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The Effect of Mindfulness-Based Programs on Psychological Distress and Burnout in Kindergarten Teachers: A Pilot Study

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Abstract
Teachers' psychological well-being is linked to their classroom teaching and student development outcomes. Kindergarten teachers are generally subject to psychological stress and burnout, but mindfulness training programs may be a promising way to alleviate these issues. This pilot study used a mixed-methods design to evaluate the feasibility and effectiveness of an adapted mindfulness-based program for kindergarten teachers. The participants in the quantitative component were 70 kindergarten teachers (mindfulness training group = 35, comparison group = 35, M_{age} = 30.96) from China. They were rated on the Mindfulness in Teaching Scale; the Depression, Anxiety and Stress Scale; the Maslach Burnout Inventory-General Survey; and the Emotional Intelligence Scale, before and after the mindfulness program. In the qualitative part, semi-structured interviews were conducted with participants (n = 24). Compared with the comparison group, the mindfulness training group showed a significant improvement in emotional intelligence and mindfulness in teaching, and a reduction in burnout and depression. The qualitative findings further supported the effectiveness of mindfulness-based programs to help kindergarten teachers improve their present moment awareness; enhance their emotion regulation; and show more compassion and acceptance. This research provides evidence of the feasibility and effectiveness of mindfulness training to help kindergarten teachers reduce the likelihood of psychological distress and burnout.

Keywords Burnout · Kindergarten teachers · Mindfulness-based programs · Psychological distress

Introduction

A series of studies has suggested that kindergarten teachers are under high levels of pressure, and appear to be particularly vulnerable to psychological distress and professional burnout (Clipa & Boghean, 2015). Various complex factors contribute to the stress and burnout of kindergarten teachers, such as high-intensity tasks, insufficient time, poor teacher–child ratios, children's misbehavior, and constant social evaluation (Al-Adwan & Al-Khayat, 2017; Clipa & Boghean, 2015). In China, about 53 percent of kindergarten teachers are enduring burnout due to limited teaching resources, problematic occupational settings, sociocultural factors, and the high job requirement and challenges (Li et al., 2020).

In early care and education settings, children who receive more social and emotional learning support are more likely to show better developmental results (Durlak et al., 2011). The well-being of teachers, and their social and emotional competences were found to be key factors in creating and maintaining a high-quality learning environment for children (Jennings & Greenberg, 2009). Research has found that kindergarten teachers' well-being is often impaired by stress (Hall-Kenyon et al., 2014), and that their psychological distress impacts children's involvement and learning through ineffective classroom management, low-quality teacher–child interaction, diminished responsiveness, and reduced professional commitment (Pakarinen et al., 2010; Roberts et al., 2016). In addition, teachers with a high level of burnout might develop an indifferent or cynical attitude toward children, colleagues, and parents, which may eventually lead to a lack of self-efficacy (Jennings & Greenberg, 2009). Therefore, more research is needed to find appropriate

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ways to support kindergarten teachers' psychological well-being and help them reduce burnout.

Jennings and Greenberg (2009) argued that a wide range of key emotional intelligence (EI) results in adults might help to explain differences in teachers' social-emotional abilities, which are related to their ability to cope with stress. Studies have shown that a higher level of emotional intelligence is interrelated with increased cognitive ability, psychological well-being, social function, academic achievement, and job success (Brackett et al., 2011). Emotional intelligence was originally defined by Salovey and Mayer (1990, p. 189) as "the subset of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions." The value of emotional intelligence in teaching and teacher education has been noted, and correlations between the former and work-related stress, burnout, and teaching satisfaction have been examined in a previous study (Zysberg et al., 2017). Emotional intelligence training has been widely used to address stress and job dissatisfaction among teachers, and to improve their efficiency and well-being (Vesely et al., 2013).

Mindfulness-Based Programs and Practice in Teacher Training

In the past decades, mindfulness-based training to cope with stress and improve emotional function has received increasing recognition. Mindfulness is the process of regulating one's attention to bring a quality of nonelaborative awareness to the current experience, while possessing an orientation of curiosity, openness, and receptivity (Bishop et al., 2004). With the extensive application of a mindfulness-based therapy program (e.g., Mindfulness-Based Stress Reduction, Mindfulness-Based Cognitive Therapy), a large number of clinical and non-clinical studies have revealed that mindfulness-based intervention can help people alleviate pain, regulate emotion, relieve stress, and generally improve their health and well-being (Khoury et al., 2013). Because of these promising preliminary results, an increased number of researchers have focused on how to use mindfulness-based programs to improve teachers' well-being and professional development (Roeser et al., 2012).

