

1 **A review of scientific theories used to justify the delivery**
2 **of school-based mindfulness programmes . A protocol for**
3 **a scoping review**

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NOTE: This preprint reports new research that has not been certified by peer review and should not be used to guide clinical practice.

23 **Abstract**

24 **Background**

25 Mindfulness-based interventions are increasingly delivered in schools with the aim of
26 promoting the mental wellbeing of pupils. The apparent success of such interventions has
27 led to calls for mindfulness to be included in the school curriculum. However, the findings are
28 more mixed than is often acknowledged and this may in part be because the theories
29 justifying are rarely considered. Understanding the scientific theories underpinning SBMIs
30 may improve the outcomes from interventions. In this paper we outline our scoping review
31 protocol to systematically review the literature to map the scientific theories that have been
32 identified to justify using school-based mindfulness interventions to promote pupils'
33 wellbeing.

34 **Methods**

35 The scoping review methodology will guide the conduct of the review. We will limit our
36 search to scholarly databases and PhD theses to ensure the credibility of the theories. The
37 following databases will be used: MEDLINE, PsychINFO, Web of Science Core Collection,
38 PubMed Central, Scopus and ProQuest Dissertations and Theses. Two reviewers will
39 independently screen all abstracts and full-text studies for inclusion. We will include any
40 study that includes a theoretical explanation linking a mindfulness intervention with its
41 impact. Information from the papers will be extracted using a framework developed by the
42 team.

43 **Discussion**

44 The scoping review will map, classify and compare scientific theories that have been used in
45 the literature to justify the use of school-based mindfulness intervention to promote pupils'
46 mental wellbeing. The findings will be disseminated through a peer -reviewed journal article,
47 conference presentations, our project website and social media.

48

49 **Key Words**

50 Mindfulness; mental wellbeing; mechanisms of mindfulness; theories of mindfulness;
51 theoretical models; theoretical frameworks

52 **Background**

53 The proposed literature review aims to investigate the theoretical frameworks underpinning
54 school-based mindfulness interventions (SBMIs) designed to promote pupils' mental
55 wellbeing. It is often claimed that mindfulness interventions are informed by theories and
56 practices from contemplative traditions, science, medicine, psychology and education [1–3].
57 However, the theories underlying them are rarely discussed in the literature, which has
58 focused on determining if they work, that is, if interventions have the intended outcomes.
59 The apparent success of SBMIs in promoting the wellbeing of children and young people,
60 as evidenced by systematic reviews and meta-analyses [4–10], especially when integrated
61 into a whole-school approach [4,7,11], has led to calls for mindfulness to be included in the
62 school curriculum [12–14]. Mindfulness interventions have also been shown to reduce
63 teachers' stress levels, improve their mental wellbeing and life satisfaction, and their
64 relationships with students making classroom environments more conducive to student
65 learning [13–18].
66 However, the reviews have been more mixed than is often acknowledged, and claims for the
67 effectiveness of mindfulness may have been exaggerated [19]. The mixed findings from
68 reviews may, at least in part, be due to the heterogeneity in SBMIs in educational settings.
69 There is a lack of agreement on what mindfulness is [1], and programmes differ in content,
70 how they are delivered, who delivers the training and the length and intensity of the training
71 [20]. They can be whole school interventions with mindfulness built into the school
72 curriculum, or sometimes only taught to some years or classes or only used with some
73 children, usually those with behavioural or mental health problems [7,20].

74 It has been argued that complex interventions based on theory can be more effective [24],
75 enabling an understanding of how the intervention worked, not just if it worked. When a
76 theory of what mindfulness *is* and *does* underlies the intervention, it provides additional
77 insight into the characteristics of effective interventions
78 The findings will enable us to refine the programme theory for research we are carrying out
79 examining the potential for SBMIs to promote the mental wellbeing of children and
80 adolescents in Rwanda and Ethiopia [25] by helping us to identify what concretely needs to
81 be included in any intervention to obtain the intended outcomes.

82 **Methods /Design**

83 To achieve our aims and objectives, we will conduct a scoping review to map scientific
84 theories that underpin mindfulness interventions aimed at promoting pupils' mental
85 wellbeing, drawing on Peters et al. best practice guidelines for reporting items for the
86 development of scoping review [26]. In doing so, we will take account of the advice of Mhairi
87 Campbell and her colleagues based on their experience of doing a review of theories, given
88 that there are no agreed standards for theoretical reviews [27].

89 A scoping review suits our purpose because we are not primarily concerned with study
90 designs and findings but are more interested in the theories used to justify the use of
91 mindfulness intervention to promote pupils' mental wellbeing. For this reason, there is no
92 need to conduct a methodological appraisal of the studies that will be included in our review
93 because we are specifically interested in what they were looking for, what they *expected* to
94 find, and why, rather than *what* they found. However, to ensure the credibility of the theories,
95 we will limit our search to peer review articles and PhDs.

