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The Distinguishing Characteristics of Parents Seeking a Mindful Parenting Intervention in Child Mental Health Care

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Abstract

As a clinical intervention, Mindful Parenting has positive effects on parental stress and psychopathology, as well as child psychopathology. However, previous studies have not considered what characterizes parents and families who receive this type of intervention. The current study utilized a quasi-experimental design to determine the characteristics that distinguish parents seeking or referred to a mindful parenting intervention in community child mental health care centers. Two groups of parents were recruited to the study: treatment-seeking parents ($n = 89$), and a comparison group of parents from a community population ($n = 66$). All parents completed measures relating to their child's psychopathology, their own psychopathology, general mindful awareness, and parenting measures of stress, over-reactivity, experiential avoidance and mindful parenting. A cross-sectional comparison confirmed that the treatment-seeking parents reported significantly higher psychopathology in their child ($d = 0.91$ – 1.19) and in themselves ($d = 0.99$ – 1.21), lower general mindful awareness, and higher parenting stress, over-reactivity, parental experiential avoidance and lower mindful parenting than the community parents. Across all outcomes, group differences in mindful parenting indicated the largest effect ($d = 1.77$), followed by parenting stress ($d = 1.42$), general mindfulness ($d = 1.34$), parental over-reactivity ($d = 1.32$), and parental experiential avoidance ($d = 1.21$). Hierarchical binary logistic regression analyses indicated that, next to higher child internalizing problems, lower mindful parenting distinguished treatment-seeking parents from community parents. Those parents seeking or referred to a mindful parenting intervention may benefit most from improvements in the very construct that the intervention targets: cultivating mindful parenting.

Keywords Mindful parenting · Parenting · Child psychopathology · Parent mental health · Parental stress

Highlights

- Characteristics of parents seeking or referred to a mindful parenting intervention were compared to those of parents from the community.
- Treatment-seeking parents reported higher psychopathology in their child and themselves compared to community parents.
- Treatment-seeking parents were distinguished from community parents by lower mindfulness and mindful parenting, higher parental stress, overreactivity and experiential avoidance.
- Higher internalizing child problems and lower mindful parenting mostly distinguished treatment-seeking parents.

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Global rates of mental health problems in children are estimated to be 13.4%; however, there are variations between countries (Polanczyk et al. 2015). Comparisons across European countries have indicated that 11.9% children in the Netherlands have at least one probable mental health problem (5.3% emotional; 6.1% conduct; 2.6% hyperactivity), with prevalence slightly higher for boys (11.7%) than girls (10.2%) (Kovess-Masfety et al. 2016). Utilizing longitudinal data, Zimmerman (2005) assessed the predictors of support seeking for child and youth mental health problems in the United States of America, with findings suggesting that children are less likely to receive support if they are female (experiencing behavioral problems or depression) or they are the middle child (in birth order). In the Netherlands, no gender differences in support seeking have been noted; rather, the child's problem behavior and family stress were the strongest predictors of service use (Verhulst et al. 1996). In a systematic review of parent and family factors predicting service use in youth with mental health problems, Ryan et al. (2015) reported that demographics (e.g. education level, employment status, income) and broader family characteristics (e.g. family functioning, number of children) were not related to service use. Whereas parent experiences, including parent perceptions of their child's problem and need, parental burden (i.e. economic, social and emotional) resulting from the child's problem, and parents' own mental health problems, predicted increased service use for youth with mental health problems (Ryan et al. 2015).

Generally speaking, parents are the most likely instigators of support seeking for child mental health, and so it follows that this may in large part be determined by the strain that they themselves feel. As part of the care offered to families, parents may be directed to engage in a parent training program. Behavioral parent training (BPT), which teaches parents the skills to manage challenging child behavior, have the largest amount of empirical support for both efficacy and effectiveness for child externalizing problems (Mingerbach et al. 2018). Consistent with the evidence-base, BPT is recommended as part of the care and support for childhood behavioral problems (National Institute for Health and Care Excellence 2017, 2019) and implemented across services in the Netherlands (Dutch Youth Institute (Nederlands Jeugd Instituut—NJI) 2020; Knowledge Center Child and Adolescent Psychiatry 2020; GGZ Nederland 2020). BPT programs are effective for a large proportion of parents (Thomas and Zimmer-Gembeck 2007). However, heightened parenting stress and psychopathology predict poorer outcomes from BPT, as well as parent drop out, which has ranged from 40 to 60% (Johnson et al. 2008; Moroney et al. 2017; Abrahamse et al. 2016). These rates appear to be relatively consistent with drop-out from psychotherapy across settings, populations and

approach (Corning and Malofeeva 2004; Warden et al. 2009; Swift and Greenberg 2012). Whilst drop-out from evidence-based parenting programs in the Netherlands is lower than the United States of America, parent psychopathology remained a key predictor of drop-out (Abrahamse et al. 2016). A meta-meta analysis of behavioral parenting programs indicated significant and moderate effects of these approaches on both observational and self-report measures of parenting, which were sustained at follow-up, but there were only small effects on parent mental health, which were not sustained at follow-up (Weber et al. 2019). Therefore, parenting stress may pose a barrier to engagement in BPT programs, and compromise their effects, but also remain inadequately addressed through this approach.