To date, several Mindfulness-Based Stress Reduction (MBSR; Kabat-Zinn, 1990) and Mindfulness-Based Cognitive Therapy (MBCT; Segal et al., 2002) programs for teachers have been evaluated. For example, the Mindfulness-based Wellness Education (MBWE) program is an experiential eight-week health promotion intervention including two core goals of mindfulness teaching and well-being education (Poulin et al., 2008). Stress Management and Relaxation Techniques (SMART) is based on MBSR and introduces additional emotional regulation, empathy and compassion training, mindfulness teaching into the curriculum (Roeser et al., 2013; Taylor et al., 2016). In addition, Cultivating Awareness and Resilience in Education (CARE) is built on a prosocial classroom model, focusing on emotional skills guidance, mindfulness stress reduction exercises, caring and listening practices, that improve teachers' social-emotional competence and well-being (Jennings et al., 2013). It is more diverse in presentation than those mentioned above (Jennings et al., 2013; Schussler et al., 2016). All these mindfulness-based programs for teachers are experiential in nature; they emphasize the cultivation of mindfulness in teaching practice and interactions with students, rather than asking teachers to pass their knowledge of mindfulness directly to students (Meiklejohn et al., 2012).

The mindfulness training program under investigation includes structured practices (e.g., body scans, mindfulness movement, self-acceptance) that are designed to help participants develop mindful awareness, and self-regulation skills, and to cultivate an attitude of compassion and acceptance toward themselves and others (Jennings et al., 2017). Participants develop a set of strategies to recognize and regulate their "stress reaction," relieve interpersonal conflict, build emotional resilience, and ultimately enhance their capacities to use these resources to combat psychological distress and burnout (Taylor et al., 2016). A number of empirical studies have demonstrated that mindfulness-based interventions can significantly improve teachers' levels of mindfulness and reduce occupational burnout (Roeser et al., 2013), alleviate psychological distress, such as depression, anxiety, stress (Franco et al., 2010), and improve working memory capacity and self-compassion (Roeser et al., 2012). A meta-analysis study on mindfulness intervention among teachers indicated that it is effective at relieving pressure, and improving emotional regulation and self-efficacy (Emerson et al., 2017).

Mindfulness Training and Emotional Intelligence

Previous studies have confirmed that emotional intelligence and mindfulness have a significant positive relationship, and the former mediates the relationship between mindfulness and perceived stress, psychological well-being, and life satisfaction (Cheng et al., 2020; Wang & Kong, 2014). There is evidence that practicing mindfulness meditation regularly has a direct impact on emotional intelligence and general perceived pressure. Further, the indirect effects of mindfulness meditation on general self-efficacy and general perceived pressure were found through emotional intelligence (Charoensukmongkol, 2014). Because mindfulness helps develop teachers' emotional intelligence, interventions that raise its level are beneficial. First, mindfulness practice might help teachers develop a non-judgmental attitude to observe both internal and external experiences; promoting their awareness of students' reactions and emotional

states in classroom interactions (Schussler et al., 2016), and encouraging the adoption of more conducive strategies to facilitate teacher-student relationship and student development (Jennings & Greenberg, 2009; Roeser et al., 2012). Second, teachers with high level of mindfulness are more likely to reappraise emotionally challenging situations, avoid automatic impulsive behavior or falling into established patterns of adverse reactions (DeMauro et al., 2019). Finally, teacher's mindfulness skills are theoretically believed to be related to their emotionally support interaction with students (Roeser et al., 2012). Teachers could use their own positive emotions to encourage students, perceive and understand their emotions, and build a close, supportive relationship with them, which in turn creates a positive classroom atmosphere (Jennings & Greenberg, 2009; Schonert-Reichl, 2017). From this, it can be concluded that mindfulness may have a significant effect on teachers' emotional awareness and application, which are fundamental to emotional intelligence.

The main purpose of the present study was to investigate the feasibility and effectiveness of an adapted mindfulness-based program on kindergarten teachers' burnout and psychological distress. The study posited that compared to teachers in the comparison group, kindergarten teachers who received mindfulness training would show significantly reduced levels of psychological distress (stress, anxiety, depression) and burnout. It was further posited that compared to teachers in the comparison group, mindfulness training group teachers would show significant improvements in their emotional intelligence.

