Mindfulness in hospitality and tourism in low- and middle-income countries

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Research team

Ishtar Govia, Jamaica Mental Health Advocacy Network; Epidemiology Research Unit, Caribbean Institute for Health Research, University of the West Indies

Janelle Robinson, Jamaica Mental Health Advocacy Network; Epidemiology Research Unit, Caribbean Institute for Health Research, University of the West Indies

Rochelle Amour, Jamaica Mental Health Advocacy Network; Epidemiology Research Unit, Caribbean Institute for Health Research, University of the West Indies

Tiffany Palmer, Jamaica Mental Health Advocacy Network; Epidemiology Research Unit, Caribbean Institute for Health Research, University of the West Indies

Marissa Stubbs, Jamaica Mental Health Advocacy Network; Epidemiology Research Unit, Caribbean Institute for Health Research, University of the West Indies

Practicing Mindfulness in Low- and Middle-Income Countries:

Young Workers in Hospitality and Tourism

Ishtar Govia[1,2], Janelle Robinson[1,2], Rochelle Amour[1,2], Tiffany Palmer[1,2] Marissa Stubbs[1,2]

[1]Jamaica Mental Health Advocacy Network

[2]Epidemiology Research Unit, Caribbean Institute for Health Research, The University of the West Indies, Mona Campus, Jamaica

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Executive summary

Mindfulness is a form of mental training, based on practices that intentionally bring one's attention to physical sensations, emotions and thoughts in the present. Mindfulness based interventions (MBIs), largely based on Mindfulness-Based Stress Reduction (MBSR), can be delivered as packaged programmes in the workplace which might include weekly, group training programmes involving practices such as body-scan exercises, breath work, physical exercises and awareness of bodily sensations typically over a course of 2 months. This review looks at evidence about using MBIs to address anxiety and depression in the workplace, with a special interest in LMICs (low- and middle-income countries) workplaces, in young workers between 18-24 years old, and in the hospitality and tourism sector. This sector is heavily reliant on formal and informal youth workers and has been hit hard by the COVID-19 pandemic. MBIs can be implemented at low cost, can exist in non-clinical settings, and can be done outside of the workplace. This makes it appealing as a less stigmatised, flexible and universal workplace wellness intervention.

We reviewed 6 meta-analyses, 1 review of meta-analyses, and 2 grey literature studies of the effectiveness of MBIs as a workplace mental health intervention. There is strong evidence from high-income countries (HICs) of the effectiveness of MBIs for reducing anxiety and depression among workers. The effect is consistent across sector, organisational structures, duration of intervention, modality of delivery, type of control group, and age of participants. There is some indication that they are more effective for those with more years of completed schooling, and that group differences according to type of MBI, type of control group, and sector ought be examined more systematically. Evidence on workers in LMICS was limited (RCT n=9) but mostly consistent with the evidence from HICs. There was no evidence exclusively on 18-24 year old workers and little evidence (n=2) on workers in hospitality and tourism. Consultations with Jamaican stakeholders revealed that mindfulness practices are used outside of standardised MBIs. This supports the limited evidence-base of the appropriateness and feasibility of implementing MBIs with workers in LMICs; it suggests that mindfulness principles and practices may be effective outside of MBIs.

More evidence on the effectiveness of MBIs for LMIC workers is needed, especially youth workers. Business leaders can use mindfulness practices to support staff in simple and inexpensive ways, with impacts for both workers and the organisations. These can be packaged as stress reduction tools. Policy makers should invest in more psychosocial support of young workers in this sector, particularly for economies heavily reliant on the hospitality and tourism sector.

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Practicing Mindfulness in Low and Middle Income Countries (LMICs): Young Workers in Hospitality and Tourism

Introduction and background

Mental health challenges limit productivity and may cause disability and absenteeism in the workplace (Zhang, et al., 2020; Kotera, et al., 2020; Hsieh, et al., 2015). Mindfulness based interventions (MBIs) have been increasingly used to address these challenges in the workplace (Lomas, et al., 2017; 2019). **Mindfulness,** derived from the Buddhist contemplative tradition**, can be defined as the self-regulation of attention in a particular way, on purpose, in the present and in a non-judgemental manner** (Kabat-Zinn, 2009). Within the past few decades there has been an explosion of the incorporation of mindfulness programmes and activities in the corporate world; mindfulness – once labelled as "touchy-feely" and esoteric and relegated to the margins of the business world and other workplaces – has become mainstream.

Several organisations have implemented formal programmes using mindfulness practices or activities (See Table 1). However, there is little to no publicly available work on the effectiveness of these programmes. Even though many organisations have been rolling out MBIs or mindfulness practices as part of their human resources employee benefits and health and wellness programmes, few are reporting publicly about the impacts of these programmes. The results of these programmes for individual and/or workplace outcomes remain within the restricted domain of the organisations implementing them.

As is the case in various fields, there is a science–programming gap. Real-world programmes are being rolled out with few if any publicly reported studies of their effectiveness, while on the other hand, the published academic evidence on MBIs and/or mindful practices-based interventions and workplace mental health has focused on the effectiveness of MBIs and/or mindfulness practices among workers located in high-income countries (HICs) such as the UK (Kersemaekers et al., 2018; Felver, et al., 2015; Bostock, et al., 2019), USA (Chi et al., 2018; Felver, et al., 2015; Klatt et al., 2015; Joss et al., 2019), Canada (Felver, et al., 2015), Australia (Felver, et al., 2015) and Macau (Li et al., 2017). Few intervention studies focus on low- and middle-income countries (LMICs) (for exceptions see, for example, Manotas, et al., 2015 (Columbia) and Huang, et al., 2015 (Taiwan)).

This review aims to assess the existing evidence and the feasibility and appropriateness of MBIs to support the mental health and wellbeing of hospitality workers aged 18-24 years in LMICs, and to suggest a way forward for this area of work.

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Table 1. *Examples of MBIs or mindfulness practices in organisations*

Organisation	MBI or mindfulness practice employed	LMIC site[1]	Employee outcomes	Implementation Duration
Adobe	• 24/7 meditation centres • Headspace "meditation app"	Brazil, India, South Africa	• Stress level • Anxiety • Reactivity • Self-esteem • Mental strength and focus Physical health and energy	10 - 15 years
Aetna	• "Viniyoga Stress Reduction Programme", includes yoga postures, breathing techniques, guided meditation, and mental skills • "Mindfulness at Work Programme": includes meditation practices and pauses between meeting	South Africa, Indonesia	• Stress level (subjective) • Stress level (physiological) • Sleep quality • Physical pain management	10 - 15 years
Ford Motor Company	• Yoga • Colouring table • Oxygen bar (to breathe in pure oxygen through masks or tubes) • Meditation	India, Brazil, Indonesia, Colombia, Mexico, South Africa, Venezuela	None found	3-5 years
General Mills	• Mindful walking between meetings • Breathing • Weekly drop-in meditation sessions and yoga classes • Dedicated meditation room in every building on its campus	Brazil, India, Malaysia, Mexico, South Africa	• Personal productivity • Decision making ability • Listening skills	11 years
Goldman Sachs	• Acts of pausing • Yoga movements	Brazil, India, Indonesia, Malaysia, Mexico, South Africa	None found	8 months (since March 2020)

[1]Organization has locations in LMIC, but unclear whether mindfulness programmes and practices implemented in these LMICs.

