One-session mindfulness meditation interventions for adult meditation novices:

A scoping review protocol

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Psychological research on mindfulness¹ has burgeoned in the past three decades (Van Dam et al., 2018). In general, this research can be grouped into three categories: (1) theoretical discussions of the *definition* of mindfulness (e.g., Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006; Bishop, 2004; Brown & Ryan, 2003; Brown, Ryan, & Creswell, 2007; Desbordes et al., 2015; Dreyfus, 2011; Khoury et al., 2017; Purser & Milillo, 2015); (2) research on the antecedents, consequents, and correlates of *trait mindfulness* (Anicha, Ode, Moeller, & Robinson, 2012; Brown & Ryan, 2003; Brown et al., 2007; Giluk, 2009; Hanley, Baker, & Garland, 2018; Hanley & Garland, 2017); (3) and research on the different consequences of *state mindfulness* or *mindfulness training* and associated mechanisms (Arch & Craske, 2006; Eby et al., 2017; Hafenbrack, 2017; Hafenbrack, Kinias, & Barsade, 2014; Hafenbrack & Vohs, 2018; Kiken & Shook, 2011; Liang et al., 2018; Lindsay & Creswell, 2017; Schumer, Lindsay, & Creswell, 2018; see Creswell, 2017 for a review). The present research seeks to shed light on a subset of (3), namely brief one-session mindfulness interventions.

Another distinction that can be observed in the field is between the study of mindfulness and/or meditation experts (e.g., long-term practitioners) versus novices. Notably, the effects of a meditation session on mindfulness experts may be different from the effects of a similar ‘intervention’ on novices, and it is unclear whether mindfulness interventions as an object of study can be discussed without referring to the population being studied, at least when it comes to experts versus novices.

¹ Note: this review focuses on “meditative mindfulness”, and does not address the sociocognitive / Langerian / “creative” mindfulness research tradition (see Hart, Ivztan, & Hart, 2013).

While most research on the effects of mindfulness training for novices has focused on several weeks–long interventions based on Kabat-Zinn’s (1994) Mindfulness-Based Stress Reduction program (MBSR; Chiesa & Serretti, 2009; Choi & Leroy, 2015), shorter interventions have gained traction in the organizational literature (e.g., Hülshager, Alberts, Feinholdt, & Lang, 2013; Hülshager, Feinholdt, & Nübold, 2015) as management scholars began exploring the potential of mindfulness interventions to improve psychological and performance outcomes of employees (Dane, 2011; Good et al., 2016). Studies have found, for example, that a single session of meditation may reduce the sunk cost bias (Hafenbrack et al., 2014), improve negotiation outcomes (Reb & Narayanan, 2014), influence information processing (Colzato, Sellaro, Samara, & Hommel, 2015; Colzato, van der Wel, Sellaro, & Hommel, 2016), and lower motivation—but not performance—for some tasks (Hafenbrack & Vohs, 2018).

These developments suggest a suitable set of questions for further inquiry: What is the minimum effective dose of mindfulness interventions? What outcomes, if any, can we expect from a *single* session of mindfulness meditation? In what way are the immediate outcomes from a single session of mindfulness meditation different from the long-term effects of more extensive mindfulness training?

While the literature on mindfulness has been subject to several reviews, these efforts typically either systematically review the evidence for long mindfulness-based programs (such as MBSR or some variant thereof) or attempt to integrate findings from correlational studies as well as brief and long interventions. A review—systematic or not—focusing exclusively on very brief interventions has, to our knowledge, not been conducted yet. This may be because the research on brief mindfulness interventions is too heterogeneous for conclusions to be drawn about any specific outcomes. While it will be prudent to wait until a

critical mass of similar studies are published in order to then conduct a systematic review and meta-analysis, we believe the time is ripe for a systematic scoping review.

Unlike traditional systematic reviews, which seek to answer specific questions about the available evidence, “scoping reviews are useful for answering much broader questions (such as ‘What is the nature of the evidence for this intervention?’ or ‘What is known about this concept?’),” (Tricco et al., 2018, p. 467) and have become increasingly popular in recent years, particularly in the field of medicine (Pham et al., 2014; Tricco et al., 2016). Thus, systematic scoping reviews help us understand how a topic has been studied, identify gaps in the literature, and potentially set a research agenda that can guide further inquiry. Much like for systematic reviews, scholars have developed and improved frameworks for conducting systematic scoping reviews (Arksey & O’Malley, 2005; Aromataris & Munn, 2017; Levac, Colquhoun, & O’Brien, 2010), culminating in an extension of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) for scoping reviews (PRISMA-ScR; Tricco et al., 2018). The present review protocol is structured according to the guidelines in the relevant chapter of the *Joanna Briggs Institute Reviewer’s Manual* (Peters et al., 2017) and the review report will follow the PRISMA-ScR checklist to the fullest extent possible.

