

University of Nevada, Reno

**Evaluating the Feasibility and Client Acceptability of Video Intervention Adjuncts  
Developed for the Treatment of Victims of Intimate Partner Violence:  
A Stage One Pilot Trial**

A dissertation submitted in partial fulfillment of the  
requirements for the degree of Doctor of Philosophy in Psychology

by

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## ABSTRACT

Intimate partner violence (IPV) is a common occurrence in the U.S. Victims of IPV are at an elevated risk of experiencing an array of physical and mental health consequences, which frequently co-occur and act synergistically, placing victims at a higher risk for revictimization. One transdiagnostic treatment, Dialectical Behavior Therapy (DBT), focused on helping individuals gain more balanced emotions and behaviors, has shown success in treating victims of IPV. However, the DBT for IPV treatment protocol is not without its limitations. Specifically, clients may need additional exposure to the skills and concepts taught in the treatment. Yet, additional exposure to the skills facilitated through a therapist is difficult to do given the limited budgets for services for victims of IPV and the client provider gap. In order to address these issues, video intervention adjuncts (VIAs) were developed to serve as treatment adjuncts. A Stage One Pilot Trial was conducted to examine the preliminary efficacy, feasibility, and participant acceptability of the two-day DBT for IPV skills group paired with the VIAs versus the two-day DBT for IPV skills group without the VIAs. Twenty-four women were randomly assigned to the experimental VIA or control condition and completed a one-month follow-up. The data suggests that the VIAs were viewed as acceptable and feasible to implement. Further those in the VIA condition reported greater skill use (with one skill, mindfulness, being significantly greater) and superior outcomes on clinical measures (with one outcome measure, interpersonal sensitivity, being significantly improved). The results of this Stage One Pilot Study provides preliminary evidence that the VIAs are a useful addition to the DBT for IPV skills group and warrant further research.

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## **Chapter 1: Introduction**

Ten million women experience intimate partner violence (IPV) each year in the U.S., equating to one in three women experiencing IPV in their lifetime (Black et al., 2011). Roughly 50% of all female homicides are committed by a current or former intimate partner (Petrosky, Blair, Betz, Fowler, Jack, & Lyons, 2017) and, on average, three or more women are murdered everyday by their current or former intimate partner (APA, 2017). Aside from the threat of death, victims of IPV are at a significant risk for a range of physical and mental health consequences (Dillon, Hussain, Loxton, & Rahman, 2013). The damage of abuse extends beyond the direct victim, impacting family, friends, and children. Estimates suggest that around 24% of children are exposed to IPV, and that those children are at a significant risk for developing emotional and behavioral problems, being the victims of abuse themselves, and growing up to be the perpetrators or the victims of IPV (Costa, et al., 2015; Herrenkohl, Sousa, Tajima, Herrenkohl, & Moylan, 2008). Intimate partner violence also inflicts a significant economic toll, costing the U.S. an estimated \$5.8 billion each year, with \$4.1 billion spent on direct mental health care and medical aid (CDC, 2003).

### **Mental Health and IPV**

Common psychological outcomes after IPV victimization experiences include depression, Posttraumatic Stress Disorder (PTSD), anxiety, suicidal ideation and suicide attempts (Dillon et al., 2013), and personality disorders (Pico-Alfonso, Maria, Echeburúa, & Martinez, 2008) with these problems frequently co-occurring (Dillon et al., 2013). Additionally, victims of IPV often struggle with psychological issues that do not meet

diagnostic criteria, such as self-esteem issues, interpersonal issues, etc. (Cloitre, Stovall-McClough, & Levitt, 2004; Zlotnick, Johnson, & Kohn, 2006). Addressing the psychological sequelae of IPV is imperative to break the cycle of violence, given that the presence of psychopathologies puts victims of IPV at an elevated risk for revictimization (Classen, Palesh, & Aggarwal, 2005; Messman-Moore & Long, 2003; Messman-Moore, Brown, & Koelsch, 2005; Risser, Hetzel-Riggin, Thomsen, & McCanne, 2006; Trevillion, Oram, Feder, & Howard, 2012).

**Depression.** Depression is one of the most commonly reported and researched symptomatic outcomes of IPV (Dillon et al., 2013). Additionally, depressive disorders (odds ratio [OR] 2.77) serve as a risk factor for future IPV victimization (Trevillion et al., 2012). Researchers have noted that the severity or frequency of IPV is positively correlated with the severity of depression (Ansara & Hindin, 2010; Ludermir, Schraiber, D'Oliveira, França-Junior, & Jansen, 2008). Conversely, others have suggested that victims' appraisals of the stressfulness of an IPV experience may be stronger predictors of depression severity (Martinez-Torteya, Bogat, von Eye, Levendosky, & Davidson, 2009). Several treatment approaches have been established as effective treatments for depression, including Cognitive Behavioral Therapy (CBT), Behavioral Activation (BA), Interpersonal Psychotherapy (IPT), and mindfulness based interventions to name a few (Chambless et al., 1998; Division 12 American Psychological Association, 2016). Depression is a common focal point of treatment with victims of IPV (Hegarty, Tarzia, Hooker, & Taft, 2016), yet depression often co-occurs with other mental health issues among victims of IPV (Dillon et al., 2013).

**Anxiety.** Survivors of IPV frequently experience anxiety; Helfrich, Fujiura, and Rutkowski-Kmitta (2008) found that 77% of their sample of IPV victims reported anxiety in the past 12 months in contrast to a rate 6.1% in a community sample. Preexisting anxiety disorders place women at a significantly greater risk (OR 4.08) of IPV victimization (Trevillion et al., 2012). The comorbidity of anxiety and depression is common and is positively correlated with an increased severity of anxiety (Pico-Alfonso, Garcia-Linares, Celda-Navarro, Blasco-Ros, Echeburúa, & Martinez, 2006). Further, the frequency and severity of IPV experiences also relates to more severe anxiety symptoms (Ansara & Hindin, 2010; Ludermir et al., 2008). Cognitive behavioral therapies and exposure-based therapies have been shown to be effective interventions for anxiety disorders (Chambless et al., 1998; Division 12 American Psychological Association, 2016) and interventions for victims of IPV often focus on treating anxiety (Hegarty et al., 2016).

**PTSD.** Rates of PTSD are also markedly high among this population, with victims of IPV having three times the odds of meeting criteria for PTSD compared to non-abused women (Fedovskiy, Higgins, & Paranjape, 2008; Nerøien & Schei, 2008). Like depression and anxiety, a diagnosis of PTSD (OR 7.34) significantly elevates women's risk of experiencing adult IPV as compared to women without these preexisting mental disorders (Trevillion et al., 2012). Prolonged Exposure Therapy (PET) and other exposure-based treatments have garnered the most empirical support for the treatment of PTSD (Chambless et al., 1998; Division 12 American Psychological Association, 2016). Yet these approaches which are intended to habituate the individual to their fear/trauma reminders may be problematic with victims of IPV as fear of their perpetrator can be

adaptive and important for keeping them safe and away from their perpetrator. Thus other tactics to ameliorate the symptoms of PTSD such as distress tolerance and mindfulness approaches may prove more safe and beneficial with this population (Foa, Rothbaum, Riggs, & Murdock, 1991).

