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A randomized controlled trial of a forgiveness intervention program with female acid attack survivors in Pakistan

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Abstract

Despite the traumatic effects of acid violence on its victims, treatment options are very limited. The present study was aimed at examining the efficacy of a forgiveness intervention with female survivors of acid attack violence in Pakistan. Female acid attack victims in Pakistan were randomized to either a forgiveness group ($n = 8$) or a treatment-as-usual (TAU; $n = 8$) control group. The forgiveness group received twice-a-week forgiveness sessions for 4 months, whereas the TAU group either received typical psychological treatment sessions for acid attack victims or no treatment. All participants were assessed on their levels of forgiveness, anger, anxiety, depression, and hope four times prior to the 4-month intervention period, twice after the intervention period, and once at the 1-year follow-up. Posttreatment, the forgiveness intervention group showed greater improvement in hope, anger, anxiety, and depression when compared with the TAU group. Upon further examinations, both groups improved on forgiveness from pretreatment to posttreatment, but the forgiveness group had a higher baseline. From pretreatment to the 12-month follow-up, the forgiveness group, when compared with the TAU group, showed greater improvement in all areas except for depression. This is the first study that examined the effects of a forgiveness intervention for acid attack victims in Pakistan. Results showing the improvement posttreatment as well as over a 1-year period posttreatment are encouraging.

KEYWORDS
acid attack victims, forgiveness, intervention efficacy, Pakistan, vitriolage

1 | INTRODUCTION

Gender-based violence (GBV) is a serious human rights and public health issue as about one third of women around the globe are reported to endure GBV during their lifetime (Heise, Ellsberg, & Gottemoeller, 1999; World Health Organization [WHO], 2013). For instance, a multisite study that examined the prevalence of intimate partner violence against women in 10 nonindustrialized countries reported 15% to 71% lifetime physical and/or sexual partner violence against women (Garcia-Moreno, Jansen, Ellsberg, Heise, &

Watts, 2006). Risk factors may include individual (e.g., personal history of being abused), relational (e.g., marital discord), and communal (e.g., negative male peer influence) factors, which often are associated with gender norms granting male control over women and tolerating male violence against women (Garcia-Moreno, Jansen, Ellsberg, Heise, & Watts, 2006; Heise, 1998; Heise, Ellsberg, & Gottemoeller, 1999).

Acid attack violence, also known as vitriolage, involves throwing a corrosive substance such as sulfuric acid on the victim, typically, on the face or head, with the intention to disfigure, maim, torture, or

even kill (Patel, 2014; Welsh, 2009). It is a horrid form of GBV against women prevalent in, but not limited to, South Asian countries such as Bangladesh, Cambodia, India, and Pakistan (Mannan et al., 2006; Welsh, 2009; see also Ahmed, Maroof, Ahmed, & Sheridan, 2017, for a report on its rise in the West). For instance, acid attacks against women were recognized as a serious human rights issue in Bangladesh (which was a part of Pakistan prior to its independence in 1971) with its steady increase from the 1970s to 1990s, leading to the establishment of the Acid Survivors Foundation (ASF) by the United Nations Children's Fund (UNICEF) (Haque & Ahsan, 2014).

Relational conflicts arising from the passion between men and women are often cited as the common motive for acid throwing (Mannan et al., 2006). In particular, men in a male-dominated society commit such attacks when unsuccessful courtship leads to an unbearable feeling of shame or gender norm violations by women increase men's desire to subdue the members of the other sex (Gulrez, 2016; Welsh, 2009). Other motives for acid attacks include business disputes, familial conflicts, property distributions, or just pure jealousy and hatred towards the target of the attack, but most acid attacks are still perpetrated by men against women (Nair, 2014).

Acid attacks often result in permanent disfigurement or disabilities (e.g., blindness) leading to irreversible physical, psychological, economic, and social harms that the survivors have to endure throughout their lifetime (Patel, 2014; Rahman, Ahmad, & Rahman, 2015). The corrosive action of the acid rapidly burns and dissolves the layers of the skin and muscle, which can lead to bone exposure and disintegration; however, the offence usually is carried out at night or in a country where the victim has no access to immediate medical care, aggravating the damages done (Bandyopadhyay & Khan, 2003). Furthermore, the deleterious effects of acid attacks are further exacerbated by weak laws against the offenders (Ahmad, 2012) and by patriarchal beliefs encouraging cultural tolerance towards violence against women (Gulrez, 2016). Though the common motives for throwing corrosives often are to leave lasting harmful effects on the victim rather than to murder, deaths due to ingestion or severe burn injuries also are reported (Behera, Rani, Pradhan, & Dikshit, 2014).

Due to the country's patriarchal social structure, women in Pakistan are often perceived to be subordinate to men and their property, which is linked to a high prevalence of GBV against women (Aurat Foundation, 2011). According to a report that examined violence against women (VAW) in Pakistan from 2008 to 2014, while the incidence of VAW fluctuated between some years, there was a steady increase in the reported VAW cases from 2012 to 2014 with 10,070 cases in 2014 alone (Aurat Foundation, 2014). Types of VAW include kidnapping/abduction, murder, rape/gang rape, and "honour" killing, and acid attack violence is acknowledged as one of the most severe forms of VAW with reported cases of 65 in 2014, a 51.2% increase from the year 2013 (Aurat Foundation, 2014). Considering that these reported numbers typically came from national and local newspapers, underreporting is highly likely, especially due to social stigma, fear, and a belief that reporting perpetrators close to the victims and their family members to the authority is dishonourable (Aurat Foundation, 2014).

Key Practitioner Message

- The treatment options available to the female survivors of acid attack violence are limited, but the potential for a forgiveness intervention shown through this study is encouraging.
- Results of this study have shown that a forgiveness intervention might lead to improvement in the areas of forgiveness, anger, anxiety, depression, and hope and that most of the positive effects are likely to persist for a year.
- A forgiveness intervention, though developed in the United States, is effective for Pakistani women in Southeast Asia, adding evidence to the universality of the virtue of forgiveness.
- Forgiveness is not to be forced upon victims because forgiveness as a moral virtue is a conscious and self-chosen expression of goodness towards the offender.

Because of the traumatic nature of acid attacks, victims' lives are adversely affected. They often suffer from many psychological issues such as stress, depression, anxiety, fear, suicide ideation, anger, low self-esteem, helplessness, and insomnia (Ahmad, 2012; Guerrero, 2013). The permanent disfigurement embedded in their body is likely to act as a constant reminder, inciting anger, hatred, and a desire for revenge throughout their lifetime (Gulrez, 2016). Furthermore, the physical deformities that acid attack survivors suffer, including ocular damage in some cases, are likely to worsen their mental health by making it difficult for them to reintegrate into society (i.e., social isolation) due to constant medical care and difficulties with getting a job or married (Ahmad, 2012). Despite these immense emotional pains documented, empirical studies focusing on acid attack victims' emotional healing have not been conducted. One specific psychological intervention that has yet to be explored is guiding acid attack victims through the process of forgiveness for the purpose of helping them cope with anger and restore hope for the future.

