Impacts of a Mindfulness-Based Program on Teachers' Forgiveness

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Citation: Braun, S. S., Cho, S., Colaianne, B. A., Taylor, C., Cullen, M., & Roeser, R. W. (2020). Impacts of a mindfulness-based program on teachers' forgiveness. *Mindfulness, 11*, 1978-1992.

Funding: This research was made possible through grants from the William T. Grant Foundation (#18107), the Spencer Foundation (#201400182), the Fetzer Institute, the Mind and Life Institute, the Impact Foundation, and Portland State University to the last author. During this work, the last author was supported by the Edna Bennett Pierce endowed chair in Care and Compassion at The Pennsylvania State University; the first author was supported by a training grant from the Institute of Education Sciences (R305B090007). Opinions expressed are those of the authors and do not necessarily represent the granting agencies.

Acknowledgements: We would like to thank our colleagues Dr. Kimberly A. Schonert-Reichl, Dr. Andrew J. Mashburn, and Dr. Ellen Skinner. Thanks also to the participating school districts, administrators, teachers, students, and families, as well as the research assistants who contributed to these research projects. We are most grateful for your support and assistance.

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Abstract

Objectives: Developing the skills to positively manage social transgressions is of particular salience to those in the teaching profession. The Mindfulness-Based Emotional Balance (MBEB) program is a professional development program for K-12 teachers to build mindfulness and related prosocial skills such as empathy, compassion, and forgiveness. The present study assessed the acceptability of the MBEB program and tested whether MBEB was associated with changes in teachers' forgiveness skills.

Methods: Participants included 171 teachers from 3 school districts who were randomized to the MBEB program or waitlist control group. Program attendance was recorded and MBEB teachers reported on the helpfulness of the forgiveness component. Five indices of forgiveness were assessed at pre-program, post-program, and in the fall of the subsequent school year (follow-up). A series of OLS regression models tested whether program condition was associated with the forgiveness outcomes at post-program and follow-up.

Results: MBEB teachers attended 90% of sessions, and 70% of MBEB teachers reported the forgiveness component to be helpful or very helpful. In comparison to control teachers, MBEB teachers reported improvements in their efficacy to forgive colleagues and students, tendency to forgive, and situation-specific forgiveness at post-program. Changes in MBEB teachers' efficacy to forgive colleagues, tendency to forgive, and situation-specific forgiveness were sustained into the fall of the subsequent school year.

Conclusions: Significant and sustained improvements in MBEB teachers' forgiveness skills indicate that teachers, who are actively engaged in a high-stress profession, can benefit from a mindfulness-based program aimed at cultivating prosocial qualities such as forgiveness.

Keywords: Mindfulness-Based Intervention; Teachers; Forgiveness; Efficacy to Forgive;

Randomized Controlled Trial

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For those who work in education, as well as other human service professions, the maintenance of healthy relationships and ability to negotiate conflicts are critical to one's professional success. Indeed, interpersonal conflicts are among the most significant job stressors that human service professionals face. Thus, the acquisition of prosocial skills such as forgiveness, empathy, and compassion assume a uniquely important role in the effectiveness of human service professionals generally (e.g., Wampold, 2001) and teachers in particular (e.g., Roeser et al. 2012).

Research shows that teaching is among the most stressful of human service careers (Johnson et al., 2005), with high burnout rates consistently evident in teachers around the world (Grayson & Alvarez, 2008; Kokkinos, 2007; Liu & Onwuegbuzie, 2012). A recent study indicated that only 7% of teachers surveyed were identified as having the coping skills needed to appropriately handle job-related stressors (Herman et al., 2018). A key source of stress for teachers is the relationships they have with students and colleagues (Hargreaves, 2000; Kyriacou, 2001). Relationships permeate the workday of teachers, and compared to other human service professions, many of these relationships involve a distinct power asymmetry, where one adult is tasked with both teaching and managing a classroom full of younger, less mature individuals. Teachers often have students who cannot control their emotions or behaviors, and these disruptions serve as major inhibitors to learning (Seidman, 2005). The ways teachers respond to these types of situations not only impact the broader classroom climate (Kulinna, 2008), but can also affect teachers' occupational health and personal well-being (McCullough et al., 1997). Teachers who are able to effectively heal relationships with students are not only able to increase students' learning (Roorda et al., 2011), but are also shielding themselves from the impacts of

burnout (Chan, 2010). In addition, maintaining healthy relationships with colleagues is also key to mitigating effects of professional burnout (Chan, 2010). As such, developing the skills to manage social transgressions (i.e., forgiveness) is of particular salience to those in the teaching profession.

However, having the skills to forgive may not be enough if the individual does not feel capable of drawing upon these skills in the necessary contexts and conditions. As Bandura (1977) argued, efficacy is a major determinant of an individuals' choice and effort in an activity. Indeed, increased self-efficacy for handling difficult situations also serves as a buffer to professional burnout for teachers (Egyed & Short, 2006; Skaalvik & Skaalvik, 2010). Teachers who are more confident in their ability to manage difficulties are more likely to experience job satisfaction and less likely to experience emotional exhaustion (Skaalvik & Skaalvik, 2014). Thus, it is also of interest to develop teachers' efficacy for forgiveness in the school context. However, despite the importance of interpersonal skills in the teaching profession, few professional development opportunities exist that address relational skills (Jennings et al., 2017; Roeser et al., 2013).

Forgiveness is a complex skill and much debate surrounds the definition and conceptualization of what the forgiveness process involves (for overview, see Tucker et al. 2015). Worthington et al. (2007) defined *emotional forgiveness* as an emotion-focused coping process that reduces resentment-based emotion, cognition, and motivation. This type of forgiveness is in contrast to what scholars call *decisional forgiveness*, a simpler form where one decides to control one's behavior with the goal of reducing hostility toward the transgressor. Emotional forgiveness, on the other hand, is more related to one's stress response and requires a multifaceted process to change cognition, emotion, and motivation (Worthington et al., 2007).

Importantly, this process of forgiveness is meant to improve one's own well-being, and does not necessarily entail that one forgets, excuses, or even continues to interact with the transgressor.

The logic model of emotional forgiveness follows that when one experiences a transgression or perceived injustice, they will commonly respond with a series of negative emotions and behaviors that induce stress (Worthington & Scherer, 2004). These responses may include maintaining anger, hurt, or resentment following the transgression, and may evolve to harboring a grudge (Witvliet, 2001). One way to reduce this transgression-related stress, termed here as "unforgiveness," is to utilize prosocial skills (e.g., empathy) and motivation (i.e., compassion) to reappraise the transgression experience. Through application of these qualities and reason, the theory is that one is then motivated to forgive the transgressor, or release feelings of unforgiveness as an adaptive, intentional coping strategy (Worthington & Scherer, 2004). In this way, the process of forgiveness can function to reduce sympathetic nervous system activity and related symptoms of stress or distress, as well as to promote health behaviors such as better sleep, and related feelings of wellbeing (Brown, 2003; Lawler-Row & Piferi, 2006; Lawler et al., 2003, 2005; Seybold et al., 2001; Toussaint & Friedman, 2008; Witvliet et al., 2001).