**Inter/intrapersonal problems.** Research has also noted low self-esteem, low life satisfaction (Zlotnick et al., 2006), and interpersonal problems (Cloitre et al., 2004; Ford et al., 2005) are associated with IPV victimization, as well as the development of personality disorders after IPV experiences (Pico-Alfonso et al., 2008). While self-esteem and life satisfaction are frequent targets of interventions with victims of IPV (Hegarty et al., 2016) fewer studies evaluate interpersonal competency as a treatment outcome.

**Emotion dysregulation.** Emotion dysregulation refers to challenges or deficits in the ability to observe, attenuate, or augment emotional states, such that the individual struggles or is unable to act in service of long-term goals (Fruzzetti & Worrall, 2010). This construct is believed to underlie many psychological issues (Barlow, Allen, & Choate, 2004) and is theorized to play a key role in IPV victimization outcomes (Fruzzetti & Iverson, 2006; Iverson, Shenk, & Fruzzetti, 2009). Treatments that focus on enhancing emotion regulation among victims of IPV have demonstrated success in decreasing depression, anxiety, PTSD symptomology, and interpersonal problems, and increasing mindfulness (Iverson et al., 2009; Lee & Fruzzetti, 2017; Linehan, Schmidt, Dimeff, Craft, Kanter, & Comtois, 1999). Thus, addressing emotion dysregulation represents an important treatment target for interventions with victims of IPV.

### **Transdiagnostic Treatments**

The sequelae of IPV victimization may be moderated by the type and length of abuse, victim-specific factors, and sociocultural factors; thus specific diagnoses are unlikely to capture the breadth of the entire symptomatic experience (Briere & Jordan, 2004). Additionally, the literature on IPV revictimization indicates that specific psychiatric disorders are unrelated to or, at best, loosely related to revictimization (Kuijpers, van der Knaap, & Lodewijks, 2011). Experts have recommended that interventions for victims of IPV concentrate on helping victims achieve more balanced emotions and behaviors, via providing victims with more adaptive ways of coping with difficult emotions and/or situations as well as skills to help navigate difficult interpersonal contexts (Kuijpers, van der Knaap, & Winkel, 2012). Given this push to move away from traditional nosologies, transdiagnostic treatments, which focused on factors commonly underlying various disorders, offer a promising intervention approach with this population.

One transdiagnostic treatment (the modified DBT for IPV skills group) has shown to be efficacious in treating victims of IPV (Iverson et al., 2009; Lee & Fruzzetti, 2017). The DBT for IPV treatment is based on the transactional model, which posits emotional problems result from ongoing invalidation and one's own emotional vulnerability (Iverson et al., 2009). DBT strives to teach individuals skills to decrease their emotional vulnerability while addressing issues with validation. The skills taught in the group are theorized to be the primary mechanism of change (Lindenboim, Comtois, & Linehan, 2007; Linehan et al., 2015; Neacsiu, Rizvi, & Linehan, 2010; Stepp, Epler, Jahng, & Trull, 2008), thus experts emphasize the importance of increasing acquisition and generalization of the skills being taught (Rizvi, Hughes, & Thomas, 2016). However,

despite the promise of the DBT for IPV treatment (Iverson et al., 2009; Lee & Fruzzetti, 2017) the need to increase skill use remains. Yet increasing contact between clinician and client is difficult to achieve due to limited resources and providers (Bennett, Riger, Schewe, Howard, & Wasco 2004; Kazdin & Blasé, 2011; Rorie, Backes, & Chahal, 2014; Soeteman, Roijen, Verheul, & Busschbach, 2008; Van Asselt, Dirksen, Arntz, & Severens, 2007). In response to the aforementioned issues, video intervention adjuncts (VIAs), intended to increase skills exposure and use, in a manner that is non-burdensome to clients or providers, were developed and evaluated in a Stage One Pilot Trial.

## **Chapter 2: Literature Review**

### **Ecological Framework of IPV**

The ecological model of IPV posits that IPV victimization is influenced by several intersecting factors: individual level factors, relationship level factors, community level factors, and societal level factors (WHO, 2002). At the level of the individual, all these conditions and experiences represent risk factors for IPV: substance use, mental illness, personality disorders, disability, low educational attainment, minority status, low income, and a history of childhood abuse (WHO, 2002). At the relationship level, these factors increase the risk of IPV: relationship discord, substance use, low socioeconomic status, non-monogamy, low or disparate educations, and poor parenting practices (WHO, 2002). Poverty, unemployment, high crime, lack of community, sparse opportunities, and limited services for IPV victims (e.g. shelters, advocacy, mental health care, etc.) represent community level factors elevating one's risk of IPV (WHO, 2002). Finally, at the societal level, these factors influence the likelihood of IPV occurring: gender inequality, cultural acceptance of IPV, lack of laws and policies to punish IPV perpetration, and lack of enforcement when such laws and policies exist (WHO, 2002). While addressing societal factors that influence IPV is beyond the scope of the current project, this study seeks to address individual level factors (via treating mental illness), relationship level factors (via teaching individuals the skills to deal with relationship conflict in a more healthy and adaptive way), and the community level factors (by offering services to victims of IPV).

### **Interventions and Treatments for IPV Victims**

Hegarty and colleagues (2016) conducted a review of the types of interventions

available for victims of IPV. From their review of the literature they distilled four main types of interventions for IPV victims: psychological interventions, advocacy interventions, parenting and mother-child interventions, and holistic healing intervention models. Psychological interventions include group, individual, and couples treatments, with brief Cognitive Behavioral Therapy (CBT) tailored to IPV victims being recommended by the authors. The authors noted a dearth of quality studies examining psychological interventions for victims of IPV, and that premature drop out was common among psychological interventions (Hegarty et al., 2016). Advocacy interventions include a range of activities and techniques, such as safety planning, community referrals, problems solving, psychoeducation, and various empowerment strategies. Social workers, victim advocates, nurses, or peer/community mentors often deliver these types of interventions. The lack of empirical studies examining the effectiveness of such interventions makes it difficult to say which types are most effective (Hegarty et al., 2016).

Rivas and colleagues (2015) conducted a systematic review of advocacy interventions and found that support exists for the effectiveness of advocacy interventions. Specifically, intensive advocacy interventions may reduce physical abuse for up to two years and improve quality of life, while brief advocacy interventions can result in short-lived improvements to mental health and decreases in abuse. While parenting interventions are often recommended, those that are not tailored to mothers who are the victims of IPV do not adequately address the needs of the mother (Chen & Chan, 2016). Parent-child interventions also include home-visiting programs, which are intended to help families develop healthy parenting practices when those families are at risk of (or

have a history of) IPV. Those that are longer in duration and are delivered by specially trained nurses have garnered the most empirical support (Olds, 2006; Olds et al., 2014). Holistic healing models strive to address physical, psychological, and social domains of those impacted by IPV. Unfortunately RCTs have not been conducted on such interventions (Hegarty et al., 2016).