Whereas the concept of forgiveness has universal features (Enright & Fitzgibbons, 2015), there are wide cross-cultural nuances in how it is viewed and expressed. For example, a set of case studies in Iran showed that some people were afraid that to forgive means a loss of one's own identity (Alim, Due, & Strelan, 2019). A study in Japan showed a greater emphasis on restoring interpersonal harmony than in the amelioration of negative affect in forgivers (Joo, Terzino, Cross, Yamaguchi, & Ohbuchi, 2019). A recent study in Pakistan showed that adolescent girls, out of a sense of shame, were hesitant to discuss in a group setting the abuse that they had suffered (Rahman, Iftikhar, Kim, & Enright, 2018).

Despite these cultural differences, forgiveness is recognized as a universal virtue found across cultures, philosophies, and religions although personal expressions of the virtue can differ among individuals and within various contexts (Enright, 2012; Enright & Fitzgibbons,

2015). As a virtue, forgiveness focuses on the conscious and self-chosen expression of goodness towards those who acted unjustly towards the forgiver. It is the primary virtue that is practiced in the context of another's injustice for the good of the offender. Although different definitions of forgiveness exist within the psychological literature, forgiveness is often defined as forgivers' abandoning negative thoughts, emotions, and behaviours towards the offenders while increasing positive thoughts, feelings, and behaviours towards them (Enright & Fitzgibbons, 2015; Exline, Worthington, Hill, & McCullough, 2003). Regardless of whether forgivers experience positive changes, it would be reductionistic to define forgiveness exclusively as a reduction in negative emotions because all moral virtues include the more expansive psychological qualities of not only affect but also cognition and action (Enright & Fitzgibbons, 2015). Forgiving is not to be confused with finding excuses for the offenders' unjust behaviour, calming down, saying, "I forgive you," or reconciling with the offenders, and forgiving does not mean giving up justice (Enright & Fitzgibbons, 2015; Exline, Worthington, Hill, & McCullough, 2003). By forgiving, forgivers are trying to see offenders from a larger perspective beyond their unjust actions and offer kindness, generosity, compassion, and even moral love (agape in the original Greek) to the ones who do not necessarily deserve these by nature of what they have done (Enright, 2001; Enright & Fitzgibbons, 2015). Forgiveness begins with a choice made by the victims, is to be offered from the forgivers' heart, and can be genuine even without openly interacting with or communicating with the offenders (Enright, 2001).

The Enright Process Model of Forgiveness implemented in this study is a widely used intervention model shown to reduce forgivers' anger, anxiety, and depression and increase their self-esteem and hopefulness for the future (Akhtar & Barlow, 2018; Baskin & Enright, 2004; Wade, Hoyt, Kidwell, & Worthington, 2014). This forgiveness process model has been tested and shown beneficial for female survivors of abuse (Freedman & Enright, 2017) such as incest survivors (Freedman & Enright, 1996), emotionally abused women (Reed & Enright, 2006), and women with fibromyalgia who experienced parental abuse in childhood (Lee & Enright, 2014). Also, a recent pilot study, the first published study that examined the efficacy of a forgiveness intervention in Pakistan, has shown that adolescent females who were physically or sexually abused experienced benefits of forgiveness in the areas of anger and hope at the 1-year follow-up when compared with the treatment as usual group (Rahman, Iftikhar, Kim, & Enright, 2018). Given its empirically supported effects for female abuse survivors and also the initial evidence for its efficacy in a unique culture in Pakistan, examining its potential with female acid attack victims in Pakistan was deemed worthwhile.

2 | THE PRESENT STUDY

The present research is unique in being the first forgiveness intervention study with female acid attack victims, who have very limited resources in a male-dominated society. It should be noted again that forgiveness is never to be forced upon the victims and that forgiveness does not require interacting with the offenders or preclude the victims from seeking justice. Given that the victims are likely to suffer emotional struggles, equipping them with a process, in this case forgiveness, to recover from emotional wounds appears to be a worthwhile goal. Consistent with previous literature on implementing forgiveness interventions with female survivors of abuse, we hypothesized that the forgiveness intervention would result in higher levels of forgiveness (H1a) and hope (H1b) and lower levels of anxiety (H1c), depression (H1d) and anger (H1e) post forgiveness treatment when compared with the treatment-as-usual (TAU) group. Further, we hypothesized (H2a–H2e) that our forgiveness treatment group would have sustained positive effects 12-months post forgiveness treatment with improved scores on all measures when compared with TAU. In addition to assessing the five dependent measures post-treatment, our design also enabled us to assess levels of forgiveness, hope, anger, anxiety, and depression over a short period of time prior to treatment (three administrations) and over a 12-month period posttreatment.

3 | METHOD

3.1 | Participants

After initial screening, 16 female participants (age range of 23 to 35 years; $M = 28.8$, $SD = 4.3$) recruited from the Depilex Smileagain Foundation and the Jinnah Burn Unit and Reconstructive Surgery Center in Pakistan participated in this study. All participants were victims of acid attacks, the time since the attack ranged from 2 to 10 years, and the offenders included husbands, male relatives, and strangers, involving either domestic intimate partner violence or interpersonal gender-based hate crimes. See Figure 1 for the Consolidated Standards of Reporting Trials (CONSORT) diagram showing the flow of participants through the trials.