McCullough and Witvliet (2002) described two common ways to conceptualize forgiveness more generally: as a dispositional quality and as a situation-specific response. The dispositional quality to forgive another person is often described as a *tendency* to forgive and is positively associated with agreeableness and conscientiousness (Berry et al., 2001). *Situation-specific* forgiveness of another person can be influenced by features of the situation, such as whether the perpetrator apologizes, is remorseful, and the severity of the situation (e.g., Carmody & Gordon, 2011; McCullough et al., 1997). In contrast, unforgiveness is the maintenance of

feelings of anger, hurt, and resentment following injustice, and may involve harboring a grudge (Witvliet, 2001).

Research has shown that forgiveness is a malleable skill that can be developed through interventions. Interventions for forgiveness have been designed for, and tested on, a wide range of clinical and targeted populations (Coyle & Enright, 1997; Reed & Enright, 2006; Waltman et al., 2009), and community samples across age groups (Allemand et al., 2013; Hui & Chau, 2009; Luskin et al., 2005). Meta-analyses of over 80 studies indicate that programs targeting the development of individuals' forgiveness skills do improve efficacy for, and enhance engagement in, forgiveness skills (Wade et al., 2000, 2014). Given the robust body of literature noting the association between forgiveness and both mental and physical health, forgiveness has been suggested as an integral component to positive psychology interventions, particularly for those in human service professions (Harris & Thoresen, 2006).

Mindfulness practice is one possible medium for teaching social skills like forgiveness. Mindfulness is the intentional awareness of one's experiences in the present moment, with an attitude of non-judgement, curiosity, and acceptance (Kabat-Zinn, 2003). Mindfulness-based programs have consistently found associations between mindfulness skills and interpersonal benefits such as increased empathy, perspective taking, and positive interpersonal interactions (Block-Lerner et al., 2007; Dekeyser et al., 2008). In addition, one cross-sectional study explicitly demonstrated an association between higher levels of mindfulness skills and an increased willingness to forgive (Johns et al., 2015).

Mindfulness may aid individuals in the forgiveness process in several ways. First, mindfulness may increase one's awareness that one is in the state of unforgiveness, along with an understanding that such a state is causing harm or discomfort to oneself, which may itself

motivate individuals to engage in the process of forgiveness. Second, several qualities of mindfulness can support this challenging process, such as nonreactivity, nonjudgement, and perspective taking. Non-reactivity may allow individuals to observe experiences from a psychological distance that affords more access to information (Shapiro et al., 2006). A nonjudgmental attitude toward or acceptance of one's internal experience may allow one to better regulate negative emotions associated with transgressions of others (Lindsay & Creswell, 2017), and thus, open up the possibility for forgiveness. Perspective-taking may allow for an empathic understanding of the transgressor (Block-Lerner et al., 2007), and this additional information regarding the motivation of the offense may cultivate forgiveness. Finally, mindfulness training may increase self-compassion (Robins et al., 2012), which may allow individuals to be more open and curious towards, and less defensive of, one's personal experiences of difficulty with others (Neff et al., 2007). In sum, people who are mindful are likely to navigate transgressions and the ensuing challenging emotions in a skillful way (Shapiro et al., 2006).

While several studies have documented that mindfulness-based programs cultivate prosocial dispositions such as kindness and compassion (e.g., Lutz, Brefczynski-Lewis, Johnstone, & Davidson, 2008), few studies have examined whether mindfulness-based programs alone influence forgiveness. As described, emotional forgiveness involves the skills of empathy and compassion, so understanding how the cultivation of these skills can happen in the context of mindfulness training seems advantageous. Oman, Shapiro, Thoresen, Plante, and Flinders (2008) evaluated the effects of two different meditation-based programs on college students. Participants who completed both programs showed greater increases in tendency to forgive others compared to control students. However, the programs studied by Oman et al. did not have

a session explicitly devoted to the topic of forgiveness. Given the research on the efficacy of forgiveness-focused programs, in conjunction with the complementary perspective provided by mindfulness skills, it was of interest to examine forgiveness in the context of a mindfulness-based program that included explicit forgiveness training.

One particularly promising mindfulness-based program for teachers which includes an explicit focus on forgiveness training is the Mindfulness-Based Emotional Balance (MBEB) program. MBEB is a fully manualized, 9-week, 11-session, professional development program for teachers (Cullen & Pons, 2015; for the full description of the program, see Taylor et al., 2015). Teachers meet for a total of 36 contact hours over nine, 2.5-hour weekly sessions (after school hours) and two full-day retreats (weekends). The program is designed to foster mindfulness, compassion, and forgiveness to promote emotional resilience in teachers and assist them in coping with stress. Approximately 50% of this program is adapted from the mindfulness-based stress reduction (MBSR) curriculum, about 30% is devoted to emotion theory and emotion regulation, and the remaining 20% focuses on cultivating compassion and forgiveness (Table 1). Sessions consist of a combination of guided meditation, group discussion, small-group activities, and lecture, which is supplemented with guided home practices and homework assignments. Home practices and homework invite teachers to apply their skills and report back to the group for discussion in the subsequent week.

Included among the 11 sessions is one session devoted to forgiveness. Teachers explore, through lecture and group discussion, the concept of forgiveness and unforgiveness, major misconceptions that impede the process of forgiveness, and their own personal experiences with harm and forgiveness. For example, teachers discuss their thoughts and experiences around how forgiveness is a sign of strength, not weakness, how forgiveness is not reconciliation or approval,

and how forgiveness can benefit oneself, rather than the offender. Teachers also practice forgiveness meditation that involves practicing forgiveness from three directions: receiving forgiveness, self-forgiveness, and offering forgiveness. Specifically, teachers are guided to first visualize the ways they have hurt others, then to release the burden of causing pain to others, and to ask for forgiveness. This is followed by feeling the pain they have caused to themselves, releasing those burdens, and forgiving themselves. Finally, teachers are guided to think of those who have hurt them and to gradually offer, without forcing, forgiveness. Additionally, they are provided with the forgiveness meditation audio guides and practice the meditation outside of the session as part of their weekly homework, which is processed through group discussion and reflection in the following week.

Due to the importance of prosocial skills such as forgiveness to those in the teaching profession, this study aimed to determine the effect of the MBEB program on teachers' forgiveness skills. Because the explicit focus on forgiveness is unique to the MBEB program, the first aim was to gain an understanding of teachers' perceptions of this component of the program. Next, in alignment with the framework of emotional forgiveness, it was hypothesized that, by participating in a mindfulness-based program that included a forgiveness component (as well as other prosocial components such as empathy and compassion), teachers would feel more efficacious in facing instances of unforgiveness at school, and be more able to forgive than their counterparts in the control group. Continuing previous work that showed the impacts of the MBEB program on teachers' stress-related outcomes in one district (e.g., Taylor et al., 2015), this study examined the impacts of the program on forgiveness-related outcomes across three districts, with data from post-program and follow-up, during the fall of the subsequent school year.

