
Effects of a Group Forgiveness Intervention on Forgiveness, Perceived Stress, and Trait-Anger



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The goal of this study was to evaluate the effects of a 6-week forgiveness intervention on three outcomes: (a) offense-specific forgiveness, (b) forgiveness-likelihood in new situations, and (c) health-related psychosocial variables, such as perceived stress and trait-anger. Participants were 259 adults who had experienced a hurtful interpersonal transgression from which they still felt negative consequences. They were randomized to a forgiveness-training program or a no-treatment control group. The intervention reduced negative thoughts and feelings about the target transgression 2 to 3 times more effectively than the control condition, and it produced significantly greater increases in positive thoughts and feelings toward the transgressor. Significant treatment effects were also found for forgiveness self-efficacy, forgiveness generalized to new situations, perceived stress, and trait-anger. © 2006 Wiley Periodicals, Inc. *J Clin Psychol* 62: 715–733, 2006.

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Introduction

Scientific, clinical, and popular interest in forgiveness has exploded in recent years. The number of empirical studies on forgiveness is approaching 200, nearly quadrupled since 1997. Forgiveness intervention studies, comprising less than 6% of the published

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forgiveness literature, have been evaluated with diverse samples, including incest survivors (Freedman & Enright, 1996), parents of adolescent suicide victims (Al-Mabuk & Downs, 1996), substance use disorder (SUD) inpatients (Lin, Mack, Enright, Krahn, & Baskin, 2004), men whose partners had abortions against their wishes (Coyle & Enright, 1997), college students (Worthington, Kurusu et al., 2000), couples (Ripley & Worthington, 2002), and others. Results have been generally promising, especially in demonstrating that specific grievances or hurts can be significantly reduced and, to a lesser extent, that positive thoughts and feelings toward an offender can be increased through forgiveness training. Still, many questions remain regarding interventions that teach or promote forgiveness.

Definitions

Theoreticians and researchers disagree about the definition of *forgiveness* (Worthington, 2005). Enright and colleagues (e.g., Enright & Coyle, 1998; Enright & Fitzgibbons, 2000) view forgiveness as a process through which negative thoughts, feelings, and behaviors towards a transgressor are replaced with positive thoughts, feelings, and behaviors. McCullough and colleagues (e.g., McCullough, Fincham, & Tsang, 2003) view forgiveness as a redirection of negative motivations and the development of conciliatory motivations toward a transgressor. Worthington and colleagues (e.g., Worthington & Scherer, 2004) make the distinction between decisional forgiveness, in which motivations change, and emotional forgiveness, in which negative emotions are replaced with more positive, other-oriented emotions (e.g., empathy). Although progress toward definitional and conceptual clarity is being made, much more work needs to be done before we can choose a single formulation as superior.

Although no “gold standard” definition of interpersonal forgiveness exists, there is general agreement among theorists and researchers about what forgiveness is not: It is not pardoning (legal term), excusing (implies good reason for offense), condoning (implies justification), denying (implies unwillingness to acknowledge), forgetting (implies failed memory, something outside conscious awareness), or reconciliation (Enright & Coyle, 1998; McCullough, Pargament, & Thoresen, 2000). It should also be noted that forgiveness as formulated by researchers is not completely consistent with ordinary usage and therefore may be contentious or initially confusing.

Unforgiveness has been defined by Worthington and colleagues (Worthington & Scherer, 2004; Worthington, Sandage, & Berry, 2000; Worthington & Wade, 1999) as a combination of delayed and chronic negative thoughts and emotions (i.e., resentment, bitterness, hostility, hatred, anger, and fear) toward a transgressor. Unforgiveness is viewed as distinct from the immediate emotional response to a perceived injustice, such as anger. Instead, unforgiveness occurs in situations that remain hurtful for extended periods, such that one is stuck in a chronic hyperaroused stress response, primarily through continuing rumination. Clearly, not everyone who is offended or hurt experiences unforgiveness (Worthington & Scherer, 2004).

Following a common thread in the definitions reviewed above, we conceptualize forgiveness as the combination of unforgiveness reduction and the emergence of more positive thoughts, feeling, and/or behaviors toward the offender. As such, forgiveness involves both the reduction of unforgiveness and an increase of positive emotions and perspectives, such as empathy, hope, or compassion. Although some have made a hard distinction between unforgiveness reduction and forgiveness (Wade & Worthington, 2003), we view unforgiveness reduction as a critical part of the forgiveness process. Therefore,

we consider unforgiveness reduction and/or the emergence of positive thoughts, feelings, or behaviors toward the offender as movement toward forgiveness.

Approaches to Forgiveness Training and Facilitation

As described more fully below, the forgiveness training program evaluated here is a cognitive-behavioral strategy combined with elements of psychoeducation and heart-focused meditation. To put this approach in the context of other extant strategies, we briefly review other forgiveness training programs that have been evaluated scientifically.

Enright and the Human Development Study Group have developed a process model of forgiveness and have conducted over 10 related interventions studies. The model and various adaptations of the intervention strategy are described in Enright and Fitzgibbons (2000). The 20-step model represents the forgiveness process as having four phases: uncovering, deciding, working, and deepening. Each major phase contains units that are typically, but not always, important. The phases and units are neither rigidly chronological nor experienced by every person in the same way. By examining elements of the model, an experienced counselor can gain a sense of how these steps might be achieved within their own theoretical orientation and therapeutic skills. Studies have generally found the approach to be more effective than support-oriented control conditions in a variety of adult samples.

McCullough and Worthington (1995; McCullough, Worthington, & Rachal, 1997) developed the five-step REACH model for forgiving a specific offense. The REACH model involves recalling (R) the event, building empathy (E), giving an altruistic (A) gift of forgiveness, publicly committing (C) to the forgiveness they have experienced, and holding (H) onto the gains achieved. The intervention strategy based on this model has been found in several studies to help individuals forgive specific offenses more effectively than does no treatment, and in some cases, more effectively than does an active control treatment.