A preliminary search for systematic reviews on brief mindfulness interventions was conducted on December 27th 2018 using the EBSCO Discovery service, accessed through our university library. The search was restricted to articles in English. The following boolean search was used to find records including the following terms in the abstract: (mindfulness OR meditation) AND (systematic review OR meta-analysis OR scoping review) AND (brief OR low-dose OR single-session). The search yielded 10 records, which were subsequently filtered by title and abstract by VB. Seven of the ten records described a systematic review or a systematic review protocol; however, none of the reviews focused on single-session

mindfulness meditation interventions (Table 1 describes the 7 articles and how they differ from the present review). Thus, there is justification for conducting a systematic scoping review as proposed in this protocol.

The objectives of this scoping review are to (1) map the methods used to induce mindfulness and assess outcomes of brief mindfulness inductions on adult meditation novices, (2) identify gaps in the literature, and (3) make recommendations for future research on the topic. We hope that by cataloguing the inductions and control groups used thus far (see “Data extraction” and “Presentation of results” below) the results of this review will be useful to scholars wishing to study the effects of brief mindfulness interventions, making it easier for them to find suitable inductions and control groups for their research question. Moreover, the raw data (table of studies included) should help scholars conduct preliminary literature reviews to better assess whether a research question of interest has been probed in the literature before. Finally, this review will give us an overview of study characteristics (such as the average sample size or n per cell) that can inform an assessment of the strengths and limitations of the available literature and suggest recommendations for future studies.

Methods

Scoping review question

What methods have been used to study the effect of one-session mindfulness meditation interventions in adult meditation novices?

Inclusion criteria

Participants. Adults (18+), not meditation experts.

Concept. One session mindfulness meditation interventions lasting no more than 30 minutes. Interventions should be explicitly labeled “mindfulness meditation” or “induction” (can include breath focus, breath counting, object focus, ...). No restriction on outcomes.

Context. Any (lab, field study, company setting).

Types of sources. Quantitative empirical studies published in English in peer-reviewed journals including a mindfulness meditation condition and measuring at least one outcome.

Exclusion criteria

Based on the inclusion criteria above, the following is a list of reasons for exclusion of studies reviewed based on title and abstract or full text. This list is numbered so that VB and VS can record the reasons for exclusion of studies reviewed based on the full text of retrieved records (see Stages).

1. Mindfulness is not manipulated.
2. Mindfulness is manipulated more than once before the outcome is measured.
3. The mindfulness induction is longer than 30 minutes.
4. Over 20% of the sample consists of mindfulness experts (defined within the study).
5. The sample includes participants younger than 18 years old.
6. Study is not reported in English.
7. Study is not reported in a peer-reviewed journal.

Search strategy and study selection

This review aims to locate as many relevant published empirical studies as possible within a limited time-frame. We will follow a simplified search strategy:

Stages.

Stage 1. To develop the review protocol, VB chose the databases to be searched (based on the broadest databases accessible through our institution) and attempted to refine the keywords to include all relevant articles while minimizing false positives. All authors

agreed on the preliminary choice of keywords. This preliminary version of the protocol has been published in a public pre-print archive (through the Open Science Framework (OSF)) and other scholars were asked for feedback through our personal networks as well as Twitter and Researchgate. The protocol has been updated to reflect all feedback received, wherever relevant.

Stage 2. Following the protocol, a systematic search (specified below) will be conducted by VB. All retrieved records will be imported into the Mendeley software, and duplicates will be automatically removed with the software's "remove duplicates" function. VB and VS will copy the list of remaining records into their personal Mendeley libraries and independently assess articles for inclusion based on title and abstract, following the inclusion criteria specified above. Discrepancies will be resolved by consensus between both authors. VB will organize relevant articles into an Excel database which will distinguish between different studies reported in the same article.

Stage 3. The full text of all articles considered suitable for inclusion by title and abstract will be reviewed by VB and VS and the studies reported will be assessed for eligibility. Discrepancies will again be resolved by consensus. The reason(s) for exclusion of whole articles or studies within articles will be specified in the Excel file, which will be made available as supplementary material on OSF.

Stage 4. VB will conduct a manual search of the reference lists of all articles included after Stage 3 and an unsystematic Google Scholar search for additional records. Retrieved records deemed eligible by title and abstract that are not yet included will be added to the Excel database by VB. The full text of these articles will be screened for eligibility by VB and VS, as in Stage 3. Thus we will arrive at the final list of articles to be included in this scoping review.