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Organisation	MBI or mindfulness practice employed	LMIC site[1]	Employee outcomes	Implementation Duration
Google	• "Search Inside Yourself" Programme: Walking meetings, standing desks, mindful emailing	Mexico, Brazil, Kenya, Nigeria,	• Calmness • Patience • Listening skills • Stress management • Emotion regulation	13 years
Intel	• "Awake@Intel": Meditation practices	India, Costa Rica	• Stress level • Happiness • Well-being • New ideas and insight generation • Mental clarity • Creativity • Quality of interpersonal relationships at work • Engagement level in meetings, projects and collaboration efforts	8 years
SAP (Systems, Applications, and Products in Data Processing)	• "Global mindfulness practice" (including train the trainer programme): Mindful walking, three-breaths exercise, arriving a minute before meetings to decentre, mindful eating, head-body-heart check-in	Mexico, Brazil, Costa Rica, Colombia, Venezuela	• Happiness • Well-being • Sense of meaning • Life satisfaction • Focus on one thing • Mental clarity • Creativity • Insights • Stress level	7 years

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MBIs and mindfulness practices

MBIs are standardised programmes where mindfulness practices are implemented. Practices include: formal or informal meditation, yoga movements, breathing exercises, body scans, listening to music, and/or metacognitive awareness practices. The first developed, and still today most commonly used, MBI is Mindfulness Based Stress Reduction (MBSR) (Kabat-Zinn, 1982; Kabat-Zinn, 2003). This is a secular, group-based intervention that meets for 2.5-3 hours once per week for eight weeks (typically at a site other than the workplace), with an all day session once around the sixth week. Most other MBIs are adaptations of MBSR.

Potential impact of tourism and hospitality work on youth mental health in LMICs

LMICs make up 62% of the top 44 countries reliant on tourism for more than 15% of their GDP (Neufeld, 22 May 2020). Caribbean and small island developing states (SIDS) have a particular reliance on the tourism and hospitality sector (IDB, 2020). The authors' Caribbean origins and contexts motivated the development of this review, and they drew special reference to their country of residence, Jamaica. In Jamaica, over 30% of the total employment depends on the travel industry (Neufeld, 22 May 2020). This industry contributes, directly and indirectly, 22% of the GDP (JIS, 2019) with visitor expenditure contributing to 50% of Jamaica's foreign exchange inflows in 2018 (JIS, 2019). In many developing countries, tourism provides the first entry point into the labour market especially for youths, women and those in the rural communities (ILO, 2013).

However, tourism-related work can be emotionally demanding (Zhang, et al., 2020; Lo & Lamm, 2005; Hsieh, et al., 2015) and has been regarded as one of the most stressful sectors to work in (Cheng & Tung, 2019; Brown et al., 2015). One US study suggested that 8-10 % of US hospitality workers cope with at least one major depressive episode per year (Kotera et al., 2020). The competing demands of management and clients are often taxing, work hours are unpredictable, labour is intensive and job-security is often uncertain (Santos & Garcia, 2016; Johnson & Park, 2020). Employees must respond in real-time to customer demands that can be thoughtless and at times abusive while maintaining a sense of professionalism (Zhang, et al., 2020; Lo & Lamm, 2005; Hsieh, et al., 2015). They are often confronted with sexual harassment by those in power –clients or workplace staff (Vettori & Nicolaides, 2016); Ram, 2015). These regular interactions affect the psychological well-being of employees.

For young adults, who are psychologically, interpersonally, neurologically and physically still at a crucial stage of development (Arain, et al., 2013), such a work environment can be particularly harmful to both mental and physical health. Youth workers in

these sectors may therefore be at increased risk of developing depression and anxiety. These conditions typically emerge between ages 15 and 19 (WHO, 2020), at the stage where young persons often transition into the workforce. Globally depression - the most common mental health disorder with symptoms ranging from lack of pleasure and energy, insomnia, difficulties concentrating to pervasive sadness, among other symptoms (APA, 2020) - is one of the leading causes of illnesses and disability among young people (WHO, 2020). Similarly, anxiety disorders, characterized by worried thoughts, feelings of tension and physical changes (APA, 2020), are the ninth leading cause of illnesses and disability among young people (WHO, 2020). Globally, the majority of tourism workers are under 35 years (ILO, 2017) and up to 50% are under 25 years (ILO, 2010), making this workforce highly vulnerable.

Goal of and rationale for insight analysis report

Considering the vulnerability of 15-19 year olds to depression and anxiety, the high prevalence of workers under 25 in hospitality and tourism – a particularly emotionally demanding sector, as well as the dependence of many LMICs on this sector, this review focuses on the evidence of the feasibility and appropriateness of MBIs to support the mental health and well-being of hospitality and tourism workers aged 18-24 in LMICs. The COVID-19 pandemic has led to international and domestic travel restrictions, severely impacting the global hospitality and tourism sector. Many tourism-dependent LMICs have suffered massive losses in income, workforce and other assets. COVID-19 may therefore exacerbate already existing mental health needs among our target group and presents an opportunity for business leaders and policy makers to intervene, once provided with evidence-informed intervention options.

While several interventions such as Cognitive Behavioural Therapy (CBT), pharmacological interventions and interpersonal psychotherapy are effective in treating mental health concerns such as depression and anxiety (Chi et al., 2018), these approaches tend to be costly and time-intensive, limiting accessibility and affordability. MBIs offer a less costly, brief, adaptable approach (Zhou, et al., 2020; Pillay & Eagle, 2019; Klatt et al., 2015) in contexts where mental health workforce and support resources are inadequate to meet the needs, and the few existing resources may be unaffordable to those that need it the most. They may also be a good fit for contexts where there is a stigma attached to mental health –even in the context of the few existing Employee Assistance Programmes (Bruckner et al., 2011).

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Methodology (see Supplementary File 1 for details)

This report outlines the direct and indirect evidence that mindfulness interventions and/or practices can reduce anxiety and/or depression in workers, particularly young workers in the hospitality and tourism sector. We used three main strategies for this critical review summarised below. A total of **116 articles** were found through our search strategy. Sixteen of these were grey literature reports, blogs, or non-peer-reviewed studies. After screening we focused on **9 MBI studies** (7 peer-reviewed articles and 2 grey literature) for our review (see Figure 1). Details can be found in Supplementary File 1.

Inclusion and Exclusion Criteria. We set out the following five inclusion criteria *a priori*: a) The study involved employee participants; b) The study was intervention based (RCTs, quasi-experiments, single-sample (uncontrolled) pre- post-interventions were included; correlational studies, narrative and theoretical reviews were excluded); c) One or more form of MBI or mindfulness practice were a significant component of the delivered intervention or training programme; d) Worker mental health was tested as a dependent variable; and e) The study was published in English.

Grey Literature Review: We examined grey literature reports of MBIs and/or mindfulness practices based interventions in organisations using Google search engine with terms such as mindfulness, workplace, and/or the name of a specific corporation we saw referenced in other blogs or online reports. We also checked the references (if available) of the included articles for additional potentially relevant non peer-reviewed studies. The grey literature yielded 16 relevant reports, blogs, or non-peer-reviewed studies. Our final reporting of the effectiveness of MBIs included two grey literature mindfulness intervention studies; a doctoral dissertation (*n*=1), an academic conference presentation (*n*=1).