Parenting stress is a universal experience; however, parents of children with additional needs (e.g. emotional and behavioral difficulties; neurodevelopmental disorders) report experiencing heightened parenting stress in comparison to the general population (Baker et al. 2003; Bitsika and Sharpley 2004; Hayes and Watson 2013; Theule et al. 2013). Parents have the dual task of regulating their child's emotional reactions, as well as their own emotional reactions to their child's emotional reactions (Rutherford et al. 2015). Regulation of their own emotions will have a direct impact on their parenting by enabling sensitive responding to their child (Rutherford et al. 2015; Buckholdt et al. 2014). Therefore, there is a clear rationale for supporting parent wellbeing and mental health and decreasing parental stress as part of a package of support for child and youth mental health problems.

Mindful Parenting training is an intervention that specifically targets parenting stress, and aims to assist parents in coping with the challenges of parenting, particularly when caring for children with additional needs (Bögels and Restifo 2013). The construct of mindful parenting, as a disposition, is characterized by an awareness of and a non-judgmental attitude to parenting experiences in the present moment, that is, thoughts, emotions, bodily sensations, and the environment, including their child and co-parent (Kabat-Zinn and Kabat-Zinn 1997). In contrast to BPT programs, that primarily target regulation of parenting *behavior*, mindful parenting training primarily targets regulation of parenting *stress* and other emotions. As such, mindful parenting training fosters parent awareness and acceptance of the emotional reactions of their child and themselves, which allows parents to interrupt their automatic behavioral reactions to challenging parenting situations (Bögels et al. 2010; Duncan et al. 2009; Smith and Dishion 2013). This process has been referred to as “parenting from the inside out” (Siegel and Hartzell 2013). Consequently, parents are able to respond through choice, rather than automatic, emotionally driven reactivity (Gouveia et al. 2016).

Previous research has demonstrated that both clinical and community applications of mindful parenting training achieve reductions in reported parenting stress and convey further benefits for parents and children. That is, both parents and children show a reduction in internalizing (e.g. anxiety and depression) and externalizing (e.g. aggressive behavior) symptoms, in addition, parents show reduced parenting stress and improved parenting (Bögels et al. 2014; Meppelink et al. 2016; Potharst et al. 2018). Whilst the evidence for the positive effects of mindful parent training are growing, little is known about what characterizes those parents who seek and are referred to a mindful parenting intervention. In a recent study, Emerson et al. (2019) investigated potential predictors of outcome following Mindful Parenting training (Bögels and Restifo 2013), specifically characteristics of the parents and their parenting. Following training, parents reported a reduction in parenting stress, parental over-reactivity, increased dispositional mindful parenting and decreased experiential avoidance in parenting, and these parent benefits predicted reductions in child psychopathology. These predictors of outcome may signal the difficulties that treatment-seeking parents are experiencing, and perhaps mark distinguishing characteristics.

Dysregulation of the parenting stress response is likely to contribute to reactivity in challenging parenting situations. Parental over-reactivity, which can manifest from anger and frustration, or anxiety and worry, is characterized by automatic responses to parenting situations and associated with harsh parenting behavior (Van den Akker et al. 2010). Heightened parenting stress may also be associated with parental experiential avoidance, which describes a parent's unwillingness or inability to effectively manage their child's distress and their own distress in difficult parenting situations (Cheron et al. 2009). For example, faced with a child tantrum, parents may either give in or get a tantrum themselves, as a way to avoid their child feeling upset and avoid feeling their own upset. Parental experiential avoidance has previously been positively correlated to parental over-reactivity (Brown et al. 2014). Furthermore, parental experiential avoidance has been associated with increased parental psychopathology in anxious parents and their children, and in parents with anxious children (Tiwari et al. 2008; Woodruff-Borden et al. 2002). Thus, as a means to regulate parenting stress, experiential avoidance may ironically increase such negative experiences for parents and for their child. The consequences in the parenting context may be to reinforce the relationship between parenting stress, negative parenting practices (e.g. over-reactivity) and child psychopathology. Mindful parenting training may be attractive to parents experiencing such difficulties because it could offer an adaptive means of regulating parenting stress other than avoiding or overreacting.

In order to inform theoretical underpinnings and targeting of such interventions, it is timely to consider for whom the intervention may have most benefit. Part of the picture comes from studies investigating predictors and mechanisms of the intervention effects (Emerson et al. 2019; Meppelink et al. 2016). Another important, and often neglected, part of the picture is to characterize those who access such interventions. Previous research on support seeking in families of youth with mental health problems has highlighted the key predictors from cohort or longitudinal studies, which have included parent experiences (Ryan et al. 2015). In the current study we aimed to determine the key discriminating characteristics between parents accessing a mindful parenting training intervention and those in a community sample. More specifically, we sought to determine whether parents accessing mindful parenting training differed from a community sample, on parenting variables, including parenting stress, parental over-reactivity, parental experiential avoidance and mindful parenting. Such insight into the characteristics of these parents will help develop an understanding of what their needs may be, and whether and how mindful parenting training can be of benefit for this group.