Stage 5. Articles to be included in the scoping review will be organized in an excel table (see “Data extraction” section) and coded for relevant characteristics. VS and VB will code the articles independently and consult with each other and the rest of the team when disagreements occur. If necessary, the data extraction table will be updated to capture the information the authors deem most useful for the review.

Stage 6. After all articles have been coded, the table with coded articles will be emailed to the corresponding author of each included article, and the authors will be asked to confirm the correctness of our coding and to give us feedback or clarifications they may deem appropriate within two weeks. Feedback received will be responded to with reasons for why the given article’s coding was or was not changed accordingly. If the authors permit, this email exchange will be made public so that readers of the review can have full information.

Search specification. The electronic search will be conducted through institutional access to the EBSCO Discovery Service and Web of Science. The following Boolean phrase will be used to find records including the keywords in abstract for the EBSCO search: (mindfulness OR meditation OR mindful OR “state mindfulness”) AND (intervention OR induction OR training) AND (brief OR short OR one-session OR single-session OR low-dose). The search will include no Expanders and “Language: English” as the only Limiter.

Data extraction

A preliminary data extraction form has been developed. Studies will be coded for characteristics encompassing most aspects of study design, as well the results, challenges raised by the authors, and avenues for future research raised by the authors. The preliminary extraction table can be found on OSF (<https://osf.io/4r6wd/>), on the “Study coding” sheet of

the workbook). As this form will most likely be adapted during the coding of articles, any changes will be reported in the final article.

Presentation of the results

Results will be summarized in tables and charts to show the full range of methods used to study brief mindfulness meditation interventions experimentally and summarize key aspects of the included studies. In accordance with the objectives of the review, three main tables will summarize all (1) mindfulness inductions, (2) control groups, and (3) manipulation checks used in the included studies. Further tables and charts will describe key study characteristics, such as the percentage of pre-registered studies, the percentage of participants by type (e.g., students, full-time workers, not described,...), or the distribution of sample sizes and *n* per cell. The challenges and avenues for future research mentioned by the study authors will be summarized in the text of the final article.

Preliminary tables have been uploaded to OSF (<https://osf.io/vynh5/>). As these tables will most likely be adapted during the course of the review, any changes will be reported in the final article.

Table 1

Reviews found in systematic search and differences from present review.

Reference	Title	Difference from present review
(Schumer et al., 2018)	Brief mindfulness training for negative affectivity: A systematic review and meta-analysis	Includes single- and multiple-session training; focuses on negative affectivity
(Korotana, Dobson, Pusch, & Josephson, 2016)	A review of primary care interventions to improve health outcomes in adult survivors of adverse	Does not focus on brief mindfulness meditation interventions; focuses on health outcomes only; participants are

	childhood experiences	adults with adverse childhood experiences
(Schmidt, 2012)	Can we help just by good intentions? A meta-analysis of experiments on distant intention effects	Does not investigate outcomes of mindfulness meditation at all
(Nieuwsma et al., 2012)	Brief psychotherapy for depression: A systematic review and meta-analysis	Does not focus on brief mindfulness meditation interventions; does not use data from single-session mindfulness meditation interventions
(Evans, 2017)	Novel approaches to change behavior and protect patients: Mindfulness, motivational interviewing, and infection prevention	Does not use data from single-session mindfulness meditation interventions
(Castelnuovo et al., 2016)	Psychological treatments and psychotherapies in the neurorehabilitation of pain: Evidences and recommendations from the Italian Consensus Conference on Pain in Neurorehabilitation	Does not focus on brief mindfulness meditation interventions
(Thummathai, Lasuka, Sethabouppha, & Chanprasit, 2013)	Internet-based depression prevention in adolescents: A systematic review protocol	Focuses on adolescents; does not focus on brief mindfulness meditation interventions