96

97 We will use the Preferred Reporting Items for Systematic Reviews and Meta-Analysis
98 extension for Scoping Reviews (PRISMA-ScR) guidance to ensure rigour and facilitate
99 replication (S1 Table: **Preferred Reporting Items for Systematic reviews and Meta-**

100 Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist). The steps involved are
101 (1) identifying the research question; (2) identifying relevant studies; (3) selecting studies for
102 inclusion; (4) charting the studies; and (5) collating, summarising, and reporting the results.

103 **Step 1: Identifying the research question.**

104 The objective of the review is to provide a comprehensive descriptive map and explanation
105 of the theories that have been used to describe the causal pathway between mindfulness
106 practice and mental wellbeing in SBMIs for pupils aged 7-16 years.

- 107 1. What theories and frameworks have been identified and described in the literature?
- 108 2. How can these theories be classified?

109 **Step 2: search for evidence**

110 **Search techniques**

111 The literature search will be in two phases: searching electronic databases and citation
112 tracking (S2 Table: Search Strategy). We will also identify relevant articles from our previous
113 search for documents for a critical realist synthesis of SBMIs. The documents that meet our
114 inclusion criteria will be downloaded for further screening. The search will be restricted to
115 publications in the English language. The search terms and the databases used are based
116 on the advice of an academic librarian.

117 **Databases**

118 We will limit our search to scholarly databases and PhD theses to ensure the credibility of
119 the theories. The following databases will be used: MEDLINE, PsychINFO, Web of Science
120 Core Collection, PubMed Central, Scopus and ProQuest Dissertations and Theses.

121 **Search strategy and terms**

122 The search terms we will use are: 'mindfulness' or 'mindful' and 'wellbeing' or 'mental health'
123 or 'health' or 'mental wellbeing' or 'happiness' or 'happy' and 'mechanisms' or 'theory' or
124 'theorisation' or 'conceptual' or 'conceptualisation' or 'concept' or 'framework' or 'mediators' or
125 'moderators' or 'process' or 'effects' or 'scholarship' and 'school' or 'classroom' or 'education'

126 and 'pupil' or 'child' or 'adolescent' or 'teen' or 'student'. Search terms will be adapted for
 127 each database. For example, see Table 1 for the search string for MEDLINE and Scopus.

128 **Table 1: Search Terms for MEDLINE and Scopus**

M E D L I N E	<p>#1 = ((mindfulness or mindful) and (wellbeing or "mental health" or health or "mental wellbeing" or happiness or happy) and (mechanisms or theory or theorisation or conceptual or conceptualisation or concept or framework or mediators or moderators or process or effects or scholarship) and (school or classroom or education) and (pupil or child or adolescent or teen or student)).ab,kf,ti.</p> <p>#2 = limit 1 to english language</p>
S c o p e s	<p>TITLE-ABS-KEY ((mindfulness OR mindful) AND (wellbeing OR "mental health" OR health OR "mental wellbeing" OR happiness OR happy) AND (mechanisms OR theory OR theorisation OR conceptual OR conceptualisation OR concept OR framework OR mediators OR moderators OR process OR effects OR scholarship) AND (school OR classroom OR education) AND (pupil OR child OR adolescent OR teen OR student)) AND (LIMIT-TO (LANGUAGE , "English"))</p>

129

130 **Inclusion/exclusion criteria**

131 We will consider all discussion, scholarship or methodology papers that discuss a named
 132 generalisable theory or framework for explaining the causal pathway between mindfulness
 133 practice and mental wellbeing in SBMIs that are not just targeted at problem pupils. It is
 134 anticipated that some studies will discuss their proposed model within the context of a
 135 systematic review.

136 There has been a proliferation of mindfulness interventions for both clinical and non-clinical
 137 populations. Therefore, it is crucial to define the essential characteristics of a mindfulness-
 138 based programme (MBP) [1,19]. Rebecca Crane and her colleagues have identified the five

139 essential ingredients in MBPs which we will follow in carrying out this scoping review (Table
140 2).

141 **Table 2: The Five Essential Ingredients of a Mindfulness-based Programme**

1.	It is informed by theories and practices that draw from a confluence of contemplative traditions, science and the disciplines of medicine, psychology, and education.
2.	It is underpinned by a model of human experience which addresses the causes of human distress and the pathways to relieving it.
3.	Develops a new relationship with experience characterised by present moment focus, decentering, and an approach orientation.
4.	Supports the development of greater attentional, emotional, and behavioural self-regulation and positive qualities such as compassion, wisdom, and equanimity.
5.	Engages the participant in sustained intensive training in mindfulness meditation practice, in an experiential inquiry-based learning process and in exercises to develop insight and understanding.

