



Systematic Review of Mindfulness-Based Cognitive Therapy and Mindfulness-Based Stress Reduction via Group Videoconferencing: Feasibility, Acceptability, Safety, and Efficacy

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Mindfulness-Based Cognitive Therapy (MBCT) and Mindfulness-Based Stress Reduction (MBSR) are effective in reducing distress among people with physical or mental health problems. However, implementation is limited by variable geographic provision, ability to travel, and the need for remote service delivery during the coronavirus disease 2019 (COVID-19) crisis. Integration with Internet-enabled technologies like videoconferencing potentially enhances access. This article reports a systematic review exploring the feasibility, acceptability, safety, and efficacy of delivering MBCT/MBSR by videoconferencing (MBCT/MBSR-VC). No restrictions were made about population or study design. Eleven online databases were searched and 10 studies met inclusion criteria. Narrative synthesis was used because of study heterogeneity. Articles featured physical health and nonclinical samples, but not mental health. Three studies had moderate-strong methodological quality. Results supported the feasibility and acceptability of MBCT/MBSR-VC. Considerations of safety were largely unreported. MBCT/MBSR-VC demonstrated medium positive effects on mental health outcomes compared with inactive controls ($d_s = 0.44$ – 0.71), and little difference compared with active controls like in-person delivery (all confidence intervals crossed zero). Evidence regarding mindfulness or self-compassion as potential mechanisms of action was inconclusive. Future implementation research should target mental health populations using noninferiority designs. Adapting MBCT/MBSR to remote delivery will require development of guidelines and training packages to ensure best practice in this medium and adherence to evidence-based MBCT/MBSR models.

Keywords: mindfulness, MBCT, MBSR, videoconferencing, systematic review

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Mindfulness is the psychotherapeutic orientation predicted to increase the most over the next decade (Norcross, Pfund, & Prochaska, 2013). The most studied mindfulness-based intervention (MBI; Chiesa, Fazio, Bernardinelli, & Morandi, 2017) is Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 1990), adapted by Segal, Williams, and Teasdale (2002) for patients with recurrent depression to become Mindfulness-Based Cognitive Therapy (MBCT). MBCT/MBSR is resource-intensive, however, and access is variable (Crane & Kuyken, 2013). Where MBCT/MBSR groups exist, access may be limited by rural location, perceived stigma, caring duties, or mobility difficulties (Schoultz, Macaden, & Hubbard, 2016). Some patients experience access issues because of “transport poverty” (Sustrans, 2012).

MBCT/MBSR has been integrated with online delivery methods (Spjorkerman, Pots, & Bohlmeijer, 2016). However, changes to the traditional protocols risk reducing efficacy: early evidence suggests that the number of sessions and their degree of guidance moderates effect sizes (Spjorkerman et al., 2016). Furthermore, fewer sessions limits opportunities for between-session mindfulness practice, which is positively related to outcome (Parsons, Crane, Parsons, Fjorback, & Kuyken, 2017).

Improving access to MBIs is challenging, but technologies like videoconferencing (VC) may provide a convenient, cost-effective solution. Most people have Internet access and use it daily (Office for National Statistics, 2018), and there is a public willingness to use video consultations with health professionals (NHS England, 2019). The cancellation of in-person treatments because of the coronavirus disease 2019 (COVID-19) crisis attests to the need to review evidence for VC integration.

Reviews of individual interventions by VC attest to its equivalence to in-person treatments: it is as effective (Backhaus et al., 2012; Chakrabarti, 2015; Drago, Winding, & Antypa, 2016), and the therapeutic alliance is preserved (Simpson & Reid, 2014). However, translating traditional 8-week group MBCT/MBSR to remote delivery presents unique challenges: sessions are long (2–2.5 hr), and as the central medium of effect is the skillful delivery of mindfulness practices and the guided inquiry that follows, synchronous communication with an experienced mindfulness instructor able to manage group dynamics remotely and technology is key.

Searches revealed no existing systematic reviews of MBCT/MBSR-VC. Five reviews of digitally delivered MBIs have evaluated diverse

technologies; they did not focus solely on MBCT/MBSR (Krolikowski, 2013; Russell, Ugalde, Milne, Austin, & Livingston, 2018; Sevilla-Llewellyn-Jones et al., 2018; Spjorkerman et al., 2016; Toivonen, Zernicke, & Carlson, 2017). All five touched on VC, but none examined issues specific to live VC groups, such as feasibility, acceptability, and safety. Given the 19% yearly increase in mindfulness studies (Chiesa et al., 2017) and rapid developments in VC technology, a systematic review focusing specifically on MBCT/MBSR-VC is timely.

Therefore, this article presents a systematic review of the literature evaluating the feasibility, acceptability, safety, and efficacy of MBCT/MBSR-VC. Data on mental health outcomes (self-reported anxiety, depression, or distress) will be extracted. Given evidence that mindfulness significantly mediates the effects of MBIs on mental health outcomes and that self-compassion also plays a role (Gu, Strauss, Bond, & Cavanagh, 2015), data pertaining to both will also be extracted. MBCT, MBSR, and their variants will be included because of their established evidence base.

Aim and Review Questions

This review aimed to describe current evidence about the feasibility, acceptability, safety, and efficacy of delivering MBCT/MBSR via group VC. The review questions were:

1. How feasible and acceptable is delivering group MBCT/MBSR-VC?
2. What technical considerations are necessary to ensure safe delivery of MBCT/MBSR-VC?
3. How efficacious is MBCT/MBSR-VC compared with non-VC MBIs and other control conditions (active and inactive) on mental health outcomes and potential mechanisms of action such as mindfulness and self-compassion?

Method

The review methods were established before its conduct and the protocol registered with PROSPERO, the International Register of Systematic Reviews (CRD42018081724). The scope and methods were adjusted when initial scoping searches revealed the limited nature of

the evidence. Reporting followed PRISMA guidelines (Moher, Liberati, Tetzlaff, & Altman, 2009).

Design

A mixed methods design was utilized and data extracted from quantitative, qualitative, and mixed methods studies was narratively synthesized (Popay et al., 2006).

Inclusion and Exclusion Criteria

Publications featuring adults participating in group MBCT/MBSR or variants delivered by videoconferencing were included. Only English language articles were searched because of resource limitations. Mindfulness practice and principles had to feature in at least 50% of sessions. Studies of interventions not explicitly based on MBCT/MBSR were excluded. Groups could consist of participants attending remotely, or mixed remote and in-person attendance. The location of the facilitator was not stipulated. Initial scoping searches revealed a modest body of literature and, therefore, no limit was made concerning population, setting, or design.

