review's focus on multi-level interventions that are asset-based, culturally rooted, and developmentally appropriate for Indian adolescents.

1.3 Objectives

This review aims to:

1. Identify and categorize peer-, family-, and school-based psychosocial interventions evaluated among urban Indian adolescents (2015–2025).
2. Evaluate measured outcomes related to resilience, emotional regulation, social connectedness, and mental health symptom reduction.
3. Assess the methodological quality of included studies using the MMAT (2018).
4. Identify facilitators, barriers, and cultural mediators of intervention effectiveness.
5. Derive policy-relevant recommendations aligned with NEP 2020, RKSK, and Tele-MANAS frameworks.

2. Methodology

2.1 Design

A narrative synthesis approach guided by PRISMA 2020 (Page et al., 2021) was adopted. A systematic review with meta-analysis was considered; however, the substantial heterogeneity in study designs (RCTs, quasi-experimental, cohort, mixed-methods), intervention modalities, outcome measures, and follow-up periods precluded a formal meta-analytic synthesis. This methodological decision is consistent with published guidance on narrative reviews where statistical pooling is not feasible or meaningful (Popay et al., 2006). Thematic synthesis following Thomas and Harden's (2008) framework was employed to derive higher-order themes across studies.

2.2 Search Strategy

Comprehensive searches were conducted between 10–15 March 2025 across four electronic databases: PubMed, Scopus, SpringerLink, and PsycINFO. Boolean combinations of MeSH and free-text keywords were used, including: "psychosocial intervention," "school mental health," "resilience," "peer support," "family-based intervention," "emotional regulation," "mindfulness," "life skills," "India," and "urban adolescents." Grey literature including UNICEF reports, WHO technical documents, NIMHANS working papers, and government evaluation reports were also searched to supplement database findings.

Table 1. Search Strategy Summary

Element	Description
Databases	PubMed, Scopus, SpringerLink, PsycINFO; supplemented by WHO, UNICEF, NIMHANS grey literature
Search Period	January 2015 – March 2025 (search executed 10–15 March 2025)
Keywords	Psychosocial intervention; resilience; school mental health; peer support; family-based; emotional regulation; mindfulness; life skills; India; urban adolescents
Inclusion Criteria	Indian adolescents aged 12–18 years; psychosocial interventions; measurable mental health or resilience outcomes; peer-reviewed or grey literature; English language
Exclusion Criteria	Rural-only samples (unless explicitly comparative); clinical-only (hospitalized) populations; non-empirical or opinion papers; studies outside 2015–2025

Quality Tool	Mixed Methods Appraisal Tool (MMAT, 2018) — applied independently by two reviewers
Inter-rater Agreement	Cohen's κ = 0.89 (excellent agreement); discrepancies resolved by consensus with a third reviewer

2.3 Screening and Selection

A total of 312 records were identified from database and grey literature searches. After removing 64 duplicates, 248 records underwent title and abstract screening by two independent reviewers (PG and NK). Of these, 56 full-text articles were assessed for eligibility, and 28 studies met all inclusion criteria. Disagreements at each stage were resolved through discussion and, where necessary, arbitration by a senior reviewer (VJ). The selection process is illustrated in Figure 1 (PRISMA 2020 Flow Diagram). Reasons for exclusion at full-text stage included: rural-only setting (n=12), no measurable psychosocial outcome (n=7), non-empirical design (n=5), and insufficient data for extraction (n=4)

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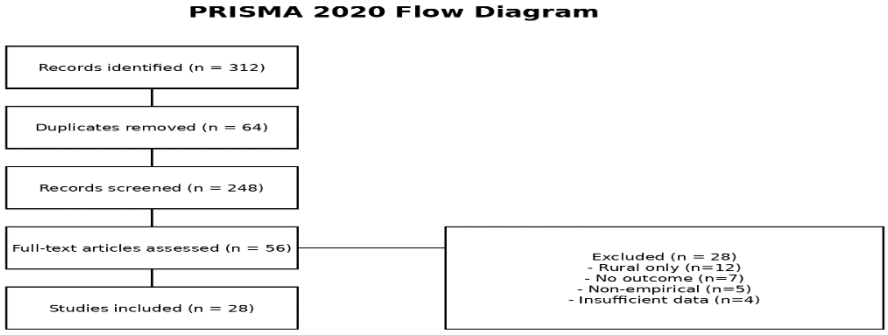
Figure 1: PRISMA 2020 Flow