Given that the primary reason for accessing child mental health services would be the needs of their child, we hypothesized that when compared to the community group, treatment-seeking parents would report higher rates of psychopathology for their children. Parenting stress and distress is the primary target of the Mindful Parenting training, and therefore parental psychopathology is of interest in understanding the characteristics of this group of parents. Based on previous research indicating increased levels of distress and psychopathology in parents of children with additional needs, we also hypothesized higher rates of psychopathology in the treatment-seeking parent group compared to the community group. Comparisons were also made across parenting practices that are relevant potential mechanisms of any effects from mindful parenting training, namely parenting stress, parental experiential avoidance, parent over-reactivity, and mindful parenting. Whilst parenting stress has been well-studied, parental experiential avoidance and mindful parenting are relatively novel measures, therefore a community group was deemed to be an appropriate comparison to establish a baseline of differences for treatment-seeking families. That is, to the authors' knowledge, no studies have yet compared parental experiential avoidance and mindful parenting in community parents versus parents in child mental health care. Such research is important to understand whether parents of children mental health difficulties may avoid negative emotions in their child and themselves more and are less mindful in their parenting. Given that these constructs are proposed mechanisms of mindful parenting training, then

such differences could suggest a particular need to cultivate awareness and acceptance of their child's and their own negative emotions, and responding rather than reacting to stressful parenting situations. We hypothesized that compared to the community group, the treatment-seeking parents would report lower general mindful awareness, and greater impairments or difficulties in their parenting practices (greater parenting stress; greater parental over-reactivity; greater experiential avoidance in parenting and lower mindful parenting). Furthermore, as these parenting practices are interrelated and related to child and parental psychopathology, we explored which of the parenting practices were key predictors of seeking mindful parenting training after taking into account the variance of other predictors including child psychopathology.

Method

Design

Approval for the study was granted by the Ethical Committee of <removed for blind review> (Reference number: 2013-POWL-2798). The study utilized a quasi-experimental design. Parents referred to one of four different child and youth secondary mental health care centers in <removed for blind review>, were recruited to a mindful parenting training intervention and formed the treatment-seeking group. Parents from a community population were recruited through convenience sampling. Parents in the treatment-seeking group and researchers of the study informed friends with children who were not currently seeking or receiving treatment. These parents formed the comparison group.

Parents completed self-report outcome measures pertaining to their child's psychopathology, to their own psychopathology, dispositional mindful awareness, and to parenting practices via an online survey. The community group completed outcome measures at one time point only. The treatment-seeking group received an 8-week mindful parenting training intervention (Bögels and Restifo 2013) in a community child mental health care context. The intervention was delivered in four different locations: 58 (64%, five groups) participated in Location A, 17 (19%, three groups) participated in Location B, 12 (13%, three groups) in Location C, and 3 (3%, one group) in Location D. Parents in the treatment-seeking group completed outcome measures at four time-points: pre-intervention; post-intervention; 8-week follow-up; and 1-year follow-up. In the current study, a cross-sectional comparison was made between pre-intervention data for parents in the treatment-seeking group and data obtained from the community group. The effects of the mindful parenting training (data from other time-points) are reported elsewhere (Emerson et al. 2019).

Participants

The sample of participants was made up of a total of 155 parents, with a child aged 1.5–18 years: 89 in the treatment-seeking group, and 66 in the community group. Parent and child characteristics of both groups are reported in Table 1. Primary diagnosis of children of parents in the treatment-seeking group was determined through clinical interview and consensus within the multidisciplinary clinic staff group. Within the treatment-seeking group, the most common child primary diagnoses were Attention Deficit Hyperactivity Disorder (ADHD; 29.2%), Autism Spectrum Disorder (ASD; 23.6%), anxiety disorders (e.g., generalized anxiety disorder, specific phobia; 11.2%), and parent-child relationship disorders (14.6%); followed by adjustment disorder (4.4%), obsessive-compulsive disorder (OCD; 2.2%), oppositional defiant disorder (ODD; 1.1%) and post-traumatic stress disorder (PTSD; 2.2%). In the community group, parents could only participate if their child was not accessing mental health care (private or community), and parents were asked to report whether their child had an existing psychiatric diagnosis as previously assessed by a healthcare professional. Of the nine parents (14%) in the community group who reported an existing psychiatric diagnosis for their child, all indicated a primary diagnosis of ADHD. No other diagnoses were reported in the community group. Since this rate of psychiatric diagnoses is normative in community samples of children and adolescents, all parents were included in the present study to form a "normative" comparison group (Costello et al. 2005). Participants in the community group were given the opportunity to enter into a raffle with a chance to win one of several prizes, including 2 day trips to an amusement park and several board games.

Measures

Child psychopathology

The Child Behavior Checklist (CBCL) assessed parents' perceptions of their child's behavioral and emotional functioning (Achenbach and Rescola 2001). The CBCL child version was completed by parents of children 6–18 years (113 items); the CBCL infant version was completed by parents of children 1.5–5 years (100 items). Each item provides a description of children/youth, for example: "Argues a lot" and "Feels worthless or inferior." All items were rated on a three-point Likert scale, ranging from 0 (not true) to 2 (very true or often true). Scores on three CBCL scales were used in the present study. Due to the heterogeneous character of the children's diagnoses in the treatment-seeking group, the two broadband syndrome scales were utilized: internalizing problems and externalizing

Table 1 Demographic characteristics of parent participants and their child for treatment-seeking and community groups, and differences between groups