Several reviews of the forgiveness intervention literature have recently been published (e.g., Baskin & Enright, 2004; Wade & Worthington, 2005; Wade, Worthington, & Meyer, 2005). These reviews provide more details regarding the nature of other forgiveness interventions and summarize the evidence supporting their efficacy.

Goals

The primary goal of this study was to evaluate the effects of a 6-week forgiveness training program on three outcomes: (a) offense-specific forgiveness, (b) forgiveness-likelihood in new situations, and (c) psychosocial outcomes related to health (i.e., perceived stress and trait-anger). The present study also tried to address several gaps in the extant forgiveness intervention literature. Previous forgiveness intervention studies mostly have had short follow-up periods (i.e., 2–4 weeks typically), relatively small sample sizes (i.e., typically less than 50 participants in the treatment groups), and only female participants, or rarely more than 25% males (Worthington, Sandage, & Berry, 2000). Most intervention studies have been designed for samples homogeneous with respect to the nature of the transgression (e.g., only incest survivors or romantic betrayals) or for heterogeneous groups of undergraduate college students. Much less is known about interventions intended to benefit groups of adults seeking help with a heterogeneous array of problematic transgressions. Previously, evaluations of forgiveness interventions have not reported the frequency of clinically significant change or the proportion of the treatment

group responsible for the observed treatment effects. Furthermore, studies typically have not evaluated the impact of interventions on offense-specific forgiveness in addition to forgiveness generalized to other or new situations. The present study adds to what is known about forgiveness interventions by trying to address these issues.

Methods

Participants

Participants were adults who had experienced a hurtful interpersonal experience from which they still felt negative emotional consequences. Exclusion criteria included being outside the age range of 25 to 50 years old, currently suicidal or homicidal, currently taking psychotropic medication, in psychotherapy in the last 6 months, or a history of sexual or physical abuse, or assault in the last 5 years. We received inquiries from 780 people of whom 521 either were excluded based on these criteria or were eligible but chose not to participate. The most common reasons for exclusion were being outside the age range (over 50 years old), current use of antidepressants, or inability to make the time commitment. Two hundred fifty-nine eligible and interested people were enrolled and randomized to either the 6-week training program ($n = 134$) or to a no-treatment control group ($n = 125$).

Participants had the following characteristics: 77% completed college, 19.3% completed some college, and 3.7% had a high school degree or less education; 64.9% were White, 13.9% Asian American, 7.7% African American, 5.4% Hispanic, and 8.1% in other categories (e.g., Pacific Islander, mixed ethnicity). The mean age was 41.8 ($SD = 7.20$) and 62% were female.

Procedure

Recruitment occurred through fliers, radio announcements, and items in local newspapers in the San Francisco Bay Area. The recruitment materials emphasized that we sought participants for a research study evaluating the effects of a forgiveness training program to help manage the negative consequences of interpersonal transgressions. Alternative framing of the program was used to attract more male participants in some recruitment material (grudge-management training rather than forgiveness training). After the eligibility screening, interested people were sent consent forms to complete prior to the initial group meeting, at which time they completed baseline questionnaires and were informed of their random assignment to either the forgiveness training program or the no-treatment control group. Participants were randomized using computer-generated, equal-probability allocation. The treatment group participated in six weekly, 90-minute, group-training sessions (outlined below). Groups were all male or all female, and consisted of between 8 and 12 people each. Seven of the groups were led by a psychologist who had a doctorate and eight of the groups were led by two psychology doctoral candidates, all trained and supervised in the treatment protocol.

All participants were asked to complete the postintervention assessment and follow-up assessments at 6 weeks and 4 months, respectively. Of the control group participants who completed the study, 26% ($n = 25$) participated in the intensive 1-day session after the 4 months follow-up. Data to evaluate this workshop was not collected because of funding restrictions and promises to participants that additional time demands would not be required if they participated. All participants received \$25 upon completion of the follow-up assessment.

Offense-Specific Outcomes

All offense-specific measures were completed at baseline, at posttreatment, and at 4-month follow-up. For this sample, internal consistencies (Cronbach's alpha) for all measures were calculated with data from all participants at baseline. The 6-week test-retest reliabilities were calculated with the control group data from baseline to 6 weeks.

The Forgiveness Scale. The Forgiveness Scale (FS; Rye et al., 2001) is a 15-item measure composed of two subscales. The absence of negative subscale (AN) contains 10 items related to the absence of negative thoughts, feelings, and behaviors (e.g., feeling hatred, thinking about revenge) regarding a specific hurt or offense. Higher scores indicate a greater absence of negative thoughts, feelings, and behaviors. This subscale has been reported to have a Cronbach's alpha of 0.86 and a 2-week test-retest reliability of 0.76 (Rye et al., 2001). In this sample, AN had a Cronbach's alpha of 0.79 and a 6-week test-retest reliability of 0.69. The presence of positive subscale (PP) contains five items related to the presence of positive thoughts, feelings, and behaviors (e.g., compassion, feeling at peace, wishing the offender well) regarding a specific hurt or offense. Higher scores indicate a greater presence of positive thoughts, feelings, and behaviors. This subscale has been reported to have a Cronbach's alpha of 0.85 and a 6-week test-retest reliability of 0.76 (Rye et al., 2001). In this sample, PP had a Cronbach's alpha of 0.82 and a 6-week test-retest reliability of 0.75.

Forgiveness Self-Efficacy Scale. A distinction can be made between a person's level of actual forgiveness and his or her confidence that he or she could forgive or perform specific forgiveness-related tasks, such as thinking about the offender while remaining calm or thinking about the offender with empathic understanding. We term the latter phenomenon forgiveness self-efficacy. Forgiveness self-efficacy may precede actual forgiveness and/or may mediate it. The Forgiveness Self-Efficacy Scale (FSE), designed specifically for this study, is a 14-item measure of confidence (0–100% scale) to perform specific actions that the forgiveness intervention sought to promote, with higher scores indicating more forgiveness self-efficacy. The Forgiveness Self-Efficacy Scale is given in the Appendix. A large body of evidence demonstrates that efficacy beliefs strongly influence a person's efforts to change. This measure of offense-specific forgiveness self-efficacy was developed in accordance with Bandura's (2001) guide to constructing self-efficacy scales, but it has not been validated in other studies. In this sample, the FSE had a 6-week test-retest reliability of 0.66 and Cronbach's alpha of 0.90.