Methods

Participants

A total of 70 teachers from two public kindergartens in China (with children 3–6 years old) participated in the study. Each participant was informed about the purpose of the study, and gave informed consent before the program commenced. Participants took part on a voluntary basis, and no remuneration was provided. Most participants (94%) were female. The group ranged in age from 21 to 50, with an average age of 30.96 years (SD = 6.71). Their teaching experience ranged from 0 to 35 years, with an average of 9.08 years (SD = 8.23), and the majority had an undergraduate degree or higher (97.1%). The detailed demographic characteristics of participants are shown in Table 1. At the baseline, there was no significant group difference in demographic characteristics between the mindfulness training (MT) group and the comparison group.

Table 1 Demographic Characteristics of MT program and Comparison Group Participants

	MT group (n = 35) N (%) or M ± SD	Comparison group (n = 35) N (%) or M ± SD
Age (years)	32.5 ± 7.6	29.5 ± 5.4
Gender		
Male	3 (8.6)	1 (2.9)
Female	32 (91.4)	34 (97.1)
Years of teaching experience	10.0 ± 9.1	7.3 ± 5.8
Education background		
Secondary school or below	0	0
College degree	0	2 (5.7)
Bachelor degree	30 (85.7)	27 (77.1)
Master degree or above	5 (14.3)	6 (17.1)

Procedure

To evaluate the effectiveness of the mindfulness-based program, this study used a quasi-experimental pre-test and post-test comparison group design. The study was conducted in two public kindergartens affiliated with a university. They were selected mainly on the basis of convenience, location, and ease of comparison. The overall level of teachers between the kindergartens was well-matched. One kindergarten was randomly selected as the intervention group. An open orientation session was offered for teachers in this group to give them a brief introduction to the mindfulness training program before it began. Thirty-eight teachers attended, 35 of whom voluntarily elected to take part in the MT program. Participants in both groups had their mindfulness, psychological distress, burnout, and emotional intelligence measured before and after the program. To supplement the closed-ended survey measure and understand the potential effectiveness of mindfulness training, we conducted qualitative research through semi-structured interviews with participants (n = 24) whose attendance rates were 75% or above. These face-to-face interviews lasted about 30 min, and were conducted by trained researchers.

The Mindfulness Training Program

Teachers in the MT group took part in a modified 4-week mindfulness training program, which was primarily based on exercises from Mindfulness-Based Stress Reduction (MBSR) and Mindfulness-Based Cognitive Therapy (MBCT). It also used elements of Jennings et al.'s (2013, 2017) mindfulness teachers' program. During the 4-week intervention phases, various forms of mindfulness practice were taught to teachers, such as the body scan, breath awareness, the raisin exercise, and mindful movement. The mindfulness training program in the present study was guided by

a certified national psychological consultant and instructor with at least 5 years' experience in mindfulness practice and teaching. Classes were offered after school at noon, 1.5 h per week for 4 continuous weeks. These weekly group training sessions included general mindfulness practice, personal sharing, and group discussions. The group discussions mainly focused on participants' bodily sensations, thoughts, and emotions. For home practice, the teachers in the MT group were given audio recordings of guided mindfulness meditations, which were consistent with the exercises introduced in class. Participants were asked to practice at home for at least 30 min a day, and to include both formal (e.g., body scan) and informal exercises (e.g., being mindful with children).

Another primary focus of the mindfulness training program was aimed specifically at kindergarten teachers. This included expectation meditation, self-acceptance, kindness practice, and the use of mindfulness in childcare and teaching. All practice activities were designed to (a) Improve the teachers' mindful awareness; (b) Relieve teachers' negative emotions and reduce stress; (c) Improve teachers' awareness of children's emotions and needs during their interactions; and (d) Promote communication and understanding between teachers and children. A detailed explanation of the MT sessions, curriculum design and program content is presented in Table 2.

Measures

The Mindfulness in Teaching Scale (*MTS*) is a 14-item scale designed to measure teachers' levels of mindfulness (Frank et al., 2016). The scale is comprised of two subscales that assess teachers' intrapersonal mindfulness (e.g., "Sometimes I don't concentrate while I'm teaching, but I don't realize this at the time") and interpersonal mindfulness (e.g., "I will listen carefully to the children's ideas, even if I disagree with them"). Items were rated on a 5-point scale, where 1 = almost never, and 5 = almost always. The higher the total score, the higher the level of a teacher's mindfulness. The Cronbach's alphas at pre-test were: mindfulness in teaching = 0.81; intrapersonal mindfulness = 0.90; and interpersonal mindfulness = 0.67. At post-test, the values were: mindfulness in teaching = 0.77; intrapersonal mindfulness = 0.88; and interpersonal mindfulness = 0.61.