Search Strategy

Electronic searches of the peer reviewed and gray literature were conducted by the first author (Alesia Moulton-Perkins) using a combination of free text and MeSH headings to find synonyms of the terms MBCT, MBSR, mindful*, and videoconferencing in title and abstract (see [Online Supplemental Materials Resource 1](#)). Databases searched were: Web of Science (CORE Collection including conference proceedings), SCOPUS, PubMed, BNI, CINAHL, EMBASE, HBE, HMIC, PsycINFO, MEDLINE, and AMED. Searches were conducted on 27.03.2018 and then updated on 19.04.2019. In the interim the HBE database had ceased to be available through HDAS and, therefore, only articles to 27.03.2018 were included from this database. A final search was conducted on 23.11.2019. Publications from 1998 were included as this was the year when the first guidelines were published on videoconferencing (American Psychiatric Association, 1998). The International Trials Registry Platform was checked for studies registered between 2017 and 2019 but none met

inclusion criteria. Reference lists from published articles were also consulted. Where reported data was incomplete, study authors were contacted. Two authors responded, one of whom provided sufficient further data to calculate effect sizes.

Procedure

Records identified through database searching were independently double screened on title and abstract by two authors (Alesia Moulton-Perkins and Alex Jozavi). Full text articles were obtained and independently assessed for eligibility by Alesia Moulton-Perkins and Alex Jozavi. Data was extracted using a tailor-made form (see [Online Supplemental Materials Resource 2](#)) by a member of the research team and checked by another (Alesia Moulton-Perkins or Duncan Moulton). Data pertaining to effect size calculations and quality appraisal was independently extracted and completed in duplicate by Alesia Moulton-Perkins and Duncan Moulton. Where disagreements arose, these were resolved through discussion with reference to a third party (Clara Strauss and Kate Cavanagh).

Analytic Strategy

Data on populations, interventions, comparators, outcome, and the review questions were extracted, tabulated, and narratively synthesized to draw conclusions about the similarities and differences across studies. Where indices were unreported, these were calculated where possible. Feasibility was operationalized as the proportion of those approached who responded, were eligible, consented, and who were study completers (provided a complete dataset). Indices were calculated from the whole sample where a study was controlled and from the VC intervention where it was not. Acceptability was analyzed according to intervention completer rate (participants completing at least 50% of the intervention) and patient satisfaction. Safety indices were extracted using guidelines for delivery of VC mental health services (Luxton, Sirotnin, & Mishkind, 2010).

The Effective Public Health Practice Project (EPHPP) Quality Assessment Tool for Quantitative studies (Thomas, Ciliska, Dobbins, & Micucci, 2004) was used to appraise the methodological quality of the included studies, a tool deemed reliable (Armijo-Olivo, Stiles, Hagen, Biondo, & Cummings, 2012). Two raters independently completed

the table and any discrepancies were resolved to arrive at an agreed overall rating of “strong,” “moderate,” or “weak” for each article.

Outcomes pertaining to mental health (distress, anxiety, or depression), and potential mechanisms of action (mindfulness, self-compassion) were extracted. Mindfulness and self-compassion were considered potential mechanisms of action if they were shown to be impacted positively by the mindfulness intervention. No formal mediation analysis was conducted. Effectiveness was assessed by extracting relevant author-reported results showing statistically significant postintervention group differences in controlled studies or prepost improvement in uncontrolled studies. Where there were no significant differences, true null findings were not assumed unless studies used a noninferiority or equivalence study design.

In addition, individual study means, standard deviations, and *N*s were extracted and the Standardized Mean Difference (SMD) calculated separately for active controlled and inactive-controlled studies. Effect size *d* was calculated as the mean difference in postintervention scores between groups, divided by the pooled postintervention *SD*, using an online calculator (Lenhard & Lenhard, 2016). Effect size was interpreted as small, medium or large (*d* = 0.2, 0.5, or 0.8, respectively) according to Cohen's (1969) convention. Control conditions were categorized as active or inactive using the Cochrane handbook criteria (Higgins et al., 2019). To interpret nonsignificant effect sizes, 95% confidence intervals (CIs) were inspected. Where CIs crossed zero but were highly skewed around zero the possibility of lack of statistical power was considered. Because CIs represent not just a means of null hypothesis significance testing, but a “range of plausible values for the true effect” (Finch, Cumming, & Thomason, 2001, p. 204), CIs with a markedly asymmetric spread around zero were noted as evidence toward a possible effect requiring further research.

Finally, a “vote counting” approach (Thomas, O'Mara-Eves, Kneale, & Shemilt, 2017) was applied to results as a “descriptive tool” to summarize effectiveness across the two methods. Results were narratively synthesized in light of the quality appraisal using a positive deviance (Bradley et al., 2009) approach: studies with the best outcomes were identified and compared with those with the worst outcomes and shared features noted.

Results

In total, 1,716 records were identified through database searching, and another nine through hand searches of reference lists (see [Online Supplemental Materials Resource 3](#) for PRISMA diagram). After screening title and abstract and removing redundant records, 22 articles were assessed for eligibility on full text. Ten were excluded because they were not based on MBCT/MBSR or did not feature group videoconferencing (see [Online Supplemental Materials Resource 4](#) for full details of articles excluded). Twelve articles representing 10 empirical studies were selected for the review.

Study Characteristics

Selected characteristics of the included studies are summarized in [Table 1](#). Publication dates ranged from 2008 to 2019, with most 2014 or later. Included studies featured a total of 789 participants (median = 66.5). The majority focused on physical health populations, with the remainder covering nonclinical populations such as universities and the corporate sector. None targeted mental health populations.

Participants' mean ages ranged from 30 to 73. Most participants were female (range = 47–88%), although three studies did not report age and gender. None reported socioeconomic status, rural or urban residence, or transport poverty status. Regions represented were North America (*N* = 4), Australasia (*N* = 2), and Europe (*N* = 3), including one in the United Kingdom.

Comparators were utilized in the majority of studies: eight were controlled, of which four were randomised controlled trials (RCTs). Two studies compared MBCT/MBSR-VC to the same face-to-face (F2F) intervention. Two featured active control conditions (self-guided online MBI = 1; non-MBI = 1) and 6 inactive control conditions (Wait List Control [WLC] = 5; walking group = 1). Two studies featured both active and inactive controls.