Forgiveness Generalization Outcomes

Forgiveness Likelihood Scale. The Forgiveness Likelihood Scale (FLS; Rye et al., 2001) is a 10-item measure of how likely (on a 1–5 scale: 1 = *Not at all likely*, 5 = *Extremely likely*) respondents thought they would be to forgive various hypothetical hurts or offenses. The following is a sample item: "A friend borrows your most valued possession, and then loses it. The friend refuses to replace it. What is the likelihood you would choose to forgive this person?" Cronbach's alpha for the FLS has been reported as 0.85, with a test-retest reliability at 2 weeks (average) of 0.81 (Rye et al., 2001). In this sample, the FLS had a Cronbach's alpha of 0.95 and a 6-week test-retest reliability of 0.70.

Forgiveness training generalization scenario. Participants were asked to imagine that the following situation, created for this study, had actually happened to them. This

topic and this item were not presented to them in the training sessions nor on any other measure.

A few minutes ago at work you received a phone call from your significant other telling you that s/he has just arrived home after spending the night with a lover. The two of you have been going through a rocky period, but you had been under the impression that the relationship was basically sound. Your significant other apologizes and wants to meet with you tonight.

Participants were then asked to describe in writing their likely initial reactions as well as how they might subsequently handle their feelings and the relationship. Also, they were asked three additional questions about how confident they were (1 = *No confidence*, 100 = *Complete confidence*) that they could do the following in the situation presented: (a) When I experienced hurt/or angry feelings toward my significant other I would use techniques that successfully soothe my distress; (b) I would forgive the significant other; and (c) I would think about my significant other with compassionate understanding.

The written responses to the vignette of each participant were evaluated independently by three judges (blind to experimental condition) and rated for the relative absence of blame and offense as well as the presence of specific self-management techniques and rational coping. The average of the three independent ratings was used as a measure of overall forgiveness, and had an intraclass correlation coefficient of 0.86. The numeric responses to the three additional questions were also used as single-item measures of forgiveness-related self-efficacy generalized to new situations.

Health-Related Psychosocial Outcomes

The Perceived Stress Scale. Given our formulation of unforgiveness as a chronic stress response, we hypothesized that forgiveness training would reduce levels of perceived stress. The Perceived Stress Scale (PSS; Cohen, Kamarck, & Mermelstein, 1983) is a global, 14-item scale that measures the degree to which concerns in one's life during the past month are perceived as stressful. These items tap issues of nonspecific perceived control using a 5-point Likert scale (0 = *Never*; 5 = *Very often*). Cronbach's alphas in various samples have ranged from 0.84 to 0.86 (Cohen et al., 1983). As a state-related measure, the test-retest reliability is expected to decrease as time between administrations increases. The 2-day stability has been reported as 0.85 and the 6-week stability as 0.55 (Cohen et al., 1983). In this sample, the PSS had a 6-week test-retest reliability of 0.63 and a Cronbach's alpha of 0.84.

Trait-Anger Subscale of the State-Trait Anger Expression Inventory. Because unforgiveness is viewed as chronic, negative, hyperarousal fueled by rumination, we hypothesized that it would be highly correlated with trait-anger. The Trait-Anger Subscale of the State-Trait Anger Expression Inventory (TAS; Spielberger, 1988) is a 10-item measure of dispositional anger. It is based on a 4-point Likert scale (1 = *Almost never*; 4 = *Almost always*) on which participants rate how often they typically feel or respond with anger. Cronbach's alphas in various samples have ranged from 0.81 to 0.91 (Spielberger, 1988). Two-month test-retest reliability has been reported at 0.75 (Morris, Deffenbacher, Lynch, & Oetting, 1996). In this sample, the TAS had a Cronbach's alpha of 0.80 and a test-retest reliability of 0.79.

Measures for Establishing Baseline Equivalence

In addition to checking that the experimental groups were equivalent at baseline on the major outcomes described above, several one-item measures were used to evaluate

equivalence on characteristics of the problematic interpersonal offenses. Specifically, participants used 10-point analog scales to rate the magnitude of hurt when the offense occurred, the present magnitude of hurt (1 = *No hurt*, 10 = *Completely hurt*), and estimated the time elapsed (years and months) since the occurrence of the offense.

The Forgiveness Training Program

The intervention was designed to be time-limited, highly structured, psychoeducational, and yet flexible enough to work with diverse populations. The intervention was not designed however to work with transgressions related to abuse or extreme trauma. A combination of cognitive restructuring, positive and negative visualizations, and heart-focused meditation techniques were used to reduce negative thoughts, emotions, and physiological states associated with the presenting offense and to replace them with more neutral or positive ones. Roughly equal time was devoted to education about the negative health consequences of grudge-holding and unforgiveness, cognitive restructuring, and meditations/relaxation exercises. Exercises used in the training were principally tailored to instill and cultivate a more relaxed state, to reduce arousal during the recollection of interpersonal grievances, and to improve participants' ability to regulate emotions by consciously shifting attention between negative and more neutral or positive thinking and feeling states. A primary goal of the training was to provide immediate accessible alternatives to negative rumination, thereby reducing negative psychological and physiological loads believed to be associated with chronic unresolved anger, hurt, and blame (i.e., unforgiveness; Harris & Thoresen, 2005; McEwen & Stellar, 1993; Thoresen, Harris, & Luskin, 2000; Worthington & Scherer, 2004).

