Mindfulness (2022) 13:801–820
https://doi.org/10.1007/s12671-021-01799-y

REVIEW

Mindful Parent Training for Parents of Children Aged 3–12 Years with Behavioral Problems: a Scoping Review

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Accepted: 22 November 2021 / Published online: 8 January 2022

Abstract

Objectives While mindfulness-based parenting programs (MPPs) are increasingly popular for reducing child behavior problems, the evidence for the advantages of MPP over existing behavioral parent training is unclear. Existing systematic reviews have largely excluded the breadth of MPP protocols, including those that integrate behavioral skills components. Therefore, a scoping review was conducted to map the nature and extent of research on MPPs for parents of children aged 3 to 12 years with behavioral problems.

Methods PRISMA-ScR guidelines were used to conduct an encompassing peer literature review of cross-disciplinary databases. Studies were included if they reported mindfulness interventions for parents of children aged between 3 and 12 years with externalizing behavior problems and had an outcome measure of child behavioral problems that could be represented as an effect size. Randomized controlled trials as well as quasi-experimental, pre-post studies and unpublished dissertations were included.

Results Sixteen studies met the inclusion criteria ($N = 1362$). The majority of MPPs delivered mindfulness adapted to parenting based on the Bögels' protocol within clinical settings. There was a dearth of fully integrated mindfulness and behavioral programs. MPPs generally produced pre-to-post-intervention improvements with small effect sizes across child behavior and parent style, stress, and mindfulness measures. Examining longer follow-up periods compared to pre-intervention, effects reached a moderate size across most outcome measures.

Conclusions MPPs continue to show promise in improving child behavior and parental mindfulness, well-being, and style. Further research is needed to determine how to best leverage the advantages of mindfulness in augmenting the well-established effectiveness of behavioral programs.

Keywords Mindfulness · Parenting · Scoping review · Behavior · Effectiveness

Despite advances in education and social healthcare over the past 50 years, one in eight children experience a mental health problem during childhood, with externalizing behavioral disorders representing the most common diagnosis for children aged 3–12 years (Pilling et al., 2013; Polanczyk et al., 2015). Without beneficial intervention, roughly half of these children develop significant problems which persist into adulthood, including the associated economic and societal burden (Farrington, 2007; Fergusson, 2005; Scott et al., 2001). Behavioral parent training (BPT) has garnered overwhelming support since the 1970s as the most effective intervention for children with behavioral problems (Kaminski & Claussen, 2017; Michelson et al., 2013). Group BPT programs such as Incredible Years and Triple P have been disseminated around the globe, with reach into 26 countries across 25 languages and have over 200 randomized controlled trials to support their effectiveness (Sanders et al., 2014; Webster-Stratton & Reid, 2018). Unfortunately, parental negative attributions and mental illness often prevent engagement and perseverance with well-proven behavioral techniques, contributing to a drop-out rate of up to 50% (Chacko et al., 2016). For example, negative attributions such as "my child is evil" or "it's hopeless, nothing works" can make it difficult for parents to consistently implement behavioral strategies such as play, praise, limit-setting, and

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consequences. There is now a groundswell of evidence to highlight the need to address parents' emotional and attributional processes, including the capacity for parental self-regulation in the face of a child with a difficult temperament, particularly within a socially disadvantaged environment (Ben-Porath, 2010; Leijten et al., 2013; Lundahl et al., 2006).

Mindfulness has emerged as a helpful mechanism to moderate parents' emotions and attributions, as well as a bridge towards more sensitive, attuned, and effective parenting under stressful circumstances (Maliken & Katz, 2013). Mindfulness is commonly defined as "awareness that arises through paying attention, on purpose, in the present moment, non-judgmentally" (Kabat-Zinn, 2009, p. 4). The history of mindfulness stretches back several millennia to Hindu, Buddhist, and other religious traditions and ancient yoga practices; however, the popularity of secular Western mindfulness is often credited to the introduction of Mindfulness-Based Stress Reduction programs in the late 1970s (Kabat-Zinn, 2011). Following the seminal publication of Everyday Parenting (Kabat-Zinn & Kabat-Zinn, 1997), there has been growing interest in how mindfulness can assist parents to respond to misbehavior in a regulated, intentional, and flexible manner, rather than reacting to misbehavior based on heightened emotions and thoughts (Bögels & Restifo, 2013).

Studies on mindful parenting can be divided between interventions for parents versus those that include parallel parent and child programs, as well as those that deliver pure mindfulness-based stress reduction/cognitive therapy (MBSR/MBCT), or MBSR/MBCT adapted for mindful parenting (MP), or those that integrate mindfulness and behavioral skills (MiBP). Collectively, these various interventions have been described as "third wave cognitive behavioral parenting programs" or mindful parenting programs (MPPs) (Townshend et al., 2016, p. 141). Broadly speaking, where BPT aims to teach skills in parent–child engagement, limit-setting, and contingency management, MP assumes that parents will (re)establish helpful routines of love and limits once they can be fully present and show their child and themselves non-judgmental acceptance.

A range of models has been proposed to account for how mindfulness works. In an early paper arguing for the benefits of mindfulness-based parenting, Dumas (2005) highlighted how mindfulness helps parents to step out of *autopilot* so they can tune into their children, self-regulate, and then respond rather than react. Shapiro et al. (2006) emphasized the central role of intention (on purpose), attention (paying attention), and attitude (with openness and non-judgment) in mindfulness and how these then facilitate "reperceiving" via four key mechanisms: self-regulation, values clarification, cognitive-behavioral flexibility, and exposure. Further models have been proposed by Duncan et al. (2009) and Bögels et al. (2010), each underlining variations of the above mechanisms. More recently, the concept of *embodied mindfulness* has been proposed to capture the continuous interaction between mind, body, and the world, and how mindfulness involves a flexible regulation of attention and awareness of internal and external cues as well as an integration of top-down (cognitions, emotions) and bottom-up (body signals) processes (Khoury et al., 2017). These models help delineate areas for clinicians to emphasize during delivery of MP programs, as well as mechanisms for researchers to measure. However, to date, there is no one accepted mechanism of change for parents following mindfulness-based parenting programs.

There have been four recent reviews of MPPs, although none have sufficiently captured MiBP programs. Townshend et al.'s (2016) systematic review of seven MPPs (that included a control group) for parents of children aged 0–18 years provided only tentative support for the effectiveness of MPPs, due to methodological issues. Many studies included multiple non-significant comparisons, increasing the risk of type 1 errors, and studies with significant findings generally found small to moderate pre-post intervention effect sizes for child behavior (range $d = 0.34$–0.40). In terms of study characteristics across the seven studies, sample sizes ranged from $N = 41$ to 432 (average $N = 140.3$), with parents of children aged 2.5 to 14 years, follow-up at 7 to 52 weeks (average 22.7 weeks), and total intervention training time between 12 and 22 h (average 14.9 h). Notably, none of the seven studies from Townshend's review would have been included in the current review due to the nature of their samples: three were based on the Tuning into Kids program which focuses on emotion coaching rather than mindfulness (Havighurst et al., 2013), two were based on the Mindfulness-enhanced Strengthening Families Program that delivers parallel sessions to youth aged 10-14 years and their parents (Coatsworth et al., 2014), one focused on children with developmental delay (Neece, 2014), and the other reported on a youth intervention (Felver et al., 2014).

A systematic review and meta-analysis of 25 studies conducted by Burgdorf et al. (2019) explored the effectiveness of mindfulness interventions for parents on parenting stress and youth outcomes. Studies that included BPT components were excluded (i.e., MiBP). Most studies (72%) reported results from mindful parenting group protocols based on Bögels and Restifo (2013), while others used generic MBSR/MBCT-based group protocols. Two-third delivered the intervention only to parents, with the remaining studies delivering parent and child parallel interventions. Twenty studies (80%) were for parents with children who had mental health difficulties. Only six studies (24%) utilized control groups; sample sizes ranged from 11 to 180 participants (average $N = 50$); group interventions ranged from 1.5 to 3 h per session over 6 to 12 weeks, with a total training time of 9 to

27 h; and sixteen studies included follow-up measures at two or more months. The meta-analysis found small effect size within group improvements for pre to post intervention child externalizing problems and parenting stress, and moderate improvements for pre to follow-up child externalizing problems and parenting stress. No differences were found between outcomes for parents of children versus parents of adolescents, nor clinical versus non-clinical child and adolescent samples. The addition of a child/youth intervention led to no overall improvements for parents of youth, and significantly worse outcomes for parents of children. There was also no evidence of a dose response in terms of total intervention time.