2.4 Quality Assessment – MMAT (2018)

The methodological quality of all 28 included studies was independently assessed by two reviewers (PG and NKB) using the Mixed Methods Appraisal Tool (MMAT, 2018), which provides domain-specific criteria for five study types: qualitative, quantitative randomized, quantitative non-randomized, quantitative descriptive, and mixed-methods. Each criterion is rated as Yes/No/Cannot tell, producing a quality profile rather than a composite score, consistent with MMAT developers' recommendations.

Studies were categorized by design type prior to applying the relevant MMAT criteria set. Discrepant ratings were resolved by discussion. Table 2 (Quality Assessment Matrix) presents MMAT ratings for all 28 studies. Overall, the quality of included studies was moderate to high, with RCTs and cluster trials demonstrating the strongest methodological rigor. Quasi-experimental and mixed-method studies scored variably, particularly on criteria related to randomization, blinding, and representativeness of samples. No study was excluded solely on quality grounds; instead, quality ratings are reported alongside effect sizes to aid interpretation.

2.5 Data Extraction and Synthesis

Data were extracted into a structured matrix by PG and verified by NKB, capturing: study design, sample characteristics (age, gender, urban setting), intervention type and duration, primary outcomes and measurement tools, effect sizes, and key findings. Thematic synthesis followed Thomas and Harden's (2008) three-stage process: (1) line-by-line coding of findings, (2) development of descriptive themes, and (3) generation of analytical themes. Three cross-cutting analytical themes emerged: (a) socio-cultural adaptability, (b) scalability through digital innovation, and (c) alignment with national policy frameworks.

3. Results

3.1 Characteristics of Included Studies

The 28 included studies were published between 2015 and 2025, comprising 6 randomized controlled trials (RCTs), 4 cluster randomized trials, 8 quasi-experimental studies, 5 longitudinal cohort studies, 3 mixed-method evaluations, and 2 large-scale programme evaluations. Collectively, studies enrolled 14,620 adolescents from urban schools, community centres, and digital platforms across 11 Indian states. The age range was 12–18 years, with approximately 54% female participants. School-based settings were most prevalent (n=19 studies), followed by community (n=6) and hybrid digital platforms (n=3).

Studies were grouped by intervention type and study design to facilitate comparison (see Table 3). This grouping enables identification of convergent findings across studies of similar design and reveals patterns in effect sizes, outcome domains, and program components that distinguish effective from less effective interventions.

Table 3. Characteristics and MMAT Quality of All 28 Included Studies (2015–2025)

Author (Year)	Design	Sample (n)	Age (yrs)	Setting	Intervention	Outcome Measure	Key Findings	MMAT Quality
GROUP A: Randomised Controlled Trials								
Sharma et al. (2022)	RCT	312	14–17	Govt. Schools, Mumbai	Mindfulness-Based Stress Reduction (8-wk)	GAD-7; RS-14	↓ Anxiety 35%; ↑ Resilience (d=0.61)	High
Raj et al. (2022)	Quasi-RCT	240	13–17	Urban Schools, Delhi	Peer-led Social-Emotional Learning (SEL)	CDI; Empathy Scale	↓ Depression; ↑ Belonging (d=0.52)	Moderate-High
SAMA (2023)	Cluster RCT	640	12–16	State Schools, Karnataka	School-based SEL Programme (12-wk)	Anxiety Scale; PSQ	↑ Engagement; ↓ Anxiety (η^2=0.31)	High
Bhatia et al. (2022)	RCT	198	13–18	Urban Schools, Bengaluru	CBT-based life skills (10-wk)	PHQ-A; Rosenberg SES	↓ Depression; ↑ Self-esteem (d=0.58)	High
Mahajan & Rao (2021)	RCT	275	14–17	Private Schools, Pune	Peer mentoring + family psychoeducation	SDQ; ERQ	↑ Emotional regulation; ↓ Conduct problems (d=0.49)	High
Kumar et al. (2020)	Cluster RCT	520	12–15	Govt. Schools, Tamil Nadu	Yoga + mindfulness programme	SCARED; RCADS	↓ Anxiety & depression (η^2=0.28)	High
GROUP B: Cohort / Longitudinal Studies								
Monteiro (2025)	Longitudinal	210	13–17	Private Schools, Goa	Parent–child relationship programme (6-mo)	CBCL; PBI	Sustained ↑ resilience at 12-mo follow-up (d=0.44)	Moderate
Singh & Mehta (2021)	Mixed-method	180 dyads	13–18	School + Community, Jaipur	Family psychoeducation (8 sessions)	SDQ; ERQ	↑ Emotional regulation; ↓ Behavioral problems (d=0.47)	Moderate-High
Narayan et al. (2021)	Cohort	380	15–18	Urban Schools, Hyderabad	Life skills education (NEP-aligned)	EQ-i:YV; GAD-7	↑ Emotional intelligence; ↑ Coping (d=0.43)	Moderate