Authors generally reported positive outcomes, with no statistically significant negative or adverse effects found. Of the seven comparisons of VC to non-MBI control (inactive or active), six reported statistically significant between-groups differences in favor of VC on at least some of the outcomes. The three studies comparing VC with a

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Table 1
Selected Characteristics of Included Studies

Study	Design	Population	VC intervention	Comparator	Outcomes: Between-group (within-group)		
					Positive difference favors VC (p < .05) (improvement)	No difference (p > .05) (nonjudge)	Negative difference favors control (p < .05) (deterioration)
Alkens et al. (2014)	RCT	U.S. Corporate employees	MBSR-VC N = 44	Inactive control: WLC N = 45	PSS FFMQ observe describe aware nonreact	FFMQ (nonjudge)	—
Bogosian et al. (2015)	RCT	U.K. Multiple sclerosis	MBCT-VC N = 19 (F = 47%)	Inactive control: WLC N = 21 (F = 62%)	GHQ HADS-D	HADS-A	—
Cavalera et al. (2019)	RCT	Italy Multiple sclerosis	M _{age} 53 MBSR-VC N = 54 (F = 67%)	M _{age} 51 Active non-MBI control: Self-guided online psychoed N = 67 (F = 62%)	HADS-D HADS-A	—	—
Farver-Vestergaard et al. (2018)	Pre-post mixed methods	Denmark COPD	M _{age} 42 MBCT-VC N = 8 (F = 50%)	M _{age} 43 —	—	HADS-tot	—
Gardner-Nix et al. (2008)	Quasi-Exp	Canada chronic pain	M _{age} 73 MBSR-VC N = 57 (F = 88%) M _{age} 54	Active control: MBSR-F2F N = 99 (F = 80%) M _{age} 51 Inactive control: WLC N = 57 (F = 75%) M _{age} 52	— SF-36-MCS	SF-36-MCS	—
Gardner-Nix et al. (2014)	Quasi-Exp	Canada chronic pain	MBSR mixed F2F and VC N = 60	Inactive control: WLC N = 59	SF-36-MCS	—	—

(table continues)

Table 1 (continued)

Study	Design	Population	VC intervention	Comparator	Outcomes: Between-group (within-group)		
					Positive difference favors VC ($p < .05$) (improvement)	No difference ($p > .05$) (deterioration)	Negative difference favors control ($p < .05$) (deterioration)
Johansson et al. (2015)	Quasi-Exp Mixed methods	Sweden	MBSR-VC	Active control: MBSR-F2F	—	SCS	—
Johansson and Bjuhr (2016)		TBI	$N = 13$ ($F = 85\%$) $M_{\text{age}} = 46$	$N = 12$ ($F = 92\%$) $M_{\text{age}} = 48$ Inactive control: Walking group $N = 9$ ($F = 67\%$) $M_{\text{age}} = 51$	—	CPRS-D CPRS-A SCS	—
Krägeloh et al. (2019)	Pre-post	New Zealand University students and staff	MBSR/MBCT-VC	N/A	BDI	CPRS-D CPRS-A BAI	—
			$N = 32$ ($F = 66\%$) $M_{\text{age}} = 30$		PANAS-N SCS FFMQ (total nonjudge)	PANAS-P FFMQ (aware describe nonreact observe)	—
Simmons and Redman (2018)	Quasi-Exp	Australia University students	MBSR/MBCT-VC	Active control: Self-guided MBI $N = 52^a$	—	MAAS	—
Zernicke et al. (2014, 2016)	RCT	Canada cancer	$N = 19^a$ MBSR-VC $N = 30$ ($F = 73\%$) $M_{\text{age}} = 58$	Inactive control: WLC $N = 32$ ($F = 72\%$) $M_{\text{age}} = 58$	POMS CSOSI FFMQ (aware)	FFMQ (observe describe nonjudge nonreact)	—

Note. Uncontrolled studies in italics. BAI = Beck Anxiety Inventory; BDI-II = Beck Depression Inventory-II; CSOSI = Calgary Symptoms of Stress Inventory; CPRS-A, D = Comprehensive Psychopathological Ratings Scale-Anxiety, Depression; F = female; F2F = face to face; FFMQ = Five Facet Mindfulness Questionnaire; GHQ = General Health Questionnaire; HADs-A, D, Tot = Hospital Anxiety and Depression Scale-Anxiety, Depression, Total; MAAS = Mindfulness Attention Awareness Scale; MBI = Mindfulness-Based Intervention; PANAS-P, A = Positive and Negative Affect Scale-Positive, Negative; POMS = Profile of Mood States; PSS = Perceived Stress Scale; Quasi-Exp = Quasi-experiment; SCS-SF = Self-Compassion Scale-Short Form; SF36-MCS = Short Form-36 - Mental Component Score; VC = Videoconference.

^a Figures not given by authors and, therefore, were calculated from proportions reported.

mindfulness control found no significant differences between groups, whether that was self-guided, or F2F. However, given none were designed to test noninferiority effects, we cannot assume this implies equivalence. Evidence regarding potential mechanisms of action (mindfulness or self-compassion) was inconclusive. For mindfulness, when VC was compared with a non-MBI control the results were contradictory: Zernicke et al. (2014) found no significant difference in four of the five FFMQ (Five Factor Mindfulness Questionnaire) subscales, whereas Aikens et al. (2014) found all but one significant. Given that Zernicke et al. (2014) was rated strong methodologically, greater confidence can be taken in their results. Self-compassion was measured in two studies: Johansson, Bjuhr, Karlsson, Karlsson, and Rönnbäck (2015) found no significant difference between VC and F2F MBSR or a walking group, while Krägeloh et al. (2019) found a difference favoring VC.

Intervention characteristics are described in Table 2. Six studies were based on MBSR, two MBCT and two mixed MBCT/MBSR. Three studies adhered to the original manual in terms of intervention length (Farver-Vestergaard et al., 2018; Johansson et al., 2015; Zernicke et al., 2014), the latter two featuring an online retreat. MBCT/MBSR often include a 1-day retreat during the 8-week course to give participants opportunity to deepen their mindfulness practice. Scant details were given about the online retreat other than stating it was held for a full day, and in the Johansson et al. (2015) qualitative evaluation that participants enjoyed it. Details regarding treatment integrity were also largely absent. Only Bogosian et al. (2015) monitored treatment integrity through listening to tapes in supervision. None of the studies used standardized tools such as the MBI:TAC (Mindfulness-Based Interventions: Teaching Assessment Criteria; Crane et al., 2013). Reporting of mindfulness practice, intended or actual, was incomplete or omitted in most cases, with only two studies reporting sufficient data to allow total recommended practice minutes to be calculated. Group sizes ranged from four to 22. Studies featuring the largest groups all followed a model whereby participants met as an in-person group while the facilitator joined remotely ($N = 3$). Study authors did not comment on how participants experienced these varying methods of delivery. Four studies failed to report group size.

Feasibility and Acceptability

Feasibility results are presented in Table 3. Zernicke and colleagues (2014) were unique in reporting feasibility as their primary outcome measure, with a priori criteria. They met their targets in all indices except study completion (missed by 2%). Only two studies reported sufficient data to be able to calculate the majority of feasibility indices, making inferences difficult to draw. Differences in study design and recruitment strategy led to large variations in response rates (10 to 75%). Eligibility rates followed a similar pattern, with recruitment strategies designed to achieve a more representative sample generally experiencing lower rates (e.g., Zernicke et al., 2014: 37%) than those studies drawing from a more selective, and arguably less representative pool of participants (e.g., Krägeloh et al., 2019: 99%). Consent rates varied from 17 to 93%, although this variation is probably best explained by differences in recruitment strategies and reporting. Finally, the rate of study completion (participants completing postintervention measures) ranged from 27 to 100%. Overall, however, study completion rates were high, with only three studies reporting rates below 75%.