More recently, a systematic review and meta-analysis of 20 mindful parenting RCTs by Anand et al. (2021) found small to moderate effects across a range of parental outcomes, including general and parenting stress, internalizing psychological symptoms, well-being, and parenting behavior. Other parental outcomes including mindful parenting were found to be non-significant, and the study did not extract data on child outcomes. Parents of children with medical conditions were found to benefit more from mindful parenting than parents of children with psychological conditions. There was additional benefit when children as well as parents attended the intervention, although this may have been influenced by the high proportion of children with medical conditions in the sample.

A further recent systematic review and meta-analysis of 11 mindful parenting RCTs with parents of typically developing children described limitations in terms of reliability and generalizability of their findings due to the heterogeneity of measures, designs, settings, and protocols (Shorey & Ng, 2021). The authors questioned the benefits of excluding pre-post studies from future reviews. A further Cochrane review protocol for mindfulness-based parenting programs to improve psychosocial outcomes in children aged 0–18 years and their parents is reported as being prepared for publication (Shlonsky et al., 2016). While not yet available, the protocol indicates that only studies with a control group will be included, and so is narrower than the current scoping review. Previous reviews have thus far offered only modest support for MPPs. In particular, it remains unclear whether small to moderate effect size changes would be improved if MPP study protocols included empirically validated behavioral skills components.

The MPP research findings described above are largely consistent with reviews from the broader BPT literature. Moderate to large effect sizes have been demonstrated for BPT over the control group for sustained improvements in parent-reported child behavior, parental stress, and parenting style (Buchanan-Pascall et al., 2018; Kazdin, 2008; van Aar et al., 2017). BPT has thus shown slightly larger effect size improvements than MPP; however, there has also been considerable variability in outcomes, with effect sizes ranging from negligible to large for pre- to post-intervention ($d = 0–1.41$) (Kaminski & Claussen, 2017).

Similar to the MPP literature, a recent review and meta-analysis of BPT group interventions for children aged 4 to 12 years with behavioral problems failed to find additional benefit for including teacher and child intervention components, and no benefit from increased intervention time (Buchanan-Pascall et al., 2018). A broader review of psychosocial treatment for disruptive behaviors reported significant benefit for interventions that had behavioral components which encouraged positive parent–child interactions, improved emotional communication skills, and taught time-out (Kaminski & Claussen, 2017). An earlier review identified moderate effect size impacts on BPT outcomes for low income, low education/occupation, maternal depression, more severe child behavior problems, harsh discipline, and negative parental attributions towards the child (Reyno & McGrath, 2006). Other studies have shown that the impact of social disadvantage moderators can be mitigated by program improvements to accessibility and engagement (Baydar et al., 2003). Risk factors such as parental wellbeing, parental attributions, and parenting style have been acknowledged as active ingredients in BPT outcomes, and as evidenced by the popularity of MPPs, are amenable to change through mindfulness approaches (Gardner et al., 2010; Maliken & Katz, 2013). Finally, it is noted that most studies have relied on parent-report measures; however, the systematic Cochrane review on BPT interventions by Furlong et al. (2013) confirmed that independent assessments also demonstrate moderate effect size improvements.

Mindfulness-based parenting interventions have emerged over the past two decades in response to the need to address parental mental health and attributional factors within traditional BPT interventions (Chacko et al., 2016; Maliken & Katz, 2013). Recent systematic reviews suggest that MPPs produce only small to moderate effect size changes in child behavior problems, in contrast to moderate to large effect size changes from well-established BPT programs (Burgdorf et al., 2019; Comer et al., 2013; Kaminski & Claussen, 2017). MPP protocols included in existing reviews have varied across many factors including age and complexity of children and parents, type of intervention, length of intervention, and dose of mindfulness component. No clear preferred format has emerged to guide MPP practitioners. Moreover, recent reviews of mindful parenting have largely excluded studies that have included behavioral skills training components (MiBP), contrary to systematic reviews identifying benefits of behavioral over non-behavioral psychosocial interventions for children with externalizing problems (Comer et al., 2013; Kaminski & Claussen, 2017). Previous systematic

reviews have identified the heterogeneity in measures, interventions, and designs, and paucity of RCTs, as limiting aspects of published mindful parenting research, often precluding meta-analyses. Accordingly, a recent review of mindfulness publications from the past 20 years categorized 51% as pre-post studies and 17% as RCTs (Lee et al., 2021). We therefore chose a scoping rather than systematic review to provide a broader picture of the still-emerging literature on MPPs, and to guide future research.

This review will explore the extent and nature of mindful parenting programs, with a particular focus on (1) the evidence for MPPs in reducing child behavior problems as well as improving parent well-being, style, and mindfulness; (2) types of settings, designs, samples, and interventions; (3) the integration of mindful parenting with behavioral skills training (MiBP); and (4) gaps in current research. These questions are important, as the proliferation of mindful parenting programs appears to have preceded evidence for their benefits over existing behavioral parenting programs.

Methods

PRISMA-ScR guidelines (Tricco et al., 2018) informed an encompassing review of the relevant literature leading to summary of findings in line with the PCC framework (population, concepts, context). The population under examination included peer-reviewed studies and unpublished dissertations between January 2000 and March 2020 of parents of children aged 3 to 12 years with behavior problems who had attended mindful parenting interventions. Concepts of interest were pre-post intervention effects in parent-reported child behavior and self-reported parent style, stress, and mindfulness. The relevant contexts included study samples, settings, countries, and types of intervention and outcome measures. The review protocol focused on within-group changes so that effect sizes could be charted for pre-post as well as controlled study designs, which has since been further supported through the recommendations of Shorey and Ng (2021). Given the consistent criticisms of MPP research being prone to small samples and statistically non-significant findings, the current review charted effect sizes as the primary outcome measure, while also noting the percentage of significant findings across different outcome measures. Parents of children with disabilities were not included due to previous research identifying different mechanisms of change and interventions for these families (Buchanan-Pascall et al., 2018; Whittingham et al., 2019). In recognition that interventions for parents of toddlers and adolescents are different from those for parents of children aged 3 to 12 years, we used mean study child age to exclude studies where samples of children were generally outside our target range.

Inclusion Criteria

Studies were included in the scoping review if they met the following criteria: (a) intervention for parents of children with behavioral problems with mean sample age between 3 and 12 years (must include parent intervention, may also include child intervention); (b) mindfulness intervention explicitly mentioned by author/s; (c) included an outcome measure of child behavioral problems that could be represented as an effect size; (d) primary focus on externalizing presentations (excluded if children presenting exclusively with autistic spectrum disorder (ASD), developmental disability (DD) or intellectual disability (ID)); and (e) studies available in English language.

Search Strategy

An encompassing search was conducted between 12 February and 10 March 2020 of peer-reviewed articles and published dissertations on the following cross-disciplinary databases: Scopus, Web of Science, APA PsychInfo, CINAHL Plus with Full text, Science Citation Index, Education Research Complete, Directory of Open Access Journals, Psychology and Behavioral Sciences Collection, MEDLINE, SocINDEX, ScienceDirect, Health Source: Nursing/Academic Edition, ERIC, APA PsycArticles, ProQuest Dissertation & Theses. Key search terms were as follows: mindful* parent* AND effectiveness or efficacy or effective or success or outcome AND externalizing behavior or externalizing problem or behavior problem or behavior difficulties. Additional hand searches using search terms "mindful parenting" were completed through Google Scholar and direct search of two key journals (Mindfulness and Journal of Child and Family Studies). References from full-text articles were also reviewed.