**Psychological treatments for IPV.** Experiencing IPV impacts individuals differently and each individuals' response is influence by factors such as the context and type of abuse, idiographic factors, and sociocultural factors, thus DSM-5 diagnoses fail to capture the complexity of the victimization symptomatic experience (Briere & Jordan, 2004). Due to the complexity and diversity of the sequelae of IPV, several different treatment approaches have been used with victims of IPV. Unfortunately, this variety of treatment options has resulted in a lack of consensus on which treatment is ideal for victims of IPV (Hackett, McWhirter, & Leshner, 2016), and the literature on the efficacy of interventions with victims of IPV remains equivocal (Dutton, 2012; Hackett et al., 2016; Oram, Khalifeh, & Howard, 2017; Stover, Meadows, & Kaufman, 2009). While individually tailored interventions are recommended by some (Briere & Jordan, 2004), they are costly and budgets for victim resources have decreased in recent years (Bennett et al., 2004; Rorie et al., 2014). Given these constraints, group interventions represent an alternative that can meet the high need for psychological services among victims of IPV.

**Literature review of group therapy for IPV victims.** A literature search was conducted to examine the existing literature on group therapy for victims of IPV, using the following databases: PsychINFO, PsycARTICLES, Criminal Justice, and Social Work Abstracts. Generally speaking, the studies that were identified can be organized

into three categories: CBT-based interventions, Mindfulness-based interventions, and ‘other’ (e.g. Interpersonal Therapy, feminist therapy, narrative approaches, etc.). Some of the group interventions also involved the treatment and assessment of the children of IPV victims.

***Group interventions not based in CBT or mindfulness.*** Five studies were identified that examined the efficacy of therapeutic group interventions not based in CBT or mindfulness (Cort et al., 2014; Koopman, Ismailji, Holmes, Classen, Palesh, & Wales, 2005; Liu, Dore, & Amrani-Cohen, 2013; Reed & Enright, 2006; Tutty, Babins-Wager, & Rothery, 2016). The examined interventions included Interpersonal Psychotherapy (IPT) for depression with victims of IPV, expressive writing for victims of IPV with PTSD, a support group and a self-defense group for reducing symptoms of depression and enhancing self-esteem for victims of IPV, forgiveness therapy for victims of emotional abuse, and a narrative approach.

Cort and colleagues’ (2014) study examining IPT, included a three-month follow-up and found significant decreases in PTSD symptoms severity ( $d = 1.5$ ) and interpersonal problems one week post-treatment ( $d = 0.5$ ) and at the three-month follow-up ( $d = 0.8$ ), but significant declines in depression symptomology were only found at the post-test ( $d = 1.5$ ). This study did not include a control group and the sample size was small ( $N = 21$ ). Koopman and colleagues (2005) examined the impact of randomly assigning victims of IPV to a stressful writing condition (i.e. writing about the abuse) or a neutral writing condition to target symptoms of PTSD. Of the 47 women to complete the four-month follow-up, significant group differences were not observed in PTSD symptoms, depression, or pain. Liu and colleagues (2013) study, comparing a support

group and a self-defense group, found significant improvements in depression symptoms and self-esteem, but no statistically significant differences emerged between the groups. While this study used comparison groups they did not report effect sizes nor did they assess participants at a follow-up. Reed and Enright (2006) randomized 20 victims of emotional abuse to receive forgiveness therapy or an alternative treatment (anger validation, assertiveness, and interpersonal skill building) to treat symptoms of depression, anxiety, PTSD, low self-esteem, learned helplessness, and to process resentment for the abuser. The participants that were assigned to the forgiveness therapy group had significantly greater improvements than the alternative treatment group on measures of depression, trait anxiety, PTSD, self-esteem, forgiveness, environmental mastery and finding meaning in suffering, which were maintained at the follow-up. A replication using a larger sample size and reporting effect sizes is needed. Tutty and colleagues (2016) evaluated the 'You're Not Alone Program,' based in a narrative approach, for the group treatment of 184 women with histories of IPV. From baseline to post-treatment, participants demonstrated significant improvements in distress ( $ETA^2 = .22$ ), generalized contentment ( $ETA^2 = .20$ ), clinical stress ( $ETA^2 = .22$ ), self-esteem ( $ETA^2 = .15$ ), and physical and non-physical abuse directed at partner ( $ETA^2 = .13$ ,  $p < .000$ ,  $ETA^2 = .29$ , respectively). This study did not use a comparison group and did not include a follow-up period to determine if the results were maintained.

Overall, for victims of IPV, group therapy treatments not based on CBT or mindfulness appear to be somewhat successful at decreasing depression, PTSD symptomology, distress, and improving self-esteem and well-being among victims of IPV. However, these claims are limited by the diversity of the treatments employed, the fact

that only two of the studies had a follow-up period, that the sample sizes (excluding Tutty et al., 2016 study) were relatively small, and none of the studies assessed the mechanisms of change theoretically responsible for the improvements.

***Group Cognitive Behavioral based interventions.*** Nine studies (Cox & Stoltenberg, 1991; Crespo & Arinero 2010; Echeburúa, Sarasua, & Zubizarreta, 2014; Kearney & Cushing, 2012; Kubany, Hill, Owens, 2003; Kubany, Hill, Owens, Iannce-Spencer, McCaig, Tremayne, & Williams, 2004; McWhirter, 2006; McWhirter, 2010; Santos, Matos, & Machado, 2017) assessed the efficacy or effectiveness of therapeutic group interventions based in CBT. These interventions included cognitive trauma therapy for battered women (CTT-BW), trauma-focused CBT, CBT for battered women (CBT-BW), and CBT combined with other interventions (e.g. problem solving, parenting, communication skills training, exposure therapy, etc.).

Cox and Stoltenberg, (1991) compared the effectiveness of a two-week group counseling program with 50 female IPV victims. The COPSsystem program, created to provide personal and vocational counseling, and utilized cognitive restructuring, self-assertiveness and communication skills training, problem solving, body awareness, and vocational counseling. Participants were divided into three groups: a control group (support group), a group with the COPSsystem Interest Inventory and the Sixteen Personality Factors Questionnaire, and a group with the COPSsystem Interest Inventory without the Personality Questionnaire. Only those in the COPSsystem Interest Inventory group demonstrated significant improvements in anxiety, depression, hostility, assertiveness, and self-esteem. Because this study assessed only for changes at post-treatment, it remains unknown if the changes were maintained. Further, the study did not

report effect sizes and was underpowered.