In the cognitive restructuring components, we explained how a grievance was created and maintained, primarily through negative attributions, the process of personalization, and the creation of a grievance narrative. Central to this feature of the forgiveness training was the identification of negative automatic thoughts, explicating the role of personal rules in the creation of a grievance and how, through cognitive disputation, one can actively transform those rules to preferences. The cognitive facets of the forgiveness training drew heavily from research and clinical practices well known to psychologists, such as the work of Albert Ellis (e.g., Ellis & Dryden, 1997) and Aaron Beck (e.g., Beck, Rush, Shaw, & Emery, 1979).

Another primary goal of the intervention was to help participants become more flexible in their responses to ongoing and future interpersonal situations. Participants were encouraged to monitor their physiological and cognitive responses to both painful memories as well as to new hurt as it arose. Such internal self-monitoring, laid over a foundation of relaxation and imagery practice, was intended to engender increased forgiveness-related self-efficacy and greater attributional flexibility.

The groups were psychoeducational in nature. Unlike formal psychotherapy groups, disclosure of one's presenting problem was not required or encouraged, although some participants did share their grievances. The retelling of the unaltered grievance story was viewed as maintaining rather than alleviating the problem. The explicit goal of the intervention was to give participants tools to change their grievance narrative to a more acceptable and less upsetting form. The format was primarily didactic, with hands-on exercises used in each weekly session. The general format of each of the six sessions is presented in Table 1. A more detailed outline of the intervention structure and the treatment components are available at no cost from the authors. Many of the techniques and exercises in the outline are more fully discussed and described in Luskin (2001).

Table 1

Main Activities for the Six 90-Minute Sessions of the Stanford Forgiveness Project

Session 1

- Introductions and ground rules for the group
- Overview of the training
- Negative and positive visualizations
- Introduction to the physiology of both unforgiveness and forgiveness

Session 2

- Details of physiology of the sympathetic and parasympathetic nervous systems vis-à-vis forgiveness
- Benefits of practicing visualizations emphasized (as they are throughout the training)
- Definition of a grievance
- Clarification of what forgiveness is and what it is not
- Choosing to respond, rather than react
- Quick focus exercise presented and practiced

Session 3

- Core values visualization and importance of focusing on the positive
- Competition between negative cognitions, grievances, and positive states of mind
- Emphasis on importance of personal rules in the grievance process
- “Advice from the heart” concept (heart focus) and tapping in to intuitive wisdom capabilities

Session 4

- Positive visualization exercise reviewed. Focus on REBT, and the “ABCDE” model
- Practice disputing personal negative beliefs/rules.

Session 5

- Practice rational emotive imagery
- Complete cognitive disputation of a participant’s story with help from the group
- Focusing on the stories we tell ourselves and others as major indicators of how thoroughly we have forgiven
- Writing exercise using the heart focus and retelling grievance narrative

Session 6

- Overview of major highlights from the group
- Emphasis on two kinds of forgiveness: General and specific
- Reminder to ask the “key questions”
- Review of the two pathways to forgiveness—the head and the heart

Our quality assurance team independently rated a randomly selected 20% of the audiotaped intervention sessions on the adherence to the treatment manual. In all cases, the actual sessions were found to cover over 90% of the planned activities and topics specified for that session in the treatment manual. When topics were not included in the specified session, usually due to time constraints, they were typically covered in the next session.

Results

Attrition, Baseline Equivalence, and Nature of Transgressions

Of the total sample, 218 (84%) completed the 6-week assessments and 195 (76%) completed the 4-month follow-up assessments. The most common reasons stated for not completing assessments involved participants moving out-of-state, due primarily to job changes, and excessive time pressures (“I’m just too busy”). No significant association was found between group assignment and completion status ($\chi^2_{(1)} = .73, ns$), nor were gender, age, ethnicity, or level of initial hurt found to be associated with completion status.

The treatment and control groups were equivalent at baseline on ratings of current hurt related to the target offense (8.9 on a 10-point scale), the magnitude of hurt at the

time the offense occurred (8.5 on a 10-point scale), and the average time elapsed from the occurrence of the offense (3.2 years). Furthermore, no significant group differences at baseline were found on demographic or outcome variables.

Although the intervention strategy did not encourage participants to tell their grievance narratives, we asked them to briefly describe, in writing as part of the baseline questionnaire, the interpersonal transgression that brought them into the study. The transgressors were spouses or romantic partners (31%), family members (26%), co-workers (13%), friends (7%), strangers (1%), and others, such as clergy or doctors (5%). In 10% of the descriptions, the identity of the transgressor could not be identified and 7% of the participants did not respond to the query. In Table 2 we present a sample of the transgressions reported by participants.

Hypotheses and Analytic Strategies

We tested hypotheses related to the main effects of the intervention on three types of outcomes: (a) outcomes related to the specific hurt or offense that brought the participant into the study, (b) outcomes related to a more general willingness to forgive, and

Table 2
Verbatim Examples of Transgressions Reported by Participants

-
- Spouse said that he didn't think he loved me anymore. Felt like I had been kicked in the stomach.
 - Ex-husband sued me for spousal support during our divorce; thus demonstrating to me that he had really married me for money.
 - The man that I was living with and devoted to took me out to our favorite restaurant. There was an attractive younger woman sitting across the room and he would continuously look in her direction and attempt to catch her attention.
 - My girlfriend of 3 years ended our relationship in large part due to her desire to initiate another relationship with a mutual friend.
 - Relieved of duties without explanation or just cause.
 - Mother buried my father in a place against his and my wishes when he died. She kept it hidden from me until after he died and I could do nothing to stop it.
 - He rear-ended me at red light. Ask me not to report it to DMV to help him. This I did. Then I found out he lied to his insurance company and I ended up being held responsible for the accident!!!
 - My husband shot himself.
 - I went to a priest at my church for counseling as I was going through a very painful divorce. I shared deeply about myself. It had taken quite a while for this man to acquire my trust. He began to pursue me sexually . . .
 - The leader of a work team of which I was a member challenged something I said in front of the rest of the team, and I was unable to convince him that I knew what I was talking about.
 - The person went through a red light and was speeding hit my son's car, broadside. My son died in the car accident.
 - I was told by another museum volunteer that I could attend an event free of charge at our museum. When I went to the desk to register, the volunteer at the desk (who hurt me) ridiculed me for believing that I could enter free. She did it in front of two other volunteers.
 - My supervisor gave me a negative performance review, which I thought was incorrect and unfair.
 - The tramp tells me she wants a divorce (on Thanksgiving)—the following xmas my daughter tells me scumbag gave her a ring and spent xmas at my house. The next day he moves out of his house telling his spouse he wants a divorce. The tramp and scumbag work together, and his family has spent time at the house with my family.
 - I was deeply hurt by my employer(s) in a high school who completely violated and destroyed the special program I had been running for eight years that had empowered and uplifted hundreds of students.
 - The employer cheated me out of a large amount of money. I was told that if I sued, it would hurt my career. Now, the person is dead.
-

