



Mindfulness-Based Interventions for Adolescents with Chronic Diseases in Clinical Settings

A Systematic Review



Hiba Abujaradeh¹, MSN, RN; Cecilia Therese Kahle¹, SN; Susan M. Sereika¹, PhD; Reema Safadi³, PhD, RN; Mary Lou Klem², PhD, MLIS; Susan M. Cohen¹, PhD, CRNP, FAAN

¹University of Pittsburgh School of Nursing, ²University of Pittsburgh Health Science Library System, ³University of Jordan School of Nursing

Background

There is growing evidence of the efficacy of mindfulness based interventions (MBI) to improve psychological and physical well-being among healthy adolescents who were recruited from school settings. However, to date, no systematic review has focused on the effectiveness of MBIs among adolescents with chronic diseases in clinical settings.

Purpose

The purpose of this systematic review is to determine the state of empirical research related to the benefits/efficacy of MBIs implemented among adolescents (12-18 years) with chronic diseases and delivered in clinical settings.

Method

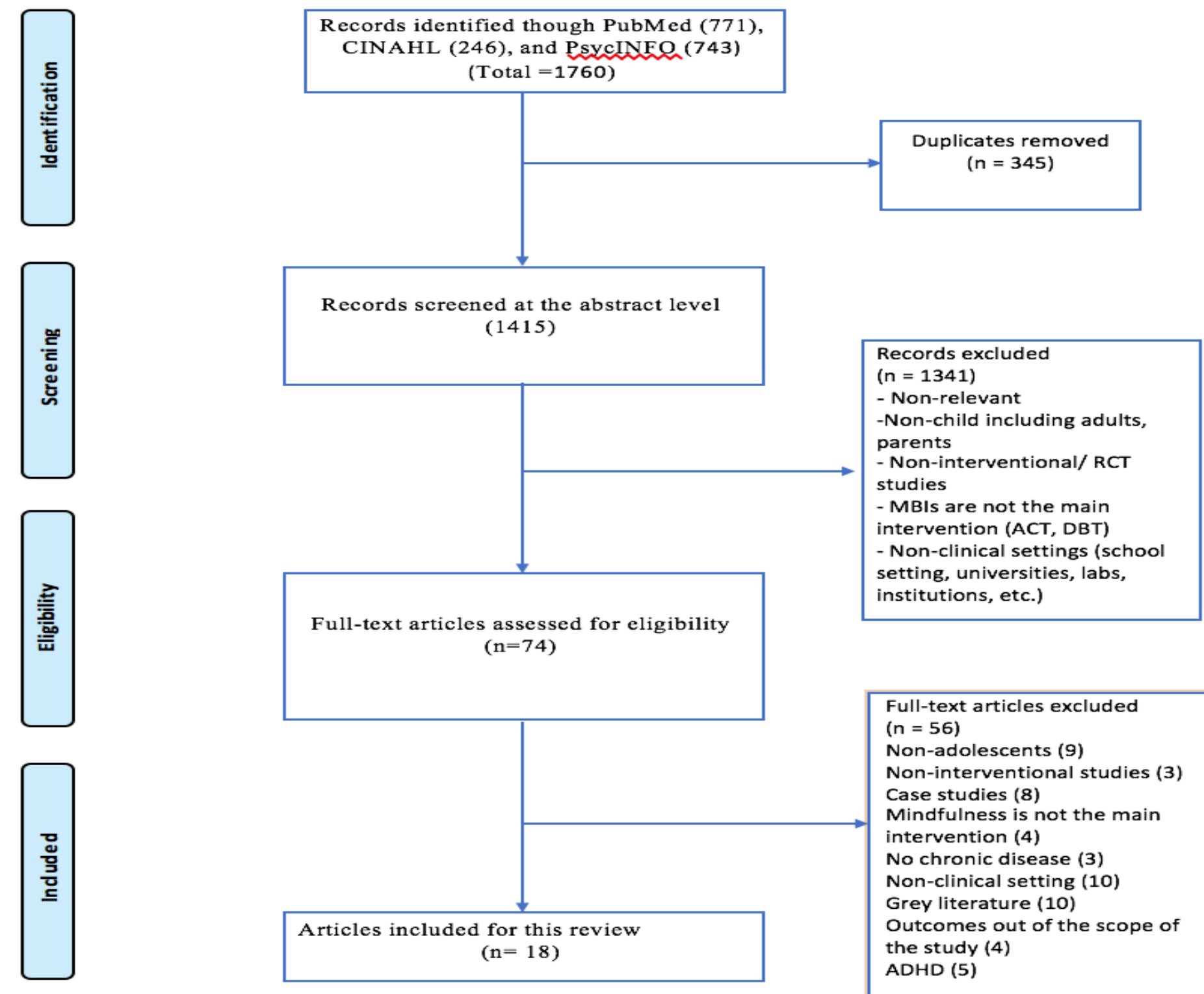
- An electronic search was conducted in July 2017 using PubMed, CINAHL, and PsycINFO databases for search terms that included mindfulness and adolescents.
- Inclusion criteria:
 - Peer-reviewed articles published in English.
 - Participants aged 12-18 years.
 - Mindfulness was the primary intervention in a clinical setting among adolescents with chronic diseases.
 - Measures included psychological outcomes relevant to adolescents who suffer chronic diseases such as anxiety, depression, stress, quality of life (QOL), and pain as well as physiological outcomes such as heart rate, blood pressure, cortisol, and glycosylated hemoglobin.
- No restrictions were applied on publication date.
- Two reviewers independently evaluated articles for inclusion. Conflicts were resolved with the assistance of the senior author.
- Data were independently extracted by two investigators.
- The quality of the included studies was evaluated by the Effective Public Health Practice Project for Quantitative Studies (EPHPP).