Crespo and Arinero (2010) conducted a study to compare the efficacy of two brief CBT treatments, one incorporating exposure therapy and the other a communication skills training without exposure, among 53 women who had experienced IPV and were suffering from PTSD symptoms. Women were assessed for PTSD symptoms, depression, anxiety, self-esteem, and anger at baseline, following the eight-week interventions, and at a one, six, and 12-month follow-ups. For the exposure group significant reductions were found at the post-test, six-month and 12-month follow-ups for depression, PTSD symptoms, and anxiety, with large effect sizes at the 12-month follow-up ( $d = 2.27$ ,  $d = 2.74$ ,  $d = 2.26$ , respectively). Women assigned to the communication skills training also evidenced significant decreases at the post-test, six-month and 12-month follow-ups for depression, PTSD, and anxiety, with large effect sizes at the 12-month follow-up ( $d = 2.53$ ,  $d = 3.82$ ,  $d = 2.06$ , respectively). Self-esteem and anger did not significantly differ from baseline to the follow-ups for either group. Regarding group differences, the exposure group demonstrated significantly greater and more constant improvements of PTSD symptoms than the communication skills group. However, the skills group showed greater improvements in re-experiencing symptoms than the exposure group. The authors posited that the eight-week treatment may not have been long enough to reprocess the memories.

Echeburúa and colleagues (2014) compared the effectiveness of individual versus individual plus group CBT-BW on reducing PTSD symptomology and emotional discomfort among victims of IPV. The interventions lasted 17 weeks and 116 individuals completed treatment ( $n = 57$  for the combined group and  $n = 59$  for individual only). At

the one-month, three-month, and 12-month follow-ups, participants in both conditions showed significant improvements in PTSD symptomology ( $d = .369$ ,  $d = .419$ , and  $d = .497$ , respectively) and in global maladjustment ( $d = .391$ ,  $d = .487$ , and  $d = .533$ , respectively), with non-significant reductions in depression, anxiety, and self-esteem. While the results of this study are promising, given the maintenance of reductions in PTSD symptomology and global maladjustment, the fact that depression, anxiety, and self-esteem were not significantly reduced may indicate that neither individual nor individual-plus-group CBT-BW adequately addresses other relevant psychological sequelae regularly encountered by victims of IPV.

Kearney and Cushing (2012) conducted a pilot study investigating the efficacy of employing group trauma-focused CBT among mothers exposed to IPV. Participants attended one individual session, three group sessions, one videotaped dyadic play session with their child, and one support session with a therapist. Of the eight mothers enrolled in the intervention, five completed the intervention and the post-test. The researchers found non-significant decreases in trauma symptom severity and non-significant increases in participants' ability to balance their emotions, engage in their child's treatment, and improvements in their child's clinical status. The small sample size, failure to report effect sizes, and lack of a follow-up period limits the generalizability of the results.

Kubany and colleagues (2003) conducted a pilot study among 37 victims of IPV comparing the efficacy of immediate or delayed CTT-BW for IPV victims with PTSD. Participants were assessed for PTSD, depression, guilt, shame, and self-esteem at a two-week and three-month follow-up. Significant changes were found for both groups at both follow-up points. Kubany, and colleagues (2004), replicated the 2003 study with a larger

sample. Participants ( $N = 125$ ) completed a twice-weekly group therapy ranging from eight to seventeen sessions. The intervention was designed to decrease guilt and depression and to increase self-esteem. Participants were assessed at baseline, at a two-week follow-up after CTT-BW intervention (for immediate condition) at a six-week follow-up (for the delayed condition), and at three-month follow-up and six-month follow-up. For women in both conditions, significant reductions in depression ( $d = 2.0$ ) and guilt ( $d = 1.7$ ) and increases in self-esteem ( $d = 2.4$ ) were found at the two-week follow-up and were maintained at the six-month follow-up. PTSD symptoms remitted in 87% of participants ( $d = 2.4$ ). The results of this study suggest that both immediate and delayed CTT-BW can be an effective treatment option for women with IPV histories and PTSD. Unfortunately interventions that treat PTSD caused by the IPV via habituation should not be used with individuals who are still in the abusive relationship, thus this intervention is not a viable treatment option for women still in abusive relationships.

McWhirter (2006) compared the effectiveness of two five-week group interventions provided to a group of 68 women with IPV histories residing in a homeless shelter. One was a CBT/Gestalt-based intervention that focused on addressing specific therapeutic needs of IPV victims; the other was a community-mentoring program concentrated on social stability, employment, and support. While both groups showed significant improvements in social support from baseline to the post-test, the community-mentoring program showed significantly greater improvements. Participants in both groups showed decreased financial stress and self-efficacy. However, at the post-test, those in the CBT/Gestalt intervention group had significantly better self-efficacy than those in the community-mentoring program. No significant effects were found regarding

family conflict or family bonding. The lack of a follow-up period, the lack of inclusion of effect sizes, and the lack of measures designed to capture the psychological sequelae all make it difficult to determine the clinical utility of the interventions being examined.

McWhirter (2011) compared two interventions based in the community designed to decrease family violence and enhance psychosocial well-being for women and their children with IPV histories, via addressing two posttraumatic coping strategies: emotion-focused and goal-oriented coping. Both interventions utilized CBT principles. Mothers ( $N = 46$ ) and their children ( $N = 48$ ) residing in a homeless shelter were randomly assigned to one of the two conditions: emotion-focused ( $n = 22$ ) and goal-oriented ( $n = 24$ ). Following the five-week intervention, the mothers demonstrated significant reductions in depression ( $\eta^2 = .22$ ) and significant improvements in self-efficacy, ( $\eta^2 = .32$ ), family bonding ( $\eta^2 = .35$ ), and readiness to decrease violence ( $\eta^2 = .35$ ) in both groups. However, greater reductions in family conflict were noted for the goal-oriented group ( $\eta^2 = .40$ ), while the emotion-focused group reported greater improvements in their quality of social support ( $\eta^2 = .30$ ). The children in both groups showed significant improvements in emotional well-being ( $\eta^2 = .13$ ), peer conflict ( $\eta^2 = .16$ ), family conflict ( $\eta^2 = .43$ ), and self-esteem ( $\eta^2 = .24$ ). Addressing posttraumatic coping strategies adds a novel contribution to the literature; employing measure to determine which coping strategies women in both conditions actually used would be enlightening. Finally, employing follow-up periods for examining the maintenance of the reported changes are needed.

Santos, Matos, and Machado, (2017) assessed the effectiveness of an eight-week CBT-based group intervention with 23 female victims of IPV in Portugal. The

intervention aimed to improve social and personal skills, and to reduce revictimization and clinical symptoms associated with IPV victimization. Participants completed measures at baseline, at a post-test and at a three-month follow-up. Significant reductions were found for depression at the post-test, with a moderate effect size value ( $\eta_p^2 = .39$ ) that remained significant at the three-month follow-up. Additionally, significant decreases in general clinical symptoms from pre to post-test and at the follow-up were found ( $\eta_p^2 = .30$ ). Specifically, there were significant decreases in distress and improvements on interpersonal relations. Significant reductions in revictimization and significant improvements in self-esteem and social support satisfaction were found at the three-month follow-up. While the results of this study are encouraging, both the small sample size and lack of a control group preclude any firm conclusions regarding the clinical utility of this intervention.