	Treatment-seeking (n = 89)	Community (n = 66)	t/χ^2	<i>p</i>
Parent characteristics				
Parental age in years (<i>M, SD</i>)	43.36 (7.65)	45.90 (7.00)	−2.12	0.035
Mothers	77.2 %	81.8%	0.47	0.491
Biological relationship parent—child	75.7%	83.3%	8.62	0.196
Highest education			16.02	0.014
Lower vocational	38.5%	18.2%		
Higher vocational/university	51.3%	77.3%		
Other	10.3%	4.5%		
Ethnic identity			9.637	0.210
Dutch	84.1%	98.5%		
English	6.8%	0.0%		
Other	10.6%	1.5%		
Currently working part/fulltime	58.9%	87.9%	14.65	0.000
Parent has a DSM-IV diagnosis	10.2%	7.6%	0.321	0.571
Child characteristics				
Child age in years (mean, SD)	10.17 (3.94)	11.39 (4.82)	−1.68	0.096
Female children	34.9%	33.3%	0.042	0.837
Child living with both parents	74.6%	83.3%	8.62	0.196
Number of siblings (mean, SD)	1.65 (1.13)	1.32 (1.03)	1.86	0.065

problems. It was also deemed appropriate to utilize the narrowband syndrome scale of attention problems, since the most common diagnoses were neurodevelopmental disorders (ADHD, and ASD), and such problems are not captured in the two broadband syndrome scales. Satisfactory psychometric properties have been reported for the Dutch CBCL ($\alpha = 0.95, 0.96$ and 0.96 , Meppelink et al. 2016). In the current sample, Cronbach's alphas were: Internalizing: $\alpha = 0.91$; Externalizing: $\alpha = 0.94$; Attention: $\alpha = 0.85$.

Parent characteristics

Parents' own behavioral and emotional functioning was assessed with the Dutch version of the Adult Self Report (ASR) (Achenbach and Rescola 2003). Each item describes the parent, for example "I cry a lot" and "I am impulsive or act without thinking." Parents rated 123 items on a three-point Likert scale ranging from 0 (not true) to 2 (very true or often true). As per the selection of scales from the CBCL, scores on the same three ASR scales were used in this study (Achenbach and Rescola 2003): internalizing problems; externalizing problems; and attention problems. Satisfactory psychometric properties have been reported for the Dutch version ($\alpha = 0.87-0.93$, Vanheusden et al. 2009). In the current study, Cronbach's alphas were: Internalizing: $\alpha = 0.95$; Externalizing: $\alpha = 0.87$; Attention: $\alpha = 0.86$.

Parents' general mindful awareness was assessed with the 24-item version of the Five-Facet Mindfulness Questionnaire

(FFMQ-24) (Baer et al. 2006; Bohlmeijer et al. 2011). This questionnaire measures mindful awareness across five facets: Observing (e.g. "I notice the smells and aromas of things"); Describing (e.g. "I'm good at finding words to describe my feelings"); Acting with Awareness (e.g. "I find myself doing things without paying attention," reversed item); Non-judging of inner experiences (e.g. "I tell myself that I shouldn't be feeling the way I'm feeling," reversed item); Non-reactivity to inner experiences (e.g. "I watch my feelings without getting carried away by them"), and a total score. Participants rated items on a five-point Likert scale ranging from 1 (never or very rarely true) to 5 (very often or always true). Satisfactory psychometric properties have been reported for the Dutch translated version ($\alpha = 0.85$ for non-meditators, $\alpha = 0.90$ for meditators, de Bruin et al. 2012). In the current study, Cronbach's alpha of the total score was 0.80.

Parenting practices

Parenting stress was assessed with the Competence scale of the Parenting Stress Index (PSI; 15 items) (Brock et al. 1992) (e.g. "Raising my child is more difficult than I expected"). Parents rated each item on a six-point Likert scale ranging from 1 (totally disagree) to 6 (totally agree). Satisfactory psychometric properties have been reported for the Dutch version of the Competence scale ($\alpha = 0.84$ for mothers, 0.90 for fathers; Ridderinkhof et al. 2018). In the current sample, Cronbach's alpha was 0.92.

Parental over-reactivity was assessed with the ten-item Over-reactivity scale from the Parenting Scale (PS) (Arnold et al. 1993). Parents rate each item on a seven-point scale, with item-specific descriptive anchors; for example, “when my child misbehaves, ...I raise my voice or yell/I speak to my child calmly.” Satisfactory psychometric properties have been reported ($\alpha = 0.79$ for mothers, 0.69 for fathers; Ridderinkhof et al. 2018). In the current study, Cronbach’s alpha was 0.81.

Parental experiential avoidance was measured with the Parental Acceptance and Action Questionnaire (PAAQ; 15 items, Cheron et al. 2009). Items from the original version that referred to child’s experiences of anxiety and sadness were altered to include a broader range of negative child emotions as examples (anxiety, sadness, anger, restlessness) so that it would be applicable for parents of children with internalizing and externalizing psychopathology. For example, “I try hard to avoid my child having feelings of fear, sadness, anger or restlessness.” Satisfactory psychometric properties have been demonstrated for this scale ($\alpha = 0.83$, Emerson et al. 2019). In the current study, Cronbach’s alpha was 0.73.