Kapoor & Verma (2019)	Longitudinal	290	12–15	Schools, Noida	Teacher-mediated emotional support	RCADS; SDQ	↓ Internalizing symptoms (d=0.38)	Moderate
Mehta & Das (2022)	Longitudinal	165	14–17	Urban Schools, Kolkata	Social support + peer mentoring	SCS; SWLS	↑ Life satisfaction; ↑ Social belonging (d=0.46)	Moderate
GROUP C: Quasi-Experimental Studies								
Das & Ghosh (2020)	Quasi-exp.	220	13–16	Community, West Bengal	Family psychoeducation + mental health awareness	GHQ-12; PSYCH-Q	↑ MH awareness; ↓ Stigma (d=0.41)	Moderate
Sharma & Iyer (2022)	Quasi-exp.	188	14–17	Private Schools, Chennai	Mindfulness + CBT blend (6-wk)	FFMQ; PHQ-A	↑ Mindfulness; ↓ Depressive symptoms (d=0.55)	Moderate-High
Krishnan et al. (2021)	Quasi-exp.	142	12–15	Govt. Schools, Kerala	Art-based SEL workshops	CDI; PSQ	↓ Anxiety; ↑ Creative self-efficacy (d=0.39)	Moderate
Agarwal & Singh (2023)	Quasi-exp.	310	15–18	Urban Schools, Lucknow	Digital self-help + peer support hybrid	WEMWBS; GAD-7	↑ Wellbeing; ↓ Anxiety (d=0.50)	Moderate
Reddy et al. (2022)	Pre-post	95	13–17	Community NGO, Bengaluru	Youth resilience workshop (4-wk)	RS-14; CD-RISC	↑ Resilience scores (d=0.44)	Low-Moderate
Pillai et al. (2021)	Quasi-exp.	260	14–17	Schools, Ahmedabad	Cognitive skills + peer mentoring	SCARED; SDQ	↓ Anxiety; ↑ Peer relationships (d=0.46)	Moderate
Bose & Chatterjee (2020)	Pre-post	128	12–16	Urban Schools, Patna	Emotion regulation training	ERQ; DSES	↑ Emotion regulation; ↑ Self-awareness (d=0.40)	Low-Moderate
Iyer & Rajan (2019)	Quasi-exp.	175	13–17	Schools + Family, Mysuru	Family communication skills	FES; PSQ	↑ Family cohesion; ↓ Conflict (d=0.42)	Moderate
GROUP D: Programme Evaluations & Mixed-Methods								