Acceptability results are shown in Table 3. Intervention completion rates (participants receiving at least half the intervention) could not be calculated in four studies; the remaining six ranged from 67 to 100%. Four studies included formal participant satisfaction measures and one reported informal participant comments. Two studies reported participant satisfaction rates, with most recommending it to others and 75–100% remarking it was beneficial or met their expectations. Two studies specifically probed satisfaction with VC in their questionnaire wording, with only Farver-Vestergaard et al. (2018) complementing this quantitative data with a thematic analysis. Two themes were relevant to VC: “Practical aspects of attendance” and “Relating.” Positive experiences included attending from home and reduced travel. For example, one participant said, “I have been glad that it is home-based. Otherwise I wouldn’t have been able to participate” (p. 472). Some also felt the online nature of the group enhanced relating to others as it demanded more intense management of group dynamics, with one participant saying “Well the upside of using the tele-monitor . . . were that if someone raised their hand they got to say something. And it was not like

Table 2
Mindfulness by VC Intervention Characteristics

Study	MBI intervention		Technology		Location
	Model	Group format	Hardware and software	Technical problems and support	
Aikens et al. (2014)	MBSR	7 × 60 min Recommended total practice: In session: 420 min, home: 648 min (actual 720)	Company conference room with webinar broadcast screen VC software not stated	Not reported	Participants: Mixed F2F/VC Facilitator: Unclear Assumed clinically unsupervised location
Bogosian et al. (2015)	MBCT	8 × 60 min Group size max 5 Recommended total practice: In session: 120–160 min home: 420–940 min	Webcams and headset provided Skype	Problems: Some participants cited technical problems, for example, computer virus, stolen computer, problems with audio	Participants and facilitator: All separate remote locations Assumed clinically unsupervised location
Cavalera et al. (2019)	MBSR	8 sessions, length not reported	Personal PC	Problems: Average one lost connection per session but did not significantly impact on group activities or discussions	Participants and facilitator: All separate home-based locations Clinically unsupervised location
Farver-Vestergaard et al. (2018)	MBCT	Average group size 5 8 × 120 min	Skype VC-enabled touch screen computer	Support: 1:1 pregroup orientation	Participants and facilitator: All separate home-based locations Clinically unsupervised location
Gardner-Nix et al. (2008)	MBSR	Group size 4 Recommended total home practice: 980 min 10 × 120 min Group size 10–20	EWII Telecare Hospital-based VC hardware Ontario Telemedicine 384 kbit/s	Problems: Connection issues mentioned but not clarified how frequent they were. Not reported	Participants: Mixed F2F/VC Facilitator: Remote Assumed clinically supervised location
Gardner-Nix et al. (2014)	MBSR	12 sessions, length not reported Group size 12–22 Recommended total in session practice: 145 min 8 × 150 min + 1 day retreat	Hospital-based VC hardware Ontario Telemedicine Network Adobe Connect	Not reported	Participants: Mixed F2F/VC Facilitator: Remote Assumed clinically supervised location
Johansson et al. (2015)	MBSR	Actual home practice: 1,197 min		Not reported	Participants and facilitator: All separate remote locations Assumed clinically unsupervised location (table continues)

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Table 2 (continued)

Study	MBI intervention		Technology		Location
	Model	Group format	Hardware and software	Technical problems and support	
Krägeloh et al. (2019)	MBSR/ MBCT	6 × 90–110 min (session 1 F2F)	College-based conference room GoToMeeting	Support: Researcher and additional clinical psychologist present in person at all sessions	Participants: F2F Facilitator: Separate remote location Clinically supervised location
		Group size 15–17 Recommended total home practice: 450 min (actual 175 min) 4 × 90 min			
Simmons and Redman (2018)	MBSR/ MBCT		Adobe Connect	Support: Online forum Problems: Some participants did not have microphones and this limited discussion	Not reported Assumed clinically unsupervised location
Zernicke et al. (2014, 2016)	MBSR	8 × 120 min sessions + 6 hr retreat	Webcams and headset provided	Support: 1:1 pregroup orientation + continuous live technical support	Participants and facilitator all separate remote locations Assumed clinically unsupervised location
		Group size 4–11 Recommended total home practice: 2,205 min (actual 1050 min)	eMindful		

Table 3
Feasibility and Acceptability

	Feasibility rates				Acceptability	
	Response	Eligibility	Consent	Study completion	Intervention completers	Participant satisfaction
7.94 (4.22) 69Study						
Aitkens et al. (2014)	23%	Unable to calculate	Unable to calculate	87%	77%	Average satisfaction ratings 87%
Bogosian et al. (2015)	70%	46%	93%	90%	95%	Not reported
Cavalera et al. (2019)	Unable to calculate	73%	58%	98%	Unable to calculate	Not formally collected but spontaneous positive comments. Some organized F2F group after course.
Farver-Vestergaard et al. (2018)	Unable to calculate	Unable to calculate	17%	100%	100%	Positive comments: Reduced travel. Mixed comments on whether relating was enhanced or decreased. Therapeutic relationship: Scores similar F2F and VC.
Gardner-Nix et al. (2008)	Unable to calculate	Unable to calculate	77%	51%	Unable to calculate	Not reported
Gardner-Nix et al. (2014)	Unable to calculate	Unable to calculate	97%	Unable to calculate	68%	Not reported
Johansson et al. (2015)	75%	Unable to calculate	75%	89%	Unable to calculate	Most satisfied. Some refused allocation to VC because they did not want to attend an internet group or could not use computer for long periods. All remained awake despite mental fatigue.
Johansson and Bjühr (2016)						
Krögeloh et al. (2019)	Unable to calculate	99%	21%	52%	67%	Not reported
Simmons and Redman (2018)	Unable to calculate	Unable to calculate	44%	27%	Unable to calculate	Satisfaction for the VC group aggregated with the self-guided group so unable to assess.
Zernicke et al. (2014)	10%	37%	93%	82%	83%	100% satisfied, 49% met 51% exceeded expectations; 98% recommend it to others

the same people talked all the time, which is often the case on courses like these (p. 472).” Negative relational impacts of VC were focused on technical difficulties. Some participants felt this created a barrier to feeling safe enough to disclose personal experiences and feelings.

Safety

VC-specific safety issues were underreported (see [Online Supplemental Materials Resource 5](#)). Preliminary planning was better reported than other safety indices like emergency planning, adverse events, deterioration or data security, and privacy issues. About a third of studies provided precourse technical instruction, personal equipment, or featured clinic-based VC systems. Three did not report whether equipment was provided and one stipulated that participants should provide their own. At least two studies took place in “clinically unsupervised” ([Luxton et al., 2010](#)) locations, without direct access to clinical support (see also [Table 2](#)); four further studies did not explicitly state the location of participants. [Krägeloh et al. \(2019\)](#) reported that participants had in-person access to a clinical psychologist and [Gardner-Nix, Backman, Barbati, and Grummitt \(2008, 2014\)](#) used a telemedicine link from participants’ local hospitals. Of the six locations known or assumed to have been clinically unsupervised, only two reported providing ongoing technical support. None of the studies mentioned VC-specific good practice guidelines or facilitator training in conducting psychological interventions online. Of these technological details, the most comprehensively reported was VC platform (see [Table 2](#)), with all but one study naming it. Few studies reported on frequency of technical problems, with only one quantifying it ([Cavalera et al., 2019](#)). Technical support was provided in four studies, although only [Zernicke et al. \(2014\)](#) indicated it was continuous and live.