Thus, this study addressed the following topics: acceptability (RQ_1), post-program impacts (RQ_2), and follow-up impacts (RQ_3). The research questions were as follows: **RQ_1:** To what extent did teachers in the MBEB condition attend the sessions? How did they perceive the forgiveness component of the program? Did they find the forgiveness component helpful and beneficial? **RQ_2:** Is MBEB associated with improvements in teachers' efficacy to forgive colleagues, efficacy to forgive students, tendency to forgive and situation-specific forgiveness and unforgiveness at post-program? **RQ_3:** Are the effects of MBEB on teachers' forgiveness sustained into the fall of the next school year?

Method

Participants

Participants were public school teachers from three districts. District 1 included 58 elementary/secondary teachers (32 control; 26 MBEB) from a large urban school district in the Canadian Northwest. District 2 included 55 elementary/secondary teachers (27 control; 28 MBEB) from a smaller suburban school district in the Midwestern United States. District 3 included 58 secondary teachers (29 control; 29 MBEB) from a large urban school district in the Northwestern United States.

The decision to combine the samples together was based on both practical and methodological factors. The same instructor who created the program also taught the program at all three districts, so practically there was consistency in the instructor and her knowledge of the program. In addition, combining the samples allowed for increased statistical power to detect program impacts. District-level differences in effects were also explored in analyses. The combined sample included 171 teachers who were randomized within district to the MBEB program or waitlist control group, and was 82% female, majority white (81% white; 8% Asian;

10% other), and an average of 45 years old (*SD* = 9.44). Participants had an average of 15.09 years of teaching experience (*SD* = 9.27), and taught elementary (34%) and secondary (66%) school.

Procedure

The study was approved by the institutional review board at the affiliated universities and the human subjects board at each of the three participating public school districts, two in the United States and one in Canada. Flyers advertising the free stress reduction program and scientific study were emailed or placed in all teachers' mailboxes, and teachers who were interested contacted the researchers to enroll in the study. Approximately 10% of eligible teachers in each district elected to participate in the study. In most cases, there were not more than one to three participating teachers from any single school. A basic randomization procedure (Suresh, 2011) was employed within each district whereby a coinflip determined whether teachers were assigned to the MBEB condition, in which they received the program first, or a waitlist control condition, in which they received the program after the completion of the study. Participation for all three districts is presented in Table 2. Teachers received the program for free and were monetarily compensated for completing study measures.

Enrolled teachers participated in the pre-program assessment (Time 1; November-December of the school year) where they completed online questionnaires. Teachers in each district were then randomly assigned to the MBEB group or waitlist control group (see Table 2). One school in each district was designated as the implementation site, and all MBEB sessions were hosted after school at the respective district's site. The program developer herself, who has an extensive background in mindfulness, led the MBEB sessions in each district during the months of January, February and March; teachers in the waitlist control group proceeded as

usual. All teachers completed questionnaires at post-program (Time 2; April-May of the school year), and in the fall of the subsequent school year, termed follow-up (Time 3; October-November of the following school year). There was a low rate of attrition from the study, with 93% of teachers responding to post-program surveys, and 88% of teachers responding to surveys at follow-up; the rate of attrition was relatively equivalent across study condition and districts. After follow-up data had been collected, the control group received the program during the subsequent school year.

Measures

Acceptability. *Attendance* was taken at each MBEB session. A program evaluation survey was also created for this study. The survey was administered during the final program session at each district. The survey measured MBEB teachers' perceptions of the forgiveness component with two items: "We would like to know how *helpful* you found the forgiveness component of this program," and "We would like to know how much *benefit* you received from the program with respect to the forgiveness session." Teachers rated their responses using a 5-point Likert scale (1 = *Not at all helpful/No benefit at all*; 5 = *Very helpful/Great benefit*).

Forgiveness Outcomes. Program effects on forgiveness-related outcomes were assessed using five measures of forgiveness.

Efficacy to forgive colleagues and students were each assessed with a single item. For colleagues, the item read: "How confident are you in your abilities to *forgive colleagues* at work who have upset you or let you down?" For students, the item read: "How confident are you in your abilities to *forgive students* in the classroom who have upset you or let you down?" Teachers rated their responses using a 5-point Likert scale (1 = *Not at all confident;* 5 = *Totally confident*).

Tendency to forgive was assessed with the four-item Tendency to Forgive Scale (TTF; Brown, 2003), such as "I tend to get over it quickly when someone hurts my feelings." Teachers rated their responses using a 5-point Likert scale (1 = *Not at all true of me;* 5 = *Very true of me*), with higher scores indicating a greater tendency to forgive. Alpha coefficients were a_{T1} = .83, a_{T2} = .84, and a_{T3} = .84.

Situation-specific forgiveness and unforgiveness. Teachers were asked to "recall a time within the last school year when someone at work wronged you, mistreated you, offended you, or betrayed you in some way. It could be an adult or student" (adapted from Brown & Phillips, 2005). Teachers wrote a description of the offense event. The prompt was unconstrained, with most teachers recounting a different event at post-program and follow-up. Teachers reported incidents with colleagues (39%), students (20%), administrators (20%), parents (8%), and unspecified others (13%). Teachers reported whether an apology was given and responded to six items assessing their response to the recalled event, using a 5-point Likert scale (1 = *Not at all true;* 5 = *Very true*). *Situation-specific forgiveness* was assessed as teachers' response to: "I have forgiven this person." *Situation-specific unforgiveness* was assessed as the mean of five items, including their level of anger, dislike, ill will, wish for retaliation, and avoidance of the offender. Alpha coefficients were a_{T1} = .81, a_{T2} = .82, and a_{T3} = .85.

Data Analysis

Preliminary analyses. First, pre-program equivalence and the amount of missing data were explored. All analyses were run in R Studio.

Pre-program equivalence. Pre-program equivalence by district, condition, and the interaction of district by condition for gender, years of teaching experience, and school level was assessed due to previous research indicating that women are more forgiving than men (Miller et

al., 2008), those who have had a greater opportunity to practice these skills will likely exhibit greater forgiveness (i.e., years of teaching experience), and that forgiveness skills may differ by school level taught due to the differing developmental capabilities, demands, and structures of elementary and secondary schools (Raschke et al., 1985). A series of ANOVA models were run to examine the main effects of district and condition, as well as their interaction for gender and years of teaching experience. A series of chi-squared tests determined the effect of district, condition and their interaction on level of school taught. A series of ordinary least squares (OLS) regression models were run in R that predicted each dimension of forgiveness at pre-program by district, condition, and district by condition. Correlations between all study measures at pre-program were also assessed.