3.2 | Measures

3.2.1 | Initial screening

Potential participants ($n = 21$), referred by the institutes listed above in Lahore, Pakistan, were screened for their levels of anger, anxiety, depression, hope, and forgiveness. Only the victims who had shown high levels of anger, anxiety, depression, and low levels of forgiveness and hope and who never had been given any proper psychological interventions after the attacks were invited. Three did not meet these inclusion criteria and thus were not invited for the intervention. After the detailed information about the study was provided, two declined to participate, resulting in 16 victims as the final sample size.
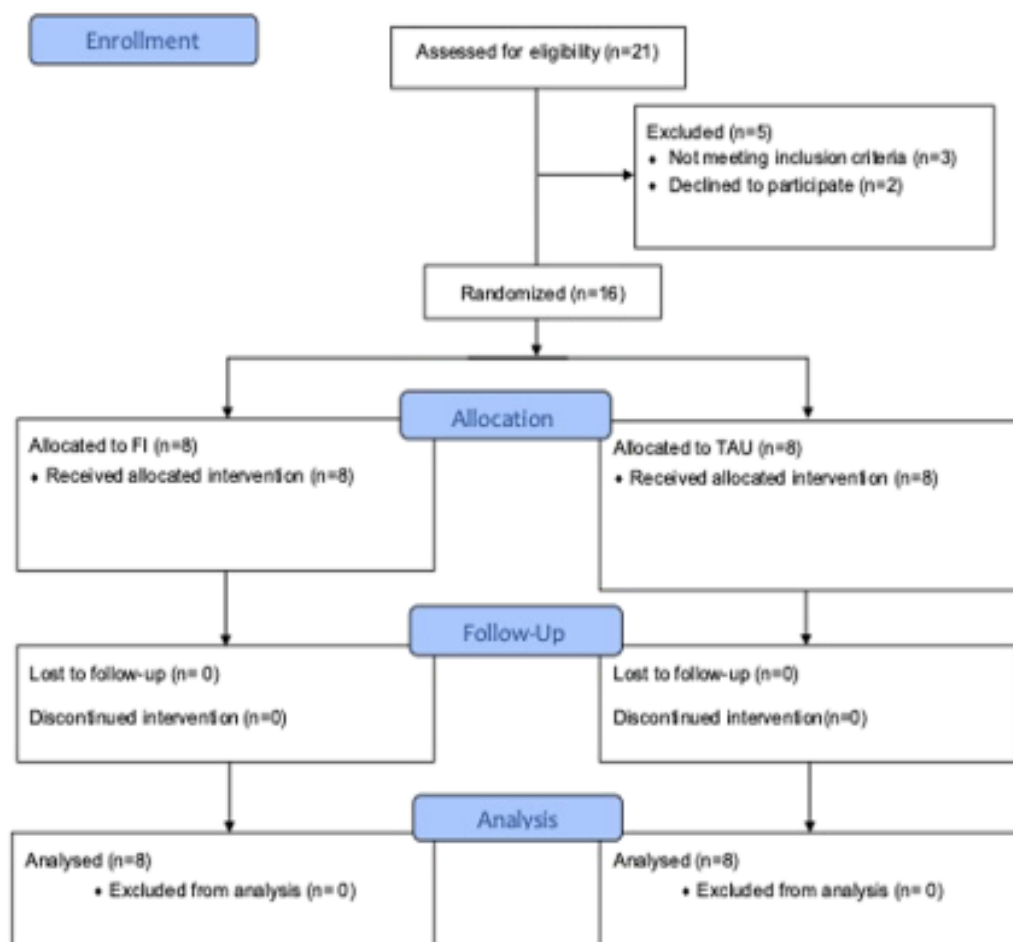
FIGURE 1 Consolidated Standards of Reporting Trials (CONSORT) diagram showing the flow of participants through the trials. FI = forgiveness intervention; TAU = treatment-as-usual [Colour figure can be viewed at wileyonlinelibrary.com]

3.2.2 | Enright Forgiveness Inventory for adults (EFI–30)

Enright Forgiveness Inventory (EFI) is a widely used forgiveness measure developed by Subkoviak et al. (1995). The original version has 60 items, but the 30-item version translated to Urdu was used in this study. A pilot study (an unpublished work) was conducted on 30 female participants between the ages 22 to 35 to test the internal consistency reliability of the translated version of the EFI-30 as well as other dependent measures used in this study, and the Urdu version of EFI-30 showed high internal consistency reliability with a Cronbach's alpha of .86. EFI measures participants' level of forgiveness towards one offender in the areas of positive and negative affect, positive and negative behaviour, and positive and negative cognition by having them rate each item on a 6-point Likert scale from 1 (Strongly disagree) to 6 (Strongly agree). Sample items include "I feel warm," "I feel repulsed," "I do or would show friendship," "I do or would ignore," "I think he or she is horrible," and "I think he or she is of good quality." Prior to calculating the total forgiveness score that ranges from 30 to 180, all negative items were reverse scored so that higher total scores indicate higher levels of forgiveness. In the current

study, EFI-30 at the first posttest was internally consistent with an alpha of .98.

3.2.3 | Herth Hope Index

Herth Hope Index (HHI) (Herth, 1991) is a measure of hope that consists of 12 items. The Urdu version of HHI was used in this study, and the pilot study (an unpublished work) conducted with 30 female participants showed high internal consistency reliability for the Urdu version with a Cronbach's alpha of .97. Participants rated each item on a 4-point Likert scale from 1 (Strongly disagree) to 4 (Strongly agree). Sample items included "I have a positive outlook toward life" and "I have a sense of direction." Total scores, calculated after two items are reverse coded, range from 12 to 48 where higher scores indicate higher hope. In the current sample, HHI's internal consistency reliability based on the first pretest responses was not acceptable with an alpha of .370; however, as virtually all of the 16 participants chose the lowest or second lowest score possible for all items on the scale (indicating a low level of hope), the low reliability seems to be due to a lack of variance in responses. In the current study, HHI at the first posttest

was internally consistent with an alpha of .96 and all alphas were high posttreatment.

3.2.4 | PROMIS Anger, Anxiety, and Depression Short Forms Scale

Five-item PROMIS Anger Short Form, 7-item PROMIS Anxiety Short Form, and 8-item PROMIS Depression Short Form from the Patient Reported Outcomes Measurement Information System (PROMIS; Cella et al., 2010; Pilkonis et al., 2011) were used to measure participants' current levels of anger, anxiety, and depression. Participants rated each item on a 5-point Likert scale from 1 (Never) to 5 (Always), indicating how often they felt certain anger, anxiety, and depression related emotions within the past 7 days. Sample anger items include "I was grouchy" and "I was irritated more than people knew." Sample anxiety items include "I felt fearful" and "I felt worried." Sample depression items include "I felt sad" and "I felt unhappy." Total scores for anger range from 5 to 25, for anxiety, from 7 to 35, and for depression, from 8 to 40 in which higher scores indicate higher levels of each construct. These scales were translated into the Urdu language, and the pilot study (an unpublished work) conducted with 30 participants showed high internal consistency reliability ($\alpha = .90$ for anger, $\alpha = .77$ for anxiety, and $\alpha = .92$ for depression). In the current study, all scales at the first posttest had high internal consistency reliability as well ($\alpha = .85$ for anger, $\alpha = .94$ for anxiety, and $\alpha = .93$ for depression). Note that alphas for the pretest scores were lower due to the lack of variance in the responses (all participants showed very low levels of initial anger, anxiety, and depression); however, all alphas were high posttreatment.

3.3 | Procedure

Participants ($n = 16$) were randomly assigned into either a forgiveness group or a TAU group. Then, the forgiveness, anger, anxiety, depression, and hope measures (described above) were individually administered three times, including the prescreening assessment, with a 1-week interval between testing periods. Posttesting was done (twice with a 1-week interval) as soon as the 4-month intervention was over. At the 1-year follow-up, participants were given the same measures again once. Research protocols were reviewed and ethics approval was obtained from the first author's institution for this study.

3.3.1 | Intervention procedure

Participants in the forgiveness group received twice-a-week forgiveness sessions for 4 months in the Urdu language. Four participants recruited from the Depilex Smileagain Foundation received twice-a-week TAU by a clinical psychologist affiliated with the Foundation in the Urdu language, and each session lasted about 55 to 60 min.

Psychologists at the Depilex Smileagain Foundation use different approaches, but all have the same goal of helping the acid burn victims with accepting the loss, overcoming their identity crisis, and moving on with their lives. They do this by inculcating confidence and helping them find strength so that they can stand for themselves and move towards rehabilitation. The techniques widely used are cognitive behaviour approaches focusing on the following areas: relaxation exercises, depression management, anxiety and panic attack management, stress and anger management, coping skills for overcoming their fears, socialization skills, and self-esteem building. In addition, during the therapy sessions, psychologists encourage the victims to practice manual skills that they are likely to have learned from a very young age as such skills that can generate income for them to help regain their hope of making a living for themselves.