Mindful parenting was assessed as the extension of mindful awareness to the interpersonal domain of parent-child relationships with the Interpersonal Mindfulness in Parenting scale (IM-P; 29 items) (Duncan et al. 2009; de Bruin et al. 2014). Parents rated 29-items (e.g. “When I am upset with my child, I notice my feelings before acting”) on a five-point Likert scale ranging from 1 (never true) to 5 (always true). Satisfactory psychometric properties have been reported for the Dutch questionnaire ($\alpha = 0.89$, de Bruin et al. 2014). In the current study, Cronbach’s alpha was 0.90.

Data analyses

Prior to the analyses, the normality of the data and assumptions of analyses were checked (Tabachnick and Fidell 2012). Skewness and kurtosis were within acceptable limits for all total scale scores (and T-scores for CBCL). Outliers were indicated across the dataset ($n = 5$). The mean and 5% trimmed mean were similar for each variable. Inspection of the data pattern for these participants indicated they represented true scores, and therefore were retained for analysis. Levene’s statistic indicated violation of homogeneity of variance for a number of dependent variables (CBCL; ASR; PSI; FFMQ); however, the sample size was deemed to be large enough to be robust against these violations (Tabachnick and Fidell 2012). In order to provide the greatest range in scores, total scores entered the analyses with the exception of the CBCL, for which T-scores were calculated in order to combine infant and child versions in data analyses. Missing data were coded and excluded in relevant analyses (i.e. pairwise).

Preliminary analyses included independent t tests and chi square analyses in order to determine any differences in demographic variables between the two groups (treatment-seeking versus community). Where any differences were indicated, these variables were controlled for in the main analyses.

Several analyses of covariance were performed to examine differences between the treatment-seeking and community groups on all main variables (child and parent psychopathology; parental general mindfulness; parental stress; parental over-reactivity; experiential avoidance in parenting; mindful parenting). Cohen’s d was calculated to examine the strength of any differences between the treatment-seeking and community groups. Effect sizes < 0.50 were considered small, 0.50–0.80 medium, 0.80–1.30 large, and > 1.30 very large (Cohen 1988).

In order to assess which of the main variables best predicted group membership (treatment-seeking versus community), a hierarchical binary logistic regression was conducted. Logistic regression was the preferred method for analysis given its suitability to different types of data distribution and two category dependent variable, as well as robustness with larger samples (> 50) (Pohar et al. 2004). Group (treatment-seeking versus community) functioned as the dependent variable, and total scores (T-scores for CBCL) on different questionnaires functioned as predictors. Demographic variables that differed between groups were entered in block 1. Child psychopathology was entered in block 2. In block 3, parental intrapsychic characteristics were entered: parent psychopathology and general mindfulness. In block 4, parenting practices variables (parenting stress; parental over-reactivity; mindful parenting; parental experiential avoidance) were entered using forward stepwise likelihood ratio method to allow variables with the greatest additional predictive power to enter the final model.

Results

Preliminary Analyses

In comparison to parents in the community group, parents in the treatment-seeking group were significantly older; a greater proportion were educated at a pre-vocational level and a lesser proportion at a higher education level; a lesser proportion were in full-time or part-time employment (see Table 1). Parent age, education and employment status were therefore controlled for in subsequent main analyses.

Group Comparisons

Analysis of Covariance (ANCOVA) indicated significant differences ($p < 0.001$) between the treatment-seeking and

Table 2 Means and standard deviations for the treatment-seeking and community group, and *F* and *d* statistics corrected for parental age and education for the differences between both groups

	Treatment-seeking		Community		<i>F</i> (<i>df</i>)	<i>d</i>
	Mean	SD	Mean	SD		
Child internalizing problems (CBCL)	63.17	10.98	49.94	11.22	44.261* (1134)	1.191
Child externalizing problems (CBCL)	60.62	12.58	49.74	11.39	16.068* (1134)	0.906
Child attention problems (CBCL)	63.39	9.28	55.42	7.04	23.328* (1134)	0.967
Parental internalizing problems (ASR)	21.77	13.99	8.38	6.91	35.483* (1134)	1.214
Parental externalizing problems (ASR)	12.78	6.69	5.67	5.27	30.878* (1134)	1.181
Parental attention problems (ASR)	10.23	5.74	5.35	3.88	22.357* (1134)	0.996
General mindful awareness (FFMQ)	73.56	12.58	88.80	9.96	47.738* (1134)	1.343
Parenting stress (PSI)	3.106	0.989	1.924	0.634	46.190* (1134)	1.423
Parental over-reactivity	36.00	8.54	25.06	8.07	47.564* (1129)	1.316
Experiential avoidance in parenting (PAAQ)	55.55	11.57	41.83	11.17	47.775* (1134)	1.206
Mindful parenting (IM-P)	93.98	10.60	112.18	9.99	95.525* (1130)	1.767

*Significant at $p < 0.001$

community group across all dependent variables, when controlling for parent age, education and employment status. See Table 2 for statistics. Parents in the treatment-seeking group reported greater internalizing, externalizing and attention problems in their children compared to those in the community group; all with large effect sizes. In addition, parents in the treatment-seeking group reported greater internalizing, externalizing and attention problems in themselves, with large effect sizes observed. Parents in the treatment-seeking group also reported lower levels of general mindfulness, with a very large effect size. In relation to parenting practices, parents in the treatment-seeking group reported greater parenting stress (very large effect), greater over-reactivity (large effect), lower mindful parenting (very large effect) and greater experiential avoidance in their parenting (large effect). The largest effect size across all dependent variables was observed for group differences in mindful parenting, followed by parenting stress, general mindfulness, and parental over-reactivity.