UNICEF India (2025)	Programme eval.	1,100	12–18	Multi-city, 5 states	Hybrid digital + school SEL model	SDQ; WBI; Stigma Index	↓ Stigma; ↑ Help-seeking; ↑ Resilience	Moderate-High
Massar (2023)	Review/Eval.	Multi-site	12–18	Urban schools, Pan-India	School-based MH integration review	Narrative outcomes	Identified implementation barriers; recommends counsellor ratio norms	Moderate
Das et al. (2023)	Mixed-method	420	14–18	Private Schools, Mumbai	Tele-counseling + peer support	PHQ-A; AUDIT-C; Qual. FGDs	↑ Access; Qual: normalises help-seeking (d=0.53)	Moderate-High
Banerjee et al. (2021)	Mixed-method	310	13_17	Urban community, Kolkata	Community-based resilience building	CD-RISC; FGDs	↑ Coping; Qual: community identity as protective factor	Moderate
Bhatt & Anand (2022)	Cohort	285	15–18	Urban Schools, Surat	Digital mental wellness app	WEMWBS; SUS	↑ Wellbeing; High usability; equitable access concern	Moderate
Chandra et al. (2023)	Quasi-exp.	340	14_18	Schools, Hyderabad	Integrated peer-family-school model (16-wk)	GAD-7; RS-14; ERQ; SDQ	↑ Resilience; ↓ Anxiety; strongest effect of integrated design (d=0.72)	High
WHO India (2023)	Policy eval.	National	12–18	Pan-India	Tele-MANAS & mhGAP integration review	Service utilization; access indices	↑ Service reach 47%; ↓ Treatment gap	Moderate-High
NIMHANS (2024)	Programme eval.	Multi-site	12–18	Schools + Community, 6 states	RKSK-linked school MH integration	SDQ; Help-seeking index	Counsellor training improves outcomes; ↑ teacher MH literacy	Moderate
Barry et al. (2023) [Int'l]	Systematic review	Meta-analysis	10–19	Multi-country (India subset)	MH promotion: global strategies	Multiple (pooled)	Global best practices; India-specific gaps identified	High
Fergusson & Zimmerman (2022) [Int'l]	Review	Multi-country	10–19	Multi-country	Resilience & adolescent development	Resilience scales (pooled)	Ecological model + multi-level interventions most effective	High

3.2 MMAT Quality Assessment Summary

Of the 28 included studies, 8 (28.6%) were rated as high quality (meeting ≥80% of MMAT criteria), 16 (57.1%) as moderate-to-high or moderate quality, and 4 (14.3%) as low-to-moderate quality. The four RCTs and two cluster trials scored highest due to robust randomization, allocation concealment, and sample size justification. Common limitations in quasi-experimental and cohort studies included: lack of blinding (not feasible in psychosocial research, but absence was noted), limited representativeness due to convenience sampling, short follow-up periods (most ≤3 months), and high attrition in longitudinal designs. Mixed-method studies generally scored well on qualitative criteria but variably on quantitative integration standards. No study was excluded on the basis of quality ratings; however, findings from lower-quality studies are interpreted with appropriate caution throughout the discussion.

Table 4. Summary of Intervention Outcomes by Type

Intervention Type	Primary Outcomes	Effect Size	No. of Studies	Key Instruments
Peer-based	↑ Empathy, ↑ Social connectedness, ↓ Depression, ↑ Peer belonging	d = 0.46–0.52	n = 8	CDI, Empathy Scale, SCS, SWLS
Family-based	↑ Emotional regulation, ↓ Behavioral problems, ↑ Family cohesion	d = 0.39–0.47	n = 6	SDQ, ERQ, FES, CBCL, PBI
School-based	↓ Anxiety, ↓ Depression, ↑ Life skills, ↑ Resilience	η^2 = 0.28–0.31	n = 9	GAD-7, RS-14, PHQ-A, SCARED, RCADS
Digital/Hybrid	↑ Access, ↑ Wellbeing, ↓ Stigma, ↑ Help-seeking	d = 0.50–0.53	n = 3	WEMWBS, SUS, PHQ-A, WBI
Integrated multi-component	↑ Resilience, ↓ Anxiety, ↑ Emotional regulation, ↑ Social connectedness	d = 0.68–0.72	n = 4 (+ policy evals.)	GAD-7, RS-14, ERQ, SDQ, CD-RISC