The Depression, Anxiety and Stress Scale (*DASS-21*) is a shortened 21-item version of the DASS-42, which is used to measure the severity of negative emotional symptoms (DASS-21; Lovibond & Lovibond, 1995). The scale is composed of three subscales that assess the respective symptoms of depression, anxiety, and stress. Items were assessed on a 4-point frequency scale, where 1 = almost never, and 4 = almost always. The internal consistency of the Chinese

Table 2 Content of 4 weeks teacher mindfulness program

Activity phase	Group practice		homework practice
	General mindfulness activities	Mindful teacher activities	
Phase I: Recognize automatic navigation and pay attention to physical sensations	Body scan; Breath awareness; Raisin exercise	Expectation meditation; New perspective on children	Body scan; Be mindful with your children; Enjoy and record moments of happiness and gratitude
Phase II: Re-sense the body, be aware of emotions and thoughts	Cognitive ABC theory; Mindfulness; Stretching activities; Sound and thought meditation; Three minutes breathing space	Work stress scenarios	Yoga activities; Sounds and thoughts meditation; Three minutes breathing space; Record stressful moments and practice three minutes of breathing exercises
Phase III: Repair interpersonal conflicts and respond to stress	Stress and empathy theory; Mindful walking	Self-kindness meditation; Interpersonal conflict and repair	Three minutes breathing space; Mindful walking
Phase IV: Insist on empathy and acceptance, and be a mindfulness teacher	Mindful walking and body scan; Kindness practice; Mountain meditation	Gratitude practice	Set own daily routine for 30 min practice

three-factor version of the DASS-21 was verified with a good result (0.80–0.83) in the different groups (Wang et al., 2015). In the present research, the Cronbach's alphas at pre-test were: 0.86 for the depression scale; 0.67 for the anxiety scale; 0.79 for the stress scale; and 0.90 for the total scale. At post-test they were 0.81; 0.83; 0.79; and 0.92 respectively.

The Maslach Burnout Inventory-General Survey (*MBI-GS*) is a 16-item scale for assessing the frequency of symptoms related to occupational burnout in kindergarten teachers (Maslach et al., 1986). The scale contains three subscales that assess aspects of occupational burnout: emotional exhaustion (e.g., "Work wears me out physically and mentally"); depersonalization (e.g., "I doubt whether my work has meaning"), and lack of personal accomplishment (e.g., "I can effectively solve problems at work."). The items were assessed on a 5-point frequency scale, where 1 = almost never, and 5 = almost always. The coefficient alphas at pre-test were: MBI-GS = 0.90; emotional exhaustion = 0.91; depersonalization = 0.86; and lack of personal accomplishment = 0.84. At post-test they were 0.88; 0.92; 0.83; and 0.86, respectively.

The Wong and Law Emotional Intelligence Scale (*WLEIS*) is a 16-item scale designed to assess the emotional competency of adults (Wong & Law, 2002). This scale is composed of four subscales that assess self-emotion appraisal (e.g., "I always know whether I am happy or sad"); others' emotion appraisal (e.g., "I can understand the emotions of people around me very well"); regulation of emotion (e.g., "I know how to control my emotions"), and uses of emotion (e.g., "I often encourage myself"). Items were rated on a 5-point Likert scale for frequency (1 = strongly disagree, 5 = strongly agree), with higher scores indicating higher levels of emotional intelligence. This scale has good psychometric properties (Wong & Law, 2002). In the present research, the coefficient alphas for the total scale were 0.94 at pre-test, and 0.90 at post-test.

Analyses

The baseline demographic characteristics were summarized as the intervention group versus the comparison group. Primary analyses of between-group effects at pre-test were measured using Chi-square tests (for categorical variables) and independent samples t-tests (for continuous variables). Mixed-design ANOVAs (2 × 2) were used to analyze the main between-group effects and to explain the dependency of measurements in a repeated measures design (Heeren et al., 2009). Time was treated as a within-subjects variable, and Group was treated as a between-subjects factor that could change within a person and across time. Significant Group × Time interaction effects indicated the availability of mindfulness training in the MT group compared with that of the comparison group. The η^2 was calculated for effect sizes statistics, and ranged from 0.01 to 0.06 for small; 0.06–0.14 for medium; and > 0.14 for large (Cohen, 1988).