Missing data. Descriptive analyses were also run to determine the amount of missingness present in the data. Missingness of < 5% is usually of little concern, whereas missingness at higher rates is considered to be an increasingly greater threat to the validity of results (Fewtrell et al., 2008). In this case, Little's test was run to determine whether the data were missing at random – a prerequisite for employing full-information maximum likelihood (FIML) estimation (Little, 1988). If satisfied, models assessing program impacts would be run using FIML in the lavaan package in R (Rosseel, 2012). FIML is a widely recognized method of model-based imputation that allows for the incorporation of all participants' data into analyses by estimating model parameters and standard errors using all available data (Enders, 2001).

Acceptability. The percentage of sessions attended by teachers was calculated, including the proportion of teachers who attended the forgiveness session. To address whether participants found the forgiveness component to be helpful and beneficial, the percentage of MBEB teachers who rated the helpfulness of the forgiveness component as a 4-5 (*helpful* or *very helpful*) and the

percentage of MBEB teachers who rated the benefit of the forgiveness component as a 4-5 (*a benefit* or *a great benefit)* were determined.

Post-program impacts. Descriptive statistics and effect sizes, Cohen's *d*, determined using the unadjusted means and standard deviations, $d = \frac{M_{MBEB} - M_{Control}}{SD_{Pooled}}$, are reported in Table 3 and Figure 1. To test whether the program had effects on teachers' forgiveness at post-program, a series of OLS regression models were run to assess whether the program condition was associated with the outcome at post-program after controlling for teacher characteristics (gender and years teaching), school level (0 = *elementary*; 1 = *secondary*), and district (categorical with District 1 as the reference group). Regression models testing the effect of the program on efficacy to forgive colleagues and students, and tendency to forgive included the outcome at pre-program. Another way to conceptualize these models is that they predict the "residual change" in the outcome, or the outcome after controlling for its baseline level. Regression models testing the effect of the program on situation-specific forgiveness and unforgiveness controlled for tendency to forgive at pre-program and the offender's apology, which previous research has shown to be associated with situation-specific forgiveness (Brown & Phillips, 2005).

In addition, to explore whether the effects of the program differed by district, a second model was tested for each outcome that included the interaction of district by condition. An ANOVA compared whether this model was a significant improvement to the main effects model.

Follow-up impacts. To test whether these effects were sustained into the fall of the subsequent school year, these same procedures were used, testing for the effect of MBEB on outcomes at follow-up. Model implied values of outcomes at post-program and follow-up are plotted in Figure 2.

Results

Preliminary Analyses

Pre-program equivalence: Demography. ANOVA results demonstrated no main effects of condition on teachers' years of experience or gender, but main effects of district on years of experience, $F(2, 156) = 10.44$, $p < .001$, and teachers' gender, $F(2, 164) = 5.03$, $p = .007$. The condition by district interaction for teachers' years of experience and gender were nonsignificant, however. Results of the chi-squared test revealed that the level of school taught did not vary by condition, but only by district, $X^2(2) = 45.35$, $p < .001$ due to the fact that two district studies included elementary and secondary school teachers, and one study included all middle school teachers only.

Pre-program equivalence: Outcomes. None of the five outcome variables differed by condition at pre-program, $p > .05$, nor were there any district by condition differences. There were several district--related differences in these variables, with teachers' efficacy to forgive students, situation-specific forgiveness, and situation-specific unforgiveness varying by district. Given the significant differences in teachers' demographics and outcome measures at pre-program across districts, our impacts analyses controlled for years teaching, gender, and district, and tested for the significance of the interaction of condition by district. Correlations among all study variables at pre-program are presented in Table 4.

Missing data. Descriptive analyses determined a total of 9% of study variables were identified as missing, with the proportion of missing values ranging according to study variable from 0%-24%. This level of missingness was above the threshold for ignorability (< 5%; Fewtrell et al., 2008). Little's test was run to determine whether the data were missing at random – a prerequisite for employing FIML to account for missing data in subsequent analyses (Little,

1988). Results demonstrated that the data were missing completely at random $X^2(326) = 328.91$, $p = .444$. Thus, models assessing program impacts were run using FIML in the lavaan package in R. Because these models were fully saturated, there were zero degrees of freedom and thus no fit statistics were available (Talbert et al., 2018).

Acceptability

Teachers in the MBEB condition attended 90% of sessions or 10 out of 11 sessions. Similarly, approximately 85% of participants attended the forgiveness session of the program. Results showed that 70% of participants found the forgiveness component to be *helpful* or *very helpful* and 69% of participants found the forgiveness component to be *a benefit* or *a great benefit* ($N = 75$).

Post-Program Impacts

Unadjusted group means and program effect sizes for efficacy to forgive colleagues, efficacy to forgive students, tendency to forgive, situation-specific forgiveness, and situation-specific unforgiveness at post-program are presented in Table 3 and Figure 1. Regression results are presented in Tables 5-6 with model implied values for outcomes across time plotted in Figure 2. These values represent the outcome for a male elementary teacher in District 1 with an average number of years of experience in the classroom, and an average level of the outcome at pre-program/tendency to forgive at pre-program where an apology was not given.

Efficacy to forgive colleagues and students. Teachers in the MBEB condition reported significantly greater efficacy to forgive colleagues at post-program ($b = 0.33$, $SE = 0.12$, $p = .005$) than their counterparts in the control group. This effect was equivalent to a small-medium effect size, $d = 0.42$.

Teachers in the MBEB condition reported greater efficacy to forgive students at post-

program (b = 0.24, SE = 0.11, p = .032) than their counterparts in the control group. This effect was equivalent to a small-medium effect size, d = 0.31.

Tendency to forgive. Teachers in the MBEB condition reported a higher tendency to forgive at post-program (b = 0.42, SE = 0.09, p < .001; Table 5) than teachers in the control condition. This effect was equivalent to a medium effect size, d = 0.51 (Figures 1-2).

Situation-specific forgiveness and unforgiveness. Teachers in the MBEB condition reported significantly greater situation-specific forgiveness at post-program (b = 0.66, SE = 0.18, p < .001; Table 6) than their counterparts in the control group. This effect was equivalent to a small-medium effect size, d = 0.42.

Teachers in the MBEB condition reported significantly less situation-specific unforgiveness at post-program (b = -0.33, SE = 0.14, p = .021; Table 6) than their counterparts in the control group. This effect was equivalent to a small-medium effect size, d = -0.27.

Impacts across districts. The possibility that the program's effects differed by district was tested by running a second model for each outcome that included the interaction of district by condition. In all cases, the inclusion of this interaction did not significantly improve the model fit, indicating that the null hypothesis of no district-level effects cannot be rejected: Post-program efficacy to forgive colleagues $X^2\Delta(1) = 1.45$, p = .229; efficacy to forgive students $X^2\Delta(1) = .86$, p = .352; tendency to forgive $X^2\Delta(1) = .46$, p = .497; situation-specific forgiveness $X^2\Delta(1) = .12$, p = .732; situation-specific unforgiveness $X^2\Delta(1) = .019$, p = .890. As the addition of this interaction did not significantly improve the model fit, only the more parsimonious main effects models described above are tabled.