Review of Peer-reviewed MBI studies: 100 peer-reviewed MBIs studies were initially identified from the online database search and through complementary manual search strategies such as searching reference lists or from suggestions made by experts. The process of screening and selection of included studies is outlined in a modified Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) diagram (Fig. 1). Fifty-six were removed after screening at title and abstract stage. An additional 47 were removed after full-text review. If individual intervention studies were absorbed in a meta-analysis they were not reported individually. This led to a final *n*=7 meta-analyses or systematic review studies.

Characteristics of Included Studies: Our review focused on seven peer reviewed empirical studies and two grey literature. These included six systematic reviews (Bartlett et al., 2019; Burton et al., 2016; Lomas et al 2019; Perez-Fuentes, et al. 2020; Slemp, et al. 2019; Vonderlin et al 2020), one evidence mapping paper (a review of meta-analyses)

(Hilton et al., 2019) one dissertation (Aeamla-Or, 2015) and one conference paper (Yang et al., 2018).

Figure 1. Flow chart of included MBI studies
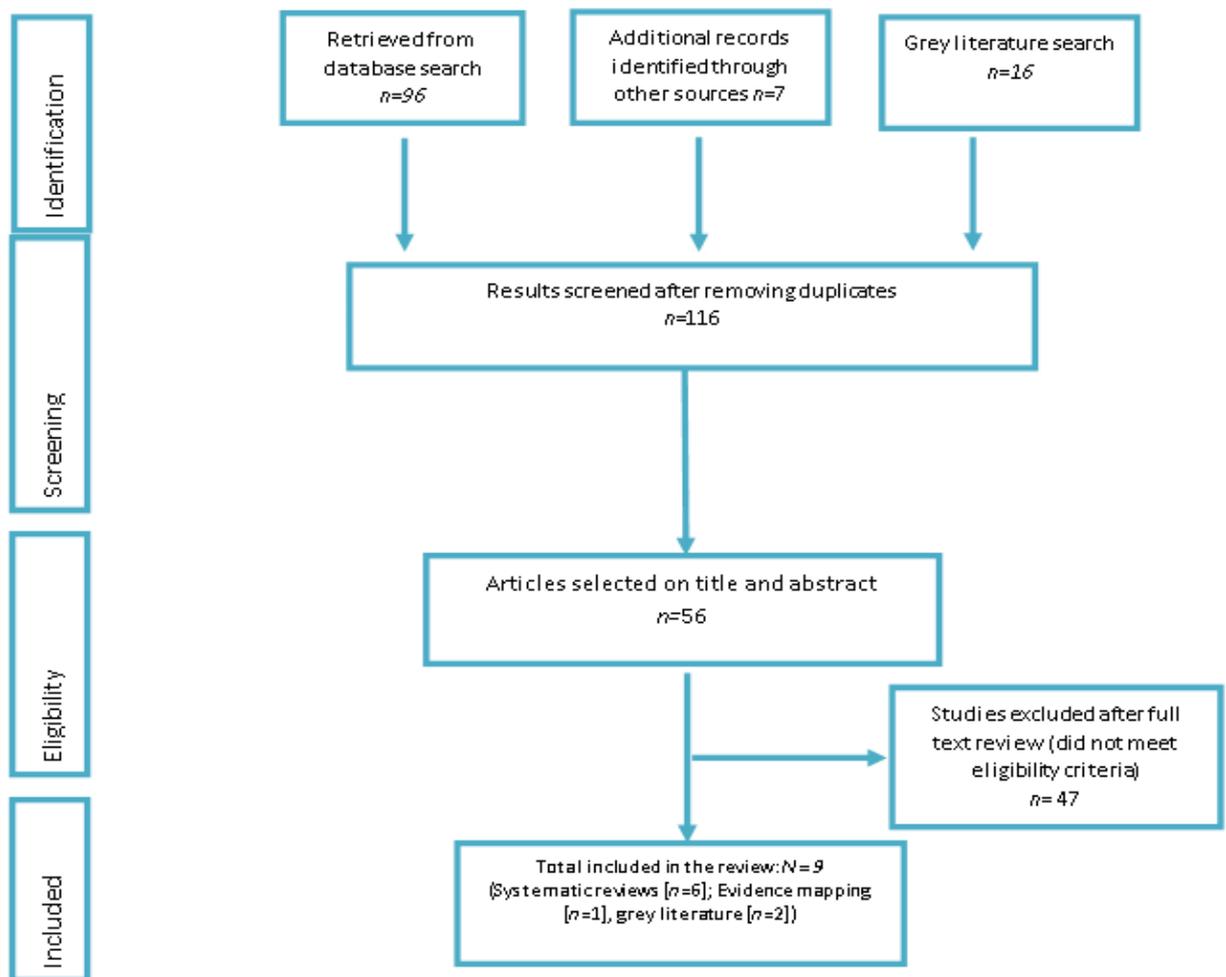
Member Check Consultations: The researchers consulted with 6 stakeholders for about the development of the proposal (5 hotel managers and 1 youth hospitality worker under 25 years of age). They also consulted with an additional 5 stakeholders for validation of the findings (1 clinician, 2 mindfulness coaches, 1 mental health advocate and 1 youth hospitality worker under 25 years of age) (See Figure 2 below).

Figure 2. Description of Informal and Formal Consultations
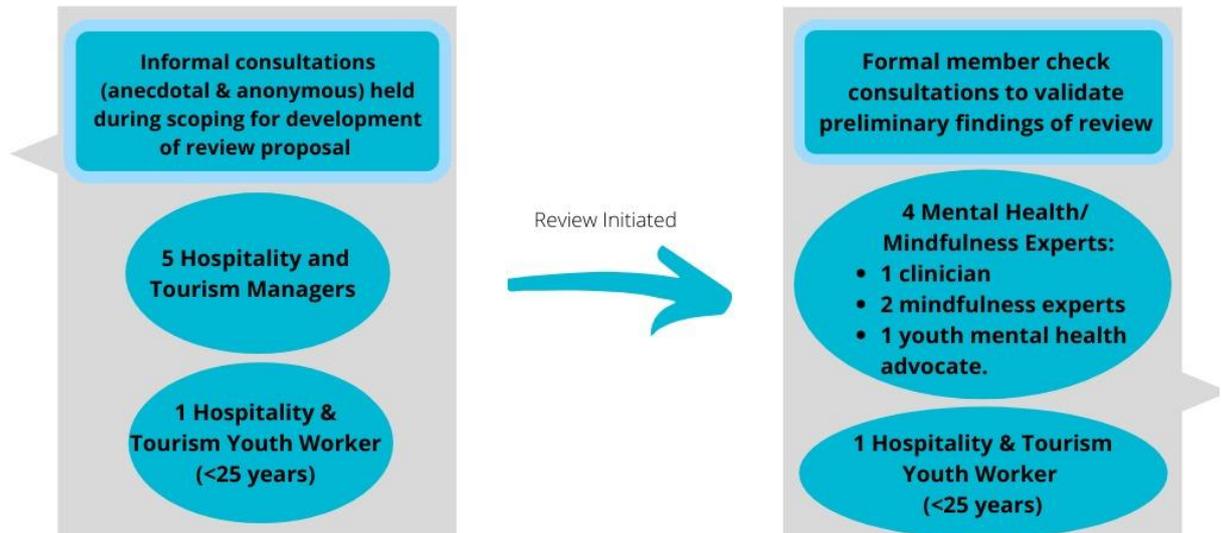
Scope of MBIs examined