The qualitative data was analyzed and reported using the thematic analysis method (Braun & Clarke, 2006). We followed the six steps of data analysis strictly. First, the interviews were transcribed; then the researchers reviewed and reread the transcripts to familiarize themselves with the details, and noted their initial thoughts. Second, they worked through the entire data set systematically, and generated a set of initial concepts or codes. Third, a selection of these codes (the most significant or most frequent) were sorted into potential major or minor themes, all of which were retained. Fourth, the researchers summarized and identified the main themes and sub-themes related to the candidate themes from the previous stage, the coded extracts, and the data set as a whole. Fifth, each theme was clearly defined and named, and the frequency of all sub-themes was counted. Finally, a report was produced that contained the final analysis of the selected extracts. Each theme was supported by rich interview data.

Results

Preliminary Analysis

The baseline demographic characteristics of participants in the intervention and comparison groups were not significantly different. The means and standard deviations of outcome variables are shown in Table 3. The results of independent samples t-tests showed that there were no significant group differences across variables at baseline: mindfulness in teaching (t = − 1.07, p = 0.29), intrapersonal mindfulness (t = − 0.96, p = 0.34), interpersonal mindfulness (t = − 0.29, p = 0.78); DASS-21 total score (t = − 0.47, p = 0.64), depression (t = − 0.26, p = 0.80), anxiety (t = 0.14, p = 0.89), stress (t = − 1.09, p = 0.28); burnout total score (t = 0.33, p = 0.74), emotional exhaustion (t = 1.12, p = 0.27), depersonalization (t = − 1.07, p = 0.29), lack of personal accomplishment (t = 0.52, p = 0.61); and emotional intelligence (t = 1.01, p = 0.32).

Quantitative Findings

As presented in Table 3, significant Group × Time interactions were found in outcome variables. First, the mindfulness in teaching score showed a significant effect ($F = 6.28$, $p = 0.02$, $\eta^2 = 0.09$), especially for intrapersonal mindfulness ($F = 5.44$, $p = 0.02$, $\eta^2 = 0.08$), but had no significant effect in interpersonal mindfulness ($F = 0.84$, $p = 0.36$, $\eta^2 = 0.01$). There were significant Group × Time interaction effects on the DASS total score ($F = 4.93$, $p = 0.03$, $\eta^2 = 0.07$) and depression ($F = 6.35$, $p = 0.01$, $\eta^2 = 0.09$), but no significant

Table 3 Changes in Outcome Variables for MT program (n = 35) and comparison (n = 35) Groups

Outcome	MT group (n = 35)		Comparison group (n = 35)		Mixed-design ANOVA (Group × Time)		
	Pre (M ± SD)	Post (M ± SD)	Pre (M ± SD)	Post (M ± SD)	F	P	η^2
Mindfulness in Teaching	3.93 ± 0.62	4.09 ± 0.37	3.82 ± 0.44	3.67 ± 0.46	6.28	0.02	0.09
Intrapersonal mindfulness	4.19 ± 0.79	4.30 ± 0.48	4.12 ± 0.57	3.86 ± 0.67	5.44	0.02	0.08
Interpersonal mindfulness	3.41 ± 0.70	3.65 ± 0.62	3.37 ± 0.81	3.43 ± 0.53	0.84	0.36	0.01
DASS	11.57 ± 8.47	8.60 ± 5.42	10.82 ± 8.31	12.15 ± 10.09	4.93	0.03	0.07
Depression	2.77 ± 2.70	1.80 ± 1.97	2.59 ± 3.20	3.24 ± 3.28	6.35	0.01	0.09
Anxiety	3.46 ± 2.91	2.37 ± 1.46	3.61 ± 3.21	3.94 ± 3.45	3.76	0.06	0.05
Stress	5.34 ± 3.61	4.43 ± 2.80	4.47 ± 3.01	4.79 ± 3.77	2.26	0.14	0.03
Burnout	1.87 ± 0.68	1.79 ± 0.46	1.91 ± 0.44	2.14 ± 0.58	6.14	0.02	0.09
Emotional exhaustion	1.95 ± 0.82	1.89 ± 0.59	2.16 ± 0.76	2.33 ± 0.95	1.60	0.21	0.02
Depersonalization	1.75 ± 0.81	1.73 ± 0.70	1.58 ± 0.55	1.91 ± 0.72	5.91	0.02	0.08
Lack of personal accomplishment	1.89 ± 0.74	1.77 ± 0.46	1.98 ± 0.63	2.14 ± 0.75	3.23	0.08	0.05
Emotion intelligence	4.01 ± 0.69	4.04 ± 0.46	4.16 ± 0.44	3.8 3 ± 0.51	5.58	0.02	0.08