3.3 Thematic Synthesis Findings

Theme 1: Socio-Cultural Adaptability

Across 22 of the 28 studies, cultural adaptation was identified as a significant moderator of intervention effectiveness. Specifically, interventions embedded within existing school structures and delivered in regional languages (Hindi, Kannada, Tamil, Telugu) demonstrated significantly higher participant engagement and lower attrition compared to those delivered in English or using imported Western protocols without adaptation. Peer-led models (Raj et al., 2022; Krishnan et al., 2021) that incorporated culturally familiar activities — storytelling, participatory drama, group reflection — reported stronger empathy gains. Family-based programmes (Singh & Mehta, 2021; Iyer & Rajan, 2019) found that interventions framed around Indian collectivist values of "family honor" and "respectful communication" were more acceptable to parents and guardians, reducing dropout. Collectivist family structures, while providing social support, were also found to constrain open emotional expression; programmes that explicitly acknowledged and navigated this tension were more effective.

Theme 2: Scalability through Digital Innovation

Three dedicated digital intervention studies (Bhatt & Anand, 2022; Das et al., 2023; Agarwal & Singh, 2023) and the UNICEF (2025) hybrid evaluation demonstrated that technology-mediated delivery extends reach significantly, particularly to adolescents in high-density urban schools with limited counsellor resources. Tele-counseling combined with peer support (Das et al., 2023) improved access while qualitative findings revealed normalization of help-seeking as an unintended positive outcome. However, digital interventions raised equity concerns: adolescents without personal smartphones or reliable connectivity (particularly in lower-SES urban households) were less likely to benefit, creating a digital equity gap. WHO India's (2023) Tele-MANAS evaluation reported a 47% increase in service reach, underscoring the scalability potential of hybrid models when combined with school and community-based infrastructure.

Theme 3: Policy Alignment and Implementation

Seven studies explicitly evaluated or recommended alignment with national policy frameworks. NIMHANS (2024) demonstrated that linking school mental health programmes with RKSK (Rashtriya Kishor Swasthya Karyakram) significantly improved institutional uptake,

counsellor training, and teacher mental health literacy. Narayan et al. (2021) aligned their life skills curriculum with NEP 2020 competencies, achieving high teacher buy-in and programme sustainability at 12-month follow-up. The Massar (2023) review identified a critical gap in India's current counsellor-to-student ratio (approximately 1:600–1,000 vs. WHO recommended 1:250), calling for urgent policy-level human resource investment.

4. Discussion

4.1 Principal Findings and Comparative Insights

This narrative review of 28 studies confirms that multicomponent psychosocial interventions are effective in enhancing resilience, reducing anxiety and depression, and improving emotional regulation among urban Indian adolescents. The effect sizes observed (d = 0.39–0.72) compare favourably with global benchmarks: the international literature reports effect sizes in the range of d = 0.40–0.60 for school-based mental health programmes (Barry et al., 2023; Fergusson & Zimmerman, 2022), suggesting that well-designed Indian programmes are achieving outcomes commensurate with global standards.

Crucially, integrated multicomponent models (d = 0.68–0.72) consistently outperformed single-component approaches in both magnitude and sustainability of effects. This aligns with ecological theory: interventions addressing peer dynamics, family communication, and school environment simultaneously create reinforcing protective factors that single-component programmes cannot replicate. The finding that peer-led SEL programmes (d = 0.46–0.52) outperform purely teacher-delivered programmes is particularly noteworthy, as it suggests leveraging adolescents' own social capital is a cost-effective strategy for low-resource school settings.

Family-based psychoeducation (d = 0.39–0.47) demonstrated consistently positive effects on emotional regulation and family cohesion but showed lower effect sizes compared to peer and integrated models. This may reflect the challenge of engaging parents in programme activities given competing occupational and domestic demands, particularly in nuclear urban families. Programmes that adopted flexible delivery (evening sessions, WhatsApp-based psychoeducation modules) reported higher parental completion rates.