Initial literature searches by the first author identified 3,615 results, reduced to 2,304 after duplicates were removed. Studies were selected for further review based on title and where necessary abstract, leading to closer review of 207 studies. Based on the eligibility criteria above, and discussion between authors, 16 studies were selected to include in the scoping review. Fifteen were from published literature and one from the gray literature (Walling, 2008). A PRISMA flowchart is provided in Fig. 1. Three studies were initially included (Coatsworth et al., 2014; Dawe & Harnett, 2007; Srivastava et al., 2011), but later excluded following unsuccessful attempts to gain means and standard deviations to calculate effect

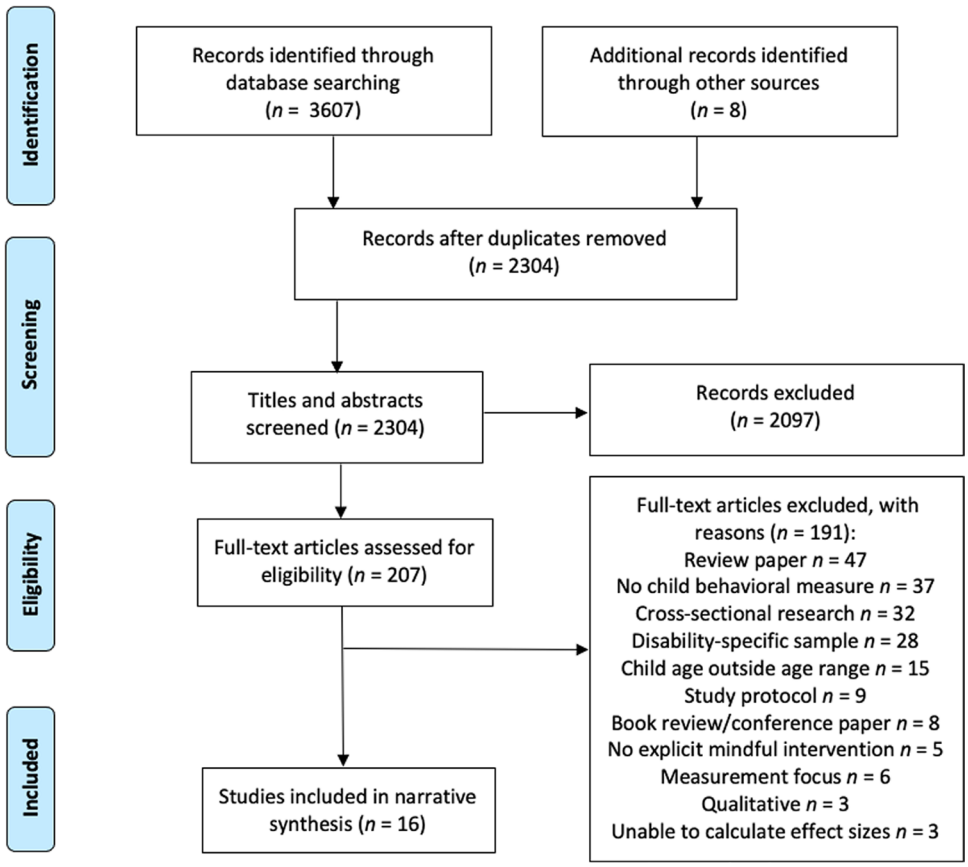

Fig. 1 PRISMA flow diagram

sizes for the behavioral measure within the timeframe for this paper.

Quality Appraisal

The Effective Public Health Practice Project (EPHPP) quality assessment tool was used to classify the selected studies into three categories: strong, moderate, and weak (Armijo-Olivo et al., 2012). The EPHPP was preferred over other quality appraisal tools due to the mixture of randomized, quasi-experimental and pre-post studies included within the scoping review (Armijo-Olivo et al, 2012). The EPHPP measures the methodological rigor of studies in relation to six components: (1) selection bias, (2) study design, (3) confounders, (4) blinding, (5) data collection methods, and (6) withdrawal and drop-outs. Two further components in the EPHHP tool do not contribute to the overall scores (intervention integrity and analyses). Each component is assessed on a quality score of 1 to 3 (1 = *strong*; 2 = *moderate*; 3 = *weak*). Global scores for studies are calculated by collating scores across components. If there are two or more weak ratings, the study scored weak; one weak rating and less than four strong ratings scored moderate; and no weak and four or more strong ratings scored strong. The first author undertook evaluation of selected studies using the EPHPP published dictionary in consultation with the other authors. This assessment tool was used for study evaluation purposes rather than for the purposes of inclusion/exclusion from the scoping review.

Overall ratings placed seven studies in the strong category, five in moderate and four in weak (see Table 1). Noticeably, all studies demonstrated strong ratings for including reliable and valid data collection methods, most provided details about participant withdrawals and had representative samples, and all had either strong or moderate study designs; however, none achieved a strong rating for blind rating or condition, most utilizing self-report measures and participants being aware of the aims of the study. Despite these shortcomings, most studies achieved a moderate rating for blinding based on published studies not providing sufficient details about blinding processes, as directed by the EPHPP dictionary. Nearly half of the studies did not report controlling for confounders. The additional assessment of intervention integrity showed that 13 of 16 studies reported treatment completion rates above 80%, only two studies provided clear fidelity checks, and only two studies provided clear information on possible

Table 1 EPHPP quality assessment ratings for included studies

Study	Selection bias	Study design	Confounders	Blinding	Data collection methods	Withdrawals and drop-outs	Overall study rating
Behbahani et al. (2018)	Strong	Strong	Strong	Moderate	Strong	Strong	Strong
Bögels et al. (2014)	Moderate	Moderate	Weak	Moderate	Strong	Strong	Moderate
Emerson et al. (2019)	Moderate	Moderate	Weak	Moderate	Strong	Moderate	Moderate
Gershy et al. (2017)	Weak	Strong	Strong	Moderate	Strong	Weak	Weak
Gewirtz et al. (2018)	Strong	Strong	Moderate	Moderate	Strong	Strong	Strong
Lengua et al. (2018)	Strong	Moderate	Strong	Moderate	Strong	Strong	Strong
Lo et al. (2019)	Strong	Strong	Strong	Moderate	Strong	Strong	Strong
Lo et al. (2020)	Strong	Strong	Strong	Moderate	Strong	Strong	Strong
Meppelink et al. (2016)	Strong	Moderate	Weak	Weak	Strong	Strong	Weak
Potharst et al. (2019)	Strong	Strong	Strong	Moderate	Strong	Strong	Strong
Potharst et al. (2020)	Moderate	Strong	Strong	Moderate	Strong	Strong	Strong
Smit et al. (2018a)	Moderate	Moderate	Strong	Moderate	Strong	Strong	Moderate
Smit et al. (2018b)	Moderate	Moderate	Weak	Moderate	Strong	Weak	Weak
van der Oord et al. (2012)	Moderate	Strong	Weak	Moderate	Strong	Strong	Moderate
Walling (2008)	Moderate	Moderate	Weak	Weak	Strong	Strong	Weak
Zhang et al. (2017)	Moderate	Moderate	Weak	Moderate	Strong	Strong	Moderate

intervention contamination. Overall, the quality ratings are positive given the broad inclusion criteria for this scoping review.

Data Extraction and Synthesis

Data were extracted by the first author using the research protocol, in consultation with other authors. Extracted data included study design, intervention, and participant characteristics (see Table 2) and outcome measures on child behavior and parent mindfulness, style, and well-being (see Table 3). Where available, within-group effect sizes were extracted and included; otherwise, they were calculated based on published means and standard deviations using formulae, where necessary (sd = mean(diff) × sqrt(N)/t) and effect size (d = 2t/sqrt(N − 2)) (Lenhard & Lenhard, 2016). A narrative synthesis was conducted to identify patterns within the literature and understand the nature and direction of effects.