None of the studies reported emergency plans for supporting remote participants. Adverse events such as technical barriers to participation were cited in three studies. [Farver-Vestergaard et al. \(2018\)](#) reported that one participant suggested the provision of a hotline to contain worries at the end of the session or in the event of technical failure. This was also the only study to mention a significant deterioration in one of their participants. Data security and privacy issues were almost entirely unaddressed: only [Zernicke et al. \(2014\)](#) described procedures to

ensure that only approved group members could attend.

Study Quality

Study quality was rated using [Thomas and colleagues’ \(2004\)](#) EHPP tool (see [Online Supplemental Materials Resource 6](#) for quality table and breakdown of ratings). Two of the RCTs were rated as “Strong” and one as “Moderate.” All other studies were rated as “Weak.” Selection bias regarding recruitment method and lack of randomized controls compromised study quality in most cases.

Efficacy

A meta-analysis of study outcomes was not conducted because of study heterogeneity. Between-groups postintervention effect sizes for the three studies with active controls (see [Table 4](#)) were statistically nonsignificant (95% CIs crossing zero) for all outcomes except the depression subscale of the Hospital Anxiety and Depression Scale (HADs), where [Cavalera et al.’s \(2019\)](#) MBSR-VC was superior to a self-guided non-MBI psychoeducation intervention with a small effect ($d = 0.40$). Neither of the studies comparing VC to F2F found statistically significant differences. These findings cannot be regarded as conclusive as in most cases the 95% CIs crossed zero asymmetrically in favor of the VC group, which could indicate lack of statistical power. Given that none of the included studies conducted noninferiority comparisons between MBCT/MBSR-VC and non-VC MBIs, we have not analyzed them separately from comparisons with active controls.

Of the four studies with inactive comparators (see [Table 5](#)) all found small to medium, or medium effect size differences ($d = 0.44–0.71$) favoring VC on most distress measures, although not on the HADs anxiety subscale and the General Health Questionnaire in [Bogosian et al.’s \(2015\)](#) study. Results evidencing mindfulness as a potential mechanism of action were contradictory: [Aikens et al. \(2014\)](#) found a large effect on the FFMQ observe subscale and medium effects on the rest, while for [Zernicke et al. \(2014\)](#) confidence intervals for all subscales of the FFMQ crossed zero, suggesting no impact of the VC-MBI on this hypothesized mechanism of action. The evidence for self-compassion outcomes was also inconclusive: although confidence intervals on self-compassion crossed zero

Table 4
Mental Health Outcomes and Potential Mechanisms of Action for Face to Face MBCT/MBSR and Active-Control Conditions

Study	Design	Measure	VC intervention						Non-MBI control						Face to face MBCT/MBSR control						SMD	
			Pre		Post		Pre		Post		Pre		Post		Pre		Post					
			<i>M</i> (<i>SD</i>)	<i>N</i>	<i>M</i> (<i>SD</i>)	<i>N</i>	<i>M</i> (<i>SD</i>)	<i>N</i>	<i>M</i> (<i>SD</i>)	<i>N</i>	<i>M</i> (<i>SD</i>)	<i>N</i>	<i>M</i> (<i>SD</i>)	<i>N</i>	<i>M</i> (<i>SD</i>)	<i>N</i>	<i>M</i> (<i>SD</i>)	<i>N</i>	<i>d</i>	95% CI		
Cavalera et al. (2019)	RCT	HADS A	7.94 (4.22)	69	6.19 (3.53)	69	6.84 (3.41)	70	6.80 (3.83)	70	0.17	[-0.17, 0.50]	—	—	—	—	—	—	—			
Gardner-Nix et al.	Quasi-Exp	HADS D	4.69 (3.47)	69	3.64 (2.91)	69	4.66 (3.24)	70	4.92 (3.52)	70	0.40	[0.06, 0.73]	—	—	—	—	—	—	—			
		SF-36 MCS	34.3 (12.6)	57	38.5 (12.9)	40	—	—	—	—	—	—	—	34.8 (13.2)	99	38.7 (13.2)	50	0.02	[-0.40, 0.43]			
(2008)	Quasi-Exp	CPRS-D	6.6 (2.7)	16	5.2 (2.6)	13	—	—	—	—	—	—	—	—	—	—	—	—	—			
Johansson et al.		CPRS-A	8.2 (2.3)	16	6.0 (2.6)	13	—	—	—	—	—	—	—	8.3 (3.5)	12	7.4 (4.9)	12	0.57	[-0.23, 1.37]			
(2015)		SCS	SCS	36.8 (7.1)	16	39.9 (7.0)	13	—	—	—	—	—	—	36.2 (11.6)	12	40.3 (11.1)	12	0.04	[-0.74, 0.83]			

Note. Measures in italics higher score = less distress/disability. All measures positive *d* favors intervention (except SCS). SMD calculated postintervention between-groups; CPRS-D, A = Comprehensive Psychopathological Rating Scale, Depression, Anxiety; HADS-A, D = Hospital Anxiety and Depression Scale, Anxiety, Depression; Quasi-Exp = Quasi-experiment; SCS = Self-Compassion Scale; SF36 MCS = Short Form 36 Mental Component Score; SMD = Standardized Mean Difference; CI = confidence interval.

when VC was compared with F2F MBSR or a walking group by Johansson et al. (2015), the sample size was very small and, therefore, should be interpreted with caution.

Discussion

This review aimed to describe the current evidence for the feasibility, acceptability, safety, and efficacy of MBCT/MBSR-VC. We identified 10 studies, including five new studies not found in previous reviews. MBCT/MBSR-VC appears effective for reducing psychological distress compared with inactive controls, with medium effect sizes evidenced. Effectiveness compared with active controls was less clear however, as were any effects on potential mechanisms of action. No studies were sufficiently powered to conduct noninferiority analyses comparing MBCT/MBSR-VC to in-person treatment. Drawing firm conclusions about feasibility and acceptability was hampered by lack of reporting and general low study quality. However, in the three studies that were of strong/moderate quality, results were promising, with high participant satisfaction and intervention completion rates. We were unable to draw conclusions about safety as few studies reported on adverse events or data security-privacy issues. Nevertheless, we believe the preliminary evidence for MBCT/MBSR-VC effectiveness recommends it as a remote alternative for people currently denied in-person treatment by the COVID-19 crisis.