References

- Anicha, C. L., Ode, S., Moeller, S. K., & Robinson, M. D. (2012). Toward a cognitive view of trait mindfulness: Distinct cognitive skills predict its observing and nonreactivity facets. *Journal of Personality*, 80(2), 255–285.
<https://doi.org/10.1111/j.1467-6494.2011.00722.x>
- Arch, J. J., & Craske, M. G. (2006). Mechanisms of mindfulness: Emotion regulation following a focused breathing induction. *Behaviour Research and Therapy*, 44(12), 1849–1858. <https://doi.org/10.1016/j.brat.2005.12.007>
- Arksey, H., & O'Malley, L. (2005). Scoping studies: towards a methodological framework. *International Journal of Social Research Methodology*, 8(1), 19–32.
<https://doi.org/10.1080/1364557032000119616>
- Aromataris, E., & Munn, Z. (Eds.). (2017). *Joanna Briggs Institute reviewer's manual*. Retrieved from <https://reviewersmanual.joannabriggs.org/>
- Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment*, 13(1), 27–45.
<https://doi.org/10.1177/1073191105283504>
- Bishop, S. R. (2004). Mindfulness: A proposed operational definition. *Clinical Psychology: Science and Practice*, 11(3), 230–241. <https://doi.org/10.1093/clipsy/bph077>
- Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, 84(4), 822–848. <https://doi.org/10.1037/0022-3514.84.4.822>
- Brown, K. W., Ryan, R. M., & Creswell, J. D. (2007). Mindfulness: Theoretical foundations and evidence for its salutary effects. *Psychological Inquiry*, 18(4), 211–237.

<https://doi.org/10.1080/10478400701598298>

Chiesa, A., & Serretti, A. (2009). Mindfulness-based stress reduction for stress management in healthy people: A review and meta-analysis. *The Journal of Alternative and Complementary Medicine*, 15(5), 593–600. <https://doi.org/10.1089/acm.2008.0495>

Choi, E., & Leroy, H. (2015). Methods of mindfulness: how mindfulness is studied in the workplace. In J. Reb & P. W. B. Atkins (Eds.), *Mindfulness in Organizations* (pp. 67–99). <https://doi.org/10.1017/CBO9781107587793.006>

Creswell, J. D. (2017). Mindfulness interventions. *Annual Review of Psychology*, 68(1), 491–516. <https://doi.org/10.1146/annurev-psych-042716-051139>

Dane, E. (2011). Paying attention to mindfulness and its effects on task performance in the workplace. *Journal of Management*, 37(4), 997–1018.

<https://doi.org/10.1177/0149206310367948>

Desbordes, G., Gard, T., Hoge, E. A., Hölzel, B. K., Kerr, C., Lazar, S. W., ... Vago, D. R. (2015). Moving beyond mindfulness: Defining equanimity as an outcome measure in meditation and contemplative research. *Mindfulness*, 6(2), 356–372.

<https://doi.org/10.1007/s12671-013-0269-8>

Dreyfus, G. (2011). Is mindfulness present-centred and non-judgmental? A discussion of the cognitive dimensions of mindfulness. *Contemporary Buddhism*, 12(1), 41–54.

<https://doi.org/10.1080/14639947.2011.564815>

Eby, L. T., Allen, T. D., Conley, K. M., Williamson, R. L., Henderson, T. G., & Mancini, V. S. (2017). Mindfulness-based training interventions for employees: A qualitative review of the literature. *Human Resource Management Review*.

<https://doi.org/10.1016/j.hrmr.2017.03.004>

- Giluk, T. L. (2009). Mindfulness, Big Five personality, and affect: A meta-analysis. *Personality and Individual Differences*, 47(8), 805–811.
<https://doi.org/10.1016/j.paid.2009.06.026>
- Good, D. J., Lyddy, C. J., Glomb, T. M., Bono, J. E., Brown, K. W., Duffy, M. K., ... Lazar, S. W. (2016). Contemplating Mindfulness at Work: An Integrative Review. *Journal of Management*, 42(1), 114–142. <https://doi.org/10.1177/0149206315617003>
- Hafenbrack, A. C. (2017). Mindfulness meditation as an on-the-spot workplace intervention. *Journal of Business Research*, 75, 118–129.
<https://doi.org/10.1016/j.jbusres.2017.01.017>
- Hafenbrack, A. C., Kinias, Z., & Barsade, S. G. (2014). Debiasing the mind through meditation: Mindfulness and the sunk-cost bias. *Psychological Science*, 25(2), 369–376. <https://doi.org/10.1177/0956797613503853>
- Hafenbrack, A. C., & Vohs, K. D. (2018). Mindfulness meditation impairs task motivation but not performance. *Organizational Behavior and Human Decision Processes*, 147, 1–15. <https://doi.org/10.1016/j.obhdp.2018.05.001>
- Hanley, A. W., Baker, A. K., & Garland, E. L. (2018). The mindful personality II: Exploring the metatraits from a cybernetic perspective. *Mindfulness*, 9(3), 972–979.
<https://doi.org/10.1007/s12671-017-0836-5>
- Hanley, A. W., & Garland, E. L. (2017). The mindful personality: a meta-analysis from a cybernetic perspective. *Mindfulness*, 8(6), 1456–1470.
<https://doi.org/10.1007/s12671-017-0736-8>
- Hart, R., Ivtzan, I., & Hart, D. (2013). Mind the gap in mindfulness research: A comparative account of the leading schools of thought. *Review of General Psychology*, 17(4),