The participants recruited from the Jinnah Burn Unit and Reconstructive Surgery Center were not given any treatment, and they had not sought any psychological treatment due to limited resources and financial issues ($n = 4$), which is more typical than getting any psychological services in this population.

Eight participants in the forgiveness intervention group received 50–55-min-long, twice-a-week individual sessions for 4 months. At times, individual sessions were increased up to 15 min as further care and attention were deemed necessary by the interventionist. The book, Forgiveness is a choice (Enright, 2001), was used by the interventionist as the treatment manual, and participants were guided through the four phases as described in the manual: Uncovering Phase, Decision Phase, Work Phase, and Discovery Phase. In the Uncovering Phase, efforts were made to establish rapport with participants and to help them become more aware of their emotional pain as well as the psychological defences that they have used in dealing with such pain. In the Decision Phase, participants were gently asked to consider forgiveness as a way to cope with their emotional pain. In the Work Phase, sessions focused on helping participants to consider the offender as a person as a part of the human community. Also, in this phase, the cosmic perspective that allows forgivers to see the offender from the perspective of their spiritual tradition was considered. Participants were encouraged to choose compassion over revenge. In the Discovery Phase, participants considered meaning in suffering and their purpose in life. Participants were reminded that they are more than what happened to them and that their lives now can have a greater purpose with the potential to make changes in the world. The book used as the treatment manual itself was not provided to the participants, but as the interventionist guided the participants through the process of forgiveness, various worksheets in the Urdu language were made available to them to assist them in their forgiveness journey.

3.3.2 | Treatment fidelity

To assess treatment fidelity, all individual sessions were audiotaped, and the entire sessions from three randomly chosen participants were reviewed by both the therapist who conducted the sessions and

another researcher who did not deliver the sessions. It was concluded that the reviewed sessions were consistent with the manual.

3.3.3 | Qualification of the interventionists

A female graduate student studying for a Master of Science in Clinical Psychology under the supervision of a female doctoral-level Clinical Psychologist with 10 years of clinical experience led all sessions in the experimental group. A clinical psychologist at the Depilex Smileagain Foundation led all sessions for four participants in the control group. Four participants from the Jinnah Burn Unit and Reconstructive Surgery Center did not receive any treatment.

4 | RESULTS

First, we assessed the three pretest administrations of the test battery using repeated measures analysis of variance (ANOVA) to ensure that the composite measures of our pretest dimensions were stable. Note that the first pretest scores were based on the first administration of measures taken as part of the screening procedures. For the PROMIS-Anger, PROMIS-Anxiety, and PROMIS-Depression scores, no differences among instrument administrations were detected so the composite score for these three dimensions consisted of the average of all three administrations. For both the EFI and the HHI, the final two administrations of these scales were not different from one another but both were different from the first administration. Because of these similarities and differences, we averaged only the second and third administration scores to calculate our pretest levels of EFI and HHI. Removing the first administration for the EFI and the HHI ensured that the baseline scores used in the analyses were the most recent ones and more stabilized over time. We calculated our post-treatment scores for each of the scales by averaging the first two posttest administrations. The 12-month follow-up score was a single administration, so it was not averaged.

Our first set of hypotheses (H1a–H1e) were that our forgiveness treatment group would have better scores on our five outcome measures than the TAU group posttreatment. Our second set of hypotheses (H2a–H2e) was that the forgiveness treatment group would be more effective than the TAU group at sustaining its improvements in forgiveness, hope, anger, anxiety and depression. We examined changes in our outcome measures using two 2×2 (Group $\times$ Time) mixed MANOVAs (pretreatment vs. posttreatment for Hypotheses 1a–1e and posttreatment vs. 12-month follow-up for Hypotheses 2a–2e).

For the first set of hypotheses, there were significant main effects of time for all measures: EFI-Forgiveness ($F(1,14) = 633.21$, $p < .001$, $\eta^2 = .97$); HHI-Hope ($F(1,14) = 487.08$, $\eta^2 = .97$); PROMIS-Anxiety ($F(1,14) = 449.38$, $p < .001$, $\eta^2 = .97$); PROMIS-Depression ($F(1,14) = 617.73$, $p < .001$, $\eta^2 = .97$); and PROMIS-Anger ($F(1,14) = 127.39$, $p < .001$, $\eta^2 = .90$). More importantly, there was a significant Group $\times$ Time interaction for all of the measures except for

forgiveness: EFI-Forgiveness ($F(1,14) = .431$, $p = .522$, $\eta^2 = .03$); HHI-Hope ($F(1,14) = 603.45$, $\eta^2 = .97$); PROMIS-Anxiety ($F(1,14) = 344.45$, $p < .001$, $\eta^2 = .96$); PROMIS-Depression ($F(1,14) = 451.34$, $p < .001$, $\eta^2 = .97$); and PROMIS-Anger ($F(1,14) = 115.90$, $p < .001$, $\eta^2 = .89$) (see Figures 2 and 3). For significant interactions, effect sizes measured by η^2 for each dependent variable were large, explaining from 89% to 97% of the total variance in the outcome measures. Also, see Figures 2 and 3 for the visual representations of Group $\times$ Time interactions from pretreatment to posttreatment and from post-treatment to the 12-month follow-up for all dependent variables.

For the post hoc analyses, we first conducted one-way ANOVAs for each of the dependent variables to determine if the groups were different from one another during each measurement period. We found that the participants in the Forgiveness group had less hope and were more anxious, depressed, and angry than those in the TAU group (see Table 1). In contrast, the forgiveness group scored higher on the EFI pretreatment than the control group. Posttreatment and also at the 12-month follow-up, without exception, we found that the treatment group was significantly better on all measures than the control group. Because the forgiveness group had higher levels of EFI than the TAU group at pretreatment, we used ANCOVA with EFI-pretest as the covariate and found that, after accounting for the relationship of pretreatment EFI with posttreatment EFI, there was no difference between the groups on EFI after treatment ($F(1,14) = .10$, $p = .757$, $\eta^2 = .01$). As a precaution, we conducted similar ANCOVAs on each of the remaining dependent variables and found no inconsistencies with the ANOVA results in posttreatment found in Table 1.

We then conducted a series of paired t-tests to determine if the two groups improved from pretest to posttest. For the treatment group, we found that there was a significant improvement on all five dependent variables with large effect sizes according to Cohen's (1988) guidelines (see Table 2). These results were consistent with our hypotheses that learning to forgive is beneficial for participants. In contrast, the TAU group only improved on Depression and EFI-Forgiveness. Though the forgiveness group improved on all five areas from pretreatment to posttreatment, the first set of hypotheses (1a–1e) was partially supported because when compared with the TAU group, the amount of gain in forgiveness for the forgiveness group was not statistically significant. Hypotheses 1b–1e were supported, showing greater improvements, when compared with the TAU group, in hope (Hypothesis 1b), anxiety (Hypothesis 1c), depression (Hypothesis 1d), and anger (Hypothesis 1e).