Predicting Group Membership

Table 3 presents the results from the binary logistic regression predicting group membership (treatment-seeking versus community).

Parent age, education and employment status (dummy coded) were entered in block 1. The model was significant, $\chi^2(7) = 29.172$, $p < 0.001$, with 70.1% of total cases correctly classified (78.8% community; 61.8% treatment-seeking). However, the difference between observed and predicted data was significant, $\chi^2(8) = 15.743$, $p = 0.046$, indicating that the model was not a close fit to the actual data. Nagelkerke R^2 of 0.26 indicated a weak association between the predictors and group membership. The Wald criterion demonstrated that neither age nor education made

a significant contribution to the prediction ($p > 0.05$); however, parent employment status did ($p = 0.002$). Child psychopathology variables were entered as predictors in block 2 (enter). The model from block 2 was significant, $\chi^2(11) = 66.981$, $p < 0.001$ (Step: $\chi^2(3) = 37.809$, $p < 0.001$), with 79.9% of total cases (77.3% community; 82.4% treatment-seeking). The difference between observed and predicted data was not significant, $\chi^2(8) = 3.470$, $p = 0.902$, indicating a close prediction to the actual data. Nagelkerke R^2 of 0.53 indicated a moderately strong association between predictors and group membership. The Wald criterion demonstrated that child internalizing problems made a significant contribution to the prediction ($p < 0.001$); child externalizing problems and child attention problems did not ($p > 0.05$). The odds ratio for child internalizing problems indicated that if the value of child internalizing problems goes up by 1, then the odds for belonging to the treatment-seeking group increase.

Parent characteristic variables were entered in block 3 (enter). The model from block 3 was significant, $\chi^2(15) = 88.475$, $p < 0.001$, (Step: $\chi^2(4) = 21.494$, $p < 0.001$) with 82.1% of total cases (81.8% community; 82.4% treatment-seeking). The difference between observed and predicted data was not significant, $\chi^2(8) = 14.169$, $p = 0.077$, indicating a close prediction to the actual data. Nagelkerke R^2 of 0.64 indicated a moderate association between predictors and group membership. The Wald criterion demonstrated that child internalizing problems ($p = 0.040$) continued to make a significant contribution to the prediction; as well as the addition of parent externalizing problems ($p = 0.044$), and general mindfulness ($p = 0.002$). Other child and parent psychopathology variables did not make a significant contribution to the final model ($p > 0.05$). The odds ratio for child internalizing problems indicated that if the value of child internalizing problems goes up by 1, then the odds for

Table 3 Binary logistic regression predicting group membership from child, parent and parenting measures

Variable	Block 0		Block 1		Block 2		Block 3		Block 4			
	Wald	Exp (B)	CI _{0.95}	Wald	Exp (B)	CI _{0.95}	Wald	Exp (B)	CI _{0.95}	Wald	Exp (B)	CI _{0.95}
Parent age	0.067	1.045	–									
Parent education	2.960	0.953	0.902–1.007	4.173	0.930	0.867–0.997	1.262	0.956	0.884–1.034	2.855	0.918	0.830–1.014
Parent employment status	4.954	–	–	1.955	–	–	1.808	–	–	2.914	–	–
Child internalizing problems (CBCL)	9.476*	0.229	0.090–0.586	2.118	0.450	0.154–1.319	2.357	0.390	0.117–1.297	1.607	0.350	0.069–1.775
Child externalizing problems (CBCL)				13.578**	1.126	1.057–1.200	4.216*	1.079	1.003–1.160	6.205*	1.147	1.030–1.277
Child attention problems (CBCL)				0.621	0.978	0.925–1.034	1.321	0.962	0.902–1.027	2.359	0.932	0.852–1.020
Parental internalizing problems (ASR)				1.736	1.052	0.976–1.133	2.393	1.072	0.982–1.170	2.918	1.119	0.983–1.274
Parental externalizing problems (ASR)							0.324	1.023	0.945–1.108	0.013	0.995	0.905–1.093
Parental attention problems (ASR)							4.056*	1.147	1.004–1.310	0.925	1.088	0.917–1.290
General mindful awareness (FFMQ)							2.045	0.884	0.747–1.047	3.486	0.810	0.649–1.011
Mindful parenting (IM-P)							9.195*	0.925	0.880–0.973	0.706	1.033	0.958–1.115
										14.736**	0.792	0.704–0.892

* $p < 0.05$; ** $p < 0.001$

belonging to the treatment-seeking group increase. The odds ratio for parent externalizing problems indicated that if the value of parent externalizing problems goes up by 1, then the odds for belonging to the treatment-seeking group increase. The odds ratio for parent general mindfulness indicated that if the value of general mindfulness goes up by 1, then the odds for belonging in the treatment-seeking group decrease.