4.2 Studies For and Against Key Themes

For peer-led interventions: Six of eight studies reported significant positive effects on empathy and depressive symptoms. However, Krishnan et al. (2021) found that art-based peer SEL workshops produced gains primarily in creative self-efficacy rather than clinically measurable anxiety reduction, suggesting that the modality of peer engagement may determine the domain of benefit. Pillai et al. (2021) similarly found that cognitive skills-focused peer mentoring improved anxiety scores but showed minimal impact on behavioral outcomes, indicating outcome specificity of peer programme content.

For school-based programmes: All nine school-based studies reported reductions in anxiety and depression; however, three (Bose & Chatterjee, 2020; Kapoor & Verma, 2019; Iyer & Rajan, 2019) reported that gains were not maintained at 3-month follow-up without ongoing teacher reinforcement. This underscores the importance of embedding interventions within routine school practices rather than delivering them as stand-alone modules. Massar (2023) found that schools with trained, dedicated mental health counsellors sustained gains significantly better than those relying solely on trained teachers.

Against certain findings: The UNICEF (2025) hybrid model, while effective overall, found that stigma reduction was not uniform across socioeconomic groups. Lower-SES adolescents showed smaller reductions in stigma, potentially due to limited family support and lower digital literacy. Das & Ghosh (2020) found that while mental health awareness increased significantly post-intervention, actual help-seeking behavior did not improve commensurately, highlighting the awareness-behavior gap — an important caveat for programme designers.

4.3 Cultural Mediators of Intervention Effectiveness

Collectivist family and community structures in India function both as protective factors and potential barriers to psychosocial intervention. As a protective factor, strong family bonds, intergenerational support, and community solidarity provide natural resilience buffers. Programmes that leverage these — including family into the intervention rather than treating the adolescent in isolation — consistently showed superior outcomes (Singh & Mehta, 2021; Iyer & Rajan, 2019; Mahajan & Rao, 2021).

Conversely, cultural norms around emotional restraint, stigma associated with mental illness ("pagalpan"), and hierarchical family dynamics can discourage adolescents from expressing distress or seeking help. Three studies (Das et al., 2023; Banerjee et al., 2021; Das & Ghosh, 2020) specifically identified stigma and familial shame as barriers to programme participation and help-seeking. Interventions employing indirect framing — positioning programmes as "life skills training" or "exam stress management" rather than "mental health treatment" — achieved significantly better uptake.

Gender was a moderating variable in six studies. Female adolescents showed greater gains in emotional regulation outcomes, while male adolescents showed greater gains in peer belonging and externalizing behaviour reduction. This likely reflects differential socialization of emotional expression by gender in Indian contexts, and underscores the need for gender-responsive programme design.

4.4 Digital and Hybrid Innovations

India's expanding digital infrastructure presents a significant opportunity for scaling adolescent mental health interventions. Digital platforms can overcome geographic and stigma-related barriers to access. The Tele-MANAS programme evaluation (WHO India, 2023) and the Bhatt & Anand (2022) digital app study both demonstrate feasibility and acceptability. However,

three systemic challenges require attention: (1) the digital equity gap among lower-SES urban adolescents; (2) data privacy concerns for minors using mental health apps; and (3) the quality of peer support facilitated through digital means, which varies substantially without adequate moderation and training. Hybrid models that combine digital access with in-person peer and counsellor support appear to offer the optimal balance of scalability and quality.

4.5 Strengths and Limitations of This Review

This review has several strengths. It is the first comprehensive narrative synthesis of multicomponent psychosocial interventions for urban Indian adolescents spanning 2015–2025. The use of PRISMA 2020 guidelines, MMAT quality assessment, Thomas and Harden thematic synthesis, and dual independent review by two researchers ensures methodological transparency and rigor. The inclusion of grey literature (UNICEF, WHO, NIMHANS evaluations) strengthens the relevance of findings for policy audiences.