(c) health-related psychosocial variables. Correlations among the major outcomes are presented in Table 3. Multilevel (mixed effects) regression models were used to test the major hypotheses (Raudenbush & Bryk, 2001). This approach uses all of the data, not only the data from participants with complete data as in repeated measure ANOVA. Also, this strategy allows for the nondependence of observations, such as repeated assessments per person, and persons-within-groups or group leaders, to be explicitly modeled.

First, we tested for effects of group ($n = 15$) and group leader ($n = 3$) by constructing a series of three-level mixed-effects regression models. The concern here is that significant variability may exist between groups within the treatment condition, either based on group leadership or other factors. We found that significant variability did not exist in the outcome trajectories between the 15 treatment groups, nor between the three group leaders. We therefore ignored these levels of grouping in subsequent analyses.

Then, for each outcome, a linear trajectory for each participant was modeled yielding estimates of each individual's score at the beginning of the study (intercept), the individual's slope, and error (how well the linear model fit that person's data). Then for each outcome, three between-person parameters were estimated: (a) the average baseline score for both groups, (b) the average slope over time in the control group, and (c) the effect of the intervention on the average slope. The full maximum likelihood estimation method and an unstructured covariance specification were used. Time was clocked in weeks. Where more than one outcome was assessed to test a specific hypothesis, a Bonferroni adjustment was used to keep the type-I error to 0.05 per hypothesis. After testing the main effect of treatment in this way, we repeated the analyses including sex and level-of-hurt at the time of the offense as control variables.

Although the effect of treatment on outcome slope over time is our primary measure of effect size, the magnitude and interpretation of this statistic is tied to the underlying scale and is less familiar than other measures of effect size, such as Cohen's d . Therefore, in addition to presenting the effect of treatment on outcome slope, we also present the standardized mean difference (Cohen's d) of the outcomes between groups at 6-week (posttreatment) and 4-month follow-up, adjusted for baseline levels, as well as confidence intervals for these effect sizes for each outcome.

We also made efforts to establish the clinical significance of the treatment effects on the forgiveness-related outcomes. We used the conceptual framework and methodology

Table 3
Correlations Among Major Outcome Variables at Baseline ($N = 259$)

	1	2	3	4	5	6	7
Offense-specific outcomes							
Absence of negative							
Presence of positive	.43**						
Forgiveness self-efficacy	.65**	.46**					
Forgiveness generalization outcomes							
Forgiveness likelihood	.21**	.37**	.28**				
Scenario-based rating of unforgiveness	-.17*	-.13	-.22**	-.18*			
Mean of three scenario-based self-efficacy ratings	.26**	.28**	.29**	.39**	-.51**		
Health-related psychosocial variables							
Trait anger	-.33**	-.14*	-.26**	-.25**	.25**	-.28**	
Perceived stress	-.46**	-.16*	-.40**	-.09	.14	-.16*	.39**

*Correlation is significant at the 0.05 level (two-tailed). **Correlation is significant at the 0.01 level (two-tailed).

described by Jacobsen and colleagues (Jacobson, Follette, & Revenstorf, 1984; Jacobson, Roberts, Berns, & McGlinchey, 1999). For a person to be classified as “recovered” they must meet two criteria: (a) The person must have changed from functioning below normal to normal functioning. (b) The magnitude of the change must be statistically reliable, that is, be greater than what might be expected due to measurement error. If a person experienced clinically significant and statistically reliable change, but failed to meet the established cutoff for normal functioning, they are considered “improved but not recovered.” Because established norms of both well-functioning and clinical samples are not yet available for existing forgiveness measures, we used the most conservative method for establishing the threshold (A) beyond which a person might be considered well-functioning ($A = \text{mean of pretreatment experimental and control groups} + 2 \text{ standard deviations of the control group}$). We used this approach for the forgiveness-related measures because participants were self-identified at baseline as in the suboptimal (“clinical”) range. We did not use this approach for the health-related psychosocial outcomes (e.g., somatization, perceived stress) because many participants were within the normal distribution of these measures at baseline and therefore could not recover by definition.

Offense-Specific Outcomes

Hypothesis 1: The training will reduce negative thoughts and emotions with respect to the target transgression.

Table 4 presents the descriptive statistics for the Absence of Negative (AN) scale at the three assessment points, the estimate and confidence interval for the effect of treatment on the slope of this outcome, and the 6-week and 4-month Cohen’s *d* effect sizes (adjusted for baseline levels) and confidence intervals. The results show that the treatment group experienced significantly greater increases in the self-reported absence of negative thoughts, feelings, and behaviors compared to the control group ($p < 0.001$). On average, the results suggest that the treatment group experienced a 0.25 point greater increase on the AN scale per week than the control group, or 5 points more by the end of the 20-week study. Cohen’s *d* effect sizes were 0.48 at 6 weeks, decreasing to 0.43 at 4 months. Adding sex and level of hurt at the time of the offense to the model as covariates did not change the magnitude or significance of the main treatment effect. At follow-up, 21.2% of the treatment group recovered with respect to this outcome compared to 8.2% of the control group and 31.3% versus 16.3% who improved but did not recover. In other words, 52.5% of the treated group improved or recovered compared to 24.5% in the control group. The differences in these proportions were all significant ($p < 0.05$). Thus, we conclude that the intervention produced significantly greater decreases in unforgiveness with respect to the target transgression than did the control condition.