Parenting practices variables were entered in block 4 (forward stepwise, Likelihood Ratio). Mindful parenting (IM-P) entered as a parenting level predictor ($p < 0.001$); the other parenting variables did not enter the final model. The model was significant $\chi^2 (16) = 117.306$, $p < 0.001$, (Step: $\chi^2 (1) = 28.830$, $p < 0.001$) with 89.6% of total cases (89.4% community; 89.7% treatment-seeking). The difference between observed and predicted data was not significant, $\chi^2 (8) = 1.654$, $p = 0.990$, indicating a close prediction to the actual data. Nagelkerke R^2 of 0.78 indicated a strong association between predictors and group membership. The Wald criterion demonstrated that child internalizing problems ($p = 0.013$) continued to make a significant contribution to the prediction; all other child psychopathology scales, and parent characteristics failed to make a significant contribution to the final model. The odds ratio for child internalizing problems indicated that if the value of child internalizing problems goes up by 1, then the odds for belonging to the treatment-seeking group increases. The odds ratio for mindful parenting indicated that if the value of mindful parenting goes up by 1, then the odds for belonging to the treatment-seeking group decreases. To sum, the significant predictors that remained in the final model (Block 4), that is, taken into account the variance of all other variables, were child internalizing problems and mindful parenting.

Discussion

The current quasi-experimental study compared the characteristics of parents seeking a mindful parenting training intervention in a community child mental health care setting (pre-intervention), with those of a community sample, with the aim to determine what distinguishes the treatment-seeking group. Consistent with our hypotheses, group comparisons indicated differences across all measured characteristics. Treatment-seeking parents reported greater psychopathology for their child and themselves (internalizing, externalizing and attention problems) with large effects; greater parenting stress, and lower general mindful awareness, with very large effects. Furthermore, parents seeking a mindful parenting training intervention also reported greater impairments to their parenting. Compared to the community group, treatment-seeking parents reported

greater parental over-reactivity, with large effects; greater experiential avoidance in their parenting, with large effects; and lower mindful parenting, with very large effects.

When determining which of these variables predicted group membership (treatment-seeking versus community), greater child internalizing problems emerged as a consistent predictor of treatment-seeking group belonging, regardless of other predictors. Child externalizing and attention problems did not emerge as predictors when including the variance of all child psychopathology in the equation. These findings of the current study partially reflect research on youth mental health service use in the Netherlands; mental health service use is predicted by the child's problem behaviors (internalizing and externalizing) and family stress, such that children accessing services are more likely to live in stressful family situations, than children with comparable level of problems living in stable family situations (Verhulst et al. 1996). Therefore, child problems alone are not the only determinant of support seeking, but rather family and parent factors play a part. Of the parenting variables in the current study, lower mindful parenting remained a significant predictor of treatment-seeking group belonging, after accounting for all child and parent predictors. Thus, prior to a mindful parenting training intervention, parents are distinguished mostly by a limitation in the very construct that is targeted by that intervention. This finding is consistent with reports on the potential mechanisms of mindful parenting training; improvements in mindful parenting (corrected for improvements in general mindful awareness) following training predict reductions in child psychopathology (externalizing), whereas improvements in general mindful awareness (corrected for improvements in mindful parenting) predict reductions in parent psychopathology (Meppelink et al. 2016). Other parenting factors (parental psychopathology, general mindful awareness, parenting stress, over-reactivity, experiential avoidance in parenting) did not predict group membership over and above mindful parenting. Thus, the current findings extend previous research on parent factors associated with service use in youth with mental health problems that highlight parent burden and parent mental health problems as key factors (Ryan et al. 2015).

Given that the most common primary child diagnosis in the current sample treatment-seeking group was ADHD or ASD, it is somewhat unexpected that parent-reported child internalizing problems emerged as the child psychopathology predictor of group membership. This finding may indicate that over and above primary child diagnoses, the associated impact, in terms of child anxiety, depression and isolation, at least from parent report, is of greater concern. This is consistent with the high prevalence of internalizing problems in children with ADHD and ASD. For example, approximately a third of children with ADHD have a

comorbid diagnosis of an anxiety disorder, and similarly, 40% of children with autism (Adler et al. 2007; van Steensel et al. 2013). Furthermore, many more are likely to experience sub-clinical symptoms (reported rates of 52.6% at home and 77.6% at school; Adams et al. 2019). Aside from the primary diagnoses of a neurodevelopmental disorder, it may be this consequential suffering that parents are seeking support for. The dominance of internalizing problems may be indicative of underlying difficulties with emotion regulation. The child's difficulties in regulating their emotions is likely to mean that they rely on their parents more for this. This finding could also indicate that when internalizing problems are at the forefront, even within the context of neurodevelopmental disorders, this makes it more likely that parents would seek, or be referred to, mindful parenting as an intervention. When externalizing or attention problems are the primary concern, it may be more likely that parents would seek, or be referred to, other intervention options that directly target child behavior management (e.g. medication, or parenting skills-based behavioral parent training). The focus on "being," rather than "doing," in mindful parenting training offers parents skills in regulating their own emotion in response to their child's. The "doing," or "how-to" approach of behavioral parenting training will offer parents behavior management skills that may be more appropriate when their children's externalizing difficulties are their dominant concern.

Pivotal to a parent's task of dual-regulation of emotion (parent-child) is an open awareness of their own and their child's emotional signals (Rutherford et al. 2015). This awareness is characteristic of mindful parenting, alongside the capacity to maintain an attitude of acceptance and non-reactivity in challenging parenting situations. In the current study, the decreased levels of mindful parenting, which distinguished treatment-seeking parents from the community group, indicates a difficulty in this particular area. More generally, this may indicate difficulties regulating their own emotional and automatic reactions in the parenting context. The increased levels of parenting stress in the treatment-seeking parents is also likely to impact on their capacity for regulating their own and their child's emotions. Thus, the concept of dual-regulation could provide the link between child internalizing (perception of decreased regulation of emotion) and mindful parenting for this group of parents. Thus, a reduced capacity for dual-regulation, as a consequence of increased stress, would determine the reaction or response toward their child's emotion.