Results

Study Designs

From the sixteen studies included in the review, six utilized randomized controlled trials, four case-controlled trials, five pre-post studies, and one was a single case series. Six studies utilized waitlist control groups and four used an alternate intervention comparator. Ten studies included a follow-up period of between 8 weeks and 1 year (M = 18.9 weeks, Mdn = 10 weeks). Findings are reported below and in Table 3 in terms of within-group effect size changes, measured from baseline to the final week of intervention (pre-post), and from baseline to follow-up at 2–12 months following intervention (pre-follow-up).

Settings

Studies comprised mindful parenting programs run in Netherlands (n = 6), Hong Kong (n = 3), the USA (n = 3), Canada (n = 2), Israel (n = 1), and Iran (n = 1). Settings were spread between child and family mental health (n = 6), child community or family care (n = 8), and one study each from military families and a longitudinal cohort.

Participants

Total sample size ranged from N = 10 to 336 (total N = 1362, mean N = 85.1). The intervention group pre-intervention sample size ranged from n = 8 to 207 (total n = 979, mean n = 61.2), with post-intervention total sample N = 833 (mean N = 52.1), and follow-up sample N = 656 (mean N = 65.6). Thirteen studies included children from clinical populations, with more than half of these including predominantly children with attention-deficit hyperactivity disorder (ADHD). The total sample of children included more boys (59.5%) than girls, and were on average aged from a mean of 3.5 years to 12.1 years, with an overall mean of 7.2 years.

Table 2 Study characteristics

Study	Type of intervention[6]	Design (comparator)	Sample size	Sample MPP (pre and post)	Follow-up, sample size	Settings	Participants	Child	Outcome measures extracted[5]
Behbahani et al. (2018)	MP (Kabat-Zinn/Bogels); 1.5 h × 8 week + 1.5-h booster + CD for home practice + medication	RCT, 2-armed Medication only	60	30 and 30	8 week, $N = 26$	Iran; academic MH clinic in hospital; real-world	Parents of child with ADHD referred by diagnosing psychiatrist; 50% mothers; 100% two-parent families	66% male; aged 7–12 years, $M = 8.7$, SD = 1.6 years; diagnosis ADHD (100%)	SNAP-IV[1] (Iranian version-18 items); PSI-SF[3] (Iranian version-36 items) (Not extracted independent: SNAP-IV teacher form)
Bögels et al. (2014)	MP; 3 h × 8 week + 3 h booster + 1-h daily meditation home practice; 8–14 per group	CCT, 2-armed Waitlist (5 weeks)	86	85 and 85	8 week, $N = 85$	Netherlands; outpatient child and youth MH care	Parents of outpatient MH; 90% mothers; aged 28–64 years, $M = 45$ years, $SD = 6.6$ years; 63% two-parent families, 24% separated/divorced; 58% diagnosed with parent–child relationship problem, 31% parent psychopathology	60% male; aged 2–21 years, $M = 10.7$ years, SD = 4.6 years; diagnoses 47% ADHD, 26% ASD/DD, 12% internalizing, 5% externalizing	CBCL[1]; RBI[2]; PSI[3] (Dutch-15 items)
Emerson et al. (2019)	MP; 3 h × 8 week + 3 h booster + 1-h daily meditation home practice	Pre-post-follow-up	89	89 and 75	8 week and 1 year, $N = 68$ and 15	Netherlands; outpatient child and youth MH care	Parents of child and youth MH; 77% mothers; aged $M = 43.5$ years, $SD = 7.7$ years; 75% two-parent families; 59% employed	65% male; aged 1.5–18 years, $M = 10.2$ years, $SD = 3.9$ years; diagnoses 29% ADHD, 24% ASD/DD, 11% internalizing, 1% externalizing	CBCL[1] (externalizing scale, child and infant); PS[2] (10 item over-reactivity scale); PSI[3] (15 item competence scale); IM-P[4]; FFMQ[4] (24 items)
Gershy et al. (2017)	MiBP (individual); NVR + mindfulness module week 3 (Linehan DBT) + home practice; 1 h × 10–12 sessions	RCT, 2-armed Standard NVR program (non-violent-responding); 10–12 individual sessions	79	23 and 19	–	Israel; outpatient MH clinic in children's hospital; real-world	Parents enrolling in parent training; 52% mothers; 88% two-parent families, 7.6% separated/divorced, 5% single-parent	82% male; aged 6–15 years, $M = 9.6$ years, $SD = 2.5$ years); diagnosed with ADHD or behavioral difficulties	CBCL[1] (Hebrew version, externalizing scale); EQ[2] (21 items)

Table 2 (continued)

Study	Type of intervention[6]	Design (comparator)	Sample size	Sample MPP (pre and post)	Follow-up, sample size	Settings	Participants	Child	Outcome measures extracted[5]
Gewirtz et al. (2018)	MiBP; ADAPT program (PMT Oregon model) 2 h × 14 weeks; low dose weekly mindfulness, emotion coaching, behavioral skills, homework; 6–15 per group	RCT, 2-armed Web and print resources	336	207 and 175	1 year, $N = 172$	USA; post-deployment military families	52% mothers; aged $M = 36.7$ years, $SD = 6.2$ years; 88% two-parent, 8% separated/divorced, 3% single-parent; 67% employed FT	Not stated	BASC-2[1]; coercive discipline[2] (based on coded family interaction tasks) (not extracted independent: adaptive skills–teacher)
Lengua et al. (2018)	MiBP; SEACAP mindfulness, emotion coaching, behavioral skills; 2 h × 6 weeks; 3–7 per group; 70% parents attended 5–6/6 sessions, average 4.8/6 sessions	Pre-post-follow-up	50	50 and 45	12 weeks, $N = 28$	USA; early learning kindergarten and headstart community college; real-world	Parents of preschoolers; 96% mothers; aged $M = 28.6$y, $SD = 7.2$ years; 77% income support, 52% single-parent; 64% ethnic/racial minority	Aged 2–6 years, $M = 3.8$ years, $SD = 1$ year	SSRS[1] (7 items, externalizing scale); CRPBI[2] (rejection scale); FFMQ[4] (not extracted independent: coded videotape of play, child executive function)
Lo et al. (2019)	Mindfulness (parent and child); based on Bögels and Restifo (2013) and Coatsworth et al. (2010); 1.5 h × 6 weeks; 1 h × 8 weeks for child; some joint sessions weeks 4 and 6	RCT, 2-armed Waitlist	102	51 and 49	12 weeks, $N = 51$	Hong Kong; primary school or family service centers (low-income population)	Parents on social security benefits of 5–7-year-old children; 93% mothers; aged $M = 38.6$ years, $SD = 6.9$ years; 82% two-parent families, 17% separated/divorced, 0% single-parent	56% male; aged 5–7 years ($M = 6.5$ years, $SD = 0.8$ years); excluded neurodevelopmental	CBCL[1] (67-item HK Chinese version); PSI-SF[3]; IM-P[4] (23-item Chinese version) (not extracted independent: child executive function)

Table 2 (continued)

