INPLASY

School-based interventions to prevent anxiety and depression in children and adolescents in low- and middle-income countries: a systematic review

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ADMINISTRATIVE INFORMATION

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 15 October 2024 and was last updated on 15 October 2024.

INTRODUCTION

Review question / Objective To identify and explore the effectiveness of interventions to prevent anxiety and depression in children and adolescents between the age of 4 and 18 years in low- and middle-income countries (LMICs).

Rationale Mental health issues among children and adolescents are significant public health concerns globally. According to the 2022 World Health Organization (WHO) World Mental Health Report, around 8% of children aged 5-9 and 14% of adolescents aged 10-19 are affected by mental disorders worldwide. Anxiety and depression are the most common, accounting for over 40% of adolescent mental health cases. The COVID-19 pandemic has significantly worsened the situation, doubling the rates of anxiety and depression symptoms in this age group. A meta-analysis of 29 studies found that during the pandemic's first year, 20.5% of children and adolescents experienced clinically elevated anxiety, while 25.2% showed symptoms of depression.

Self-harm, a severe outcome linked to poor mental health and emerging as one of the leading causes of adolescent mortality, accounts for 8.2% of all adolescent deaths and 20% of deaths in the 15-24 age group. Mental health problems often begin in adolescence, with half starting by age 14 and three-quarters by age 25. These issues can persist throughout life, leading to long-term bio-psychosocial impacts and significant economic costs. United Nations Children's Fund's (UNICEF) 2021 report highlights that mental health conditions in children aged 0-19 result in an annual loss of $340.2 billion in human capital.

Globally, over 225 million children and adolescents are affected by mental disorders, with 88% of these cases occurring in low- and middle-income countries (LMICs). However, there is a lack of data from these regions, with mental health data available for only 2% of children and adolescents

in LMICs, despite them comprising about 90% of the global adolescent population. Children and adolescents in LMICs face unique challenges, including limited resources, inadequate mental health infrastructure, and socio-cultural variations. Mental health services in these regions are often not integrated into broader healthcare policies, and many young people face higher exposure to adverse childhood experiences, such as abuse, neglect, poverty, homelessness, and violence.

A widespread stigma surrounding mental health in LMICs exacerbates these challenges. Misconceptions and fear surrounding mental illness often lead to social exclusion and discrimination, reducing the likelihood of individuals seeking help. In many cases, cultural and religious beliefs push individuals towards traditional healers rather than evidence-based mental health care. This stigma and reliance on alternative approaches result in delays in seeking help, poor access to services, and reduced adherence to treatment.

Given the long-term consequences of untreated mental health conditions, preventive measures and timely interventions are critical. Early prevention can reduce the prevalence of mental disorders in children and alleviate the burden of associated disabilities. Prevention strategies are categorised into universal, selective, and indicated interventions. Schools play a central role in delivering these interventions, especially in LMICs where education is often compulsory, allowing programs to reach large numbers of children regardless of socio-cultural backgrounds. A range of interventions has been introduced in schools, including psychological, psychosocial, psycho-educational, and physical interventions, as well as mindfulness and relaxation techniques. Cognitive-behavioural therapy (CBT) is one of the most widely used and effective psychological interventions for addressing anxiety and depression. Other psychological interventions include behavioural therapy, third-wave therapies, and interpersonal therapies.

Although numerous systematic reviews have assessed the effectiveness of school-based interventions, most of the interventions have been evaluated in high-income countries. There is a lack of research on their applicability in LMICs. Given the distinct mental health challenges in these regions, more context-specific reviews of preventive interventions are necessary to guide effective policy implementation and improve mental health outcomes for children and adolescents in LMICs.

Condition being studied During a depressive episode, a person experiences a low mood (feeling sad, irritable, empty). They may feel a loss of pleasure or interest in activities. A depressive episode is different from regular mood fluctuations. They last most of the day, nearly every day, for at least two weeks. Depression can cause difficulties in all aspects of life, including in the community and at home, work and school.