Follow-Up Impacts

Unadjusted group means and program effect sizes for efficacy to forgive colleagues,

efficacy to forgive students, tendency to forgive, situation-specific forgiveness, and situation-specific unforgiveness at follow-up are presented in Table 3 and Figure 1. Regression results are presented in Tables 5-6 with model implied values for outcomes across time plotted in Figure 2.

Efficacy to forgive colleagues and students. Teachers in the MBEB condition reported significantly greater efficacy to forgive colleagues at follow-up ($b = 0.37$, $SE = 0.12$, $p = .002$) than their counterparts in the control group, demonstrating that MBEB teachers' improvements in their efficacy to forgive colleagues were sustained into the following school year. This effect was equivalent to a small-medium effect size, $d = 0.47$.

Teachers in the MBEB condition did not report significantly different levels of efficacy to forgive students at follow-up ($b = 0.14$, $SE = 0.10$, $p = .179$) than their counterparts in the control group, indicating that the post-program effect of MBEB was not sustained at follow-up. The effect was equivalent to a small effect size, $d = 0.19$.

Tendency to forgive. Teachers in the MBEB condition reported a higher tendency to forgive at follow-up ($b = 0.31$, $SE = 0.08$, $p < .001$; Table 5) than teachers in the control condition, demonstrating that MBEB teachers' improvements in tendency to forgive were sustained into the following school year. This effect was equivalent to a medium effect size, $d = 0.42$ (Figures 1-2).

Situation-specific forgiveness and unforgiveness. Teachers in the MBEB condition reported greater situation-specific forgiveness at follow-up ($b = 0.41$, $SE = 0.20$, $p = .043$; Table 4) suggesting that the program's effect at post-program was sustained through the fall of the subsequent school year. This effect was equivalent to a small to medium effect size, $d = 0.26$.

Teachers in the MBEB condition did not report significantly different situation-specific forgiveness at follow-up ($b = -0.20$, $SE = 0.15$, $p = .192$; Table 4) than their counterparts in the

control group, suggesting that the program's effect at post-program was not sustained through the fall of the subsequent year. The effect was equivalent to a small effect size, d = -0.17.

Impacts across districts. The possibility that the program's effects differed by district was tested by running a second model for each outcome that included the interaction of district by condition. In all cases, the inclusion of this interaction did not significantly improve the models' fit, indicating that the null hypothesis of no district-level effects cannot be rejected: Follow-up efficacy to forgive colleagues $X^2\Delta(1) = .57$, $p = .449$; efficacy to forgive students $X^2\Delta(1) = .80$, $p = .370$; tendency to forgive $X^2\Delta(1) = .04$, $p = .847$; situation-specific forgiveness $X^2\Delta(1) = 2.50$, $p = .114$; situation-specific unforgiveness $X^2\Delta(1) = 2.22$, $p = .136$. As the addition of this interaction did not significantly improve the model fit, only the more parsimonious main effects models described above are tabled.

Discussion

The purpose of this study was to assess the acceptability of a mindfulness-based program for K-12 public school teachers that included prosocial components (i.e., forgiveness, empathy, compassion), and determine whether the MBEB program was associated with improvements in teachers' ability to forgive. Teachers reported high acceptability of the forgiveness session, which supports the additive value of incorporating explicit topic of forgiveness in mindfulness-based professional development program. Results showed that teachers who participated in the program demonstrated significant increases in all measured indices of forgiveness at post-program: efficacy to forgive colleagues, efficacy to forgive students, tendency to forgive, and situation-specific forgiveness and unforgiveness. Further, improvements in teachers' efficacy to forgive colleagues, tendency to forgive, and situation-specific forgiveness were sustained into the fall of the following school year. These results suggest that the teachers were able to increase

the skills associated with emotional forgiveness (Worthington & Scherer, 2004).

This study not only supports previous work that shows that forgiveness is a malleable skill (Wade et al., 2000), but it also supports the promise of mindfulness-based interventions to improve prosocial qualities like forgiveness (e.g., Oman et al., 2008). The MBEB program tested in this study differs from other mindfulness-based interventions in two ways. First, the program focused more on emotion regulation skills and "heart" practices (e.g., empathy, compassion, forgiveness) than typical mindfulness-based stress reduction (i.e., Kabat-Zinn, 2003) programs. This emphasis on using mindfulness to regulate emotions may have allowed participants to learn skills associated with emotional forgiveness, such as awareness, empathy, and compassion (Worthington & Scherer, 2004). By learning these emotional skills, participants may have been able to respond to transgressions with positive emotions and prosocial behavior, and thus more effectively engage in the process of the emotional forgiveness.

Second, the MBEB program explicitly dedicates one session to the topic of forgiveness. This session focused on how unforgiveness makes individuals feel, obstacles that impede the forgiveness process, and what happens when individuals forgive. This differs from other mindfulness-based intervention studies that explored forgiveness as an outcome (i.e., Oman et al., 2008) and may explain why the post-program effect size for tendency to forgive (the measure most similar to that used by Oman et al., 2008) was stronger in the present study on teachers than in Oman's study of a mindfulness-based program with college students. By the MBEB program providing a full session on the topic of forgiveness, MBEB teachers may be able to better understand the relationship between mindfulness and forgiveness, and therefore be more effective at utilizing mindfulness skills to facilitate the forgiveness process.

Although it is likely that the specific session on forgiveness contributed to our results, the

program did not dictate *how* teachers should transfer the skill of forgiveness to the classroom context, which may explain why the effects of the program were in the right direction, but were not significantly maintained for teachers' efficacy to forgive students or situation-specific unforgiveness at follow-up. The program may have stronger effects on workplace forgiveness if it were designed to scaffold the transfer of forgiveness skills to teachers' interactions with colleagues and students. Another explanation is that teachers may not perceive students as causing significant enough transgressions to require the act of forgiveness, potentially due to the power asymmetry that exists in the classroom. During challenging moments, teachers may have enough awareness of their students' motivations to maintain a healthy stress-response that does not require the coping strategy of forgiveness.

On a larger scale, this study is a response to Worthington et al. (2007)'s call for more robust controlled trials of forgiveness programs to better understand the skills that may contribute to improving one's ability to forgive. In the context of the MBEB program, the present study furthered the existing research base (see Taylor et al., 2015) by examining the program's impacts on an expanded set of outcomes, over longer periods of time, and in more settings.

Because understanding how to improve teachers' relational skills is of particular importance to the field of education, this study has implications for the types of training that could be provided to teachers. Few professional development programs target the cultivation of teachers' relational skills, although prior mindfulness programs used in education settings have been suggested as useful in this regard (Roeser et al., 2012). Two important findings from this study support the wider use of mindfulness-based programs for teachers. First, there were no significant effects of district by condition, implying that the MBEB program had similar results

across all three districts. These results suggest that mindfulness-based programs may have similar positive effects if implemented in more school districts. Second, some of the results were sustained into the fall of the following school year, suggesting that the information and experiences gained during the program may be associated with more enduring changes in teachers' efficacy, dispositions and relationship repair skills. These lasting effects might appeal to school districts that are looking for more impactful professional development trainings.