Study	Type of intervention[6]	Design (comparator)	Sample size	Sample MPP (pre and post)	Follow-up, sample size	Settings	Participants	Child	Outcome measures extracted[5]
Lo et al. (2020)	Mindfulness (parent and child); based on Bögels and Restifo (2013) and Coatsworth et al. (2010); 1.5 h × 6 weeks; 1 h × 8 weeks for child; some joint sessions weeks 4 and 6	RCT, 2-armed Waitlist	100	50 and 48	–	Hong Kong; family service centers ($n = 3$)	Parents of children 5–7 years with ADHD; 88% mothers; aged $M = 39.2$ years, $SD = 5.7$ years; 91% two-parent families, 6% separated/divorced, 3% single-parent	83% male; aged 5–7 years ($M = 6.2$ years, $SD = 0.9$ years); 100% diagnosis ADHD	CBCL[1] (67-item HK Chinese version); PSI-SF[3]; IM-P[4] (not extracted independent: parent HRV, child executive function)
Meppelink et al. (2016)	MP; 3 h × 8 weeks + 3-h booster + 1-h daily meditation home practice, 2-h focus MBSR, 1-h mindful parenting; 4–13 per group	Pre-post-follow-up	70	70 and 64	8 weeks, $N = 61$	Netherlands; outpatient child and youth MH clinic ($n = 3$); real-world	Parents of children with psychopathology; 93% mothers; aged $M = 42$ years, $SD = 7.2$ years; 19% unemployed, 30% FT employed	57% male; aged $M = 8.7$ years, $SD = 3.4$ years; diagnosis 29% ASD, 24% ADHD, 3% internalizing; 1% externalizing, 26% V code parent–child problem	CBCL[1] (child and infant); IM-P[4] (short 10 items); FFMQ[4] (24 items)
Potharst et al. (2019)	MP (online); self-directed mindfulness + mindful parenting each week; 8 × 10 weeks (35–50 min per session)	RCT, 2-armed Waitlist	76	76 and 58	10 weeks, $N = 37$	Netherlands; longitudinal cohort study mothers of toddlers	100% mothers invited by email following high scores on PSQ ($n = 209$); aged 26–45 years, $M = 36.2$ years, $SD = 3.9$ years; 98% two-parent families; 87% employed	44% male; aged 3–4.7 years, $M = 3.5$ years, $SD = 0.3$ years	CBCL[1] (Dutch infant; aggressive, emotionally reactive scales); PS[2] (over-reactivity subscale); PSQ[3] (parent–child relationship, parenting, parental role-restriction scales); IM-P[4] (10-item) poor alpha (a = 0.49) so excluded

Table 2 (continued)

Study	Type of intervention[6]	Design (comparator)	Sample size	Sample MPP (pre and post)	Follow-up, sample size	Settings	Participants	Child	Outcome measures extracted[5]
Potharst et al. (2020)	MP (clinical)—3 h × 8 weeks + 3-h booster + 15–45-min daily meditation; MP (non-clinical)—2 h × 8 weeks + 10–20-min daily meditation	CCT, 2-armed Waitlist (7 weeks)	247	186 and 129	8 weeks, $N = 118$	Netherlands; outpatient MH clinic (clinical) and child health center (non-clinical)	Clinical—referred by GP/psychologist, 80% mothers; aged $M = 43.8$ years, $SD = 6.1$ years; 53% two-parent families, 27% single-parent Non-clinical—parents experiencing stress; 82% mothers; aged $M = 42.4$ years, $SD = 6.9$ years; 67% two-parent families, 19% single-parent	Clinical—aged 1–35.3 years, $m = 8.9$ years, SD = 5.4 years; diagnosis 31% ADHD, 23% ASD, 23% other Non-clinical—aged 2.6–25.4 years, $M = 11.7$ years, $SD = 4.4$ years	SDQ[1]; PS[2] (10 item over-reactivity subscale); OBVL[3] (35 items); IM-P[4] (10 items)
Smit et al. (2018a)	Mindfulness and attachment (parent and child); ABM based on Siegel and Hartzell (2003) and Duncan et al. (2009); teaching, discussion, skill development, journaling practice); parent group 2 h × 8 weeks (+ child therapy: self regulation 1 h × 8 sessions)	CCT, 2-armed ABM v Psychoeducation	13	8 and 7	–	Canada; community agency; real-world	Parents of children with behavior problem; 92% mothers; aged $M = 32.8$ years, $SD = 5$ years; 77% two-parent families; 85% employed; 54% insecure on RQ (average 40% Hazan and Shaver, 1987)	56% male; aged 3–5 years, $M = 4.1$ years, $SD = 0.8$ years; T-score on CBCL > 60	CBCL[1] (infant); PRQ-P[2] (discipline, relational frustration scales); PSI[3]; IM-P[4] (10 items)

Table 2 (continued)

Study	Type of intervention[6]	Design (comparator)	Sample size	Sample MPP (pre and post)	Follow-up, sample size	Settings	Participants	Child	Outcome measures extracted[5]
Smit et al. (2018b)	Mindfulness and attachment (parent and child); ABM as above except included self-regulation and psychoeducation; parent group 2 h × 12 weeks (+ child therapy: self regulation 1 h × 8 sessions)	Pre-post	11	11	–	Canada; community agency; real-world	Parents of children with behavior problem; 100% mothers; aged $M = 32.2$ years, $SD = 7.1$ years; 64% two-parent families; 73% insecure on Relationship Questionnaire (average 40% Hazan and Shaver, 1987)	27% male; aged 3–5 years, $M = 3.6$, $SD = 0.7$ years; T-score on CBCL > 60	CBCL[1] (infant); PRQ-P[2] (discipline, relational frustration scales); PSI[3]; IM-P[4] (10 items)
van der Oord et al. (2012)	MP (parent and child); 1.5 h × 8 weeks (some joint sessions); CD for home practice; 4–6 per group; manualized; weekly supervision for integrity	CCT, 2-armed Waitlist	22	22 and 18	–	Netherlands; academic clinic in outpatient MH	Parents of children with ADHD; 95% mothers; 73% high-education	73% male; aged 8–12 years, $M = 9.6$ years, $SD = 1.3$ years; diagnosis 100% ADHD, 27% on medication	DBDRS[1] (ODD scale); PS[2] (30 items); PSI[3] (25 items); MAAS[4] (15 items)
Walling (2008[7])	MBSR adapted to parents (parent only); 1.5 h × 6 weeks; 3–4 per group; audiotape for home practice	Pre-post	10	10 and 10	10	USA; university clinic	Mothers of children with behavioral problems; aged $M = 38.6$ years, $SD = 5.6$ years; 80% two-parent families, 10% divorced	90% male; aged 3–6 years, $M = 4.5$ years, $SD = 1.1$ years; diagnosis 20% ADHD, 10% ASD, 20% disability	ECBI[1] (intensity scale); PSI[3] (36-items); IM-P[4]:KIMS
Zhang et al. (2017)	MP (parent and child); MYmind, based on MBSR/MBCT; 1.5 h × 8 weeks; training by Bogels	Pre-post	11	11 and 10	–	Hong Kong; child and youth NGO	Parents of children 8–12 years with ADHD; 64% mothers; aged $M = 42.4$ years, $SD = 4.1$ years; 82% two-parent families, 18% separated/divorced; 80% employed	73% male; aged 8–12 years, $M = 9.5$ years, $SD = 1.4$ years; diagnosis 100% ADHD, 91% on medication	ECBI[1] (problem scale); PS[2] (30 items); PSI[3] (36 items); IM-P[4] (not extracted independent: child executive function)

Table 2 (continued)

[1]Child behavior measure

[2]Parent style measure

[3]Parent stress/well-being measure

[4]Mindfulness measure

[5]*BASC* Behavioral Assessment Scale for Children; *CBCL* Child Behavioral Checklist; *CRPBI* Child Report of Parenting Behavior Inventory; *DBDRS* Disruptive Behavior Disorder Rating Scale; *ECBI* Eyberg Child Behavior Inventory; *EQ* Escalation Questionnaire; *FFMQ* Five Facets Mindfulness Questionnaire; *IM-P* Interpersonal Mindfulness in Parenting; *KIMS* Kentucky Inventory of Mindfulness Skills; *MAAS* Mindful Attention and Awareness Scale; *OBVL/PSQ* Opvoedingsbelastingvragenlijst/Parenting Stress Questionnaire; *PRQ* Parenting Relationship Questionnaire–Preschool; *PS* Parenting Scale; *PSI/PSI-SF* Parenting Stress Index-Short Form; *RBI* Rearing Behavior Inventory; *SDQ* Strengths and Difficulties Questionnaire; *SNAP-IV* Swanson, Nolan and Pelham–Parent; *SSRS* Social Skills Rating System

[6]*ABM* attachment-based mindfulness; *ADAPT* After Deployment, Adaptive Parenting Tools; *CD* compact disc; *DBT* dialectical behavioral therapy; *MBCT* mindfulness-based cognitive therapy; *MBSR* mindfulness-based stress reduction; *MP* mindful parenting; *NVR* non-violent resistance; *SEACAP* Social, Emotional, and Academic Competence for Children and Parents

[7]Unpublished dissertation

Parents were predominantly mothers (78.8%) with mean age of 37.5 years, with average age ranging from 28.6 to 42.8 years.