Other symptoms are also present, which may include:
- poor concentration
- feelings of excessive guilt or low self-worth
- hopelessness about the future
- thoughts about dying or suicide
- disrupted sleep
- changes in appetite or weight
- feeling very tired or low in energy.

People with an anxiety disorder may experience excessive fear or worry about a specific situation (for example, a panic attack or social situation) or, in the case of generalized anxiety disorder, about a broad range of everyday situations. They typically experience these symptoms over an extended period – at least several months. Usually they avoid the situations that make them anxious.

Other symptoms of anxiety disorders may include:
- trouble concentrating or making decisions
- feeling irritable, tense or restless
- experiencing nausea or abdominal distress
- having heart palpitations
- sweating, trembling or shaking
- trouble sleeping
- having a sense of impending danger, panic or doom.

METHODS

Search strategy Ovid MEDLINE, Embase, PsycINFO and CENTRAL were searched. The concepts used in the structured search were "children and young people", "school-based", "depression and anxiety", "preventive interventions", "risk factors", "randomised controlled trials" and "low- and middle-income countries". Under these concepts, relevant keywords, synonyms and Medical Subject Headings (MeSH) terms were included.

Participant or population Studies with participants aged between 4 and 18 years at recruitment and who did not have an identifiable physical or mental health condition were included.

Intervention Studies were eligible if they evaluated school-based interventions aimed at preventing anxiety and depression. These interventions were required to take place in school settings or be integrated into the school curriculum. Various primary prevention approaches, including universal, selective or indicated prevention, were eligible.

Comparator All types of control group were eligible. These included no intervention (NI), usual curriculum (UC), waitlist (WL) or attention control (AC) groups.

Study designs to be included Randomised controlled trials (RCTs) including both individual and cluster RCTs reporting anxiety and/or depression symptoms as the outcomes were included.

Eligibility criteria All types of outcome assessors, such as participants, parents, teachers and clinicians, were eligible. Only studies conducted in LMICs, based on the Development Assistance Committee (DAC) list of recipients eligible for official development assistance (ODA) funding, were included. Studies published from 2018 were included. The date limit was selected because the search strategy of the last major systematic review on school-based anxiety and depression prevention interventions was conducted until 2018. Studies published in English Language were included.

Exclusion criteria: Studies that focused on addressing mental health promotion, awareness or literacy, emotional well-being and positive psychology were not eligible, unless their aim was to prevent anxiety and depression. Interventions intended to address problems potentially leading to a mental health disorder, for example, stress, bullying and substance abuse, were excluded. Similarly, interventions aimed to help children and young people cope with specific events or circumstances such as parental divorce, natural disasters and conflicts, were excluded. Any grey literature and reviews, reports and study protocols were excluded.

Information sources Electronic databases.

Main outcome(s) Anxiety and/or depression symptoms.

Additional outcome(s) Not applicable.

Data management A data extraction form was developed to register and code relevant information about the included studies. Data were extracted by SZDY and checked by a second reviewer, MPM.

Quality assessment / Risk of bias analysis The Cochrane Risk of Bias tool version 2 (RoB 2 tool) was used to assess the risk of bias of all included studies. The RoB 2 for cluster-randomised trials was employed when the study design involved a cluster RCT. The process of assessment was performed by SZDY, and were checked by a second assessor, MPM.
The quality of evidence was assessed using the Grading of Recommendations Assessment, Development and Evaluation (GRADE) approach. The quality assessment of included studies was performed independently by two assessors, SZDY, and MKL.

Strategy of data synthesis Due to the heterogeneity of the included studies, it was not possible to conduct a meta-analysis. A narrative synthesis of anxiety and/or depression outcomes of all included studies was undertaken.

Subgroup analysis Not applicable.

Sensitivity analysis Not applicable.

Language restriction English language only.

Country(ies) involved United Kingdom.

Keywords depression; anxiety; school-based intervention; low- and middle-income countries; children; adolescent.

Dissemination plans Publication in peer-reviewed journals.

Contributions of each author
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