There are several variations of MBSR, tailored to specific contexts and purposes. A number of these are compatible with implementation in workplaces and some have in fact been designed for workplaces. Mindfulness in Motion (MIM), for example, evolved to improve engagement and resilience among employees in high-stress work environments (Steinberg & Duchemin, 2015). Workplace Mindfulness Training (WMT) and Meditation Awareness Training (MAT) were also designed with the workplace in mind. Mindfulness-on-the-Go (Bostock, et al., 2019) is another MBI that is workplace compatible, as individual digital / smartphone devices are used to facilitate virtual delivery and such self-paced and self-applied intervention flexibility is welcome in demanding work environments. Table 2 summarizes the key features of MBSR and the six most commonly implemented adaptations of MBSR included in this review.

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Table 2. *Definitions and characteristics of 6 main Mindfulness Based Interventions (MBIs)*

MBI	Definition	Training Characteristics &Techniques
Mindfulness-Stress Based Reduction (MBSR)	MBSR-original mindfulness-based intervention-can be described as a structured mind-body programme that utilizes mindfulness meditation and yoga postures to help manage a variety of adverse health issues, including stress.	- Typically offsite, 2.5 to 3 hour per week for 8 weeks - Hatha yoga movement (done from the floor), guided body scans, sitting and breathing, walking meditation
Mindfulness-Based Cognitive Therapy (MBCT)	MBCT incorporates elements of cognitive-behavioural therapy with MBSR. Initially conceived as an intervention for relapse prevention in people with recurrent depression, it has since been applied to various psychiatric conditions.	- Typically offsite, 2.5 to 3 hour per week for 8 weeks - Guided body scans, sitting and walking meditations, 3-minute breathing spaces, focused awareness - Developing action plans that identify early warning thoughts or feelings that signal worsening symptoms, along with steps to take when they occur
Mindfulness in Motion (MIM)	MIM is based on mindful awareness principles of MBSR, with an increased emphasis on bodily relaxation with the soft background music preceding the discussion of mindful awareness of cognitive habits.	- Typically on a worksite, 1 hour per week for 8 weeks - Body scan, yoga movement is done standing or seated, breathing awareness, meditation, music, mindful eating, teaching handouts
Meditation Awareness Training (MAT) [MBSR Adaptation]	MAT incorporates traditional Buddhist practices with MBSR principles.	- Typically on a worksite 2-hour per week for 8 weeks. - Guided meditation involving support materials. One- on-one support sessions. Vipasyana/insight meditation, teachings on ethical awareness, generosity, patience, compassion. No yoga movements
Workplace Mindfulness Training [MBSR Adaptation]	Guided by MSBR principles but conducted on worksite.	- Both offsite and on worksite, 2 hour per week for 8 weeks plus 2 -day retreat - Mindfulness meditation, walking meditation, pausing meditation, body scan and compassion meditation. Mindful emailing and daily journaling
Mindfulness –on-the-Go [MBSR Adaptation]	Guided by MBSR but administered via a mobile application in 45 pre-recorded 10–20 minute guided audio meditations.	- Typically onsite and on worksite, 10-20 minutes per day for 45 days via a mobile application - Involves meditation techniques, breathing exercises, pauses

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Evidence in High Income Countries (HICs)

Direct evidence: MBIs and/or mindfulness practices for prevention and/or reduction of anxiety and/or depression in workplace settings in HICs

There is a considerable body of evidence on the effectiveness of MBIs for workplace mental health, especially for HIC-based workers. We located 6 meta-analyses examining MBIs in the workplace (Bartlett, et al., 2019 [n= 23 RCTs had sufficient data]; Burton et al., 2016 [n=9 (incl. 2 RCTs)]; Lomas et al 2019 [n=35 RCTs]; Perez-Fuentes, et al. 2020 [n=16 RCTs]; Slemp, et al. 2019 [n=56 RCTs]; Vonderlin et al 2020 [n=56 RCTs]). In addition, we located an evidence-mapping (a review of meta-analyses) of MBIs (Hilton et al., 2019 [n=175 systematic reviews]). Below we present the most relevant findings.

Vonderlin and colleagues' 2020 meta-analysis (search period up to November 2018) of mindfulness-based programmes (MBPs) in the workplace is arguably the most comprehensively reported of the meta-analyses. Given the increase in published MBIs between 2016 and 2018, it extended the Lomas et al 2019 meta-analysis and the Bartlett et al 2019 meta-analysis (in both of which the search period was up to 2016). It included 49 HIC-based RCTs and seven LMIC-based RCTs (Brazil n=1, China n=2, Colombia n=1, India n=2, Taiwan n=1). This meta-analysis offered evidence that MBPs effectively reduced stress, burnout, mental distress, somatic complaints; they also improved well-being, compassion and job satisfaction. These effects were consistent across different occupational groups and organisational structures; they persisted over a period of 3 months. Though the original studies analysed may have included depression and anxiety outcomes specifically, that level of granularity in outcomes was not reported in this meta-analysis; those outcomes were collapsed into a category called "subsyndromal symptoms" and that category was collapsed with others for a domain named "stress and health impairment". The meta-analysis indicated that MBIs had the strong effects on perceived stress (g=-0.66), well-being/life satisfaction (g=0.68), work engagement (g=0.53) and job satisfaction (g=0.48).

A recently published meta-analysis for which the search period went up to October 2019 (Perez-Fuentes et al., 2020) presented findings consistent with those from the Vonderlin et al (2020) meta-analysis. Perez-Fuentes et al.'s 2020 meta-analysis of 24 studies (16 RCTs; 4 non-RCTs; 1 LMIC-based study (China)), reported statistically significant effect sizes of workplace mindfulness interventions on depression (SMD=1.43) and anxiety (SMD=0.34).

Vonderlin et al.'s 2020 exploratory moderator analyses (to explore when and for whom these interventions are most effective) indicated no significant moderator effects for age of participants, location, type of MBI, time span, delivery modality (in-class vs. online), or comparator/control group. The moderator analyses did, however, suggest that for the

subsyndromal symptoms outcomes participants' level of education was a significant moderator, with larger effects observed for higher educated participants. **This suggests an important area for future research relevant to young workers in LMICs, especially those in the hospitality and tourism sector, many of whom enter the workforce with education levels no higher than a high school degree.**

Slemp et al.'s (2019) meta-analysis of 119 unique studies (including 56 RCTs) also indicated that contemplative interventions (mindfulness strategies, meditation, acceptance and commitment therapy (ACTs)) are effective for overall employee distress (which included depression, anxiety, stress, burnout and somatic symptoms). Their analysis of interventions with depression as the outcome (n=15) indicated significantly moderate to large effect sizes regardless of study design (Cohen's d effect sizes: 0.42 to 0.46). The studies with anxiety as the outcome (n=29) had similar statistically significant results (Cohen's d effect sizes:0.32 to 0.58). This meta-analysis did not provide information on the countries in which each of the assessed interventions was located. They did, however, also conduct exploratory moderator analyses which suggested no differences in effect sizes according to study quality ratings, overall duration of the programme (in weeks), or number of sessions included. There was some evidence that effect sizes varied (though moderation was not substantial; i.e. there was some overlap in the confidence intervals across levels of the moderator) by type of intervention delivered (general meditation-based interventions had the highest effects, followed by MBIs, and then ACTs) and type of control group (contemplative interventions performed better than no-intervention comparisons or comparisons that received education only; however, they were not substantively better than active control comparisons that received another type of therapeutic intervention). They were not able to test intervention-sector interactions because of insufficient data. However, they suggested that this is an important area for future research given the industries and treatment protocols that performed best and worst. Of note, the most studied industries were healthcare, education, and corporate.