142 Source: Crane RS, Brewer J, Feldman C, Kabat-Zinn J, Santorelli S, Williams JMG, et al.

143 What defines mindfulness-based programs? The warp and the weft. *Psychol Med*.

144 2017;47(6):990–9, p993

145 **Inclusion Criteria**

- 146 • Population: school pupils aged 7-16 years.
- 147 • Study design: Theoretical or empirical. The definition of mindfulness used in the
148 study meets the essential requirements (Table 2).
- 149 • Documents: from any country or region.
- 150 • Any SBMI or theoretical discussion of SBMIs that describes a theory, model or
151 framework connecting mindfulness to mental wellbeing in the design of the
152 intervention or the discussion of the findings.
- 153 • Any publication date
- 154 • Document type: peer-reviewed theoretical or empirical research papers or PhD thesis

- 155 • Language: English.
- 156 • The primary or secondary outcome variable (where applicable) measures wellbeing
- 157 or mental wellbeing.

158 **Exclusion Criteria**

- 159 • There is no reference to a theory, model or framework being useful in the study
- 160 design or the discussion of outcomes.
- 161 • Only discusses theories for understanding how mindfulness interventions work with
- 162 clinical populations.
- 163 • Does not include an outcome measure of wellbeing or mental wellbeing.
- 164 • Only includes yoga.
- 165 • Mentions mechanisms but does not link them to a theory.
- 166 • Not delivered in a school.
- 167 • Only included pupils outside the 7-16 year age range.
- 168 • Grey literature excluding PhD thesis.
- 169 • Not peer-reviewed.
- 170 • In languages other than English.

171 **Step 3: study selection**

172 *Covidence* will be used to manage article screening and data extraction. A four-step search
173 strategy will be utilised.

- 174 1. Extracting search results and removing duplicates and citations without abstracts or
- 175 summaries;
- 176 2. A single reviewer will review titles, determining eligibility based on the inclusion and
- 177 exclusion criteria;
- 178 3. Two reviewers will independently review the titles and abstracts remaining, following
- 179 step two. Differences will be resolved through discussion and, if necessary, by
- 180 bringing in a third reviewer;

181 4. All papers left after step 3 will be downloaded and independently evaluated by two
182 reviewers. Differences will be resolved through discussion and, if necessary, by
183 bringing in a third reviewer. Reasons will be recorded for excluding full-text articles
184 and reported in the scoping review.

185 **Step 4: document appraisal and data extraction**

186 We will extract information from the documents that meet our inclusion criteria into an Excel
187 spreadsheet. The extraction of data will be done under the following headings:

188 **General details of the paper:** search origin; author and date; title; type of paper (e.g.,
189 review paper, primary quantitative study), and type of study.

190 **Population focus:** (where applicable) country of study, the age range of pupils, and gender.

191 **Exposure, mechanism, outcome details:** (where relevant) details of the mindfulness
192 intervention.

193 **Theories:** All theories mentioned in the paper; the name of theories; a detailed description of
194 each theory discussed in the paper; discipline.

195 If relevant, whether the theory was tested and if findings supported or refuted it; any policy
196 implications explicitly reported.

197 The extraction tool will be piloted. PA, LD, IS and GN will independently read two documents
198 and complete the extraction table. They will then meet, compare their extraction tables, and
199 agree on necessary modifications.

200 PA will extract the data from the papers and GN will independently review a 10 per cent
201 sample. The team will meet regularly to discuss the emerging findings and to resolve any
202 differences between PA and GN.

203 The review to be performed is a focused scoping review to locate and describe existing
204 theoretical models or frameworks; therefore, assessing the methodological quality of the
205 papers is not appropriate.

206 **Step 5: Analysis and Reporting**

207 Our coding framework will capture the theories linking mindfulness to mental wellbeing. We
208 will identify theory categories, compare theories within each pathway, and compare the
209 theories identified.
210 Our aim for this scoping review is to present a comprehensive descriptive map and
211 explanation of the theories that have been used to justify the introduction of SBMIS for pupils
212 aged 7-16 years and mental wellbeing. Study characteristics and theories will be presented
213 in a table and summarised using a narrative synthesis approach.

214 **Ethics**

215 Formal ethics approval is not required for a literature review. However, ethical approval has
216 been obtained from the University of Aberdeen, Addis Ababa University, and the University
217 of Rwanda for the research programme, of which this scoping review forms an integral
218 element.

219 **Dissemination**

220 We will publish at least one article in a peer review journal reporting the findings from the
221 literature review. Findings from the review will also be disseminated via seminar and
222 conference presentations and podcasts posted on the project website and via social media.

223

224 **Authors' Contributions:** PA, GN, and LD contributed to the NIHR grant application. PA led
225 the research design and the protocol's writing and produced the first draft. GN, IS and LD
226 revised drafts and agreed on the final text of this paper.

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320 **Supporting Information**

- 321 **S1 Table: Preferred Reporting Items for Systematic reviews and Meta-Analyses**
322 **extension for Scoping Reviews (PRISMA-ScR) Checklist**
- 323 **S2 Table: Search Strategy**
- 324