Hypothesis 2: The training will increase positive emotions and perspectives with respect to the target transgression.

Table 4 presents the descriptive statistics for the Presence of Positive scale at the three assessment points, the estimate, and the confidence interval for the effect of treatment on the slope of this outcome, and the 6-week and 4-month Cohen’s *d* effect sizes and confidence intervals. The treatment group experienced significantly greater increases in the self-reported presence of positive thoughts, feelings, and behaviors compared to the control group ($p = .012$). The results suggest that the treatment group experienced a 0.07-point greater increase on this scale per week than the control group, or 1.4 points more by the end of the 20-week study. Cohen’s *d* effect sizes were 0.20 at 6 weeks and 0.24 at 4 months. Adding sex and level of hurt at the time of the offense as covariates to

Table 4
Offense-Specific and Forgiveness Generalization Outcomes: Descriptive Statistics, Treatment Effects, and Effect Sizes

	Baseline	Posttest	Follow-up	Treatment effect ^a	Effect size <i>d</i> ^b
	<i>M (SD)</i> <i>N</i>	<i>M (SD)</i> <i>N</i>	<i>M (SD)</i> <i>N</i>	(.95 CI)	Posttest (.95 CI) Follow-up (.95 CI)
Offense-specific outcome					
Absence of negative					
Treatment	28.8 (7.0) 133	36.6 (8.1) 115	39.0 (7.2) 95	0.25 (.15,.36)	0.48 (.23, .73) 0.43 (.19, .68)
Control	28.9 (7.4) 124	32.6 (7.7) 103	33.4 (8.7) 98		
Presence of positive					
Treatment	14.7 (4.6) 133	16.1 (4.7) 115	16.5 (4.0) 95	0.07 (.02,.12)	0.20 (-.05, .44) 0.43 (.19, .68)
Control	14.2 (5.4) 124	14.6 (5.3) 103	14.7 (5.3) 98		
Forgiveness self-efficacy					
Treatment	47.5 (20.1) 132	70.8 (19.5) 114	73.1 (18.9) 93	0.73 (.45,1.01)	0.65 (.39, .89) 0.51 (.26, .76)
Control	46.9 (21.4) 121	55.1 (22.5) 101	57.4 (24.6) 92		
Forgiveness likelihood					
Treatment	23.4 (7.2) 134	30.2 (8.1) 115	30.1 (8.5) 95	0.22 (.12,.32)	0.74 (.49, .99) 0.44 (.19, .69)
Control	23.2 (7.2) 123	24.2 (8.4) 103	24.9 (8.3) 93		

^aEffect of treatment on slope of outcome in units/week.

^bEffect sizes are the difference between the group change scores divided by the pooled standard deviation of the change scores. Change scores were used to account for baseline differences. Confidence intervals were calculated using a variance-stabilizing transformation as recommended in Hedges and Olkin (1985).

the model did not change the magnitude or significance of the main treatment effect. The treatment effect on frequency of recovery or improvement without recovery for this variable was not significant. Thus, hypothesis 2 was supported; however, the magnitude of the treatment effect was smaller than for the Absence of Negative scale.

Hypothesis 3: The training will increase confidence to perform specific forgiveness-related actions with respect to the target transgression.

The descriptive statistics and results for the Forgiveness Self-Efficacy scale are presented in Table 4. The treatment group experienced significantly greater increases on this scale compared to the control group ($p < .001$). The results suggest that the treatment group experienced a 0.73-point greater increase on this scale per week than the control group, or 14.6 points more by the end of the 20-week study. Cohen's d effect sizes were 0.65 at 6 weeks and 0.51 at 4 months. Adding sex and level of hurt at the time of the offense to the model as covariates did not change the magnitude or significance of the main treatment effect. The treatment group had significantly ($p < 0.05$) higher rates of recovery (12.12% vs. 6.12%) and improvement without recovery (32.32 vs. 15.3) than the control group. That is, over 44% in the treated condition improved or recovered in forgiveness self-efficacy compared to less than 20% in the control group.

Forgiveness Generalization Outcomes

Hypothesis 4: The training will promote forgiveness and reduce offense-taking for events other than the specific event that brought the person into the study.

This hypothesis was addressed by comparing responses of the treatment and control groups on The Forgiveness Likelihood Scale and the scenario-based forgiveness generalization measure. We conducted five tests related to this hypothesis, so each test had an associated alpha of 0.010 to keep the type-I error to 0.05, according to the Bonferroni adjustment.

A summary of the descriptive statistics and results for the Forgiveness Likelihood Scale are presented in Table 4. The treatment group experienced significantly greater increases on this scale compared to the control group ($p < .001$). The results suggest that the treatment group experienced a 0.22-point greater increase on this scale per week than the control group, or 4.4 points more by the end of the 20-week study. Cohen's d effect sizes were 0.74 at 6 weeks and 0.44 at 4 months. Adding sex and level of hurt at the time of the offense to the model as covariates did not change the magnitude or significance of the main treatment effect. The treatment group had significantly ($p < 0.05$) higher rates of recovery (13.16% vs. 1.75%) and improvement without recovery rates (14.91% vs. 3.5%) compared to the control group (collectively 28% vs. 5.25%).