Limitations and Future Research Directions

Because the forgiveness lesson was embedded within the larger mindfulness-based program, it is impossible to identify the specific program component was responsible for MBEB teachers' improvements in forgiveness skills. Future research might specifically explore the "active ingredients" in the program that led to changes in forgiveness. Exploring possible mediators of the relationship between the program and improvements in forgiveness is a related and fruitful avenue for future research. For example, it may be that mindfulness training increases teachers' self-awareness such that they can recognize that they are in the state of unforgiveness, which initiates the forgiveness process.

An inherent limitation in studies employing waitlist control designs is that they do not allow for multiple treatments to be assessed against each other. Thus, results from this study may reflect a general effect of treatment rather than an effect of the MBEB program itself. For example, it is possible that some of the positive effects emerged from the frequent and positive contact teachers derived from supportive colleagues and facilitators, which may be absent in teachers day-to-day life (Clark & Lampert, 1986). Thus, a next logical step in this work would be to examine how active control groups that match MBEB in structure (e.g., group meeting, weekly exercise, psychoeducation), might eventuate in differential or similar impacts (Grossman

et al., 2004; MacCoon et al., 2012).

The present study included teachers who self-selected into a mindfulness-based teacher wellness program. Although unable to be tested in the present study, it is possible that these teachers differed from the larger population of teachers in these districts. Participating teachers were, in general, highly experienced, and predominantly white. Future studies that recruit a more representative sample of teachers will aid in our understanding of *for whom* these programs work. Moderation of program effects by teaching experience, for example, are warranted but rare and are a useful next step for research in this domain. It may be that the program is even more effective for new teachers who are at risk for increases in emotional exhaustion and leaving the profession (Dicke et al., 2015). Given the high rate of stress and burnout within the teaching profession, efforts to improve teachers' critical social and emotional skills are also of interest due to their hypothesized downstream effects on teachers' own well-being, and that of their students' (Jennings & Greenberg, 2009). Future research could explore how the development of teachers' prosocial skills might alleviate common struggles in teaching. For example, whether improvements in teachers' social and emotional skills mediate the relationship between mindfulness-based programs for teachers and their feelings of stress, burnout, and associated experiences.

The current study took place across three school districts, with teachers randomized within district. While the analyses in the current study include district as a fixed effect, as is consistent with similar studies of this design (Madill et al., 2014), the sample was underpowered to fully explore this possibility. Larger trials could consider employing multilevel modeling, which would better reflect the nested nature of the data. Further, although unlikely with the participation rate and stratification of teachers across schools in the current study, it is possible

that contamination influenced results. Larger trials that randomize at the school-level could further help to prevent contamination.

Finally, it is noteworthy that the measures assessing teachers' efficacy to forgive colleagues and students were single items created for the current study. Additional research is necessary to determine the reliability and validity of this measure. As with most self-report data, it is possible that response bias may have influenced results. Future studies could employ additional robust measures, including observational measures of critical incidents, student-reports of their teacher, and colleague-reports of teachers, which may enhance our confidence that behavioral change occurs following such training. Studies with longer-term follow-up assessments will also contribute to our understanding of whether these programs can instill long-term change. One also wonders if more forgiving teachers socialize more forgiving students. Measuring students' tendency to forgive in such studies is also an interesting avenue of research.

This study contributes to the literature on mindfulness in education by suggesting that teachers, who are actively engaged in a high-stress profession, can benefit from a mindfulness-based program that aimed to cultivate forgiveness skills. Improvements in forgiveness were seen after the program was completed and were sustained into a new school year among teachers in three different districts. Because developing and maintaining healthy relationships is at the crux of the teaching profession, understanding how programs can help teachers strengthen prosocial skills, such as forgiveness, should be of top priority for schools.

Disclosure of Potential Conflicts of Interest

The fifth author co-developed and implemented the program assessed in this study. The remaining authors declare no conflicts of interest.

Compliance with Ethical Standards

Ethical Approval: All procedures were in accordance with the ethical standards of the institutional review board at Portland State University 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.

Author Contributions: SSB: Led data analysis, interpretation, and manuscript preparation. SC: Collaborated on data analysis, interpretation, and manuscript preparation. BAC: Collaborated on data analysis, interpretation, and manuscript preparation. CT: Collected data, collaborated on data analysis and interpretation. MC: Developed and implemented the MBEB program. RWR: Principal investigator, conceptualized study, oversaw data collection, provided guidance on data analysis, interpretation, and manuscript review. All authors approved the final version of the manuscript for submission.

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Table 1

Curricular Components of the Mindfulness-Based Emotional Balance Program

Mindfulness-based stress reduction Approximately 50%	Mindfulness-based emotion skills Approximately 30%	Mindfulness-based compassion & forgiveness Approximately 20%
• Body scan for somatic awareness and awareness of states of tension and rest • Basic breath awareness practice • Mindfulness of thoughts and emotions practice • Mindful standing practice • Mindful walking practice • Mindful walking and greeting • Mindful eating • Role play practicing mindfulness in the context of emotion of anger and fear in the classroom • Role play practicing mindfulness in the context of a challenging social interaction with a colleague or parent	• Introduction to emotions, purpose, universal expressions, relevant brain research • How emotions affect reacting vs. responding • Didactic information about uncomfortable emotions (anger, fear, sadness) including physiology, facial expression, cognitive and behavioral responses • Didactic information about comfortable emotions (joy, appreciation) including physiology, facial expression, cognitive and behavioral responses • Exploring bodily awareness of uncomfortable emotions • Exploring bodily awareness of comfortable emotions • Exploring individual differences in emotional expression (emotional profile, triggers, and scripts) • Using mindful awareness & reflection to recognize strong emotions and the refractory period • Developing mindful coping strategies (e.g., reappraisal, relaxation)	• Loving-kindness practice—guided reflection focused on caring for self • Loving-kindness practice—guided reflection focused on caring for self, loved one, colleague, challenging person • Practicing loving-kindness for "most challenging student" and student "I don't know very well" • Mindful forgiveness practice—guided reflection focused on forgiving self and others, under the right circumstances, for perceived transgressions • Mindful listening practice

Table 2

Participants by District, Condition, and Time

	Total *N*	District 1		District 2		District 3	
		Control	MBEB	Control	MBEB	Control	MBEB
Pre-Program Assessment (T1)	171	32	26	27	28	29	29
Post-Program Assessment (T2)	160	30	25	27	28	27	23
Follow-up Assessment (T3)	150	29	24	23	26	25	23

Table 3

Descriptive Statistics for Forgiveness Outcomes at Pre-Program, Post-Program, and Follow-Up