Overall, group treatments based in CBT demonstrate success in treating a multitude of issues encountered by victims of IPV. However, as with the interventions not based in CBT or mindfulness, many of these studies did not use follow-up periods, hindering the ability to determine if these changes are maintained, and many studies were underpowered. While one of these studies (McWhirter, 2011) intervened on the mechanisms theoretically related to the intended target (improved psychosocial well-being), none of the aforementioned studies examined the mechanisms of change theoretically responsible for the treatment improvements.

***Group mindfulness-based interventions.*** Three studies (Dutton, Bermudez, Matás, Majid, & Myers, 2013; Lee, Zaharlick, & Akers, 2017; Michalopoulou, Tzamalouka, Chrousos, & Darviri, 2015) examined the usefulness of mindfulness-based

interventions with victims of IPV. Dutton, and colleagues (2013) evaluated the effectiveness of Mindfulness Based Stress Reduction (MBSR) at improving PTSD symptomology among low socio-economic status women with a history of IPV who met criteria for a PTSD diagnosis. Fifty-three women completed the nine-week MBSR intervention. Participants were interviewed at baseline, post-treatment, and at a three-month follow-up. Participants reported improvements in awareness, acceptance, self-empowerment, self-care, daily well-being, belonging, and compassion, along with decreases in arousal/distress. Due to the study's exclusive reliance on qualitative methods, the statistical significances and clinical significance of the reported changes and clinical significance of the intervention remain unknown. However, the study's qualitative findings suggest the clinical utility of mindfulness-based interventions for the treatment of IPV victims. Lee, and colleagues (2017) sought to examine the efficacy of a meditation-based intervention among female victims of IPV with co-occurring Substance Use Disorder (SUD) at a residential SUD clinic. The researchers delivered a six-week meditation program (breathing, loving kindness, and compassion) and evaluated distress and trauma symptoms of the 56 women who completed the program. Participants demonstrated significant improvements in distress ( $ETA^2 = .127$ ) and trauma symptoms ( $ETA^2 = .146$ ) at the post-treatment assessment. The lack of a control group and follow-up periods limits the inferences that can be made regarding the success of the intervention. It is also unknown whether the results would generalize to women with IPV histories without co-occurring SUD. Michalopoulou and colleagues (2015) examined the effects of a relaxation program (progressive muscle relaxation, relaxation breathing, and counseling) among victims of IPV ( $n = 16$ ) at a shelter compared to shelter services as

usual ( $n = 18$ ). After the eight-week relaxation program, participants reported significant reductions in perceived stress, but the intervention did not significantly impact depression symptomology, sleep quality, or coping. This small scale RCT suggests that relaxation techniques can be useful to decrease stress among victims of IPV, but that additional techniques may be necessary to facilitate change in other psychological dimensions.

*Summary.* The results of the aforementioned studies suggest that treatments disseminated in group settings can successfully address much of the psychological sequelae faced by victims of IPV. Unfortunately, several of these studies failed to incorporate follow-up periods and were quasi-experimental, it remains unclear as to whether the improvements lasted and whether the intervention caused the changes or if the changes were merely a result of contact, regression to the mean, or some other unaccounted-for factor. Additionally, none of these studies looked at the mechanisms driving these changes. Despite these limitations, these studies suggest that interventions rooted in CBT, IPT, and mindfulness hold utility in treating victims of IPV.

**Group therapy as a treatment for IPV victims.** Dissemination of treatment via group-based interventions provides a useful alternative that meets the high treatment demands and limited resources available for victims of IPV. Group treatments have demonstrated success in decreasing psychological symptomology for IPV victims (Cort et al., 2014; Crespo & Arinero 2010; Dutton et al., 2013; Echeburúa et al., 2014; Iverson et al., 2009; Kearney & Cushing, 2012; Lee et al., 2017; Liu et al., 2013; McWhirter, 2006; McWhirter, 2011; Santos et al., 2017; Tutty et al., 2016). However, many of these group interventions focused on treating specific nosologies (i.e. PTSD and depression). While these disorders are common among victims of IPV (Dillon et al., 2013), they fail to

capture the scope and complexity of IPV victimization sequelae; with victims of IPV, psychological maladies frequently co-occur and appear to act synergistically, with the presence of one often exacerbating the others (Briere & Jordan, 2004).

### **Theories on the Transdiagnostic Nature of IPV Victimization Sequela**

As theorized by Dutton (1995) ‘affective lability factors,’ or difficulty controlling emotions (such as anger), attachment issues, and other behavioral expressions (e.g., borderline personality disorder traits), may be risk factors for IPV victimization and revictimization. A prospective study examining risk factors for IPV revictimization found that avoidant and aggressive behaviors (i.e., affective lability) increased the risk for IPV revictimization, with the researchers recommending treatments that focus on gaining more balanced affect and behavior (Kuijpers et al., 2012). Specifically, Kuijpers, and colleagues (2012) advised that, “Interventions should be aimed at minimizing avoidant behavior, at reducing victims’ anger and use of violence, and at managing their feelings of aggression.” (pg. 42) and should instead engender healthy ways of coping with difficult emotions and situations. Given that affective lability, or difficulty managing emotions, plays a role in IPV victimization and revictimization, increasing emotional regulation represents a potential point for intervention. Additionally, as noted by Kuijpers and colleagues (2012), providing victims with healthy ways of coping (e.g. via distress tolerance and mindfulness) with difficult emotions or situations and skills to deal effectively with difficult interpersonal situations (e.g. interpersonal effectiveness skills) may have great utility in combating IPV revictimization and treating the psychological aftermath of IPV victimization. It follows that employing transdiagnostic interventions focused on emotion regulation, distress tolerance, self-esteem, and interpersonal

effectiveness, rather than interventions that target specific disorders, are a promising intervention possibility. Fortunately, one transdiagnostic treatment paradigm, DBT, has shown success in treating emotion dysregulation with several ‘difficult’ to treat populations, including victims of IPV (Iverson et al., 2009; Lee & Fruzzetti, 2017; Linehan et al., 1999).

**Dialectical Behavioral Therapy as a treatment for IPV victims.** Integrating the literature on efficacious cognitive behavioral treatments for disorders such as anxiety, depression, and other emotion regulation difficulties, Linehan developed the framework for DBT (Linehan, 1993a). In addition to these traditional CBT change-oriented techniques, which may leave clients feeling blamed for their problems or situation, Linehan incorporated radical acceptance. Radical acceptance emphasizes that self-compassion and acceptance (i.e. accepting how things really are rather than how they ‘should’ be) are necessary for making meaningful changes. When operating from a DBT framework the therapist’s goal is to balance and synthesize change-oriented strategies and acceptance. Individuals who have experienced IPV often struggle to accept their situation (e.g. “But I love him,” or “he said he will never do it again... although he said that before”) and often receive blame from others for their situation (e.g. “Why wouldn’t you just leave?”). Treating victims of IPV using a DBT framework allows victims to learn skills to change their situation in a non-judgmental and validating environment.