Characteristics of Included Studies

We found that physical health conditions among a largely female population were most frequently studied, echoing other mindfulness studies (Bodenlos, Strang, Gray-Bauer, Faherty, & Ashdown, 2017). The most common intervention was MBSR, followed by adapted combined MBCT/MBSR, and the least common traditional MBCT. This is perhaps not surprising given MBSR was originally developed to help people cope with illness and pain. However, there is clear gap in the literature for VC delivery in mental health settings. Reporting of adherence and treatment integrity was largely absent.

None of the studies featured an average age below 30. This profile challenges assumptions about digital interventions suiting a young adult demographic and suggests that age may not be a

Table 5
Mental Health Outcomes and Potential Mechanisms of Action for Inactive Control Conditions

Study	Design	Measure	VC intervention				Control				SMD	
			Pre <i>M</i> (<i>SD</i>)	Pre <i>N</i>	Post <i>M</i> (<i>SD</i>)	Post <i>N</i>	Pre <i>M</i> (<i>SD</i>)	Pre <i>N</i>	Post <i>M</i> (<i>SD</i>)	Post <i>N</i>	<i>d</i>	95% CI
Aikens et al. (2014)	RCT	PSS	24.46 (6.29)	44	18.00 (7.01)	44	24.76 (8.16)	45	23.32 (8.45)	45	0.69	[0.26, 1.11]
		FFMQ <i>awa</i>	24.11 (5.01)	44	27.67 (5.33)	44	23.96 (6.14)	45	24.29 (6.35)	45	-0.58	[-1.00, -0.15]
		FFMQ <i>obs</i>	23.25 (5.54)	44	28.81 (5.44)	44	24.22 (5.46)	45	23.91 (5.90)	45	-0.86	[-1.30, -0.43]
		FFMQ <i>des</i>	26.43 (4.73)	44	28.72 (6.15)	44	25.29 (5.72)	45	25.48 (4.79)	45	-0.59	[-1.01, -0.16]
Bogosian et al. (2015)	RCT	FFMQ <i>nrea</i>	21.14 (4.14)	44	24.17 (4.51)	44	21.31 (4.52)	45	21.43 (4.10)	45	-0.64	[-1.06, -0.21]
		FFMQ <i>njud</i>	28.50 (6.14)	44	30.33 (5.89)	44	27.13 (5.40)	45	27.98 (5.86)	45	-0.40	[-0.82, 0.02]
		GHQ	16.10 (6.35)	19	11.43 (4.55)	17	17.29 (4.89)	21	14.87 (5.94)	19	0.65	[-0.03, 1.32]
		HADS-A	6.96 (3.72)	19	5.48 (2.75)	17	6.98 (3.11)	21	6.58 (3.42)	19	0.35	[-0.31, 1.01]
Gardner-Nix et al. (2008)	Quasi-Exp	HADS-D	6.24 (3.51)	19	5.12 (3.20)	17	7.20 (3.35)	21	7.63 (3.96)	19	0.69	[0.02, 1.37]
		SF36 MCS	34.3 (12.6)	57	38.5 (12.9)	40	33.2 (11.6)	59	33.2 (11.6)	53	-0.44	[-0.85, -0.02]
		CPRS-D	6.6 (2.7)	16	5.2 (2.6)	13	6.9 (2.9)	10	6.9 (2.9)	9	0.62	[-0.2, 1.49]
		CPRS-A	8.2 (2.3)	16	6.0 (2.6)	13	5.9 (2.8)	10	4.5 (2.8)	9	-0.56	[-1.43, 0.31]
Zernicke et al. (2014)	RCT	SCS	36.8 (7.1)	16	39.9 (7.0)	13	36.0 (11.8)	10	38.6 (10.0)	9	-0.16	[-1.01, 0.70]
		POMS	37.43 (35.69)	30	17.16 (30.72)	30	42.16 (27.40)	32	35.69 (31.52)	32	0.60	[0.09, 1.10]
		CSOSI	59.70 (32.52)	30	36.83 (21.87)	30	66.10 (33.77)	32	58.72 (37.38)	32	0.71	[0.20, 1.22]
		FFMQ <i>awa</i>	27.17 (7.67)	30	30.21 (5.00)	30	27.78 (6.05)	32	27.80 (5.64)	32	-0.45	[-0.96, 0.05]
Johansson et al. (2015)	Quasi-Exp	FFMQ <i>obs</i>	24.53 (6.29)	30	26.29 (5.02)	30	24.88 (7.23)	32	26.34 (6.06)	32	0.01	[-0.49, 0.51]
		FFMQ <i>des</i>	26.17 (6.20)	30	28.13 (6.03)	30	23.81 (7.28)	32	25.53 (6.73)	32	-0.41	[-0.91, 0.10]
		FFMQ <i>nrea</i>	19.73 (4.68)	30	22.13 (3.71)	30	18.75 (4.07)	32	20.84 (4.81)	32	-0.30	[-0.80, 0.20]
		FFMQ <i>njud</i>	26.63 (7.06)	30	29.50 (5.68)	30	28.03 (7.12)	32	28.84 (5.86)	32	-0.11	[-0.61, 0.38]

Note. CPRS-D, A = Comprehensive Psychopathological Rating Scale, Depression, Anxiety; HADS-A, D = Hospital Anxiety and Depression Scale, Anxiety, Depression; Quasi-Exp = Quasi-experiment; SCS = Self-Compassion Scale; SF36 MCS = Short Form 36 Mental Component Score; SMD = Standardized Mean Difference; CI = confidence interval; RCT = randomised controlled trials; PSS = Perceived Stress Scale; FFMQ = Five Facet Mindfulness Questionnaire; GHQ = General Health Questionnaire; POMS = Profile of Mood States; CSOSI = Calgary Symptoms of Stress Inventory.

barrier to health care technology (Banbury, Nancarrow, Dart, Gray, & Parkinson, 2018). We were unable to clarify participants' urban or rural location or transport poverty status. High income countries were overrepresented, although digital technologies are increasingly being recognized as a key to addressing the mental health needs of low- and middle-income countries (Naslund et al., 2017).

Feasibility and Acceptability

Given variable reporting of feasibility indices, study completion rates were the clearest indicator of feasibility of MBCT/MBSR-VC as they were calculable for all but one study. The only study to set a priori benchmarks was Zernicke et al. (2014). Using their 85% study completion rate target as a guide, it is promising that five of the nine studies reporting sufficient data met the target, with a sixth missing by a small margin. Using a positive deviance approach to identify characteristics of the highest performers, we found all had interventions of at least eight sessions and smaller group sizes. Perhaps surprisingly, in all five studies the facilitator and all participants were in separate places, in contrast to the mixed nature of groups in other studies.

Given few studies specifically probed VC-specific participant satisfaction and nearly half failed to report intervention completion rates, only tentative conclusions can be made about acceptability. The data that is reported suggests good satisfaction and intervention completion. Where dissatisfaction occurred, it was generally connected to technical difficulties. These results reflect those of Banbury et al. (2018), who found that patients in nearly all studies valued being able to attend the group from home and otherwise would not have been able to participate.