	Pre-Program						Post-Program						Follow-Up					
	Control			MBEB			Control			MBEB			Control			MBEB		
	N	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*	*N*	*M*	*SD*
Efficacy to Forgive Colleagues	88	3.19	0.87	77	3.29	0.94	85	3.29	0.94	75	3.67	0.84	75	3.35	0.85	70	3.76	0.84
Efficacy to Forgive Students	88	3.64	0.95	77	3.71	1.06	85	3.65	0.93	75	3.93	0.83	75	3.81	0.85	70	3.97	0.85
Tendency to Forgive	88	2.81	0.79	76	2.82	0.77	85	2.82	0.87	75	3.23	0.70	75	2.86	0.79	69	3.19	0.73
Situation-Specific Forgiveness	71	2.92	1.30	62	2.81	1.30	80	2.86	1.22	72	3.40	1.29	64	3.05	1.35	64	3.39	1.22
Situation-Specific Unforgiveness	71	2.11	1.00	62	2.15	0.86	80	2.21	1.01	72	1.95	0.88	65	2.09	1.01	65	1.93	0.92

Note. *N* = Participants with data; *M* = Mean; *SD* = Standard deviation.

Table 4

Bivariate Correlations Among Study Measures at Pre-Program

		1	2	3	4	5	6	7	8	9	10
1	Condition (1 = *MBEB*)	-									
	Forgiveness Outcomes										
2	Efficacy to Forgive Colleagues	0.07	-								
3	Efficacy to Forgive Students	0.08	0.22	-							
4	Tendency to Forgive	0.01	0.47	0.24	-						
5	Situation-Specific Forgiveness	-0.04	0.35	-0.04	0.43	-					
6	Situation-Specific Unforgiveness	0.02	-0.37	0.02	-0.45	-0.75	-				
	Covariates										
7	Gender (1 = *Female*)	0.01	-0.16	0.04	-0.14	-0.10	0.07	-			
8	Years Teaching	-0.03	0.10	0.14	0.03	-0.05	-0.06	-0.11	-		
9	School Level (1 = *Secondary*)	0.05	-0.03	-0.31	0.16	0.13	-0.15	-0.22	-0.14	-	
10	Apology Given (1 = *Apology*)	0.03	0.10	-0.07	-0.01	0.29	-0.13	0.03	-0.10	0.08	-

Note. $p < .05$ when $|r| > .15$.

Table 5

Program Effects on Teachers' Efficacy to Forgive Colleagues, Students, and Tendency to Forgive

	Post-Program									Follow-Up								
	Efficacy to Forgive Colleagues			Efficacy to Forgive Students			Tendency to Forgive			Efficacy to Forgive Colleagues			Efficacy to Forgive Students			Tendency to Forgive		
	Beta		SE	Beta		SE	Beta		SE	Beta		SE	Beta		SE	Beta		SE
Intercept	1.58	**	0.32	1.80	**	0.37	0.77	**	0.24	1.63	**	0.34	1.49	**	0.35	0.81	**	0.22
Outcome at Pre-Program	0.51	**	0.07	0.49	**	0.07	0.73	**	0.06	0.42	**	0.07	0.61	**	0.07	0.78	**	0.05
Study Condition (*1 = MBEB*)	0.33	**	0.12	0.24	*	0.11	0.42	**	0.09	0.37	**	0.12	0.14		0.10	0.31	**	0.08
Demography																		
Gender (*1 = Female*)	-0.06		0.16	0.16		0.16	0.05		0.12	0.05		0.17	-0.02		0.14	-0.01		0.11
Years Teaching	0.00		0.01	0.00		0.01	0.00		0.01	0.01		0.01	0.01		0.01	0.00		0.01
School Level (1 = *Secondary*)	0.04		0.15	0.00		0.14	-0.04		0.11	0.23		0.16	0.11		0.13	-0.13		0.10
District																		
District 2	0.00		0.14	0.00		0.14	-0.02		0.11	-0.04		0.15	-0.18		0.13	0.01		0.10
District 3	0.21		0.17	-0.17		0.17	-0.11		0.12	0.10		0.17	-0.02		0.16	-0.01		0.11
R^2	0.34			0.39			0.54			0.29			0.48			0.63		

Note. Unstandardized regression coefficients derived from OLS regression models. *SE* = Standard error. ** $p < .01$; * $p < .05$.

Table 6

Program Effects on Teachers' Situation-Specific Forgiveness and Unforgiveness

	Post-Program						Follow-Up					
	Situation-Specific Forgiveness			Situation-Specific Unforgiveness			Situation-Specific Forgiveness			Situation-Specific Unforgiveness		
	Beta		SE	Beta		SE	Beta		SE	Beta		SE
Intercept	1.15	*	0.47	3.70	**	0.38	0.77		0.52	3.26	**	0.41
Tendency to Forgive at Pre-Program	0.63	**	0.11	-0.44	**	0.09	0.67	**	0.13	-0.37	**	0.10
Apology Given (1 = *Apology*)	0.93	**	0.21	-0.49	**	0.17	0.44		0.26	-0.40		0.21
Study Condition (1 = *MBEB*)	0.66	**	0.18	-0.33	*	0.14	0.41	*	0.20	-0.20		0.15
Demography												
Gender (*1 = Female*)	-0.12		0.24	-0.12		0.19	0.07		0.26	0.10		0.20
Years Teaching	-0.01		0.01	0.00		0.01	0.02		0.01	0.00		0.01
School Level (1 = *Secondary*)	-0.11		0.22	0.08		0.18	-0.37		0.25	0.21		0.20
District												
District 2	-0.03		0.21	-0.14		0.17	0.15		0.25	-0.16		0.19
District 3	0.05		0.24	-0.17		0.19	0.61	*	0.28	-0.49	*	0.22
R^2	0.30			0.20			0.26			0.19		

Note. Unstandardized regression coefficients derived from OLS regression models. *SE* = Standard error. ** $p < .01$; * $p < .05$.