In addition to providing victims with a validating environment, DBT aims to foster emotion regulation (and, in doing so, decrease affect lability), enhance interpersonal effectiveness, improve self-validation, and increase distress tolerance. Mindfulness (i.e. present-moment awareness, acceptance, and participation without judgment) is core to

these skills and to DBT (Linehan, 1993b). As stated by Iverson and colleagues (2009):

“Mindfulness and self-validation skills are particularly important for women victims of domestic abuse because they are likely to have difficulty labeling and expressing their emotional experiences accurately (and assertively) as a consequence of invalidation. Therefore, accurate expression is self-validating. Mindfulness and self-validation skills also may be useful for increasing awareness of danger-related cues, thus reducing the chance of future revictimization.” (pg. 244).

**Preliminary studies using DBT for IPV.** Iverson and colleagues (2009) were the first to adapt a DBT protocol to treat victims of IPV. They adapted the standard DBT protocol into a closed, 12-week skills group for female victims of IPV. The modified DBT protocol for IPV dedicates additional time to address validation of self and others in order to mitigate the impact of punishing social relations, and increase the victims’ access to positive reinforcement (Iverson et al., 2009). Of the 46 women enrolled in the program, 31 completed the full 12-week group. Results demonstrated that participants reported significant decreases in depression, hopelessness, and distress and anxiety, and increased social functioning with medium effect sizes. Additionally, participants reported high satisfaction with the intervention (Iverson et al., 2009).

Given the high rates of treatment drop-out among this population (Warshaw, Sullivan, & Rivera, 2013) and the many treatment barriers faced by this population, Lee and Fruzzetti (2017) sought to examine if the DBT for IPV protocol could be modified and delivered in an intensive two-day format to mitigate treatment barriers and increase treatment completion. Of the 47 women to complete the two-day intervention, 37 completed the three-month follow-up assessment. Results indicated that the participants in the two-day group experienced significant reductions in psychological distress scores, depression, hopelessness, PTSD, and frequency of interpersonal problems, and

significant increases in mindfulness, self-compassion, coping, and emotional regulation with medium to large effect sizes being reported

Applying the DBT framework to IPV emphasizes that emotional disturbances are the byproduct of a continuous exchange between the victims' emotional vulnerability (i.e. lack of emotional regulation, distress tolerance, and interpersonal effectiveness skills) and punishing social relations (Iverson et al., 2009). Because the key mechanism of change within the DBT treatment paradigm appears to be the utilization of the skills that are taught in session (Lindenboim et al., 2007; Linehan et al., 2015; Neacsiu et al., 2010; Stepp, Epelr, Jahng, & Trull, 2008), experts have noted that clinicians should make efforts to support the attainment and generalization of the skills being taught (Rizvi et al., 2016).

While, DBT-based treatments have demonstrated success for treating victims of IPV, this model is not without its limitations. Implementing DBT is costly both in terms of resources and person-power (Soeteman et al., 2008; Van Asselt et al., 2007). Additionally, drop out remains high in both the traditional 12-week closed model as well as the two-day group model (drop-out in the two-day group was considerably less, but still high). Because many of the concepts and skills core to DBT are complicated and abstract, those affected by IPV may struggle to understand and implement the skills and may require increased exposure to the skills. Yet, providing victims with increased exposure to the skills via increased contact with a therapist is difficult to do, given the client provider gap (Kazdin & Blasé, 2011) and the shrinking budgets for victim resources (Bennett et al., 2004; Rorie et al., 2014). Program developers and implementers must find innovative modalities to deliver treatments in a way that mitigates the burden on both the clients and

providers, while maximizing treatment effectiveness (Kazdin & Blasé, 2011). In order to enhance treatment outcomes for group members, innovative and engaging modes of treatment dissemination are required.

### **Treatment Adjuncts**

Experts have noted that technology, such as mobile applications (apps) and websites represent one mechanism for improving skills acquisition and generalization (Ameringen, Turna, Khalesi, Pullia, & Patterson, 2017; Mantani et al., 2017; Rizvi et al., 2016). Treatment adjuncts, including apps and websites, have been shown to enhance treatment outcomes for a range of mental disorders (Ameringen et al., 2017; Clough & Casey, 2011; Mantani et al., 2017), increase treatment accessibility for underserved populations (e.g. rural victims of IPV, victims with disabilities, victims with low literacy and/or educational attainment, etc. [Hassija & Gray, 2011]), and decrease therapist burden (Ameringen et al., 2017). In order to improve treatment dissemination and implementation, innovative and engaging modes of treatment delivery are required. One such innovation is video intervention adjuncts (VIAs), which deliver intervention content via multimedia, and has the potential to enhance treatment outcomes and decrease therapist burden.

While there has been limited research examining VIAs as adjuncts for psychotherapy, media campaigns have been shown to improve knowledge, attitudes, and behaviors related to an array of physical health problems (Wakefield, Loken, & Hornik, 2010). One type of media campaign, the Entertainment-Education (E-E) model, which delivers health and educational messages in an entertaining narrative, has demonstrated success in fostering adaptive behavioral changes to increase positive health outcomes; such as

reducing alcohol consumption (Kim, Lee, & Macias, 2014) and improving the use of safe sex practices (Booker, Miller, & Ngunjiri, 2016; Schouten et al., 2014).

*Technology-based interventions for the treatment of IPV victims.* Different forms of technology have been utilized for the treatment of IPV victims. For rural victims of IPV in a small-scale study, a telehealth intervention demonstrated sizable reductions on measures of depression and PTSD, and had high participant satisfaction (Hassija & Gray, 2011). Web-based interventions have also shown success among this population. Investigating the use of various iterations of a web-based intervention (present-control, enhanced present-control, and present-control plus mindfulness) among college students with and without a history of IPV, researchers found marginally significant reductions in distress, perceived stress, and worry among the enhanced present-control intervention and the present-control plus mindfulness intervention, with small to medium effect sizes (Nguyen-Feng, Frazier, Greer, Meredith, Howard, & Paulsen, 2016). Constantino and colleagues (2015) conducted a pilot study to examine the feasibility and effectiveness of the Health, Education on Safety, and Legal Support and Resources in IPV Participant Preferred Intervention (HELPP), comparing two modes of treatment dissemination: web-based and face-to-face. The online HELPP version comprised six modules that were delivered via email once a week after an initial meeting with the researchers. The traditional face-to-face format delivered the same content, but in person. Both groups reported significant decreases in anxiety, depression, and anger, and increases in social and personal support, but the online condition showed greater improvements (Constantino et al., 2015). The authors asserted that online interventions represent a positive alternative to traditional face-to-face interventions and “may lessen social risks

and inhibitions and enhances sharing of unwelcome thoughts and painful feelings” (Constantino et al., 2015, pg. 437).

Given the success of employing technology-based interventions to help treat victims of IPV and the success of media campaigns at increasing healthy behaviors, applying novel modes of dissemination, such as VIAs, to the treatment of IPV victims represents an innovative way to enhance treatment outcomes for this high needs and underserved population.