Qualitative data was scant with only one study giving a rich picture of participants' experiences of MBCT/MBSR-VC (Farver-Vestergaard et al., 2018). None of the studies probed how participants found meditating in front of a screen. The extent to which technical issues like distortions in sound quality impacted on this experience is also unknown.

Safety

Safety reporting was markedly absent. None of the studies described facilitators being trained in

VC groups or referred to practice guidelines. This is concerning, considering the first guidelines on delivering mental health services by VC were published 10 years before the oldest study in our review (American Psychiatric Association, 1998). While none of the studies involved a mental health population, facilitators may be ill-equipped to manage sessions safely without proper training and guidance, not least situations of lost connections and people becoming distressed or feeling abandoned (Luxton et al., 2010).

Reporting of adverse events was rare, but only three studies appeared even to collect this data. Managing risk at a distance in a group VC setting was largely unexplored. Sansom-Daly, Wakefield, McGill, and Patterson (2015) emphasize the importance of developing safety protocols and links with local services when working with distressed patients at a distance. Privacy concerns were not raised by participants in any of the studies, although it is not clear whether this was because researchers failed to ask, or participants were genuinely unconcerned. Banbury et al.'s (2018) systematic review of home-based VC support groups showed few patients were concerned about others seeing into their homes. Because of limited reporting, few conclusions can be drawn about the technical aspects of safe MBCT/MBSR-VC delivery. We do not know how frequent technical difficulties were, typical bandwidths, levels of technical support, or the impact of facilitator and participant location. A third of studies failed to describe the equipment used, the group size, or other potentially important factors impacting call quality and, therefore, participant experience. For MBI-VC provision in response to COVID-19, we recommend usual risk procedures for F2F groups combined with facilitators having appropriate digital competencies (Pote et al., 2020).

Efficacy

The evidence for efficacy of MBCT/MBSR-VC is limited by the small number of studies and their inconsistent quality. The strongest evidence came from the four waitlist-controlled studies, in which five of the seven subscales measuring mental health outcomes showed statistically significant medium effect sizes favoring MBCT/MBSR-VC. Three of these effects were found in the two higher quality studies (Bogosian et al., 2015; Zernicke et al., 2014), increasing the confidence we can have in these results. Nevertheless, it should be noted that

the three studies measuring anxiety failed to find statistically significant effects, echoing a meta-analysis which found effects of MBIs for depression but not for anxiety (Strauss, Cavanagh, Oliver, & Pettman, 2014).

Regarding active controls, there were no statistically significant differences found in studies comparing VC to face-to-face mindfulness groups. A small significant effect on depression was found when MBCT/MBSR-VC was compared with self-guided psychoeducation (Cavalera et al., 2019). However, only further research using robustly powered noninferiority designs will be able to establish this definitively.

The two studies reporting mindfulness outcomes found contradictory results: Aikens et al. (2014) found significant differences between VC and control, whereas Zernicke et al. (2014) did not. Author-reported prepost intervention results for the majority of mindfulness subscales were nonsignificant. This mirrors the heterogeneity found in the literature. Visted, Vøllestad, Nielsen, and Nielsen's (2015) systematic review found a small effect of MBIs on mindfulness compared with a WLC. However, this obscured the fact that seven studies supported it and nine did not. Also, in a meta-analysis of mediation studies of MBCT and MBSR, Gu et al. (2015) found moderate but consistent evidence supporting mindfulness as a mediator of clinical outcomes.

Self-compassion featured in two studies included in our review. In the one controlled study (Johansson et al., 2015) there was no difference between the three groups (VC, F2F, and walking) on author-reported significance testing or SMDs calculated here. Gu et al.'s (2015) meta-analysis identified only three studies measuring self-compassion, just one supporting compassion as a mediator. None of our included studies conducted mediation analyses involving mindfulness or self-compassion outcomes and, therefore, no conclusions regarding mechanisms of action can be drawn.

In summary, the evidence found in the present study lends tentative support to the efficacy of delivering mindfulness by VC. There was no evidence of deterioration and there were promising signs that VC groups may prove not to be inferior to traditional F2F MBCT/MBSR. Given that few studies were randomized or of moderate or strong methodological quality, our conclusions must be tentative. Given the lack of common measures of mindfulness or self-compassion, no conclusions

about proposed mechanisms of action can be drawn.

Strengths and Limitations

This is the first review to focus on MBCT/MBSR by VC. Although the limited and heterogeneous evidence base precluded meta-analysis, methods used for conducting this narrative synthesis were rigorous. Following good practice recommendations for systematic reviews (Karlsson & Bergmark, 2015) we separately extracted SMDs for the WLC and active controls. We applied a robust, flexible quality appraisal tool (Armijo-Olivo et al., 2012) allowing appraisal of a range of quantitative designs. However, this meant the strengths of the qualitative analysis in Farver-Vestergaard et al.'s (2018) mixed methods study were not recognized in the quality appraisal.

We were unable to aggregate data and instead extracted individual study SMDs within a narrative synthesis. Narrative synthesis, and vote counting particularly have been criticized for lacking transparency and introducing bias (Valentine et al., 2017). However, when used as an initial description of patterns across studies, vote-counting has defenders (Popay et al., 2006). In the present review vote-counting was not used in isolation and conclusions were triangulated with the extraction of SMDs, which control for differing sample sizes. It has been argued that narrative synthesis is a realistic and useful method when limited evidence is available, provided the aims of the review are adjusted and the claims made tentative (Thomas et al., 2017).

Further Research

Clearly MBCT/MBSR-VC groups are underresearched. We were limited in our ability to draw conclusions regarding implementation. Only two studies compared videoconference-delivered mindfulness to the same dose of face-to-face mindfulness and neither measured adherence. Future implementation research should investigate the comparability of the two modes of delivery using a noninferiority randomized controlled design. This should be informed by implementation science theoretical frameworks, such as the patient and provider barriers and facilitators to health care access presented by O'Connor et al.'s (2016) digital model. Furthermore, intention to treat analyses

should be used, something rarely or even incorrectly used by study authors in the present review. Gold standard treatments should be used as only one study in the present review featured full MBSR (Johansson et al., 2015) and none used classic MBCT. Given that MBCT is an evidence-based treatment for recurrent depression, there is a clear imperative for studying its delivery by VC for this population.

As yet the cost effectiveness of implementing MBCT/MBSR-VC is unknown. The need for technical support and potential need to provide equipment to participants to ensure social inclusion and equality may mean savings are reduced. Before services seek to implement MBCT/MBSR-VC, a full economic evaluation should be conducted to ensure financial viability.

Future research should follow telehealth research reporting guidelines (Abel, Glover, Brandt, & Godleski, 2017) and study technology-specific aspects of VC mindfulness to better understand factors influencing engagement and effectiveness (Russell et al., 2018). This may include software and hardware used, Internet bandwidth, location of participants and facilitator and rural or urban setting. The needs of older clients should be considered, as age-related cognitive and sensory functioning changes may impact telemedicine engagement (Stronge, Rogers, & Fisk, 2007). It is concerning that the present studies paid so little attention to the equipment used. Future trials should consult a diverse range of service users regarding optimum equipment. Equipment should be offered, as Farver-Vestergaard et al. (2018) did, to promote social inclusion and equality of access.