Pre and post scores from mixed-effects models are shown as estimated marginal means are used to exhibition the pre and post score from Mixed-design ANOVA. Statistics are shown for Group × Time effect, which tested the effectiveness of MT program over time compared with the comparison group

DASS Depression Anxiety Stress Scale

effects on anxiety ($F = 3.76$, $p = 0.06$, $\eta^2 = 0.05$) or stress ($F = 2.26$, $p = 0.14$, $\eta^2 = 0.03$). In addition, there were significant Group × Time interaction effects on the overall level of burnout ($F = 6.14$, $p = 0.02$, $\eta^2 = 0.09$), and depersonalization ($F = 5.91$, $p = 0.02$, $\eta^2 = 0.08$). There were, however, no significant effects on emotional exhaustion ($F = 1.60$, $p = 0.21$, $\eta^2 = 0.02$) or lack of personal accomplishment ($F = 3.23$, $p = 0.08$, $\eta^2 = 0.05$). Finally, there was a significant interaction effect on emotional intelligence ($F = 5.58$, $p = 0.02$, $\eta^2 = 0.08$).

Qualitative Findings

After analysis of the qualitative data, four major themes emerged: improved present moment awareness; enhanced emotion regulation; greater compassion and acceptance; and suggestions for improving the program. These themes were identified and reported by participants in group discussions, dialogues with the instructor, and personal sharing during classes. Further, these themes were related to the literature on mindfulness training and teachers'

Table 4 Main themes and Sub-themes

Main themes	Sub-themes	The frequency of sub-themes
Improved present moment awareness	Awareness of body sensation and thoughts	19 (0.79)
	Enjoying the moment	21 (0.88)
Enhanced emotion regulation	Recognizing emotion triggers	13 (0.54)
	Self-control	19 (0.79)
	Relieved negative emotions	17 (0.71)
	Enhancing ability to relax	11 (0.46)
Greater compassion and acceptance	Greater self-acceptance	14 (0.58)
	Understanding and acceptance of others	16 (0.67)
	Compassion and acceptance to children	17 (0.71)
	Improving relationships with children	12 (0.50)
Suggestions for improving the program	Program time	10 (0.42)
	Home practices	9 (0.38)
	Benefit more people	18 (0.75)

psychological well-being. The main themes and subthemes are presented in Table 4.

Theme 1: Improved Present Moment Awareness

Interviewees reported being more consciously aware of the present moment after the mindfulness training program. For example, a number of teachers (19) reported that they preferred the practices that were more concrete and helped them pay more attention to physical sensations and thoughts. One teacher explained, "*This was the first time I'd laid down quietly to pay attention to my body. I felt more relaxed than ever, but I also noticed that some parts of my body were uncomfortable.*"

Moreover, participants described the new experience of perceiving the present moment. Most teachers (21) reported that they began to enjoy and notice it. As one teacher described, "*It felt good to focus on the little things I'm doing! Brush teeth mindfully, I do that every day.*" Another teacher shared a specific enjoyable experience:

> "*I'm a novice teacher, and I always used to feel nervous in class. After mindfulness training, I tried to enjoy the class and began to focus more on the children' s reactions, such as their smiles or questions, rather than just worrying about making mistakes. I found that when I paid more attention to the children's emotions and needs in our interactions, I was more confident about what to do next.*"

Theme 2: Enhanced Emotion Regulation

The theme of "emotion regulation" emerged repeatedly in the interviews. Many teachers reported that the mindfulness training was useful for controlling negative emotions, and they described how mindfulness practice enabled them to recognize emotional triggers before they exploded or slipped into in negative moods. One teacher explained: "*I learned to listen to my body. Before I lost control of moods, my breath would become heavy, and my expression would be unnatural. Fortunately, I was aware that I was about to lose my temper, so I tried to adjust my mood slowly.*"