Participants were asked to respond in writing to the forgiveness generalization scenario and were also asked to rate how confident they were on a 1–100% scale that they could perform three forgiveness-related tasks with respect to the hypothetical transgression. We evaluated each of these four components of the participants' responses separately. Each written response was given a total score based on the relative absence of blame and offense and the presence of specific self-management techniques and rational coping. Higher scores indicated more unforgiveness (0 = total and active forgiveness; 30 = vindictive and ruminating unforgiveness). An independent samples t test revealed that the treatment group showed significantly more forgiveness than the control group, $t_{188} = 2.56$, $p = 0.01$. The t tests comparing the confidence ratings of each of the three scenario-related questions revealed that the treatment group had significantly higher confidence ratings than the control group. For the question "When I experienced hurt/or angry feelings toward my significant other I would use techniques that successfully soothe my distress," $t_{188} = 5.72$, $p < 0.0001$. For the question "I would forgive the significant other," $t_{188} = 3.14$, $p = 0.002$. For the question "I would think about my significant other with compassionate understanding," $t_{188} = 3.64$, $p < 0.0001$. Therefore, the results from each of the five forgiveness generalization outcomes support hypothesis 4.

Health-Related Psychosocial Outcomes

Hypothesis 5: The training will produce improvements in perceived stress and trait anger.

These variables are related to unforgiveness and health, but were not in this study clearly linked to a specific, problematic transgression. Descriptive statistics, estimates, and confidence interval for the effects of treatment on the slope, and 6-week and 4-month effect sizes are presented in Table 5. The treatment group experienced greater decreases in perceived stress ($p < 0.001$) and trait anger ($p < 0.001$) compared to the control group. For example, mean scores on perceived stress dropped from 27.48 to 23.53 in treated group compared to 27.87 and 26.78 in control condition. Average trait-anger in both groups at baseline was in the 72nd percentile of normal adults (Spielberger, 1996). The treatment group decreased to the 55th percentile by follow-up whereas the control group did not change. Cohen's d effect sizes for perceived stress were 0.66 at posttreatment

Table 5

Health-Related Psychosocial Outcomes: Descriptive Statistics, Treatment Effects, and Effect Sizes

Offense-specific outcome	Baseline	Posttest	Follow-up	Treatment effect ^a	Effect size <i>d</i> ^b
	<i>M (SD)</i> <i>N</i>	<i>M (SD)</i> <i>N</i>	<i>M (SD)</i> <i>N</i>	(.95 CI)	Posttest (.95 CI) Follow-up (.95 CI)
Perceived stress					
Treatment	27.5 (6.9) 130	21.6 (6.4) 115	23.3 (6.1) 95	-0.17 (-.25, -.08)	0.66 (.41, .91) 0.31 (.06, .55)
Control	28.4 (8.0) 122	26.30(8.0) 103	26.8 (7.0) 98		
Trait anger					
Treatment	20.5 (4.8) 131	18.5 (4.3) 114	17.8 (4.4) 95	-0.10 (-.15, -.06)	0.41 (.16, .65) 0.42 (.77, .67)
Control	20.5 (5.0) 122	20.5 (5.3) 102	20.5 (5.3) 94		

^aEffect of treatment on slope of outcome in units/week. ^bEffect sizes are the difference between the group change scores divided by the pooled standard deviation of the change scores. Change scores were used to account for baseline differences. Confidence intervals were calculated using a variance-stabilizing transformation as recommended in Hedges and Olkin (1985).

and 0.54 at follow-up, and for trait-anger Cohen's *d* effect sizes were 0.41 at posttreatment and 0.55 at follow-up. Adding sex and level of hurt at the time of the offense to these models as covariates did not change the magnitude or significance of the main treatment effects. Recovery rates were not calculated for these outcomes because participants were not in the subnormal range on these variables, making the notion of recovery (movement from subnormal to normal) inappropriate for the evaluation of the intervention.

Discussion

This study has several limitations that should be kept in mind in interpreting the results and in planning future intervention studies: (a) It is unknown to what extent the results generalize to samples with other characteristics. This sample was self-selected (open to the possibility of forgiving or at least grudge-reduction) and demographically unrepresentative (e.g., highly educated). Also, participants were screened by restrictive inclusion criteria, limiting the scope of inference further. In addition, the extent to which treatment would have been effective with more or less serious hurts is unknown. (b) Because treatment was compared to a no-treatment control group, the observed effects might be due to nonspecific factors (e.g., participating in a structured training group, being selected to receive treatment, traveling to the intervention site) rather than the content of the treatment itself. Furthermore, it is possible that being assigned to the control group could have accentuated levels of unforgiveness (i.e., upset about not being selected to be in the "real group") potentially explaining the observed treatment effects. The lack of an active and plausibly helpful control group is arguably the most serious limitation of this study. (c) The measurement of forgiveness-related constructs is still nascent. The extent to which people say they have forgiven or are likely to forgive future events is related to an unknown degree to possible performance measures of these constructs. Also, while the 4-month follow-up was much longer than most forgiveness intervention studies reported to date,

features of forgiveness, especially the development of more positive states, may not have been captured within the timeframe of this study (Fredrickson, 2001). (d) To the extent that we are willing to grant that the intervention produced the desired effects beyond possible expectancy effects of being in the intervention group, we do not know what components of the intervention were most potent or if component-by-person interaction effects may have occurred. (e) Because an alternative treatment control group was not used, we do not know if the effects of this intervention (forgiveness-focused cognitive-behavioral therapy (CBT), relaxation/meditation training, and stress physiology education) differ from a more generic (i.e., not limited to themes of interpersonal offense) CBT or relaxation intervention. (f) It is important to remember that the intervention caused changes in responses to self-reported, questionnaires rather than objective measures of actual behavior. Suggestions for future research include addressing these six limitations of the present study. With these caveats in mind, we now discuss the major findings.

The forgiveness-training program, when compared to the control condition, significantly decreased offense-specific unforgiveness (e.g., hurt, negative thoughts, feelings, and self-reported behaviors). Both groups showed improvement over time, but reduction in offense-specific unforgiveness was faster and greater in magnitude in the treatment group. In other words, unforgiveness tends to fade naturally, but specific training tends to speed and deepen the process.