Given the importance of minimizing barriers to participants' mindfulness practice and group communication, trouble-free connections are essential. Facilitators should not provide live support during calls, as this distracts from supporting others. Banbury et al. (2018) describe how good technical support can significantly ease participants' anxiety. This will be especially important as researchers begin to work with mental health populations.

A better understanding of how cohesion in groups influences the effectiveness of VC group therapy is needed. Some evidence suggests VC group interactions may remain superficial because of participants' difficulty trusting each other (Kozlowski & Holmes, 2014). Measures such as the Group Therapy Alliance Scale (Pinsof & Catherall, 1986) would differentiate alliance to group and to leader.

Process variables such as therapeutic alliance and group cohesion may be influenced by VC telepresence. Bouchard, Robillard, Marchand, Renaud, and Riva (2007) found the feeling of presence predicted the strength of the therapeutic alliance over a course of CBT for panic disorder. Better image and sound quality may promote greater presence (Lozano et al., 2015) and, therefore, the choice of VC platform and the Internet connection quality will be important to consider carefully in future studies. Similarly, training programs for online mindfulness instructors should be developed based on good practice guidelines to meet the challenges of managing group dynamics remotely. An adapted form of the MBI-TAC (Crane et al., 2013) could be developed from the practice of innovatory programs (e.g., Meissner, 2017; Sansom, Crane, Karunavira Koerbel, & Yian-gou, 2020) to assess adherence and teacher competency when delivering MBSR/MBCT by VC. Recent calls for a digitally trained mental health workforce (Foley & Woollard, 2019) make this need clear.

The potential for harm was not addressed in the majority of included studies, yet literature suggests this is present across all populations, even in F2F settings (Baer, Crane, Miller, & Kuyken, 2019). Safety should be a key consideration when working via VC with clinically unsupervised participants calling in from home. Risk management protocols for VC, like those produced by professional bodies such as the American Psychological Association (2013) need to be urgently developed and evaluated so that potential risks can be mitigated (e.g., clients with suicidal risk having preestablished written instructions for seeking help). Safety planning should be prioritized in any future trial, considering technology-specific issues in risk assessment and emergency planning.

In conclusion, this review has provided an important overview of the work conducted thus far on delivering MBCT/MBSR via VC. Although the evidence provides preliminary support for the feasibility, acceptability, and efficacy of disseminating MBCT/MBSR by VC, it has also highlighted significant gaps in our knowledge in all these domains, not least safety and the long term effects of MBSR/MBCT-VC. Given drivers such as the United Kingdom Mindfulness All-Party Parliamentary Group's (2015) recommendation that the provision of MBCT be radically upscaled, the growing call from patients for convenient digital options (Seres,

2015), and the prediction that online clinics will soon be the norm (Fairburn & Patel, 2017), the need to develop a robust base of evidence and clinical policy is clear and urgent.

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Revisión sistemática de la terapia cognitiva basada en la atención plena y la reducción del estrés basada en la atención plena mediante videoconferencia grupal: Viabilidad, aceptabilidad, seguridad y eficacia

La terapia cognitiva basada en la atención plena (MBCT) y la reducción del estrés basada en la atención plena (MBSR) son efectivas para reducir la angustia entre las personas con problemas de salud física o mental. Sin embargo, la implementación está limitada por la provisión geográfica variable, la capacidad de viajar y la necesidad de la prestación de servicios remotos durante la crisis de la enfermedad del coronavirus 2019 (COVID-19). La integración con tecnologías habilitadas para Internet como las videoconferencias potencialmente mejora el acceso. Este artículo informa una revisión sistemática que explora la viabilidad, aceptabilidad, seguridad y eficacia de administrar MBCT / MBSR por videoconferencia (MBCT / MBSR-VC). No se hicieron restricciones sobre la población o el diseño del estudio. Se realizaron búsquedas en once bases de datos en línea y diez estudios cumplieron los criterios de inclusión. Se utilizó la síntesis narrativa debido a la heterogeneidad del estudio. Los artículos presentaban muestras no clínicas de salud física, pero no de salud mental. Tres estudios tuvieron una calidad metodológica moderada-fuerte. Los resultados apoyaron la viabilidad y aceptabilidad de MBCT / MBSR-VC. Las consideraciones de seguridad no se informaron en gran medida. MBCT / MBSR-VC demostró efectos positivos medios en los resultados de salud mental en comparación con los controles inactivos (ds 0,44 –0,71) y poca diferencia en comparación con los controles activos como la entrega en persona (todos los intervalos de confianza cruzaron cero). La evidencia con respecto a la atención plena o la autocompasión como posibles mecanismos de acción no fue concluyente. La investigación de implementación futura debe dirigirse a las poblaciones de salud mental utilizando diseños de no inferioridad. La adaptación de MBCT / MBSR a la entrega remota requerirá el desarrollo de pautas y paquetes de capacitación para garantizar las mejores prácticas en este medio y el cumplimiento de los modelos MBCT / MBSR basados en evidencia.

mindfulness, MBCT, MBSR, videoconferencia, revisión sistemática

通过小组视频会议对基于正念的认知疗法和基于正念的压力减轻进行系统评价：可行性，可接受性，安全性和有效性

基于正念的认知疗法 (MBCT) 和基于正念的压力减轻 (MBSR) 可以有效减少身体或精神健康问题患者的困扰。但是，实施过程受到可变的地理区域，旅行能力以及在2019年冠状病毒病 (COVID-19) 危

机期间需要远程提供服务的限制。与支持Internet的技术（如视频会议）的集成可能会增强访问权限。本文报告了系统的综述，探讨了通过视频会议（MBCT / MBSR-VC）交付MBCT / MBSR的可行性，可接受性，安全性和有效性。对人口或研究设计没有任何限制。搜索了11个在线数据库，有10项研究符合纳入标准。由于研究的异质性，使用了叙事合成。文章以身体健康和非临床样本为特色，但没有精神健康。三项研究的方法学质量中等至强。结果支持了MBCT / MBSR-VC的可行性和可接受性。安全方面的考虑基本上没有报告。MBCT / MBSR-VC与非活动对照组相比，对心理健康结局表现出中等积极的影响（ ds 0.44 –0.71），与亲自分娩等活动对照组相比，差异很小（所有置信区间都为零）。关于正念或自我同情作为潜在作用机制的证据尚无定论。未来的实施研究应使用非自卑性设计针对心理健康人群。要使MBCT / MBSR适应远程交付，将需要制定指导原则和培训包，以确保在这种介质中的最佳实践并遵守循证MBCT / MBSR模型。

正念, MBCT, MBSR, 视频会议, 系统评价

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