Supporting the above meta-analysis, an evidence mapping of meta-analyses conducted by Hilton and colleagues (2019) on the effectiveness of mindfulness in multiple work settings, found that even though there were positive pooled effects of mindfulness on depression, anxiety, distress, across workplace settings/ target workforce employees, there were mixed results within target workforces. Focusing on healthcare professionals, social workers, informal caregivers, educators and the general work population, Hilton and colleagues noted that 12 studies reported that MBSR and Mindfulness Meditation (MM) were effective in reducing nurses' state anxiety (SMD=-0.78) and depression (SMD=-0.51) but not their trait anxiety or stress. Other studies in the review indicated that MBSR and MM reduced stress but had no statistically significant effect for anxiety, depression or burnout (Hilton et

al., 2019). In contrast, seven reviews of mindfulness interventions for informal and formal caregivers focusing on MBSR and MBCT showed positive effects post-intervention for stress (g=0.57) and depression (g=-0.62) (Hilton et al., 2019). The results were consistent for educators (Hilton et al., 2019).

Overall findings suggest that the effectiveness of MBIs for workplace mental health in HICs are robustly effective across sector, organisational structures, duration of intervention, modality of delivery, type of control group, and age of participants. The findings from HICs suggest the need for the evidence base on MBIs and mindfulness interventions in workplaces to expand to test more explicitly participant and intervention moderator effects (participant factors: age group, education level of participants, sector; intervention factors: type of intervention, type of comparator). Furthermore, the long-term effects remain unknown as most of the interventions' post-test assessments were within a 3-month post-intervention time frame.

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Evidence in Low- and Middle- Income Countries (LMICs)

Direct evidence: MBIs and/or mindfulness practices for prevention and/or reduction of anxiety and/or depression in young persons/workers in LMICs

In addition to those included in the peer-reviewed meta-analysis and evidence mapping paper, we located two grey literature studies on MBIs and/or mindfulness practices interventions for the mental health of workers located in LMICs. Both focused on workers in the healthcare sector. Only one focused on workers 24 or younger (Aeamla-Or's 2015 dissertation). Table 3 below summarises these two studies LMIC of focus, sector, age group, MBI or mindfulness practice(s), and whether the study captured anxiety and/or depression as an outcome of focus. The dissertation study focusing on healthcare workers in Thailand presented findings inconsistent with those from HICs related to mindfulness interventions and depression outcomes, as it found no effect on depression. The Yang et al 2018 conference paper focusing on nurses in Taiwan, using a screener to explore a composite of anxiety and depression, did not find any differences between the intervention and control group.

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Table 3. *Grey literature studies using MBIs for mental health of workers in LMICs (n=2)*

Study Reference	Country	Sector	Sample	Study Design	MBI or practice	Measured outcomes	Findings	Limitations
Aeamla-Or, 2015 (dissertation)	Thailand	Healthcare	• Intervention group [*n*=63]; control group [*n*=64] • Mean age= 19.17[*range*=17-21 years]	RCT [intervention group and non-active control group]	MBSR	• Depression • Perceived stress • Self-esteem	• No effect for depression • Reduction in perceived stress • Improvement in self-esteem	• There was no active control and/or placebo to compare outcomes of difference interventions. • Target sector and age group not included.
Yang et al. 2018	Taiwan	Healthcare	Intervention group [*n*=21]; Control group [*n=21*] Mean age = 42 [*range*=26- 59]	RCT Pre- and post-test design [intervention group and non-active control group'	MBI [not specified];	• Awareness • Distress	• No effect on awareness • No effect on distress	• Target sector and age group not included.

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Context considerations: Mindfulness practices and the mental health of 18-24 year olds in LMICs

To provide further context about the potential feasibility and appropriateness of MBIs and/or mindfulness practices for young workers in tourism-dependent LMICs, we briefly summarise three non-intervention empirical studies (one correlational, one qualitative, one critical review). While the studies do not focus on young persons working in the tourism and hospitality industry, we believe they help understand young adults' perspectives about mindfulness and may be useful for thinking about considerations to bear in mind for that target age group of workers in tourism-dependent LMIC contexts.

Ramli et al.'s (2018) observational study suggested that higher mindfulness scores were linked with greater self-regulation among 18-25-year-old Malaysian university students. Self-regulation is hypothesized to be a key mechanism related to mental health outcomes such as anxiety and depression (Weidner et al., 2015). This suggests the need to include practices that target self-regulation when developing and implementing workplace MBIs for young workers in LMICs. These young adults must often contend with contexts and circumstances that may impede the cultivation of self-regulation (violence in communities, poverty, abuse).

Walker (2020) explored Jamaican secondary school principals' use of mindfulness meditation as a spiritual well-being strategy to manage their work-related stress and anxiety through qualitative methods. The author interviewed 12 secondary school principals across Jamaica and found that they relied heavily on mindfulness prayer or meditation as a spiritual coping strategy. This finding is not surprising within a predominantly Black country that is heavily influenced by religion (JIS, 2019). The reliance on spirituality is also consistent with international literature looking at the positive role of spirituality and religion among African American youths coping with depression (Breland-Noble, et al., 2015) and provides some insight into what might work with our target age group. There has been support for the use of spirituality in mindfulness interventions (e.g. Shonin & Gordon, 2015).

It is important to note, LMICs face specific challenges in contexts of high urbanisation and levels of crime and violence, vulnerability to natural disasters and fragility of health and social care systems to deal with epidemics. These vulnerabilities translate into high levels of trauma exposure that typically go unacknowledged, unaddressed, and become normalised. Therefore, the applicability of mindfulness training to LMIC contexts, where the intervention that has been developed and implemented in highly resourced, often corporate contexts, deserves close scrutiny. Pillay and Eagle (2019) explored the applicability of mindfulness-based intervention in one LMIC: South Africa. In their critical review of the literature, they noted that mindfulness was efficacious in addressing trauma-related symptoms. They

concluded that mindfulness has the potential to both reduce negative trauma impacts and build psychological resilience in the context of LMICs, similar to their landscape.

Indirect evidence: Consultation insight about the potential for using mindfulness techniques with young persons

Stakeholders with whom we consulted to validate the findings (1 clinician, 2 mindfulness coaches, 1 mental health advocate) indicated that, with their clients, they used mindfulness principles and practices outside of standardizsed MBIs. The clinician utilised journaling (paper and pen, voice-notes, typed notes on a device), breathing exercises and mindful meditation with younger clients. The mindfulness coaches reported using contemplative activities and meditation (which they defined as training one's mind to live in a mindful way) in their work. They noted that these were more acceptable when packaged in a secular manner with an emphasis on optional (versus mandatory) engagement in the practices.