Only five studies reported parent mental illness. Family composition was on average 82% two-parent families (range 48 to 100%). Thirteen studies reported the following exclusion criteria: child neuro/developmental disorder ($n=8$), parental severe mental illness/psychosis ($n=7$), non-primary language ($n=4$), receiving alternative intervention ($n=4$), parental IQ < 80 ($n=3$), primary diagnosis not oppositional behavior/ADHD ($n=2$), unable to attend at least 75% of sessions, child unsafe, parent not high school level education, and irregular medication use (all $n=1$).

Interventions

There was even spread between studies that relied solely on delivering mindfulness training to parents ($n=7$), mindfulness training to parents and children concurrently ($n=6$), and those that integrated mindfulness alongside behavioral skills training ($n=5$) (see Table 2). Most studies utilized group interventions ($n=14$). Six studies were reported as being real-world interventions. Intervention protocols were guided by Bögels and Restifo (2013) for ten of the studies and involved mindfulness explicitly adapted to parenting alongside regular MBSR/MBCT practice. Only one study delivered MBSR/MBCT without adapting the content to include parenting concepts (Walling, 2008). There was no consistent behavioral skills program. MiBP protocols for two studies focused more on attachment than behavioral skills (Smit et al., 2018a, 2018b), two others included minimal mindfulness content within an existing BPT program (Gershy et al., 2017; Gewirtz et al., 2018), and the remaining study combined behavioral skills, mindfulness, and emotion regulation within a brief 6-week program (Lengua et al., 2018). Total intervention face-to-face contact time, including child and booster sessions where relevant, ranged from 9 to 32 h ($M=18.4$ h), conducted across 6 to 14 sessions with 8 weeks for most ($n=9$) protocols. Booster sessions were employed by a third of intervention protocols, whereby parents attended a follow-up session to review progress and consolidate key principles. Groups comprising 3 to 15 participants generally ran for 1.5 to 3 h per week for parents, and 1 h per week for children. These intervention characteristics are comparable with previous reviews on MPP (Burgdorf et al., 2019; Townshend et al., 2016). The online MP was notably less intense, with only eight sessions of 35 to 50 min each across 10 weeks, and an average of only 17 min meditation per week (Potharst et al., 2019). Most MP protocols included in-session mindfulness practice and up to 1 h per day of meditation home practice. However, a study that tracked homework completion found that most parents only meditated once or twice per week (Potharst et al., 2020), and

Table 3 Study characteristics, global quality assessment, and outcome measure effect size changes

Study	Type of intervention[a] total hours	Quality Assessment	Child behavior		parent style		Parent stress		Parent mindfulness		General mindfulness	
			Pre-post	Pre-f/up	Pre-post	Pre-f/up	Pre-post	Pre-f/up	Pre-post	Pre-F/up	Pre-post	Pre-f/up
Behbahani et al. (2018) ($n=60$)	MP (parent only) 13.5 h	Strong	0.36	1.00	0.56	0.76	–	–	–	–	–	–
Bögels et al. (2014) ($n=86$)	MP (parent only) 27 h	Moderate	0.31	0.37	0.33	0.35	0.44	0.47	–	–	–	–
Emerson et al. (2019) ($n=89$)	MP (parent only) 27 h	Moderate	0.17	0.26	0.50	0.65	0.43	0.48	0.77	1.04	0.7	0.91
Gershy et al. (2017) ($n=79$)	[b]MiBT (parent only) 12 h	Weak	0.85	–	0.40	–	–	–	–	–	–	–
Gewirtz et al. (2018) ($n=336$)	[b]MiBT (parent only) 28 h	Strong	0.12	–	0.26	–	–	–	–	–	–	–
Lengua et al. (2018) ($n=50$)	MiBT (parent only) 12 h	Strong	0.03	0.03	0.35	0.37	–	–	–	–	0.02	0.01
Lo et al. (2019) ($n=102$)	MP (parent and child) 17 h	Strong	0.36	0.38	–	–	0.26	0.24	0.05	−0.02	–	–
Lo et al. (2020) ($n=100$)	MP (parent and child) 17 h	Strong	0.29	–	–	–	0.19	–	−0.05	–	–	–
Meppelink et al. (2016) ($n=70$)	MP (parent only) 24 h	Weak	0.22	0.37	–	–	–	–	0.78	1.04	0.73	1.02
Potharst et al. (2019) ($n=76$)	MP Online (parent only) 8 h	Strong	0.33	0.38	0.26	0.37	0.02	0.16	–	–	–	–
Potharst et al. (2020) ($n=247$)	MP (parent only) 27 h	Strong	0.61	0.41	0.68	0.71	0.37	0.63	0.72	0.63	–	–
Smit et al. (2018a) ($n=13$)	MiBT (parent and child) 24 h	Moderate	0.67	–	0.65	–	0.52	–	0.84	–	–	–
Smit et al. (2018b) ($n=11$)	MiBT (parent and child) 32 h	Weak	0.24	–	0.38	–	0.06		0.75	–	–	–
van der Oord et al. (2012) ($n=22$)	MP (parent and child) 12 h	Moderate	0.26	0.22	0.40	0.85	0.49	0.57	–	–	0.28	0.11
Walling (2008[c]) ($n=10$)	MBSR (parent only) 9 h	Weak	2.26	1.89	–	–	0.91	1.26	1.21	1.31	1.01	0.88
Zhang et al. (2017) ($n=11$)	MP (parent and child) 12 h	Moderate	0.36	–	−0.12	–	−0.18	–	−0.17	–	–	–
Studies (n)	–	–	15	9	12	7	11	7	9	6	5	5

[a]*MP* mindful parenting, *MiBT* mindfulness integrated behavioral training, *MBSR* mindfulness-based stress reduction, *MPP* mindful parenting program (includes all types)

[b]Individual interventions

[c]Unpublished dissertation

Potharst and colleagues (Potharst et al., 2019, 2020) found no association between meditation time and any of the child or parent outcome measures. The mindfulness-integrated behavioral programs (MiBP) had notably lower doses of mindful practice.

Outcomes

A broad range of outcome measures were used across studies, although most relied on parent report or self-report (see Table 2). Six studies included independent, third-party ratings alongside parent ratings, although four of these were child executive functioning tests associated with monitoring ADHD symptoms. Only two studies (Gewirtz et al., 2018; Lengua et al., 2018) incorporated play-based parent–child observational measures and so observational data were not charted for the current review. Among parent report measures, there was most frequent use of the Child Behavior Checklist (50%) for child behavior, Parenting Scale (50%) for parent style, Parenting Stress Index (86%) for parent stress, and Interpersonal Mindfulness for Parents (100%) for parent mindfulness. The review charted effect sizes within Table 3 and percentage of significant findings in Table 4. The review's broad scope included an unpublished dissertation, and it was evident that the effect sizes for this 6-week MBSR study were much larger (e.g., $d = 2.26$). For this reason, the results for this paper are discussed separately below.

Primary Outcome Measure

Similar to other MPP reviews, pre-post effect sizes for parent-reported child behavior varied from $d = 0.03$ to 0.85 for peer-reviewed studies, with one unpublished study reporting an effect size of $d = 2.26$ (see Table 3). Ten studies reported small effects, two moderate, one large, and two studies found nil to negligible effects. Effect sizes were higher at follow-up than post-intervention for six out of nine peer-reviewed studies, with a range of $d = 0.03$ to 1.00. The lowest effect size was from a real-world 6-week group MiBP for families who were higher in single-parent, income support and ethnic minority characteristics (Lengua et al., 2018). Aside from the unpublished study, the largest effect size was from an individually delivered MiBP for parents who were largely from two-parent families (Gershy et al., 2017).

Secondary Outcome Measures

Three quarters of selected studies included a self-report measure of parenting style, of which most found small effects at pre-post and moderate effects at pre-follow-up (see Table 3). One study found a slight worsening of parenting style (Zhang et al., 2017), and others had effect size improvements between $d = 0.26$ and 0.68 at pre-post and between $d = 0.35$ and 0.85 at pre-follow-up, indicating that most parents rated themselves as less hostile and more consistent following MPP attendance. Parenting style ratings improved further at follow-up compared with post-intervention for all seven studies which included follow-up measures.