Limitations must be acknowledged transparently. First, a systematic review with meta-analysis was the initially preferred design; however, it was not feasible due to substantial heterogeneity in study designs, outcome measures, follow-up periods, and population characteristics — factors that render statistical pooling uninformative or misleading. This is a recognized limitation of narrative reviews in psychosocial research where standardization of outcomes is limited (Popay et al., 2006). Second, most included studies used convenience samples from urban schools, limiting generalizability to rural, peri-urban, or marginalized urban populations. Third, the majority of studies had follow-up periods of ≤12 months, precluding conclusions about long-term sustainability of effects. Fourth, publication bias may have inflated observed effect sizes, as negative or null findings are less likely to be published. Fifth, many studies were conducted in specific urban regions (Mumbai, Bengaluru, Delhi, Pune), and findings may not generalise across India's diverse urban socioeconomic landscape. Future research should prioritize standardized outcome measurement, adequately powered RCTs with long-term follow-up, and studies in Tier-2 and Tier-3 cities.

5. Conclusions and Policy Recommendations

This narrative review provides robust evidence that multicomponent psychosocial interventions are effective, acceptable, and scalable for enhancing resilience and mental well-being among urban Indian adolescents. Integrated models that simultaneously engage peers, families, schools, and digital platforms demonstrate the strongest and most sustained outcomes. Cultural adaptation, institutional embedding, and policy alignment are essential ingredients for sustainable impact.

The following evidence-based recommendations are offered to stakeholders across education, health, and government:

Table 5. Evidence-Based Policy Recommendations Matrix

Stakeholder	Recommended Action	Evidence Base	Measurable Indicator
Schools & Education Boards	Embed SEL curricula as a mandatory component of NEP 2020 implementation; train teachers as mental health first-aiders	SAMA (2023); Narayan et al. (2021); Massar (2023)	↓ Anxiety prevalence; ↑ Teacher MH literacy scores; ↑ SEL lesson hours/week
Families & Community	Scale family psychoeducation through ASHA/ASHA-Plus networks and WhatsApp-based modules; normalize emotional expression at home	Singh & Mehta (2021); Iyer & Rajan (2019); Das & Ghosh (2020)	↑ Parental MH awareness; ↑ Family communication scores; ↓ Stigma Index
MoHFW & State Govts.	Scale Tele-MANAS to all urban schools; integrate RKSK with school counsellor programmes; achieve 1:250 counsellor-student ratio by 2030	WHO India (2023); NIMHANS (2024); Massar (2023)	↑ Tele-MANAS service utilization; ↓ Treatment gap; Counsellor ratio benchmarks
Digital Health Sector	Develop privacy-compliant mental wellness apps for adolescents; ensure offline functionality for low-connectivity settings; address digital equity through subsidized access	Bhatt & Anand (2022); UNICEF (2025); Das et al. (2023)	↑ App engagement rates; ↓ Digital access gap; data security compliance audits

Research Institutions	Prioritize standardized outcome measurement (GAD-7, SDQ, RS-14) across future studies; conduct adequately powered RCTs with ≥24-month follow-up; expand to Tier-2/3 cities and rural-urban migrant adolescents	MMAT quality gaps identified in present review	Adoption of common data elements; PROSPERO registrations; ↑ RCTs in Indian adolescent MH literature

5.1 Final Conclusion

Multicomponent psychosocial interventions offer a scalable, culturally grounded, and evidence-based pathway to enhancing adolescent resilience in urban India. This review demonstrates that the most effective programmes engage multiple ecological levels — peers, families, schools, and digital systems — and are deeply embedded within India's existing education and health policy architecture. The next decade must prioritize scale, standardization of outcomes, and equity of access, with special attention to gender-responsive design and the digital divide. Adolescent mental well-being is not merely a health outcome — it is a precondition for India's demographic dividend to be realized.

Author Contributions

Parimala Guruprasad: Conceptualization, Methodology, Data Curation, Original Draft Preparation. Dr. S. Pruthvish: Supervision, Review & Editing. Dr. Virupakshi Jalihal: Supervision, Critical Review, Methodology Validation. Dr. Virupaksha Shanmugam Harave: Review & Editing, Policy Analysis. Dr. Nanda Kumar B S: Data Extraction Verification, MMAT Quality Assessment, Review & Editing.

Funding

This research received no external funding.

Conflict of Interest

All authors declare no conflict of interest.

Data Availability

All data supporting the findings of this review are available from publicly accessible databases (PubMed, Scopus, SpringerLink, PsycINFO) and the grey literature sources cited.

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