All stakeholders indicated that in LMICs such as Jamaica more sensitisation and awareness of mindfulness training as a stress reduction intervention is necessary. Similar to what Pillay and Eagle (2019) observed in their focus on South Africa, the Jamaican consultees noted that mindfulness training interventions tend to be regarded by the general public as a technique meant for those from the middle-class and/or who are otherwise privileged. Jamaican consultees also noted that the sensitisation and subsequent training around mindfulness should use language that is developmentally appropriate and spoken in the preferred dialect of the recipient. The clinician shared that when explaining mindfulness to youths within Jamaica, terms such as meditation, relaxation, muscle exercises (elements endemic to mindfulness) were well-received (See Table 5).

All consultees were candid and realistic in their discussions, and in sharing their expert insight regarding the cultural contexts of young workers in hospitality and tourism in LMICs. The clinician and one mindfulness coach suggested that MBSR may be particularly helpful in demanding work environments and in LMICs among persons who experienced trauma. They identified likely barriers and facilitators to effective implementation of mindfulness practices in the workplace in LMICs (See Table 5 below), as well as provided recommendations on how mindfulness could be applied to our target group.

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Table 4: *Stakeholder identified facilitators, barriers and recommendations on using mindfulness techniques with young persons and/or workers in the hospitality and tourism sector in the Caribbean (N=11)*

Stakeholder Category (*N*= 11)	Facilitators	Barriers	Stakeholder recommendations
Mental health /Mindfulness Consultees (*n*=4)	Global urgency around managing contemporary 'stress culture ' puts positive pressure on corporate entities to align with global workplace wellness movements.	Cultural misunderstanding /misperception around mindfulness and broader mental health, including perception that mental health services are only accessible to persons of higher socio-economic status, due to cost barriers and variations in awareness levels across classes.	Need to use simple, common, non-clinical, developmentally appropriate terminology when introducing mindfulness techniques and concepts to target group to reduce misconceptions and stigma.
	Mindfulness is universal and flexible in its application.	In religious contexts- which many LMICS's are, Christian denominations in particular may regard mindful meditation techniques with skepticism and hesitation.	MBIs in the workplace should strip away religious associations to exclude techniques associated with religion like yoga. With younger people, demonstrating how practices like walking meditation and breathing exercises can fit into everyday life is helpful.
	There is growing awareness of mental health in LMICs- much of which is being advocated by young people.	In some LMICs there is an avoidance of discussions and disclosure around mental health in the workplace.	Package MBIs in a less clinical and more secular way that is directly related to professional development.
	Mindfulness supports a guided, self-help approach to anxiety and depression among young adults, which is particularly useful in contexts of low mental health work forces and limited resources.		Need to package mindfulness techniques as leadership skill-building, because 'as persons become better at leading their own lives, they become better at leading others'- Clinician.
	Mindfulness is a good fit for behavioural, emotional and family issues, impulsivity, anxiety,		Mindfulness techniques to help re-frame negative experiences can be very useful in the tourism and

Stakeholder Category (*N*= 11)	Facilitators	Barriers	Stakeholder recommendations
	depression and other mood disorders and emotional dysregulation and coping with trauma in young people.		hospitality sector where staff may be vulnerable to abusive clients.
	Increasing need for mental health interventions during COVID-19, which has been compared to warzones characterised by 'VUCAN'- (Volatility, Uncertainty, Complexity and Ambiguity). The uncertainty might adversely affect young adults who are just starting out in their careers.		
Youth tourism workers (*n=2*)	Increased awareness of mental health among young staff who are aware of their own and each other's triggers for anxiety while on the job- such as aggressive clients or crowds. Some already use mindfulness practices, including meditation with relaxing music and journaling.	Male colleagues and older colleagues (those mid-life and older) are more resistant to mental health discussion, despite its importance during COVID-19.	Mindfulness techniques like meditation or breathing exercises can be used by staff before a shift, during lunch and after a shift. Management should place mental health materials in staff spaces to raise awareness and educate them.
	Young workers recognise the impact of work environments and the pandemic on their mental health and wellbeing and that of their families.	Implementation of mindfulness practices or MBIs depend heavily on management and the work culture which may not always address staff needs nor client abuses (including verbal and emotional abuse and sexual assault) against staff.	Any mental health intervention in their workplace should involve peer-support to help reduce isolation due to COVID-19 protocols and new ways of working.
	Some young workers support inclusion of psychosocial development as part of professional development and believed that the use of mindfulness practices was a skill in itself.		Group mindfulness practices at work could take place during "line-up" sessions each morning where staff discuss various issues on the job.

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Stakeholder Category (*N*= 11)	Facilitators	Barriers	Stakeholder recommendations
Managers in tourism and hospitality sector (*n*=5)	Hospitality and tourism are among the hardest hit industries during COVID-19, particularly in tourism-dependent Caribbean islands. Pay cuts, layoffs and losses increased the need to support workers emotionally.	Implementing mental health support is challenging due to lack of clear organizational policies or guidelines on how to approach worker mental wellness.	Any intervention should demonstrate its ROI (return on investment) and not be 'parachute training.' It should also be focused on individual goals and coping tools during this difficult time.
	Younger managers (<40 years) recognize the need for inexpensive psycho-social support to help staff manage stress and build resilience in the absence of access to professional services through staff benefits- especially for those informally employed.	Some international organisations hire expats to manage staff in LMIC sites who may not understand local contexts and therefore may not see the need for or choose the most appropriate intervention/ practices.	When approaching workplaces in this sector with any mental health intervention, researchers / clinicians should liaise with local management and staff as well as higher management.
	Sector depends on staff's interpersonal skills when engaging with both local and international clients. There is a need to focus more on local and regional (Black) clients due to the travel restrictions which requires a shift in staff-client relationships in many organisations where clients are traditionally White Americans and Europeans.	Generational resistance and stigma around mental health among older industry leaders may hinder organisations from considering MBIs in the workplace- despite its potential usefulness to business strategy.	Researchers and advocates should pre-empt efforts at mental health interventions with sensitisation efforts among leaders at higher levels in the industry.
	Hospitality and tourism jobs are easily accessible to young workers with little formal education. Many young workers in this sector come from resource-strained contexts vulnerable to increased exposure to trauma and violence.	Mindfulness practices may open a 'Pandora's Box' of deep-seated, mental health issues among workers which managers lack the resources and expertise to address.	Nevertheless, there is value in creating safe spaces at work and MBIS or practices can be incorporated into training on conflict resolution, communication and self-awareness.

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Recommendations and Conclusion

Recommendations

General

1. Recognise that the limited evidence on mindfulness interventions for young LMIC workers is both a challenge and an opportunity. Most of the evidenced interventions have been conducted in HICs; focused on educational, health and social care settings; and are not focused on young workers. However, young adults in LMICs constitute a major segment of the workforce in these countries, particularly in the hospitality and tourism sector.

2a. Recognise that mindfulness training should not be delivered as a one size fits all workplace wellness intervention. Instead, the mindfulness training component/package must be matched with the target recipients and the context. The elements of focus (e.g. breathing, meditation, bodily/sensory awareness, etc.) may be selected and delivered based on feasibility and applicability.