Eleven studies included measures of parenting stress (see Table 3). Effect sizes ranged overall from $d = -0.18$ to $d = 0.52$ at pre-post and $d = 0.16$ to $d = 0.63$ at pre-follow-up for peer-reviewed studies, and were again much larger for the unpublished study. Parenting stress ratings improved further at pre-follow-up for six of seven studies.

Over half of the selected studies included a measure of mindful parenting, and nearly a third included a measure of general trait mindfulness (see Table 3). Across all studies, effect sizes ranged from small to large across both types of mindfulness measures. Three studies reported minimal or

Table 4 Percentage of studies reporting significant effects across outcome measures

Construct (and measures)	Percentage of studies reporting significant results (proportion of total number)	
	Pre-post	Pre-follow-up
Child externalizing behavior (BASC, CBCL, DBDRS, ECBI, PBQ, SDQ)	56.3% (9/16)	70% (7/10)
Parenting style/approach (CRPBI, EQ, PS, PSQ, RBI, SSRS, observational)	58.3 (7/12)	57.1 (4/7)
Parenting stress/well-being (OBVLQ, PRQ, PSI, PSI-SF)	81.8% (9/11)	71.4% (5/7)
Mindful parenting (IM-P)	44.4% (4/9)	50% (3/6)
Mindfulness (FFMQ, MAAS, KIMS)	60% (3/5)	40% (2/5)

BASC Behavioral Assessment Scale for Children; *CBCL* Child Behavioral Checklist; *CRPBI* Child Report of Parenting Behavior Inventory; *DBDRS* Disruptive Behavior Disorder Rating Scale; *ECBI* Eyberg Child Behavior Inventory; *EQ* Escalation Questionnaire; *FFMQ* Five Facets Mindfulness Questionnaire; *IM-P* Interpersonal Mindfulness in Parenting; *KIMS* Kentucky Inventory of Mindfulness Skills; *MAAS* Mindful Attention and Awareness Scale; *OBVL/PSQ* Opvoedingsbelastingvragenlijst/Parenting Stress Questionnaire; *PRQ* Parenting Relationship Questionnaire–Preschool; *PS* Parenting Scale; *PSI/PSI-SF* Parenting Stress Index-Short Form; *RBI* Rearing Behavior Inventory; *SDQ* Strengths and Difficulties Questionnaire; *SNAP-IV* Swanson, Nolan and Pelham–Parent; *SSRS* Social Skills Rating System

negative change in parent mindfulness, all of which included Hong Kong Chinese parent samples.

From the subset of outcome measures relevant to the current review, 53 from 88 produced statistically significant findings (60.2%), and 66 from 88 reported effect sizes classified as small, moderate, or large (75%) (see Table 4). Measures of parenting stress produced the highest rate of statistically significant findings (87.5%), and mindful parenting produced the lowest rate (46.7%). This latter finding may have been influenced by the three studies with participants from Hong Kong which found nil to negative changes in mindful parenting.

Discussion

This scoping review aimed to systematically map the current research on MPPs in reducing behavioral problems in children aged 3–12 years and improving parent well-being, style, and mindfulness. In addition to exploring study characteristics and outcomes, there was a particular focus on whether the integration of behavioral skills in MPPs (MiBP) produced effect size changes in child and parent outcome measures commensurate with outcomes from behavioral parent training. The study also sought to identify gaps in the literature.

The current review included data from nearly a thousand parents who had attended MPP interventions across six countries, and five languages, and was representative of families that would benefit from intervention with 87% being from clinical settings and mostly mothers (79%) of male children (59%). Encouragingly, retention was high with 85% of 979 parents completing post-intervention measures, and 76% completing 8- to 52-week follow-up measures, suggesting good engagement and perseverance in mindful parenting programs. Furthermore, nearly 40% of studies were based on real-world studies, adding strength in terms of generalizability. Of the family structure indicators, only two-parent family status was commonly reported across studies, showing 81% overall which is comparable to an average of the countries represented.

Findings were consistent with previous reviews in identifying mostly small effect size improvements from pre- to post-intervention for MPPs across both child and parent outcome measures, with variability across studies from nil to large effects (Burgdorf et al., 2019; Townshend et al., 2016). Effects sizes generally improved further at pre to follow-up. Greater improvement at follow-up compared with post-intervention was also found by Kaminski and Claussen (2017) in their review of BPT studies. This suggests parents continue to apply principles following parenting interventions and that behavioral change is gradual. Three quarters of outcome measures extracted for this review reported effect sizes in the small to large range, and two-third was also statistically significant. Taken together, these findings demonstrate that families often experience meaningful change in a positive direction from attending MPPs.

The mindful parenting program of Bögels and Restifo (2013) was identified by this and previous reviews as the most prevalent approach, and could provide a benchmark for new and existing MPP intervention protocols. Within their protocol, MP is divided evenly each 2–3-h session between a range of formal meditation practices and mindful parenting principles, including understanding the impact of parental reactivity and automacy, responding to children and self with open-awareness and non-judgment, reducing parental stress, and self-care (see Bögels & Restifo, 2013, for more detail).

The review specifically sought to map the evidence from protocols that have integrated behavioral skills and mindfulness components (MiBP). As noted above, only the SEACAP protocol by Lengua et al. (2018) represented a complete integration of BPT with MPP, as the other four MiBP protocols contained either minimal behavioral components or one-off mindfulness sessions. Notably, the 6-week SEACAP program found no change in child behavior or general mindfulness, and only small improvements in parent style. These outcomes could be attributed to the length of program being insufficient for the higher-need sample, rather than to the effects of integrating mindfulness and behavioral skills per se. Indeed, the peer-reviewed study with largest effects on child behavior was also a MiBP program, which in this case was delivered individually to socially advantaged parents (Gershy et al., 2017). The fit between family need and dose of intervention appears important (Kazdin & Whitley, 2006). Kazdin (2007) has previously argued against trying to integrate additional components within group programs due to concerns about redundancy for many parents and lack of sufficient dose for parents in need. However, we suggest that mindfulness and behavioral skill components are inter-related and have the potential to amplify the benefits of each other. Mindfulness provides a process (the "how") for the delivery of behavioral content (the "what"). A values-guided parent who can self-regulate and be present with their child is more likely to deliver behavioral components with integrity and potency, and the ensuing well-proven increase in child cooperation could promote greater parent–child closeness and co-regulation.

Applying the idea of mutual benefit from mindfulness combined with behavioral components to Shapiro et al.'s (2006) model of mindfulness, we could expect that a parent who brings *intention, attention*, *and attitude* to how they deliver a clear instruction is likely to invite cooperation from their child. A parent who delivers a vague, mindless instruction may inadvertently invite resistance or at least non-cooperation, which invites further escalation in the

parent–child relationship (Patterson, 1982). It is proposed that a real test of MiBP would therefore involve mindfulness and behavioral components being integrated throughout each week of the intervention in terms of both how the program is delivered (process) and what is delivered (content), and where the dose of intervention is matched to the needs of the target audience. Although not for an externalizing sample, a recent RCT with 195 mothers of children with ASD found significant benefits for the integrated protocol over either mindfulness or behavioral alone (Singh et al., 2021).