For the second set of hypotheses, we hypothesized a Group $\times$ Time interaction for each of the dependent measures. That is, we expected that at the 12-month follow-up that any gains that were made by the forgiveness group would be maintained or show more improvement than the TAU group. There was a significant Group $\times$ Time interaction for all of the measures except for depression: EFI-Forgiveness ($F(1,14) = 23.21$, $p < .001$, $\eta^2 = .62$); HHI-Hope ($F(1,14) = 603.45$, $p = .043$, $\eta^2 = .97$); PROMIS-Anxiety ($F(1,14) = 5.91$, $p = .029$, $\eta^2 = .30$); PROMIS-Depression ($F(1,14) = 2.11$, $p = .169$, $\eta^2 = .01$); and PROMIS-Anger ($F(1,14) = 29.85$, $p < .001$, $\eta^2 = .68$) (see Figures 2 and 3). For significant interactions, effect sizes measured by

FIGURE 2 Mean HHI-Hope and EFI-Forgiveness by Time

HHI-Hope

EFI-Forgiveness

········· Forgiveness   ▬ ▬ ▬ Treatment as Usual
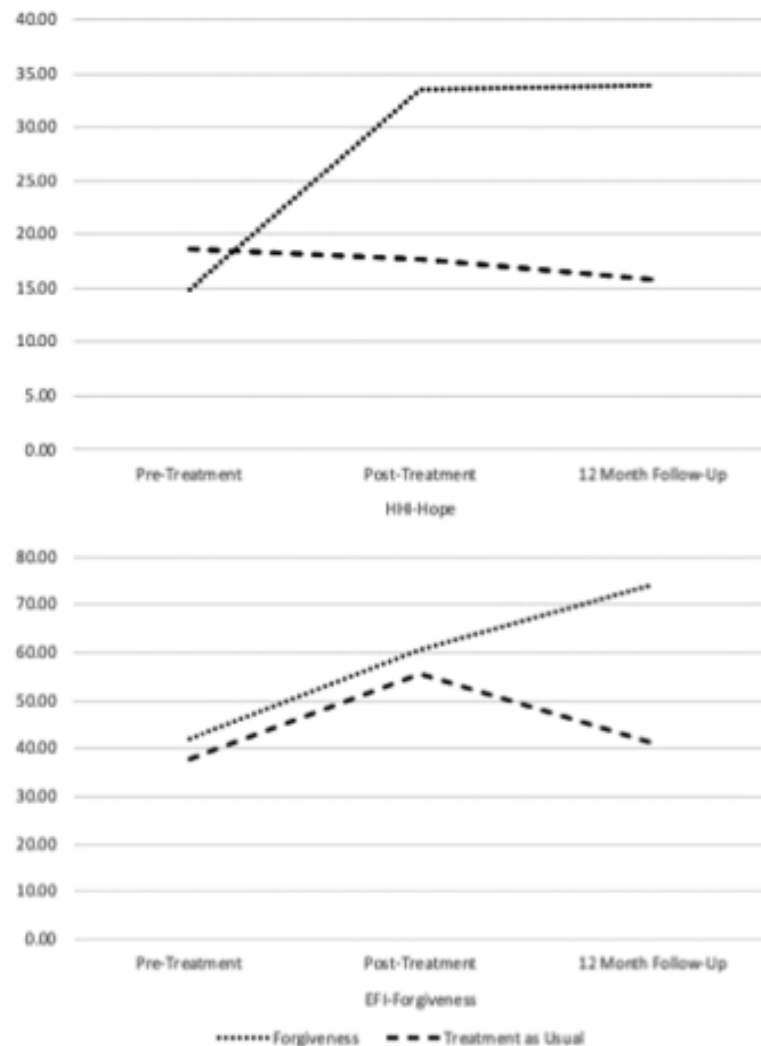
η^2 were large, explaining from 30% to 97% of the total variance in the outcome measures.

For the post hoc tests, we conducted a series of paired t-tests to determine if each group improved\maintained from post-treatment to 12-month follow-up. For the forgiveness group, we found that there was a significant improvement on all five dependent variables with moderate to large effect sizes according to Cohen's (1988) guidelines (see Table 2). For the TAU group, we found that PROMIS Depression continued to improve whereas HHI-Hope, PROMIS-Anxiety, and PROMIS-Anger did not improve, and we also found that EFI-Forgiveness was significantly worse for the TAU group at the 12-month follow-up than at posttreatment (see Table 2). Except for PROMIS-Depression, these results are consistent with Hypotheses 2a–2e, showing greater improvements on the dependent measures favouring the forgiveness group. The forgiveness group showed a continued reduction in depression from posttreatment to 12-month follow-up (the positive effect on depression from pre to posttreatment continued to improve), but the TAU group also improved on depression, resulting in no

Time × Group interaction effect on depression from pretreatment to the 12-month follow-up.

Finally, we wanted to make sure that the effect of forgiveness is not confounded with recruitment locations. Therefore, we conducted one-way ANOVAs for each of the dependent variables comparing the posttest scores and 12-month follow-up scores between the two recruitment locations. Results showed no differences in scores between them. Also, given that half of the TAU group from one recruitment location received sessions while the other half from the other location did not, we wanted to test whether or not they differ at the posttest and 12-month follow-up. One-way ANOVAs for each of the dependent variables within the TAU group did not show any differences between the two recruitment locations.