2b. Following review of the literature and consultations with mental health providers and mindfulness experts, the authors are recommending the adaptation of four main MBIs (MAT, WMT, MBSR, MIM; see Figure 3) based on their flexibility, and ability to be implemented on-site in a fast-paced sector such as hospitality and tourism.

For Business Leaders

3. Before implementing mindfulness training interventions, provide sensitisation and education sessions about the approach and why/how it can be useful. Furthermore, informal consultations with hotel workers indicate that HR managers are likely to better support younger staff if mindfulness practices are integrated with professional development training programmes which can cater to developmental and professional needs, considering the high stress nature of the job.

4. Expand the delivery modalities and approaches for maximum benefit from this low cost and flexible intervention. Instead of solely relying on highly trained professionals, many mindfulness-based interventions can be delivered by trained community members or advocates.

5. Following the review of the grey literature, it was evident that companies utilise MBIs or mindfulness practices. We recommend that business leaders partner with researchers to accurately monitor and assess the outcomes of these practices using validated and reliable methods which can strengthen the existing data on the effectiveness of mindfulness.

5. Use mindfulness training as a 'single lever' for beneficially influencing many workplace variables at a low cost (Kersemaekers et al., 2015). This is particularly relevant for industries that face high revenue losses due to burnout –and because of natural disaster and public

health emergency shocks. Funding can be redirected from reacting to high turnover and rehiring, to testing this intervention and increasing job retention and satisfaction.

For Policy Makers

6. Economists should promote the packaging of mindfulness as a stress-reduction and wellness tool rather than a mental health intervention, which can support both staff and provide opportunities to expand the sector into wellness tourism.

7. Within the context of a high percentage of the workforce in LMICs made up of informal workers, we recommend that labour and social sectors target informal youth workers who may lack access to HR training and formal organisational benefits with virtual wellness and peer support programmes as they navigate reduced incomes and other changes due to the COVID-19 pandemic.

Figure 3. *Suggested Adaptations of MBIs for LMICs*

WORKPLACE WELLNESS INSIGHT ANALYSIS REPORT: MINDFULNESS
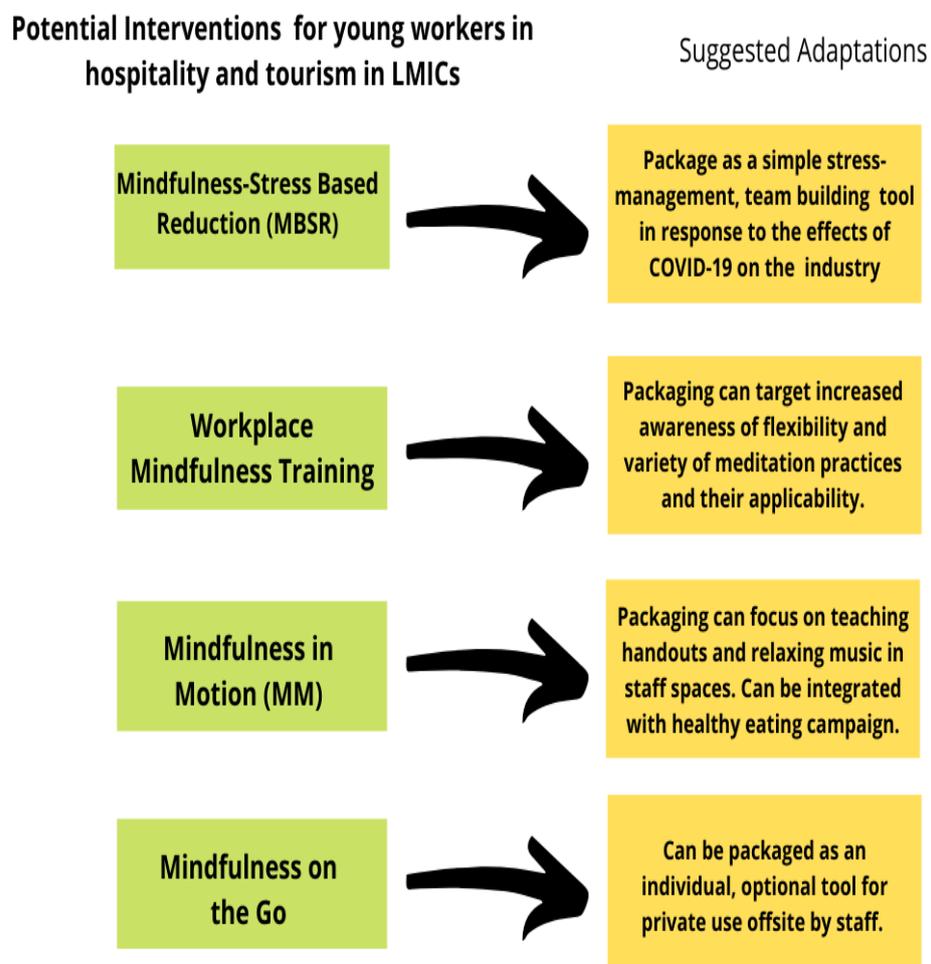
Conclusion

MBIs and mindfulness practices have emerged as a cost-effective, more culturally acceptable and effective alternative to traditional means of addressing mental health challenges in the workplace. Systematic reviews of workplace RCTs show promise for high-stress and demanding occupations such as healthcare providers, nurses and medical students but there is a need for further evidence for young workers between 18-24 years of age, and across other fast-paced, emotionally-demanding industries and sectors, such as tourism and hospitality, in which many youth workers in LMICs are based.

While there is a robust body of evidence supporting the effectiveness of MBIs and mindfulness practices as a workplace wellness approach in HICs, there is limited evidence from LMICs and none from the Caribbean and other small island developing states (SIDs). LMICs bear the disproportionate burden for mental illness and psychosocial challenges, have woefully inadequate mental health workforces, and see a vast majority of its young persons working in increasingly inequitable settings where they will not be provided with any type of emotional or psychosocial supports. More evidence is needed to clarify its appropriateness, fidelity, feasibility, and applicability in these settings for the target workforce of young adults.

The limited evidence on MBIs with workers located in LMICs along with insight from consultations suggests that four of the six programmes reviewed in the evidence base may lend themselves to adaptation for LMICs. Of the six MBIs presented (see Table 2), the four which appear most appropriate MBIs for 18-24 year old hospitality and tourism workers in LMICs are: MBSR, MIM, Workplace Mindfulness Training and Mindfulness-on-the-Go.

These all include practices which stakeholders reported they used in Jamaica. In a context which, particularly during the COVID-19 pandemic, may lack resources to facilitate lengthy, off-site interventions requiring large dedicated spaces, these interventions had reasonable durations and could be applied in the workplace or even virtually, as in the case of 'Mindfulness-on-the-Go.' MIM was applied at an intensive care unit which may be categorised by long, late night/early morning hours and an environment that is fast paced, high stress and demanding- characteristics shared by the hospitality and tourism industry. Practices used across the four programmes were simple (e.g. mindful eating, teaching handouts in MIM); inexpensive or free to practice (e.g., journaling, breath work, body scan meditation); and could be practiced either in groups or individually and self-paced (as per guided audio meditations in Mindfulness-on-the-Go). Two of the programmes were applied to a broad age range, and while helpful for young workers, they demonstrate a higher return

on investment for organisations that may prefer to implement a programme that can benefit all workers, and not just a subset. Stakeholder input provided suggestions on how each of these programmes might be adapted to overcome potential contextual barriers to implementation (See Figure 3).

