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Review article

Interventions for Adolescent Mental Health: An Overview of Systematic Reviews

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A B S T R A C T

Many mental health disorders emerge in late childhood and early adolescence and contribute to the burden of these disorders among young people and later in life. We systematically reviewed literature published up to December 2015 to identify systematic reviews on mental health interventions in adolescent population. A total of 38 systematic reviews were included. We classified the included reviews into the following categories for reporting the findings: school-based interventions (n = 12); community-based interventions (n = 6); digital platforms (n = 8); and individual-/family-based interventions (n = 12). Evidence from school-based interventions suggests that targeted group-based interventions and cognitive behavioral therapy are effective in reducing depressive symptoms (standard mean difference [SMD]: −.16; 95% confidence interval [CI]: −.26 to −.05) and anxiety (SMD: −.33; 95% CI: −.59 to −.06). School-based suicide prevention programs suggest that classroom-based didactic and experiential programs increase short-term knowledge of suicide (SMD: 1.51; 95% CI: .57–2.45) and knowledge of suicide prevention (SMD: .72; 95% CI: .36–1.07) with no evidence of an effect on suicide-related attitudes or behaviors. Community-based creative activities have some positive effect on behavioral changes, self-confidence, self-esteem, levels of knowledge, and physical activity. Evidence from digital platforms supports Internet-based prevention and treatment programs for anxiety and depression; however, more extensive and rigorous research is warranted to further establish the conditions. Among individual- and family-based interventions, interventions focusing on eating attitudes and behaviors show no impact on body mass index (SMD: −.10; 95% CI: −.45 to .25); Eating Attitude Test (SMD: .01; 95% CI: −.13 to .15); and bulimia (SMD: −.03; 95% CI: −.16 to .10). Exercise is found to be effective in improving self-esteem (SMD: .49; 95% CI: .16–.81) and reducing depression score (SMD: −.66; 95% CI: −1.25 to −.08) with no impact on anxiety scores. Cognitive behavioral therapy compared to waitlist is effective in reducing remission (odds ratio: 7.85; 95% CI: 5.31–11.6). Psychological therapy when compared to antidepressants have comparable effect on remission, dropouts, and depression symptoms. The studies evaluating mental health

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interventions among adolescents were reported to be very heterogeneous, statistically, in their populations, interventions, and outcomes; hence, meta-analysis could not be conducted in most of the included reviews. Future trials should also focus on standardized interventions and outcomes for synthesizing the exiting body of knowledge. There is a need to report differential effects for gender, age groups, socioeconomic status, and geographic settings since the impact of mental health interventions might vary according to various contextual factors.

Adolescence is a period for the onset of behaviors and conditions that not only affect health at that time but also lead to adulthood disorders. Unhealthy behaviors such as smoking, drinking, and illicit drug use often begin during adolescence and are closely related to increased morbidity and mortality and represent major public health challenges [1]. Many mental health disorders emerge in mid- to late adolescence and contribute to the existing burden of disease among young people and in later life [2]. More than 50% of adult mental disorders have their onset before the age of 18 years [3,4]. Poor mental health has been associated with teenage pregnancy, HIV/AIDS, other sexually transmitted diseases, domestic violence, child abuse, motor vehicle crashes, physical fights, crime, homicide, and suicide [2]. Globally, neuropsychiatric disorders are the leading cause of years lost because of disability among 10- to 24-year-olds, accounting for 45% of years lost because of disabilities [5]. The overall prevalence of depression in adolescents is around 6% and that for children (younger than 13 years) is 3% [6]. Major depressive disorder (MDD) is one of the leading causes of disability, morbidity, and mortality and is a major risk factor for suicide [7]. MDD also puts adolescents and young adults at a greater risk for suicide as they are seven times more likely to complete suicide than those without MDD [8]. Suicide itself accounts for 9.1% of deaths in 15- to 19-year age group and ranks as the third major cause of mortality in this age group, preceded only by accidents and assault [9].

Given the prevailing burden and impact of mental health disorders in children and adolescents, it is essential that effective interventions are identified and implemented. This article is part of a series of reviews conducted to evaluate the effectiveness of potential interventions for adolescent health and well-being. Detailed framework, methodology, and other potential interventions have been discussed in separate articles [10–16]. Our conceptual framework depicts the individual and general risk factors through the life cycle perspective that can have implications at any stage of the life cycle [10]. We also acknowledge the fact that mental health interventions take a life course perspective and that interventions earlier in life can have impacts in adolescence; however, the focus of our review is to evaluate potential mental health interventions targeted toward adolescents and youth only. With this focus, we aimed to systematically review the effectiveness of interventions to prevent and manage mental health disorders among adolescents and youth.

Methods

We systematically reviewed literature published up to December 2015, to identify systematic reviews on interventions to prevent and manage mental health disorders in adolescent population. For the purpose of this review, the adolescent population was defined as aged 11–19 years; however, since many studies targeted youth (aged 15–24 years) along with adolescents, exceptions were made to include reviews targeting adolescents and youth. We did not apply any limitations on the start search date or geographical settings. We considered all available published systematic reviews on the interventions to prevent and treat adolescent mental health disorders. A broad search strategy was used that included a combination of appropriate keywords, medical subject heading, and free text terms; the search was conducted in the Cochrane Library, and PubMed. The abstracts (and the full sources where abstracts are not available) were screened by two abstractors to identify systematic reviews adhering to our objectives. Any disagreements on selection of reviews between these two primary abstractors were resolved by the third reviewer. After retrieval of the full texts of all the reviews that met the inclusion/exclusion criteria, data from each review were extracted independently into a standardized form. Information was extracted on (1) the characteristics of included studies; (2) description of methods, participants, interventions, outcomes; (3) measurement of treatment effects; (4) methodological issues; and (5) risk of bias tool. We extracted pooled effect size for outcomes reported by the review authors with 95% confidence intervals (CIs). We assessed and reported the quality of included reviews using the 11-point assessment of the methodological quality of systematic reviews criteria (AMSTAR) [17]. We excluded nonsystematic reviews, systematic reviews focusing on preventive and therapeutic mental health interventions targeting population other than adolescents and youth, and reviews not reporting outcomes related to mental health (Table 1).

Figure 1 describes the search flow. Our search identified 107 potentially relevant review titles. Further evaluation of the abstracts and full texts resulted in the inclusion of 38 eligible reviews. We classified the included reviews into the following categories for reporting the findings:

- School-based interventions (n = 12)
- Community-based interventions (n = 6)
- Digital platforms (n = 8)
- Individual-/family-based interventions (n = 12)

Table 2 describes the characteristics of the included reviews while Table 3 provides the summary estimates for all the interventions.

Results

School-based interventions

We found a total of 12 reviews reporting school-based interventions for adolescent mental health, of which one review performed meta-analysis. AMSTAR rating ranged