5 | DISCUSSION

The purpose of the study was to evaluate the effectiveness of a forgiveness intervention in the context of female acid attack victims in
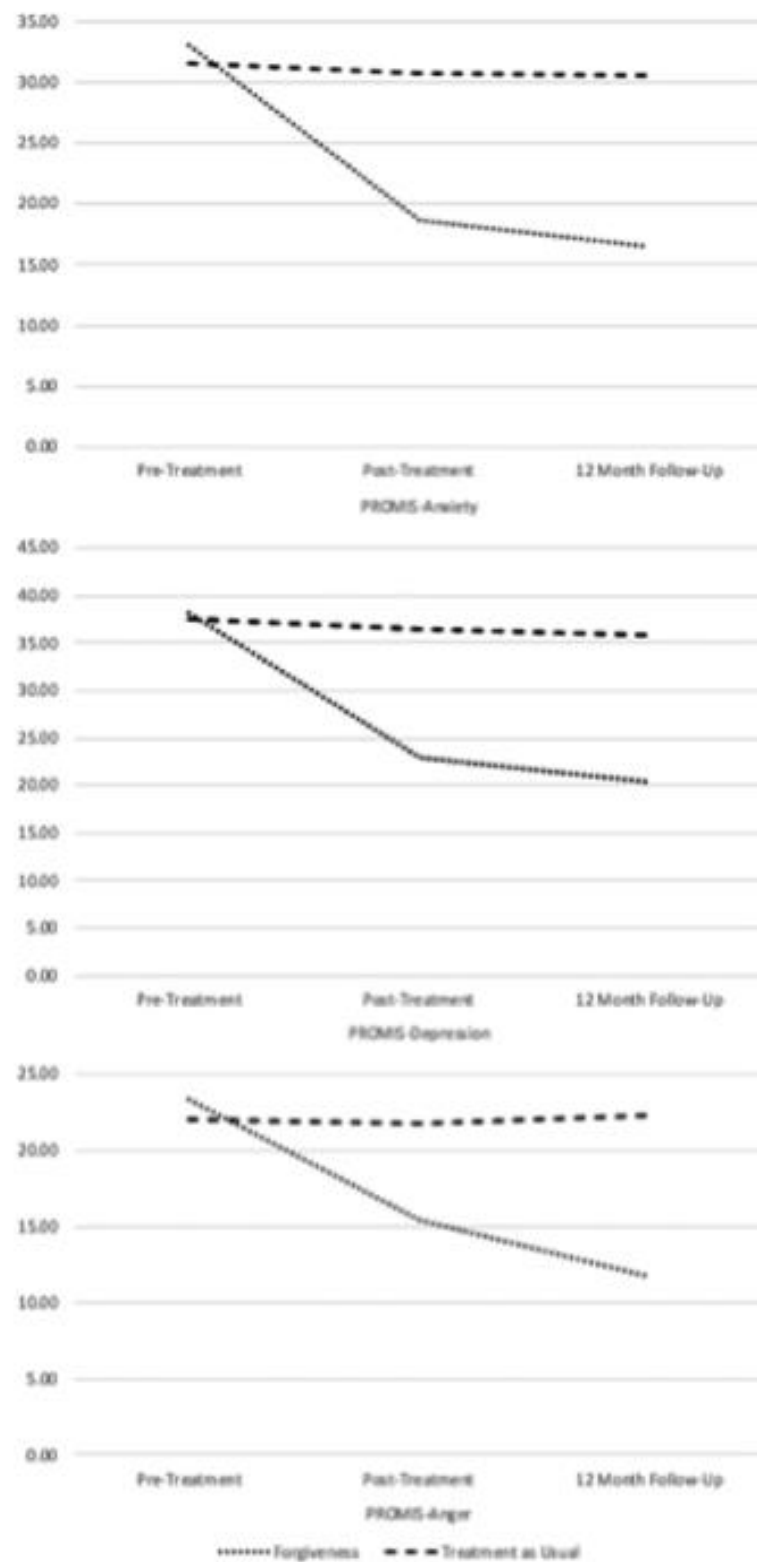
FIGURE 3 Mean PROMIS Anxiety, Depression, and Anger by Time

Pakistan. This was the second forgiveness intervention study done in Pakistan (see Rahman, Iftikhar, Kim, & Enright, 2018, for the first published study on the efficacy of a forgiveness intervention in Pakistan),

and it is the first that targeted female acid attack victims. The analysis of the data has shown statistically significant positive results for the participants of the forgiveness intervention group who received

TABLE 1 Between group post hoc ANOVAs

Treatment	Group	N	Mean	SD	F
EFI-Forgiveness					
Pretreatment	Experimental	8	42.00	2.43	18.37**
	Control	8	37.81	1.31	
Posttreatment	Experimental	8	60.44	5.15	7.03*
	Control	8	55.31	1.83	
Follow-up	Experimental	8	74.00	16.03	31.69**
	Control	8	41.25	3.73	
HHI-Hope					
Pretreatment	Experimental	8	14.81	1.58	27.73**
	Control	8	18.63	1.30	
Posttreatment	Experimental	8	33.50	0.53	1685.12**
	Control	8	17.63	0.95	
Follow-up	Experimental	8	33.88	0.64	653.84**
	Control	8	15.88	1.89	
PROMIS-Anxiety					
Pretreatment	Experimental	8	33.00	1.15	8.46*
	Control	8	31.58	0.75	
Posttreatment	Experimental	8	18.56	0.68	405.51**
	Control	8	30.63	1.55	
Follow-up	Experimental	8	16.50	1.51	548.80**
	Control	8	30.50	0.76	
PROMIS-Depression					
Pretreatment	Experimental	8	38.17	0.53	5.50*
	Control	8	37.63	0.37	
Posttreatment	Experimental	8	23.00	1.65	455.10**
	Control	8	36.43	0.68	
Follow-up	Experimental	8	20.38	2.67	222.95**
	Control	8	35.75	1.16	
PROMIS-Anger					
Pretreatment	Experimental	8	23.38	0.63	11.49**
	Control	8	22.00	0.96	
Posttreatment	Experimental	8	15.44	1.24	172.58**
	Control	8	21.81	0.59	
Follow-up	Experimental	8	11.75	1.67	246.96**
	Control	8	22.25	0.89	

*$p < .05$. **$p < .01$.

twice-weekly individual forgiveness sessions for 4 months. Post-treatment, the forgiveness intervention group, when compared with the TAU group, had greater gains in hope and greater reductions in anger, anxiety, and depression with large effect sizes. The sharp slope differences between the two groups shown in Figures 2 and 3 illustrate the large effect sizes from pretreatment to posttreatment. Although there was no Time × Group interaction effect on forgiveness from pretreatment to posttreatment, further examinations of the data have shown that both groups improved on forgiveness where the forgiveness intervention group had higher baseline forgiveness scores when compared with the TAU group, and the effect sizes were large for both groups (see Table 2). Despite the use of random assignment, those in the forgiveness group on average had a higher level of forgiveness prior to the intervention. Also, those in the TAU group showed improvement in forgiveness at posttest (which was not sustained at the 12-month follow-up, which is to be discussed below). Findings are encouraging because regardless of their different forgiveness baselines, both groups improved significantly from pretreatment to posttreatment.

The analysis of the data focusing on the changes from the pretreatment assessment to the 12-month follow-up assessment has shown that the forgiveness intervention group continued to improve in all areas as shown in Figures 2 and 3. When compared with those of the TAU group, the improvements from pretreatment to the

TABLE 2 Post hoc paired t-tests for time by group

Dependent variable	Comparison	Forgiveness				Treatment as usual			
		Mean change	SD	t	d	Mean change	SD	t	d
EFI-Forgiveness	Pretreatment vs. posttreatment	18.44	3.91	13.32**	4.72	17.50	1.00	49.50**	17.5
	Posttreatment vs. follow-up	13.56	15.99	2.40*	.85	-14.06	2.73	-14.56**	5.15
HHI-Hope	Pretreatment vs. posttreatment	18.69	1.71	3.91**	10.92	-1.00	1.49	-1.90	
	Posttreatment vs. follow-up	.38	.64	1.66		-1.75	2.62	-1.89	
PROMIS-Anxiety	Pretreatment vs. posttreatment	-14.44	1.06	-38.47**	13.62	.96	1.76	1.54	
	Posttreatment vs. follow-up	-2.06	1.72	-3.39*	1.20	.13	1.46	.24	
PROMIS-Depression	Pretreatment vs. posttreatment	-15.17	1.75	-24.57**	8.67	-1.19	.65	-5.21**	1.83
	Posttreatment vs. follow-up	-2.63	3.62	-2.05	.73	-.69	1.07	-1.82	
PROMIS-Anger	Pretreatment vs. posttreatment	-7.94	1.64	-13.71**	4.84	-.19	1.21	-.44	
	Posttreatment vs. follow-up	-3.69	2.02	-5.17**	1.83	.44	.78	1.59	

*$p < .05$. **$p < .01$.