453–466. <https://doi.org/10.1037/a0035212>

Hülshager, U. R., Alberts, H. J. E. M., Feinholdt, A., & Lang, J. W. B. (2013). Benefits of mindfulness at work: The role of mindfulness in emotion regulation, emotional exhaustion, and job satisfaction. *Journal of Applied Psychology, 98*(2), 310–325. <https://doi.org/10.1037/a0031313>

Hülshager, U. R., Feinholdt, A., & Nübold, A. (2015). A low-dose mindfulness intervention and recovery from work: Effects on psychological detachment, sleep quality, and sleep duration. *Journal of Occupational and Organizational Psychology, 88*(3), 464–489. <https://doi.org/10.1111/joop.12115>

Khoury, B., Knäuper, B., Pagnini, F., Trent, N., Chiesa, A., & Carrière, K. (2017). Embodied mindfulness. *Mindfulness, 8*(5), 1160–1171. <https://doi.org/10.1007/s12671-017-0700-7>

Kiken, L. G., & Shook, N. J. (2011). Looking Up: Mindfulness Increases Positive Judgments and Reduces Negativity Bias. *Social Psychological and Personality Science, 2*(4), 425–431. <https://doi.org/10.1177/1948550610396585>

Levac, D., Colquhoun, H., & O'Brien, K. K. (2010). Scoping studies: advancing the methodology. *Implementation Science, 5*(1). <https://doi.org/10.1186/1748-5908-5-69>

Liang, L. H., Brown, D. J., Ferris, D. L., Hanig, S., Lian, H., & Keeping, L. M. (2018). The dimensions and mechanisms of mindfulness in regulating aggressive behaviors. *Journal of Applied Psychology, 103*(3), 281–299. <https://doi.org/10.1037/apl0000283>

Lindsay, E. K., & Creswell, J. D. (2017). Mechanisms of mindfulness training: Monitor and Acceptance Theory (MAT). *Clinical Psychology Review, 51*, 48–59. <https://doi.org/10.1016/j.cpr.2016.10.011>

Peters, M. D. J., Godfrey, C., McInerney, P., Soares, C. B., Khalil, H., & Parker, D. (2017).

Chapter 11: Scoping reviews. In E. Aromataris & Z. Munn (Eds.), *Joanna Briggs*

Institute reviewer's manual. Retrieved from

<https://reviewersmanual.joannabriggs.org/>

Pham, M. T., Rajić, A., Greig, J. D., Sargeant, J. M., Papadopoulos, A., & McEwen, S. A.

(2014). A scoping review of scoping reviews: advancing the approach and enhancing the consistency. *Research Synthesis Methods*, 5(4), 371–385.

<https://doi.org/10.1002/jrsm.1123>

Purser, R. E., & Milillo, J. (2015). Mindfulness revisited: A Buddhist-based

conceptualization. *Journal of Management Inquiry*, 24(1), 3–24.

<https://doi.org/10.1177/1056492614532315>

Schumer, M. C., Lindsay, E. K., & Creswell, J. D. (2018). Brief mindfulness training for

negative affectivity: A systematic review and meta-analysis. *Journal of Consulting and Clinical Psychology*, 86(7), 569–583. <https://doi.org/10.1037/ccp0000324>

Tricco, A. C., Lillie, E., Zarin, W., O'Brien, K., Colquhoun, H., Kastner, M., ... Straus, S. E.

(2016). A scoping review on the conduct and reporting of scoping reviews. *BMC Medical Research Methodology*, 16(1). <https://doi.org/10.1186/s12874-016-0116-4>

Tricco, A. C., Lillie, E., Zarin, W., O'Brien, K. K., Colquhoun, H., Levac, D., ... Straus, S. E.

(2018). PRISMA extension for scoping reviews (PRISMA-ScR): Checklist and explanation. *Annals of Internal Medicine*, 169(7), 467.

<https://doi.org/10.7326/M18-0850>

Van Dam, N. T., van Vugt, M. K., Vago, D. R., Schmalzl, L., Saron, C. D., Olendzki, A., ...

Meyer, D. E. (2018). Mind the hype: A critical evaluation and prescriptive agenda for

research on mindfulness and meditation. *Perspectives on Psychological Science*,
13(1), 36–61. <https://doi.org/10.1177/1745691617709589>