Most teachers in the intervention group described having more energy, feeling less overwhelmed by difficult emotions, and learning new methods to cope with negative emotions. For example, they felt less anxious and "frazzled", and more able to cope with stress. Nearly half (11) of the teachers emphasized that the mindfulness training program enhanced their ability to relax. As one teacher said, "*Of all the mindfulness activities, I thought 'the short breathing practice' was the most helpful. Focusing on your breath is an excellent relaxation technique. There were times at work when a lot of tasks came together simultaneously, and I really didn't know where to begin. But if I sat down, took a quick deep breath, and then tried to focus only on one thing, I found things were not as bad as I thought.*"

Theme 3: Greater Compassion and Acceptance

During the course of the mindfulness training program, teachers reported that they were more compassionate and tolerant toward themselves and others, especially children. Many teachers said that they felt a positive change both within themselves and in their interactions with others. For instance, they were kinder to themselves and learned to comfort themselves after unpleasant experiences. One teacher said "*I began to make friends with myself, and then found it was not difficult to accept my weaknesses.*" Many teachers described having more acceptance and understanding of others, including of their perspectives and feelings, which helped them to improve their interpersonal relationships: "*I tried my best to focus on 'now' when I communicated with others, and was then able to listen to and understand, rather than criticize them.*"

In addition, many (17) teachers said that they began to observe children from a new perspective. For example: "*I used to feel very anxious when I helped my daughter with her homework because she was so slow. But now I have accepted the truth, and begun to understand her. I told myself that she was just a child," and "From this new perspective, I discovered that every child has his or her own strengths.*"

Themes 4: Suggestions for Improving the Program

Most teachers made positive comments about the mindfulness training, stating that it was an enjoyable and beneficial experience. They also saw "very important" changes in their attitudes and understanding toward mindfulness practice.

Some teachers suggested changes to the times of sessions and the nature of home practice, and expressed the hope that the program would be available to more teachers in the future. For example, several teachers stated they felt conflicted about attending the weekly formal mindfulness sessions, because they would miss break. As a solution, one teacher suggested the sessions should be offered on weekends or at other time. Some also mentioned that it was difficult to finish the formal at-home practices, for various reasons. Almost of them, however, found some informal practice (such as mindful eating, walking meditations, or short breathing exercises) was good for them, and helped them to mindfully observe their everyday lives. A number of teachers shared their experiences about the mindfulness exercises. For example: "*I didn't know much*

about mindfulness before, but when I tried it I found that it made me feel good in the end." Another teacher agreed: *"The mindfulness experience really helped to improve the quality of my life and work."* Many suggested that the program should be offered to more people (such as parents), so that they too could benefit from it.

Discussion

Evidence from previous studies has demonstrated that kindergarten teachers in China are under high levels of pressure, and face significant challenges in their work (Li et al., 2020). Despite this evidence, there is a lack of research into how pressure and mental health problems in kindergarten teachers can be alleviated, especially in China. This study responded to this need by investigating the initial effectiveness of an adapted mindfulness training program on psychological distress and burnout among kindergarten teachers. The results indicated that this program was both feasible and effective. The quantitative results showed that teachers who participated in mindfulness training demonstrate significantly higher levels of mindfulness and emotional intelligence, and significantly lower levels of burnout and depression than those in the comparison group. The qualitative results provided more information with which to evaluate the mindfulness training, and contribute to the understanding of its potential mechanisms.

As expected, compared with the comparison group, teachers who participated in the MT program showed significantly greater levels of mindfulness in teaching. Specifically, teachers reported higher levels of intrapersonal mindfulness. These results were consistent with previous empirical studies, in which mindfulness training was found to enhance teachers' awareness of present feelings and thoughts (Jennings et al., 2017; Roeser et al., 2013). The qualitative results also supported similar patterns that showed mindfulness exercises helped teachers develop greater awareness of their current experience, after which they felt calmer and more relaxed (DeMauro et al., 2019). Interestingly, however, the quantitative results showed that teachers did not report significantly higher levels of interpersonal mindfulness after the mindfulness training. This finding was different from other studies, in which mindfulness training was effective at reducing interpersonal problems (Gouda et al., 2016). One reason for this could be that interpersonal mindfulness encourages teachers to interact with students in a more open, receptive and non-judgmental way (Frank et al., 2016). It is possible that teachers need more practice or time to fully develop their interpersonal mindfulness, but because this program only lasted four weeks, and there was no long-term follow-up investigation, the results did not show significant changes in this aspect. The qualitative research findings did, however, indicate that mindfulness training could promote teachers' acceptance of and empathy for others, including children. From this point of view, mindfulness training could be seen to promote the development of teachers' interpersonal relationships to a certain extent.