MBIs and mindfulness practices, as demonstrated, transcends its favourable impact on depression and anxiety and has a direct correlation to job satisfaction/performance, reduced burnout, improved focus and self-esteem. As such, mindfulness training for hospitality workers may translate into a natural way of being where youth workers are present (Johnson & Park, 2020) and able to better navigate their interactive roles with customers. Such engagement benefits the individual and organisation ultimately leading to quality service, satisfied customers and potential increase in profits.

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WORKPLACE WELLNESS INSIGHT ANALYSIS REPORT: MINDFULNESS

Supplementary File 1: Detailed Methodology

1A. Review of grey literature

To search for government or institution's site or top-level domain, for instance, we used Goggle site limits. For example, to limit our search to Jamaica in government sites, this technique was paired with keywords in Google to locate grey literature. Example of search: site:jm.gov tourism, mindfulness, youth. There was no limit to the time frame of literature. For additional advanced techniques we used Google scholar. The links and citation found through grey literature search was stored in Mendeley and reference list created.

To identify MBIs or mindfulness practices in corporations, additional grey literature search using Google included search terms such as mindfulness, workplace, and/or specific corporation [Google]. We also checked the references (if available) of the included articles for additional potentially relevant studies.

Description of included studies

The grey literature on MBI studies included doctoral dissertation (*n*=1) and academic conference presentation (*n*=1). Additionally, to provide examples of MBIs and practices in workplaces in HICs, we utilized workplace blog posts (*n*=6), online articles (*n*=4) and reports on mindfulness in organisations (*n*=4).

1B. Critical review of academic literature

Inclusion and Exclusion Criteria

The studies were included in the review according to the following eligibility criteria: a) The study involved employee participants; b) The study was intervention based (RCTs, quasi-experiments, single-sample (uncontrolled) pre- post-interventions were included; correlational studies, narrative and theoretical reviews were excluded); c) One or more form of MBI or mindfulness practice were a significant component of the delivered intervention or training programme; d) Worker mental health was tested as a dependent variable; and e) The study was published in English. . There was no restriction in study timeframe. Studies were excluded from full-text review if they solely focused on school-aged children and were conducted in school settings. However, they were not restricted from citation in other sections, where relevant.

Search Method

Electronic databases used to identify peer-reviewed studies included PubMed Central, JSTOR, Google Scholar, Ebsco Host, West Indian Medical Journal and Caribbean Journal of Psychology. There was no publication date limit. We utilised the following search terms and their iterations: mindfulness (OR meditation, meditate, Buddhis*, stress

management, stress reduction,) **AND** youth (OR young adults; youths, young people, 14 to 24) **AND   OR** workplace (OR tourism, workplace, burnout) **AND** Mental Health (OR depression, anxiety, stress, conflict*, conflict management, negative think*, compassion fatigue, stress*) **AND OR**, Caribbean (LMIC*, Low to Middle-Income Countries). We also checked the references of the included articles for additional potentially relevant studies.

Data Collection

Identified studies were exported to Mendeley to manage references and then to Rayyan QCRI (Ouzzani, et al., 2016) to facilitate removal of duplicates and conduct the screening of titles and abstracts. After removing duplicates, a review of abstracts and full-text articles to be included in the paper was conducted by two independent reviewers.

Description of included studies

The process of screening and selection of included studies is outlined in a modified Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) diagram (Fig. 1). Following the removal of duplicates, 100 empirical peer-reviewed studies remained, a total of 93 peer reviewed studies were excluded at the title and abstract screening stage, and after full-text reviews as they did not meet inclusion criteria. The review ultimately yielded **seven** MBI peer-reviewed studies.

Characteristics of included studies

Types of studies included: **six** systematic reviews (Bartlett et al., 2019; Burton et al., 2016; Lomas et al 2019; Perez-Fuentes, et al. 2020; Slemp, et al. 2019; Vonderlin et al 2020), **one** evidence mapping paper (Hilton et al., 2019) **one** dissertation (Aeamla-Or, 2015) and **one** conference paper (Yang et al., 2018).

1C. **Consultations**

Informal Consultations (anecdotal and anonymous)

Prior to conducting the review, the researchers informally consulted with one female tourism worker (under age 25) and five tourism sector managers to help gauge relevance and viability of the proposal for this review on mindfulness and for the review itself.

Member Checks

Following the review of the literature, member checks were done virtually and in-person with one clinician, two mindfulness coaches, one mental health advocate, and one youth tourism worker (under age 25) to gain feedback on the empirical findings or guided additional literature (empirical and or grey literature) search for the study investigators.

Recruitment

WORKPLACE WELLNESS INSIGHT ANALYSIS REPORT: MINDFULNESS

The consultees were directly recruited from our network or through snowballing, where members of our network referred us to the relevant person(s).

Procedure

To prepare for the interviews, the authors reviewed stakeholder consultation guides and resources and utilised our professional experience in this capacity. Each consultee was given an information sheet which provided a brief description of the project, outlined the format of the interview, and how the data will be used. Consultees were then asked to sign an information release form to allow the authors to include anonymously what they shared in our final deliverables. Additionally, a topic guide (see Supplementary File 2) was prepared for each category of consultee (e.g. clinician, youth worker, manager) to tailor each interview.

Analysis

Team members took notes during the interviews and after interviews held debriefing meetings where key themes and ideas were discussed. These were summarised in additional notes/memos and an inductive coding process of constant comparison (Glaser, 1965) was used to articulate key themes and similarities and differences in those by consultee category and in the context of the findings from the review.

WORKPLACE WELLNESS INSIGHT ANALYSIS REPORT: MINDFULNESS

Supplementary File 2: Topic Guide Example – Target Consultee: Clinician

1. What does it mean to be mindful?
   - How did you learn about mindfulness?
   - Where did you learn about mindfulness?

2. Do you currently use mindfulness in your practice? If so, how do you do this?
   - What mindfulness strategies do you use with your clients?
   - If yes, how effective do you find these strategies with young people?
   - Have there been advantages of using mindfulness in your practice? Any disadvantages?
   - How receptive are clients to mindfulness strategies?
   - Which therapeutic/treatment goals do you find mindfulness to be most helpful with? (anger management; stress management; conflict management; etc.)?
   - Has COVID-19 in any way affected your use of/success with mindfulness in your practice?

3. Do you think it would be possible to train young adults on mindfulness using your current strategies?
   - Have you observed any gender differences when it comes to responses to or receptiveness of mindfulness among your clients?
   - Are there ways in which mindfulness have been/can be adapted to prevalent local mental health needs among young Jamaican adults?
   - Are there any cultural attitudes/practices that may be barriers to the use of mindfulness in Jamaica? (such as religious beliefs, etc)?

4. Do you think it would be worthwhile to include mindfulness in programmes/conversations about workplace wellness?
   - Do you foresee any challenges with broaching the topic of mindfulness at the workplace?
   - Have you applied mindfulness techniques with anybody working in hospitality?

5. Do you know of other colleagues that use mindfulness in their practice?