The significance of forgiveness, especially as it relates to health and disease risk, is a provocative topic (Harris & Thoresen, 2005). Put differently, does either element of forgiveness (i.e., reduction in unforgiveness or increases in positive states) make a meaningful difference in personal and social functioning? Conceptually, one could argue that the greater the reductions in chronically elevated levels of anger, resentment, vengeful ruminations and hopeless ideations, the better the person's overall functioning will be. In addition, our results indicate that reductions in unforgiveness are also related to reductions in perceived stress (see Table 3). Research exists (e.g., Witvliet, Ludwig, & Bauer, 2002) demonstrating that rapid negative changes in physical functioning (e.g., heart rate and brain wave patterns) occur when one thinks about someone for whom they feel resentment or anger and that this negative condition can be rapidly reversed when ideation is positively focused, such as in the process of forgiveness. However, it is not clear how patterns of unforgiveness and forgiveness over time influence health and disease status as distinct from these short-term physiological reactions. Use of ambulatory measures repeated over time could begin to clarify how unforgiveness and forgiveness processes influence the health and quality of life.

The treatment group also experienced significant increases in forgiveness self-efficacy compared to controls. The items of the Forgiveness Self-Efficacy Scale emphasize both unforgiveness management (e.g., "I can think about the offender without feeling hurt and/or angry.") and positive acts related to forgiveness (e.g., "I can think of the offender with compassionate understanding."). Increased confidence to perform these actions is an important outcome yet it differs from actually being able to or choosing to perform them. Given the challenging nature of forgiving someone who has been very hurtful, especially over long periods of time, considerable confidence to perform these tasks may be required before forgiveness is even attempted. Yet growing confidence is associated with greater persistence and patience that may, in turn, result in actual performance of the tasks (Bandura, 2000). We suspect that increasing forgiveness self-efficacy represents one of the most important results of this intervention.

Relatively small treatment effects in forgiveness-related positive thoughts, feelings, and self-reported behaviors were found. This result is not surprising given that the training strategically emphasized the many benefits of reducing unforgiveness more than the

benefits of increasing positive states, such as compassionate understanding of the offender. The intervention was designed to emphasize the physiological and psychosocial costs of unforgiveness and highlight the potential benefits of unforgiveness reduction. The relatively small group differences in positive states have at least three potential causes: (a) This intervention was more effective at unforgiveness-reduction (e.g., less anger) than in producing forgiveness-related positive states; (b) increasing positive states take time to develop and may have occurred after the 4-month follow-up; and (c) the intervention is capable of helping people increase positive thoughts, feeling, and behaviors toward the offender, but that goal needs to be made much more clear to participants. We suspect that many participants were primarily interested in "getting over" their unforgiveness but were not necessarily motivated to go beyond that goal, in part because the intervention highlighted letting go of the negative states (unforgiveness) as the primary objective.

In addition to improving the rate of change and magnitude of offense-specific unforgiveness, participants in the treatment condition were significantly less likely to take offense in hypothetical future situations than the control group, and this difference was observable 4 months after the intervention was completed. The treatment group also experienced significant improvements in perceived stress and trait anger compared to the control group both postintervention and at 4-month follow-up.

Looking at the recovery and the improved-but-not-recovered rates of the treatment and control groups emphasizes two important points: First, participants were roughly 2 to 3 times as likely to recover or improve in the treatment group as were participants in the control group. Second, many people in both groups failed to recover or improve. For example, for forgiveness self-efficacy at follow-up, 44% of the treatment group recovered or improved compared to 21% who either recovered or improved in the control group. A participant in the treatment group was twice as likely to recover or improve compared to control group, but still had a 66% chance of not achieving either status. Learning more about the person and offense characteristics that predict both response and nonresponse to forgiveness interventions is a critical, but as yet unanswered, research question. Assessing readiness-to-change and individual goals in intervention trials would clarify if the training program helped people reach their goal (forgiveness or simply unforgiveness reduction). It is important to reemphasize that the use of the framework for assessing the frequency of clinically significant change is a bit of a stretch given the crude nature of forgiveness-related measurement and the lack of meaningful norms for comparison. However, we feel the inclusion of these results, if viewed with these caveats in mind, offer another useful lens through which to evaluate these data.

Conclusion

We have demonstrated that a 6-week training program can reduce unforgiveness 2 to 3 times more effectively than a no-treatment control condition, and to a smaller degree, increases forgiveness-related positive states. Forgiveness intervention research with active control groups, less-restrictive inclusion criteria, assessment schedules that are both longer and more frequent, and that include the measurement of both potential treatment moderators (e.g., motivation, readiness-to-change) and outcomes hypothesized to result from forgiveness (e.g., health, social integration) will significantly extend the present research.

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Appendix

Forgiveness Self-Efficacy Scale

Using the scale below, please indicate how confident you are that you can complete the following tasks. A score of 100% confidence indicates that you are completely confident that you can complete the task (e.g., 100% confidence that you can brush your teeth). A

score of 0% confidence indicates that you do not believe you can accomplish the task at all (e.g., 0% confidence you can jump 10 feet in the air). Please answer the following questions regarding the interpersonal offense that brought you into this study.

Confidence Rating

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

No confidence **Moderate confidence** **Complete confidence**

At this moment how confident are you that:

1. I can think about the offender without feeling hurt and/or angry.
2. I hold myself accountable for the hurt and/or angry feelings that arise when I think about the interpersonal offense.
3. I can think of the offender with compassionate understanding.
4. I can think about the offender and remain calm and peaceful.
5. I can think about the interpersonal hurt without blaming the offender for what happened.
6. I can think about the offender and understand why they acted as they did.
7. I can forgive the offender.
8. I can think about what the offender did without thinking that it was directed at me personally.
9. I can go an entire day without feeling angry at the offender.
10. I can go an entire week without feeling hurt by the offender.
11. When I experience hurt and/or angry feelings toward the offender I use techniques that successfully sooth my distress.
12. I can take responsibility for the angry thoughts that arise toward the offender.
13. I can go an entire day without hurt by the offender.
14. I can go an entire week without feeling angry at the offender.