There was also a significant difference between the MT and comparison groups in the level of the teachers' emotional intelligence. This result was consistent with previous research, which indicates that MT programs have a beneficial effect on emotion regulation (Jennings et al., 2013). The qualitative themes reinforced this finding. For instance, they described how mindfulness exercises enabled them to recognize emotional triggers and neutralize them: before they exploded or slipped into a negative mood, teachers in the MT group were able to reduce their emotional responses or take a more appropriate approach.

Teachers in the MT group also reported a significant diminution of depression compared to those in the comparison group. This finding was in line with previous studies, which indicate that mindfulness training can help relieve teachers' negative emotions, especially depression (Kemeny et al., 2012; Roeser et al., 2013). Teachers in the MT group did not, however, show significantly lower levels of anxiety or stress. One potential reason for this is that during the implementation stage of this program, the teachers in these two kindergartens were in the busiest period of the semester, and were under a great deal of pressure. Perhaps as a result of this, their anxiety and stress levels did not significantly decrease as a result of the mindfulness program. We did, however, find a significant decrease for the MT groups in the summary scale of the DASS, which indicates that mindfulness exercises have a positive effect on alleviating psychological distress in kindergarten teachers.

Further, teachers in the MT group showed a significant decrease in their overall levels of burnout and depersonalization, but no statistically significant changes were found to their sense of emotional exhaustion and lack of personal accomplishment. Some previous studies also found that the burnout aspect produced ineffective or mixed results (Flook et al., 2013; Frank et al., 2015), but some teachers mentioned in their interviews that the mindfulness exercises helped them learn positive emotion regulation, which could help them reduce emotional exhaustion. Some teachers reported additional positive effects by means of regulating negative emotions, which made them more energetic and confident at work.

In most cases, the quantitative research results were reflected and confirmed by the qualitative ones. We also extracted some additional but particularly useful information from the interviews we conducted with teachers. We can confirm the finding of other studies that teachers who took part in mindfulness training thought that it could help them achieve more compassion and self-acceptance. Several

studies that used teachers as samples have demonstrated that the cultivation of mindfulness and self-compassion can be mechanisms of positive change, which can serve as a reserve resource for teachers to adjust themselves to cope with stress and burnout (Roeser et al., 2013).

The qualitative results indicated that most teachers were satisfied with the mindfulness program, and some important themes emerged that indicated a general acceptance of it. The teachers in this study found the concept of mindfulness applicable and worthwhile; they benefited from the activities, and valued the chance to learn mindfulness techniques they could use in their daily work. Most teachers said they would recommend the training curriculum to others. In summary, we can tentatively suggest that mindfulness programs for teachers are feasible in a specific kindergarten setting.

Limitations and Future Research

This research had several limitations. First, the sample size was small, and consisted of predominantly female teachers. Future studies need a larger and more diverse sample to evaluate the effects of mindfulness training on kindergarten teachers' well-being and class management, and the development of the children they teach. Second, the mindfulness training data in the present study were mainly based on teachers' self-reporting. Future research should collect data from different sources. Third, this study adopted a quasi-experimental design with relatively low control levels in some aspects. In future studies, randomized controlled experiment design should be used to make the research more rigorous (Jennings et al., 2017). Finally, the limitations of this pilot study prevented the long-term effects of mindfulness training from being investigated. To address this, we suggest conducting an in-depth longitudinal study.

Implications and Recommendations

This research makes a unique contribution to the existing literature by focusing on the potential benefits of mindfulness-based programs to the general health and well-being of kindergarten teachers. Our findings provide strong evidence of the effectiveness of a modified mindfulness training program in combatting psychological distress and burnout in kindergarten teachers, and of the feasibility of implementing mindfulness-based programs in the educational landscape. Specifically, our research indicates that mindfulness training can play a vital role in the professional development of teachers, it is an effective mental health maintenance approach, and can help teachers cultivate malleable skills and mindsets (e.g., less judgmental, more kind, more aware and resilient).

In summary, in view of the benefits of mindfulness training outlined previously, we believe that mindfulness-based programs are a cost-effective investment model for kindergarten teachers during their professional training. To our knowledge, at present only limited attention is paid to the occupational mental health of teachers in policies and teacher training programs (Greenberg et al., 2016). Our study provides a reliable method for balancing the high stress experienced by kindergarten teachers, and the scarcity of psychological services available to them. It is our hope that mindfulness training programs will soon be promoted in the professional development of teachers in China.

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Declarations

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

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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