12-month follow-up were statistically greater in all areas for the forgiveness intervention group except for depression. Though from pretreatment to the 12-month follow-up, there was no Time × Group interaction effect on depression, both showed reductions in depression at the 12-month follow-up with the forgiveness group having a larger effect size (see Table 2).

Note that forgiveness improved for the TAU group from pretreatment to posttreatment, but from posttreatment to the 12-month follow-up, it went down by, on average, 14 points ($SD = 2.73$) with a large effect size ($d = 5.15$). The control participants in the TAU group increased in forgiveness from pretest to posttest, which may have been due to their attempt to adapt to the extremely challenging situation of the acid attacks. Yet, that attempt was not sustained without a forgiveness intervention as seen in their statistically significant decline in forgiveness to the 1-year follow-up assessment. In contrast, the forgiveness intervention seemed to stimulate increases in forgiveness over time for the experimental group as seen in their statistically significant gains in forgiveness to follow-up, which seems to support the idea that forgiveness is a virtue that grows over time as one learns more about it and practices it.

These results favouring the forgiveness intervention add evidence to the claim that when one forgives, it is the forgiver who benefits from the offering of forgiveness (Wade, Hoyt, Kidwell, & Worthington, 2014). These results add further evidence to the past findings that the forgiveness Process Model is an empirically supported therapeutic approach that works well with female abuse victims (Freedman & Enright, 2017) and that it is effective within the context of non-Western, male-dominated societies where victims are likely to find themselves even more vulnerable with a lack of resources and due to the power differentials between the two genders (Rahman, Iftikhar, Kim, & Enright, 2018). Furthermore, moderate to strong effect sizes reported in this study add evidence to the moderating effect of treatment modality favouring individual forgiveness sessions over group sessions (Baskin & Enright, 2004; Wade, Hoyt, Kidwell, & Worthington, 2014).

Acid violence is a crime that is ongoing in Pakistan, and women from both rural and urban areas are affected by it (Zia, 2013). Those who are victimized are looked down upon by the society as it is often thought that the pain and consequences that they face are due to their own actions (disrespecting the husband, bringing shame to the family, and so forth). These cultural views held by the society make it even more difficult for the victims to find hope and peace in life. Forgiveness does not mean forgoing justice. However, without any hope for the future and while dealing with deep emotional pain, it might be hard for the victims to find any strength to go on with life and make attempts to become change-agents in their society. With the implementation of the forgiveness intervention, acid attack victims were able to acknowledge their anger and hatred towards the perpetrators and learned to view the offenders from larger perspectives outside the context of injustice. They have been taught that forgiveness is an attribute of the strong, not of the weak, and that they have the power to forgive and leave a legacy of love despite the grave injustice that they suffered at the hand of their offenders. What happened to them was, is, and will always remain as wrong, but these new views, the seeing with new eyes that the late Lewis

Smedes (1984) has discussed, aided in their emotional recovery. The participants in the forgiveness intervention group were coping with their emotional struggles in the areas of anger, anxiety, and depression and gained hope for a better future.

Finally, because forgiveness cuts across different spiritual traditions as an expression of virtue, it seems plausible at least in part that the participants who learned about the importance and meaning of forgiveness might have been motivated by their Islamic faith where Allah is seen as all-forgiving and merciful (Enright & Fitzgibbons, 2015). To what extent their spiritual tradition helped with their process of forgiveness is unclear, but this is one area for future research.

5.1 | Limitations

There are several limitations to be noted. Within the TAU group, half of them received actual treatment from a clinical psychologist and the other half did not receive any treatment. Also, for those who received in the TAU condition, we do not have detailed information about their sessions (other than general knowledge about what psychological services typically are provided for acid attack victims). We made a decision to combine the two groups to make a comparison between those who received forgiveness sessions and those who did not and to make sure that there is sufficient statistical power to make group comparisons between the experimental and control groups. While the questions about the uncontrolled aspects of the TAU group will remain, as reported in Section 4, our analyses between the two recruitment locations showed no differences between them at the posttest and at the 12-month follow-up.

Second, this study had a small sample size, necessitating additional intervention studies with acid attack victims in Pakistan before the forgiveness intervention can be introduced as a part of the regular treatment protocols. However, it is not easy to conduct a study with such a vulnerable population in a country where psychological services are not common and receiving such services can stigmatize the victims. Also, in addition to Time × Group interactions favouring the forgiveness group on most of the outcome measures, large effect sizes for the changes from pretreatment to posttreatment for all outcome measures within the forgiveness group add a layer of confidence to our findings that the forgiveness intervention resulted in the positive effects for our participants in the forgiveness group. Therefore, it seems reasonable to conclude that our findings are promising and that there is preliminary yet convincing evidence for the efficacy of the forgiveness intervention with acid attack victims in Pakistan.

Finally, the forgiveness intervention itself does not directly address the issue of acid attacks in Pakistan. It is not a limitation of the study itself, but in addition to making psychological services such as forgiveness interventions more accessible to the victims, future studies should examine ways to prevent future attacks by raising awareness of the deep pain acid attack victims have to endure for their lifetime, changing gender norms that nurture tolerance for such horrendous acts and initiating policy and legal changes that would deter potential offenders from acting upon their desire to hurt women.

In conclusion, this is the first study to show positive psychological developments for acid attack victims in Pakistan. The results are encouraging given the very traumatic effects of these kinds of attacks and that the results were enduring over a 1-year period posttreatment.

CONFLICT OF INTEREST

The authors declare that they have no conflict of interest.

DATE AVAILABILITY STATEMENT

Data are available from the corresponding author upon reasonable request.

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REFERENCES

Ahmad, N. (2012). Weak laws against acid attacks on women: An Indian perspective. Medico-Legal Journal, 80(3), 110–120. https://doi.org/10.1258/mlj.2012.012020

Ahmed, F., Maroof, H., Ahmed, N., & Sheridan, R. (2017). Acid attacks: A new public health pandemic in the west? International Journal of Surgery, 48, 32–33. https://doi.org/10.1016/j.ijsu.2017.09.073

Akhtar, S., & Barlow, J. (2018). Forgiveness therapy for the promotion of mental well-being: A systematic review and meta-analysis. Trauma, Violence, and Abuse, 19, 107–122.

Alim, M., Due, C., & Strelan, P. (2019). Perceptions of forgiveness in response to systemic injustice among Iranian refugees. Peace and Conflict: Journal of Peace Psychology, 25(3), 255–258. https://doi.org/10.1037/pac0000355

Aurat Foundation. (2011). Gender-based violence in Pakistan: A scoping study. Islamabad, Pakistan. Retrieved from http://af.org.pk/gep/images/deskStudies/GENDER%20BASED%20VIOLENCE%20-%20R%20PARVEEN%20(2).pdf

Aurat Foundation. (2014). Violence against women: Annual report 2014. Islamabad, Pakistan. Retrieved from https://www.af.org.pk/PDF/VAW%20Reports%20AND%20PR/VAW%202014.pdf

Bandyopadhyay, M., & Khan, M. R. (2003). Loss of face: Violence against women in South Asia. In L. Manderson, & L. R. Bennett (Eds.), Violence against women in Asian societies (pp. 61–75). London: Routledge.