Box 1: Search Strategy

Data Base	Terms
MEDLINE (PubMed)	((("Adolescent"[Mesh]) OR (((adolescen*[Title/Abstract]) OR teen*[Title/Abstract]) OR high school*[Title/Abstract]) OR middle school*[Title/Abstract]))) AND (("Mindfulness"[Mesh]) OR Mindful*[Title/Abstract])
PsycINFO via Ovid	((Mindfulness/ OR mindful*.ti.ab.) AND (adolescen* or teen* or high school or middle school).ti.ab.) OR ((Mindfulness/ OR mindful*.ti.ab.) AND adolescence 13 17 yrs.ag.) NOT (0200 or 0240 or 0280 or 0300).pt.
CINHAL	(MH Mindfulness OR "mindful*") AND (MH Adolescence+ OR "teen*" OR "adolescen*")

Results

Figure 1. Flow Chart of Articles Selected for this Systematic Review



Results

- Mindfulness programs included mindfulness based stress reduction (MBSR) and mindfulness based cognitive therapy (MBCT) adapted for children and adolescents.
- Study samples consisted of adolescents with psychiatric disorders (4), chronic pain (6), depression (2), anxiety (1), autism spectrum disorders (1), cancer (1), cardiac problems (2), and headache (1).
- Six studies were randomized controlled trials and 12 were intervention studies with 11 using only a one-group design and one used two-groups without random assignment.
- Quality assessment according to the EPHPP criteria showed that 4 studies were strong, 7 were moderate, and 7 were weak.
- The majority of studies examined psychological outcomes such as depression, anxiety, stress, quality of life, pain, and mindfulness.
- One study examined physiological outcomes (cortisol) as a measure of stress.
- Adolescents in MBI group had significant improvement in a variety of measures such as depression, anxiety, and QOL in RCTs and one group pre-post studies (Table 1).

Table 1: Summary of effect sizes for Most Reported Measures of Studies Included in Systematic Review

Outcome	Mindfulness	Depression	Anxiety	Quality of Life	Pain	Psychological distress
RCTs	.00-.616	.13-.59	.02-.66	.00-.26	.17	(-.43)-.62
One group pre-post	.11-.66	.42-.79	.48	.59	.00-.3	.28-.51

Conclusions

The majority of MBI studies conducted in clinical settings engaged adolescents with psychiatric or pain disorders and demonstrated improved psychological outcomes. The preliminary findings of this systematic review show that future research should focus on the efficacy of MBIs among adolescents with physical chronic diseases, e.g., diabetes, cancer, heart diseases, cystic fibrosis, and asthma and expand the focus to include more physiological outcomes.