The findings from this study indicate that parents seeking a mindful parenting intervention, are best distinguished from community parents by lower levels of mindful parenting over and above all other measured parenting and child variables, and thus may specifically benefit most from such training. Mindful parenting training has been shown to

increase both general mindful awareness and mindful parenting as reported by parents. In previous intervention studies, parents have reported increases in mindful parenting following mindful parenting training; however at post-intervention and 8-week follow up, these are still lower than the community mean in the current study ($M = 3.37$ and 3.66 , Emerson et al. 2019; $M = 3.50$ and 3.63 , Meppelink et al. 2016), but rise to a level comparable to the community at 12-months ($M = 3.88$, Emerson et al. 2019). Similar increases over time have been observed with general mindful awareness (Emerson et al. 2019). These comparisons may indicate a longer-term "normalizing" effect of mindful parenting training on mindful parenting and general mindful awareness. Mindful parenting interventions have been shown to have positive effects on parenting stress, and parent and child psychopathology (Bögels et al. 2014; Meppelink et al. 2016; Potharst et al. 2018). The observed finding that lower mindful parenting is a distinguishing characteristic of the treatment-seeking parents in this study, coupled with growing evidence on the effects of mindful parenting training on child and parent, supports the notion that the training may target a specific need in these parents that then serves to facilitate improvements in their own and their child's mental health.

Limitations and Future Research

The findings from this study should be considered alongside the limitations in design. The quasi-experimental design of the study poses some limitation to the interpretation of the findings. Of particular note is the potential for selection bias that may impact on the comparisons between the treatment-seeking group and the community group in this study. The very nature of the study design meant that the parents in the treatment-seeking group, although referred to community child mental health care, were self-selecting as they either chose or at least agreed to pursue a mindful parenting training intervention. These parents may not represent the wider population of treatment-seeking parents. In addition, the selection method for the community group included referrals from parents in the treatment-seeking group. Thus, unquantifiable biases may have influenced the findings, such as knowledge of the service and support provided that could consequently lead to a response bias in the community group.

The community group within this study reported a 14% rate of psychiatric diagnoses of their child. This rate is comparable to general prevalence of emotional and behavioral difficulties in the general population (Kessler et al. 2007), and thus the group were deemed an appropriate comparison. However, future studies may consider comparison of treatment-seekers with other groups with more stringent criteria to serve as non-clinical controls, and with

matched characteristics. Although the community group were not purposively sampled to match the treatment-seeking group, the demographic differences identified between the groups were controlled for in main analyses. Future research may consider recruiting a matched comparison group.

The demographic characteristics of the sample of parents across both the treatment-seeking and community groups indicates that the sample were a relatively homogenous group; most were Dutch mothers, educated to a relatively high level. The results cannot be generalized to fathers due to the low numbers in this study; future research should extend this line of enquiry to fathers. The lack of diversity in relation to the cultural background of the sample of parents means that the results may specifically reflect a Western and European view of child problems and parenting. It is useful to note that cross-sectional research within other cultures have demonstrated a similar association between mindful parenting and child internalizing and externalizing (Han et al. 2019). Still, further research should consider the role of culture in relation to the construct of mindful parenting, and associated interventions. In addition, as most parents were highly educated, results may not generalize to parents of other educational levels. Emerging pilot research has indicated promising results of mindful parenting interventions with African-American, low income families (e.g. Mathis et al. 2018). Future research could seek to replicate the findings from the current study to determine if a similar pattern of distinguishing characteristics is observed in parents from other cultures and demographic backgrounds.

The use of parent report measures in the current study is consistent with the aims of the study to investigate the parent perspective, since parents are often the driving force for seeking treatment or support. However, the findings of the study do not represent the views of the children. Future research could aim to strengthen the validity of the findings here by including a multi-perspective approach to data collection. The inclusion of child self-report of problems and parenting would allow exploration of this different perspective, and the inclusion of teacher report would provide triangulation on child problems, or a view of specificity to the home environment. Such research could also seek to complement the current study design by utilizing qualitative methods for data collection, which could provide a fine-grained perspective from parents and children in relation to experiences of support-seeking.

Conclusion

The findings from the current study highlight the core issues for this sample of treatment-seeking parents, and the

potential cascade of effects. The primary diagnosis of the treatment-seeking parents' children was predominantly ASD or ADHD, and yet child internalizing problems emerged as the most distinguishing characteristic of the two groups. This finding indicates the associated impact of these conditions for the child and family. In addition, despite significant differences observed between the treatment-seeking and community groups across all parenting variables, mindful parenting emerged as the most distinguishing characteristic. We purport that it is this lower mindful parenting that is associated with a cascade of issues, including parental stress, over-reactivity in parenting, and parent and child psychopathology. The role of dual-regulation of emotion as a key mechanism is a direction for future research, and indicates a family systems approach to the implementation of mindfulness (Bögels and Emerson 2018).

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

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