Baskin, T. W., & Enright, R. D. (2004). Intervention studies on forgiveness: A meta-analysis. Journal of Counseling & Development, 82(1), 79–90.

Behera, C., Rani, A., Pradhan, M., & Dikshit, P. C. (2014). Fatal corrosive attack: A study of 13 cases from Central Delhi, India. American Journal of Forensic Medicine and Pathology, 35(2), 109–112. https://doi.org/10.1097/PAF.0000000000000071

Cella, D., Riley, W., Stone, A. A., Rothrock, N., Reeve, B. B., Yount, S., ... Cook, K. F. (2010). The Patient Reported Outcomes Measurement Information System (PROMIS) developed and tested its first wave of adult self-reported health outcome item banks: 2005–2008. Journal of Clinical Epidemiology, 63, 1179–1194.

Cohen, J. (1988). Statistical power analysis for the behavioral sciences (2nd ed.). Hillsdale, NJ: Lawrence Earlbaum Associates.

Enright, R. D. (2001). Forgiveness is a choice. Washington, DC: APA Books.

Enright, R. D. (2012). The forgiving life. Washington, DC: American Psychological Association.

Enright, R. D., & Fitzgibbons, R. P. (2015). *Forgiveness therapy*. Washington, DC: American Psychological Association.

Exline, J. J., Worthington, E. L. Jr., Hill, P., & McCullough, M. E. (2003). Forgiveness and justice: A research agenda for social and personality psychology. *Personality and Social Psychology Review, 7*, 337–348. https://doi.org/10.1207/S15327957PSPR0704_06

Freedman, S. R., & Enright, R. D. (1996). Forgiveness as an intervention goal with incest survivors. *Journal of Consult Clinical Psychology, 64*(5), 983–992.

Freedman, S. R., & Enright, R. D. (2017). The use of forgiveness therapy with female survivors of abuse. *Journal of Women's Health Care, 6*(3), 1–6. https://doi.org/10.4172/2167-0420.1000369

Garcia-Moreno, C., Jansen, H. A. F. M., Ellsberg, J., Heise, L., & Watts, C. H. (2006). Prevalence of intimate partner violence: Findings from the WHO multi-country study on women's health and domestic violence. *Lancet, 368*, 1260–1269.

Guerrero, L. (2013). Burns due to acid assaults in Bogotá, Colombia. *Burns, 39*(5), 1018–1023. https://doi.org/10.1016/j.burns.2012.10.022

Gulrez, H. (2016). *Living with facial disability: The experiences of female survivors of acid attack in Pakistan (unpublished master's thesis)*. Winnipeg, Canada: University of Manitoba.

Haque, S. E., & Ahsan, H. (2014). Human rights violations against women: Acid violence in Bangladesh. *American Journal of Preventive Medicine, 46*(2), 216–217. https://doi.org/10.1016/j.amepre.2013.10.013

Heise, L., Ellsberg, M., Gottemoeller, M. (1999). Ending Violence Against Women. Population Reports, Series L, No. 11. Retrieved from https://www.k4health.org/sites/default/files/L%2011.pdf

Heise, L. L. (1998). Violence against women: An integrated, ecological framework. *Violence against Women, 4*(3), 262–290. https://doi.org/10.1177/1077801298004003002

Herth, K. (1991). Development and refinement of an instrument to measure hope. *Scholarly Inquiry for Nursing Practice: An International Journal, 5*, 39–51.

Joo, M., Terzino, K. A., Cross, S. E., Yamaguchi, N., & Ohbuchi, K. (2019). How does culture shape conceptions of forgiveness? Evidence from Japan and the United States. *Journal of Cross-Cultural Psychology, 50*, 676–702. https://doi.org/10.1177/0022022119845502

Lee, Y. R., & Enright, R. D. (2014). A forgiveness intervention for women with fibromyalgia who were abused in childhood: A pilot study. *Spirituality in Clinical Practice, 1*, 203–217.

Mannan, A., Ghani, S., Clarke, A., White, P., Salmanta, S., & Butler, P. E. M. (2006). Psychosocial outcomes derived from an acid burned population in Bangladesh, and comparison with Western norms. *Burns, 32*(2), 235–241. https://doi.org/10.1016/j.burns.2005.08.027

Nair, A. R. (2014). Acid attack—Violence against women 'NEED OF THE HOUR'. *Journal of Innovative Research and Solutions., 1*(1).

Patel, M. (2014). A desire to disfigure: Acid attack in India. *International Journal of Criminology and Sociological Theory, 7*(2), e39702–e39702.

Pilkonis, P. A., Choi, S. W., Reise, S. P., Stover, A. M., Riley, W. T., Cella, D., & PROMIS Cooperative Group. (2011). Item banks for measuring emotional distress from the Patient-Reported Outcomes Measurement Information System (PROMIS ®): Depression, anxiety, and anger. *Assessment, 18*, 263–283. https://doi.org/10.1177/1073191111411667

Rahman, A., Iftikhar, R., Kim, J. J., & Enright, R. D. (2018). Pilot study: Evaluating the effectiveness of forgiveness therapy with abused early adolescent females in Pakistan. *Spirituality in Clinical Practice, 5*, 75–97. https://doi.org/10.1037/scp0000160

Rahman, F. N., Ahmad, M., & Rahman, Z. M. (2015). Socio demographic status of victims in vitriolage cases—A medico legal study. *KYAMC Journal, 6*(1), 553–556.

Reed, G. L., & Enright, R. D. (2006). The effects of forgiveness therapy on depression, anxiety, and posttraumatic stress for women after spousal emotional abuse. *Journal of Consulting and Clinical Psychology, 74*(5), 920–929. https://doi.org/10.1037/0022-006X.74.5.920

Smedes, L. (1984). *Forgive and forget*. New York, NY: HarperCollins.

Subkoviak, M. J., Enright, R. D., Wu, C., Gassin, E. A., Freedman, S., Olson, L. M., & Sarinopoulos, I. (1995). Measuring interpersonal forgiveness in late adolescence and middle adulthood. *Journal of Adolescence, 18*, 641–655.

Wade, N. G., Hoyt, W. T., Kidwell, J. E., & Worthington, E. L. Jr. (2014). Efficacy of psychotherapeutic interventions to promote forgiveness: A meta-analysis. *Journal of Consulting and Clinical Psychology, 82*(1), 154.

Welsh, J. (2009). *"It was like burning in hell": A comparative exploration of acid attack violence (unpublished master's thesis)*. The University of North Carolina at Chapel Hill.

World Health Organization. (2013). Global and regional estimates of violence against women: Prevalence and health effects of intimate partner violence and non-partner sexual violence. Geneva, Switzerland. Retrieved from https://apps.who.int/iris/bitstream/handle/10665/85239/9789241564625_eng.pdf;jsessionid=598F4B1412CCC6F0474A4BE86C766BE0?sequence=1

Zia, T. (2013). *Acid violence in Pakistan*. UCLA: Center for the Study of Women. Retrieved from. https://escholarship.org/uc/item/65v958z1