### **Theoretical Framework for Using VIAs**

**Social Cognitive Theory.** The VIAs are founded in Bandura’s Social Cognitive Theory (SCT), which posits that knowledge acquisition is influenced via observing others’ experiences and interactions, even in the absence of direct reinforcement (Bandura, 2001; Bandura, 2004). The SCT model asserts that this vicarious learning occurs through live models, verbal instructions, or symbolic modeling, such as media (Bandura, 2004). Specifically, when individuals observe a ‘model’ (be that in vivo or symbolically) performing a behavior and receiving the corresponding consequence, they incorporate this information into their memory and use it to guide future behavior (Bandura, 2001; Bandura, 2004). Observing the ‘model’ (i.e. the VIAs) can also elicit previously learned behavior (i.e. those skills taught in group). The first step in the SCT model is learning via personal or vicarious experiences (Bandura, 2001). Learning is necessary for behavior change; for learning to occur attention to and retention of the materials is required (Postman & Sassenrath, 1961). The next step in the SCT model involves decision-making, in which the individual engages in problem solving, evaluation of proposed solutions, making a decision, and finally implementing the decision

(Bandura, 2001). This stage relies on the individual being able to reproduce the learned behavior and having the motivation to enact the behavior.

**Cognitive Theory of Multimedia Learning (CTML).** Building upon SCT, the Cognitive Theory of Multimedia Learning (CTML) recognizes that, when delivering an intervention via media, there are ways to make the message of the ‘model’ more accessible to the learner (Mayer, 2009). Specifically, “people learn more deeply from words and pictures than from words alone” (Mayer, 2009, p. 47). Mayer’s theory rests on three main assumptions of learning and brain functioning: 1) Dual-Coding Theory (i.e. there are separate channels, visual and auditory, for processing information); 2) Cognitive load (i.e. each channel has finite storage); and 3) Learning is a dynamic and ongoing process of sorting, choosing, classifying, and amalgamating information based upon prior knowledge. In this theoretical framework, multimedia facilitates learning and mitigates cognitive overload by utilizing the different channels (visual and auditory) in a synergistic manner.

### **Current Study**

The purpose of this study was to empirically evaluate the preliminary efficacy, feasibility and client acceptability of a low-cost intervention adjunct that is designed to increase skill acquisition for the two-day DBT for IPV skills group members. A randomized control trial (RCT) was conducted on the implementation of the VIAs (cost effective and easily accessible), developed for the purpose of enhancing skills generalization, acquisition, and ultimately improving treatment outcomes. The RCT examined the feasibility and acceptability of the VIAs in addition to testing their preliminary efficacy in improving treatment outcomes and increasing the frequency that

clients practice the skills taught in the group and in the VIAs, for those attending the two-day DBT for IPV skills group.

### **Research Questions**

The current study sought to evaluate the following research questions:

**Question 1:** Will participants in the experimental VIA condition experience superior treatment gains compared to those in the control DBT skills group alone condition?

**Question 2:** Will participants in the experimental VIA condition be more likely to report using the skills over the follow-up periods than those in the control condition?

**Question 3:** Will participants in the experimental VIA condition, rate the VIAs as acceptable?

**Question 4:** Will the VIAs be feasible to implement?

### Chapter 3: Methods

The objective of this study was to conduct a Stage One Pilot RCT study examining the feasibility, preliminary efficacy, and client acceptability of the VIAs, developed for the purpose of enhancing skills generalization, acquisition, use, and (ultimately) improving treatment outcomes for the two-day DBT for IPV skills group members. Following the guidelines for developing and researching behavioral therapies, a Stage One Pilot Trial (Rounsaville, Carroll, & Onken, 2001) was conducted, focusing on feasibility, participant acceptability, and treatment outcomes.

#### Methodology

**Participants.** Individuals who had been victims of IPV, were age 18 or older, spoke English, had access to the Internet, and could read at an eighth-grade reading level were eligible for participation. Despite the high levels of poverty in Nevada, 92.5% of Nevadans have Internet access via mobile phones or personal computers, versus 74.5% of the U.S. general population (Fil & Ryan, 2014), thus it was anticipated that the requirement for Internet access would not be an obstacle for enrolling participants. A Stage One Pilot Trial was conducted, consisting of Stage 1-A (modification or refinement of an existing intervention), and Stage 1-B (feasibility and pilot testing) (Onken, Carroll, Shoham, Cuthbert, & Riddle, 2014). Because Stage One Trials recommend 12 - 30 participants per group (Julious, 2005; Rounsaville, Carroll, & Onken, 2001), a final *N* of 30 was sought. While a total of 39 participants enrolled in the two-day skills group, three participants did not complete the group, and an additional 12 did not complete the one-month follow up. Thus, the final sample consisted 24 participants. See Table 1 for the demographics of the sample.

**Table 1.** Demographics

	<i>n</i>	%
Ethnicity		
Caucasian	14	58.3
Latina	4	16.7
Bi-racial	2	8.3
African American	2	8.3
Asian or Pacific Islander	1	4.2
Native American	1	4.2
Age		
18 - 25	4	16.7
26 - 35	5	20.33
36 - 45	9	37.5
46 - 55	4	16.7
56 - 65	2	8.3
Sexual orientation		
Heterosexual	18	75
Bi-sexual	6	25
Education		
Middle school	2	8.3
High school/GED	17	70.8
Associates degree	2	8.3
Bachelors degree	2	12.5
Monthly Income		
No income	18	75
< \$1,000	2	8.3
\$1,000 - \$1,999	1	4.2
\$2,000 - \$2,999	2	8.3
\$5,000 - \$5,999	1	4.2

**Screening and recruitment.** Participants included those who sought services through a local psychological treatment center for victims of IPV (the THRIVE Center) and partnered local community agencies and resource centers for victims of IPV (e.g. temporary protection order offices, Police Department, District Attorney offices, safe house, and other victim resource centers). Individuals interested in receiving treatment completed measures prior to beginning treatment to establish a baseline and at a one-month follow-up. Participants were informed at the start of the two-day group that they

were eligible for compensation for completing the one-month follow-up. Participants received a \$15 gift card as compensation for participation in the study.

**Intervention.** The DBT for IPV skills protocol consists of five major interconnected topics: mindfulness, emotion regulation, distress tolerance, validation, and interpersonal effectiveness. The skills group was held over two consecutive days (from roughly 9am–4pm). See Table 2 for a breakdown of the skills group contents. Groups were capped at eight group members per group as recommended by Linehan (2014). Participants were randomly assigned to either the experimental or control condition via a research randomizer (Urbaniak & Plous, 2013).