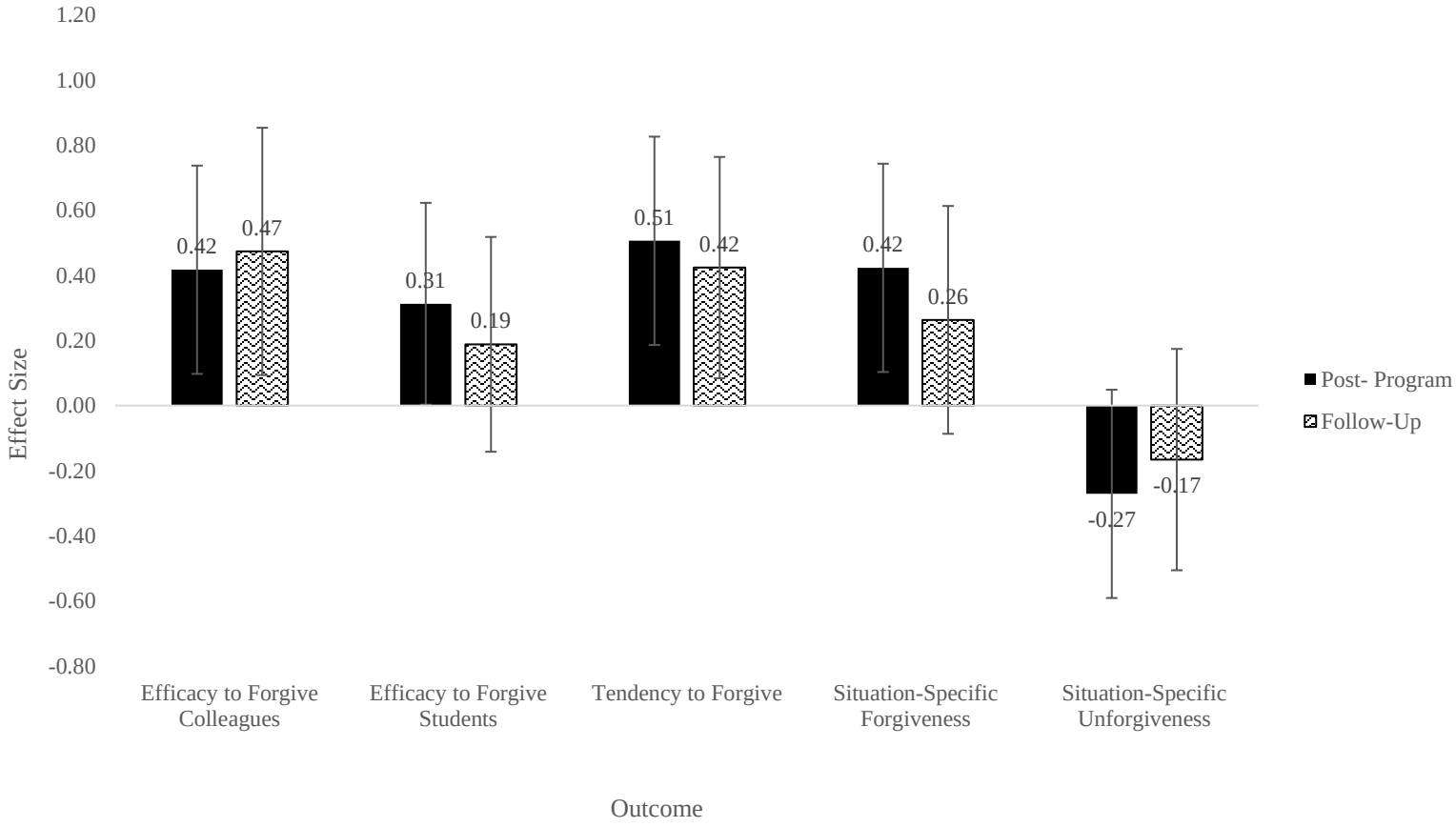
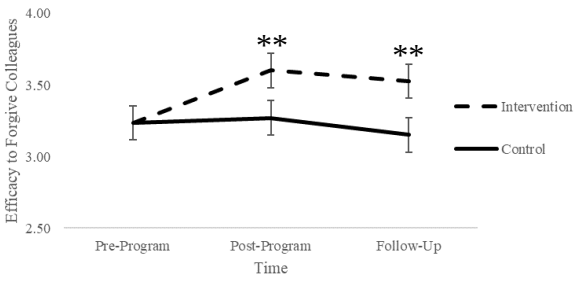
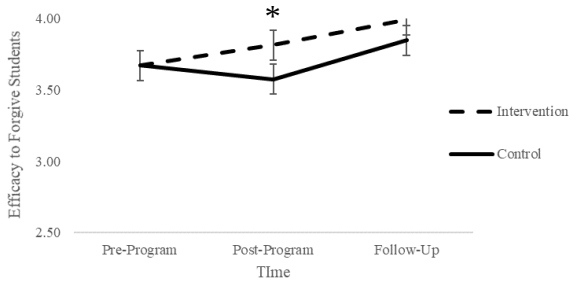


Figure 1. Effect sizes of the program on five dimensions of forgiveness at post-program and follow-up calculated using unadjusted means and standard deviations, $d = \frac{M_{MBEB} - M_{Control}}{SD_{Pooled}}$. Confidence intervals are represented in error bars.



a.



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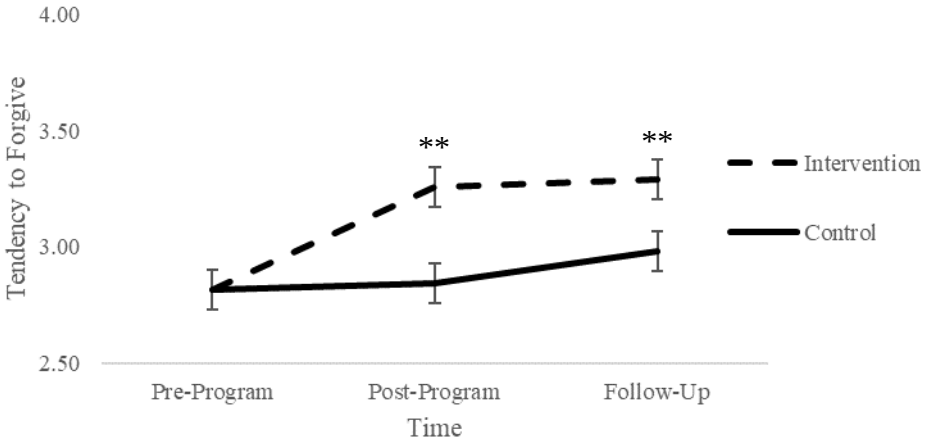
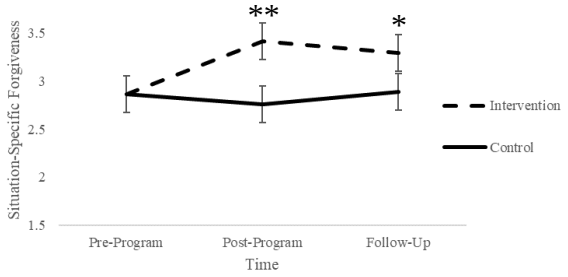
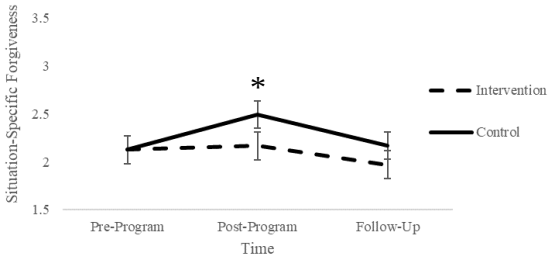


c.



d.



e.

Figure 2. Model implied values for forgiveness outcomes at pre-program, post-program, and follow-up. Standard errors from model outputs are represented in error bars. Significant differences between conditions are denoted by ** $p < .01$; * $p < .05$.