In terms of active intervention ingredients, Emerson et al. (2019) identified changes to parental reactivity rather than mindful parenting as a significant predictor of improved child behavior. Furthermore, three studies from the current review found small effect size improvements to child behavior despite nil to negative effect size changes for parent mindfulness (Lo et al., 2019, 2020; Zhang et al., 2017). Such findings have been replicated by other researchers (Mah et al., 2020), and raise questions about underlying mechanisms of change. It is possible that (1) parents from the studies reviewed improved their parenting style, and that this led to changes in child behavior, regardless of changes in parental mindfulness; (2) the Chinese version of the IM-P used by the three studies above is not culturally sensitive, and changes in parental reactivity and mindfulness correlate highly, as found by previous studies (Brown & Ryan, 2003); and/or (3) there are multiple pathways to change involved in MPPs. Notably, factors such as parental stress, over-reactivity, experiential avoidance, psychological flexibility, self-compassion, and mindfulness have been implicated by some studies and not by others in mediating improvements in adaptive parenting or child behavior or both (Brassell et al., 2016; Cheron et al., 2009; Emerson et al., 2019; Ferraioli & Harris, 2013; Gardner et al., 2010). The multiple pathway position is more appealing as a coherent explanation. This is consistent with existing theoretical accounts of mindfulness, which include multiple active mechanisms. For example, adopting the model proposed by Shapiro et al. (2006), some parents may gain most from improved self-regulation, where others gain more from values clarification, or cognitive-behavioral flexibility or willingness to approach rather than avoid under stress (exposure), and some may benefit from a combination of these mechanisms. Multiple pathways also fit with the mechanism of *flexible regulation of attention and awareness* depicted by the concept of embodied mindfulness (Khoury et al., 2017). Moreover, parenting challenges are different for a child with a disability versus a child with an oppositional temperament, as evidenced by different mediating factors and outcomes being shown for MPPs with different clinical presentations (Anand et al., 2021; Whittingham et al., 2019). Namely, increased self-regulation may be the most potent mechanism in interrupting coercive parent–child cycles associated with externalizing behavior presentations, and improvements to values-clarification and flexibility may assist a parent supporting a child with a lifelong disability.

Most studies in this review utilized traditional face-to-face programs. Looking towards the future, Potharst et al. (2019) were able to demonstrate small effect size improvements in child behavior and parent style through a self-directed, low-intensity online mindfulness intervention delivered to socially advantaged mothers from a longitudinal cohort study. Online parenting interventions have promise (Boekhorst et al., 2021), including equal efficacy to face-to-face delivery for parents of young children with ADHD (DuPaul et al., 2017). However, concerns have been raised about acceptability of online delivery, and particularly for socially disadvantaged families in terms of engagement, user costs, privacy, and scheduling where there is synchronous delivery (Boekhorst et al., 2021; Wilkerson et al., 2020). The importance of creating effective and engaging online parenting programs has been underscored by the shift to online service-provision across the globe since COVID-19 (Cluver et al., 2020).

Limitations and Future Research

Concerns raised in previous reviews regarding the quality of MPP research were again notable. Most studies relied on parent report or self-report measures, many were underpowered potentially contributing to non-significant results and possible type 1 errors, and only a minority utilized randomized controlled trials. That said, RCTs represented 37.5% of studies in the current review compared with 24% in an earlier review on MPPs (Burgdorf et al., 2019), which is consistent with the broader increase in RCTs in mindfulness research (Lee et al., 2021). Most samples included socially advantaged parents, and most often from two-parent families. While the current review had the advantage of drawing from a range of programs, delivered across various cultural groups throughout the world, there was a predominance of children with ADHD within the overall sample. Previous BPT studies have demonstrated attenuated effects for children with ADHD compared with those with oppositional behavior (Furlong et al., 2013), and this may have reduced the effect sizes within the current review. The heterogeneity among rating scales across studies limits our ability to draw broader conclusions, including where different authors have utilized short forms or variations for scoring of subscales. For example, although the CBCL was used by half of the included studies, some of these studies utilized certain CBCL subscales and seven studies used other behavioral outcome measures. There may also be cultural factors to consider. The three studies from the current review that failed to find improvements in mindful parenting following MPP attendance (Lo et al., 2019, 2020; Zhang et al., 2017) used a 23-item Chinese adaptation of the IM-P which

includes four of the five original subscales, and has demonstrated adequate reliability (α = 0.87) and validity (Lo et al., 2018). However, this 23-item version of the IM-P may have been less sensitive to change within traditional Chinese family values (Ho & Bond, 1986). Interestingly, Han et al. (2021) used a 31-item Chinese version of the IM-P based on five subscales, and found a positive relationship between parent mindfulness, positive parenting, and reduced child behavioral problems.

Efforts to control for subjectivity and bias in this review were managed through close adherence to PRISMA-ScR guidelines (Tricco et al., 2018), use of the EPHPP (Armijo-Olivo et al., 2012), and regular review of the research protocol between authors. Nonetheless, some papers may have been missed, including by the chosen search terms. The review also focused on effect sizes from selected outcome measures and some innovative independent assessment methods were not extracted and reported. More broadly, the scope of the current study on externalizing behavior problems as the primary outcome measure excluded several emerging MPPs that focused on internalizing problems, or that did not include a measure of child behavior. There are also many MPP studies addressing the needs of families who have children with developmental or intellectual disabilities that were excluded from this review, although these have been investigated by other reviews (Anand et al., 2021; Jones et al., 2018; Singh et al., 2019).

The increased uptake of MPPs across the globe has preceded clear evidence of benefit over existing BPT programs. Active treatment components and mechanisms of change remain uncertain. MPPs, without any behavioral skills components delivered solely to parents, have been shown to improve parent style and child behavior, although not to the same extent as BPT programs, and mostly for parents from relatively advantaged social contexts.

Further replication of MPPs for families with more complex needs is suggested, as well as exploring stepped-care approaches and online delivery, matched for clinical need and context. For socially disadvantaged parents who may have experienced negative parenting role models, it seems unlikely that mindfulness alone will help create parenting practices that strike the right balance between love and limits. MiBP interventions can reduce parental reactivity and stress, while providing a scaffold for the tried and tested behavioral parenting skills that may not previously have been developed (Lengua et al., 2018). Contrary to this position, from the two studies within the current review that recruited higher-risk families, the mindful parenting study showed small effect size improvements for child behavior and parent stress, and no change in parent mindfulness (Lo et al., 2019), whereas the MiBT study showed no change in child behavior and mindfulness alongside improved parental reactivity (Lengua et al., 2018). It was noted above that the 23-item Chinese version of the IM-P may not have been sensitive to change, and that the brief intervention (6 weeks) within Lengua's MiBT protocol may not have been adequate in addressing the needs of their families. There are only a handful of MiBT studies in the published literature, and most suffer from the limitations described above in terms of limited integration of mindfulness and behavioral components and small samples. Thoroughly integrated MiBT studies with larger high-risk samples are needed to test whether protocols that blend mindfulness with behavioral skills lead to larger effect sizes than either protocol alone.

This review raised questions about mechanisms of change, which would be a valuable focus for future studies. The current picture suggests that MPPs bring about improvements in child behavior through a plethora of treatment components and underlying mechanisms, which vary based on the individual needs of each family. Our current understanding could be elucidated further through fine-grained analysis of the components of leading MP programs (e.g., Mindful Parenting) and MiBPs, alongside exploration of multiple mediators and moderators. For example, a recent study distinguished between parents' use of informal moment-to-moment mindfulness in their parenting (open monitoring) versus formal meditation practice (focused attention) (Mah et al., 2020). Consistent with previous research, they found that although parents used informal mindfulness more regularly, it was increased use of formal meditational practice during the program that was associated with greater reductions in harsh parenting (Carmody & Baer, 2008). Likewise, mediational analysis could test the extent to which improvements in parental style, stress, or mindfulness predict reductions in child behavior problems within blended mindfulness and behavioral interventions. As described by Kazdin (2007), mechanisms of change are uncovered through a series of studies similar to sequential, strategic moves on a chessboard. The current review is one of many moves.

Author Contribution M. D. was responsible for the conception, design of the review, extraction, analysis and interpretation of data, and drafted the manuscript. E. B. contributed to conception, design, data interpretation and review of manuscript. J. P. and J. S. H. contributed to the data interpretation and revised the paper critically in terms of theory and argument. All authors read and approved the final version of the manuscript for submission.

Funding This study was supported by the University of Wollongong through an HDR scholarship to M. D.

Declarations

Ethical Approval This article does not contain any studies with human participants performed by any of the authors.

Conflict of Interest The authors declare no competing interests.

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