**Table 2.** Two-Day Skills Group Content & Schedule

Day 1	Day 2
Introductions: Study participation requirements	Mindfulness exercise
Administer baseline assessments	Day 1 review
Orientation: Guidelines for group	Validation
Questions & Answers	Validation: Practice 1
Psychoeducation	Validation: Practice 2
Chain Analysis	Self-validation
Introduction to mindfulness/ Mindfulness exercise	Chains & self-validation: Practice 1
Wise Mind	Invalidation
Lunch break	Invalidation: Practice 1
‘What’ skills/ What it takes to be mindful	Interpersonal effectiveness (goals & DEAR MAN, GIVE & FAST skills)
‘How’ skills/ How to be mindful	Interpersonal effectiveness: Practice 1
Mindfulness practice 1: Being descriptive	Lunch break
Mindfulness practice 2: Being ‘one-mindful’	Emotion regulation: Being mindful of emotions
Mindfulness practice 3: Being effective	Emotion regulation: Practice 1
Chains & mindfulness	Emotion regulation: reducing vulnerability to negative emotions
Distress tolerance: Crisis survival strategies	Emotion regulation: Practice 2
Distress tolerance: Personalized self-sooth plan	Emotion regulation checking the facts & opposite action
Distress tolerance: Radical acceptance	Emotion regulation: Practice 3
Distress tolerance: Turning the mind	Emotion regulation: Increasing positive emotions
Chains and distress tolerance	Emotion regulation: Practice 4
Homework assignment	Chains & emotion regulation
	Homework assignment
	Post-treatment assessment
	Randomization

**Experimental condition.** Participants assigned to the experimental condition received a text or email message every other day for 22 days with a link to a VIA hosted on the online research platform Qualtrics. Each VIA reviews one of the core skills taught as part of the two-day skills group. Participants were asked questions regarding whether the VIA helped them better understand the concept/skill, whether they enjoyed the VIA, and three questions about the content (to serve as a manipulation check). A correct response to two of the three manipulation check questions qualified the individual as having completed that VIA. Additionally, Qualtrics recorded how long participants stay on the page hosting the VIAs, serving as a proxy for determining which participants watch the entire VIA. To reduce the risk of a contamination effect, participants in the experimental condition were instructed not to share the videos or content with other group members.

**VIA development.** A focus group was conducted with DBT for IPV group therapists regarding the skills clients struggle to understand and implement the most. Based on the information gained in the focus group, 11 videos were made pertaining to the following topics listed in Table 3.

**Table 3.** VIA Topics

VIA	Topic
VIA 1	Wise Mind
VIA 2	Behavioral Chains
VIA 3	Checking the Facts
VIA 4	Opposite Action
VIA 5	Interpersonal Effectiveness
VIA 6	DEAR MAN
VIA 7	Tolerating Distress
VIA 8	Radical Acceptance
VIA 9	Validation/ CLEAR skill
VIA 10	Invalidation
VIA 11	Self-Validation

**Control Condition.** Participants assigned to the control DBT skills group alone condition received the two-day skills group without the VIAs.

## Measures

**Demographic Questionnaire.** Information was collected at baseline on the participant's age, sexual orientation, occupation, educational history, ethnicity, income, and if treatment was court mandated.

**Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004).** This 36-item self-report measure of emotion regulation contains six subscales: non-acceptance of emotional responses, difficulties engaging in goal-directed behavior, impulse-control difficulties, lack of emotional awareness, limited access to emotion regulation strategies, and lack of emotional clarity. The six subscales combined to create a total score with scores above 80 suggesting clinically significant issues with emotion regulation (Harrison, Sullivan, Tchanturia, Treasure, 2010). Participants rated items on a 5-point Likert scale ranging from 1 (almost always) to 5 (almost never). The DERS has demonstrated good internal consistency (Cronbach's  $\alpha = .93$ ).

**Five Facet Mindfulness Questionnaire (FFMQ; Baer et al., 2008).** This 15-item self-report measure assesses participants' ability to engage in mindfulness (i.e. present moment awareness without judgments). The FFMQ measures five facets of mindfulness using five subscales: non-reactivity to inner experience, observing/noticing, acting with awareness, describing, and non-judging of experience. Participants rated items on a 5-point Likert scale ranging from 1 (never or very rarely true) to 5 (very often or always true). The five subscales can be combined to yield a total score (range = 15 – 75),

reflecting a global measure of mindfulness. Higher scores represent greater levels of mindfulness.

**Brief Symptom Inventory (BSI; Derogatis, 1993).** This 53-item self-report instrument assesses psychological distress and psychiatric disorders. The BSI consists of nine symptom scales (somatization, obsessive compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoia, and psychoticism) and three global indices (global severity index, positive symptoms distress index, and positive symptoms total). For the purposes of this study only participants' anxiety, depression, and interpersonal sensitivity subscales were examined. Participants were asked to rate how much each statement applied to them over the past week on a 5-point scale ranging from 0 (not all) to 4 (extremely). Higher scores indicate greater clinical dysfunction. The BSI has shown good internal reliability ( $\alpha = .7$ ) and adequate test-retest reliability (.68 - .91; Derogatis, 1993).

**PTSD Checklist–DSM-5 (PCL-5; Weathers et al., 2013).** This 20-item measure assesses DSM-5 symptom clusters associated with PTSD (e.g., reexperiencing, avoidance, and hyperarousal). The PCL-5 asks about symptoms in regards to “stressful experiences,” allowing assessment of multiple traumas. Participants rated the extent to which they have been bothered by a particular item in the past month on a 5-point scale from 0 (not at all) to 4 (extremely), with scores ranging from 0 – 80. Early psychometric data suggests that the PCL-5 has good internal consistency ( $\alpha = .94$ ) and test-retest reliability ( $r = .82$ ; Blevins, Weathers, Davis, Witte, & Domino, 2015).

**Follow-up Questionnaire.** Participants were asked how frequently they used the skills, broken down by module (e.g. “how many times in the last month did you

practice/use the emotional regulation skills, such as opposite action, checking the facts, and/or problem solving?”).

***VIA acceptability.*** After viewing each VIA participants’ were asked to respond to questions regarding the acceptability of the VIAs on the Qualtrics survey hosting the VIAs (Q1: Did this video help you better understand the concept/skill? and Q2: Did you enjoy the video?). Participants responded to these two questions on a five point Likert scale ranging from 1 = strongly disagree to 5 = strongly agree. After viewing the final video participants were asked to give an overall rating of the helpfulness and likability of the all the VIAs.

### **Data Analysis Plan**

Quantitative data analysis was employed so as to answer the research questions that guide the current study. Data analyses were performed employing the Statistical Package for Social Sciences (SPSS) version 2.0.

## Chapter 4: Results

### Group Differences on Demographics

Analyses were performed to examine if group significantly differed in demographic variables for the final sample ( $N = 24$ ) as well as the original sample ( $N = 39$ ).

**Group differences on demographics for completers.** To determine if significant differences in demographics existed among the completers a series of analysis were conducted. A fisher's exact test was used to examine possible significant group differences in sexual identity. An independent sample  $t$ -test was used to assess possible significant group differences for the variable of age, since it was normally distributed. The non-parametric alternative to the independent sample  $t$ -test, the Wilcoxon Mann Whitney, was used to examine any group possible significant differences in ethnicity, education, and income. There were no statistically significant associations between group assignment and sexual identity as assessed by Fisher's exact test,  $p = .357$ . The variable of age was normally distributed, as assessed by Shapiro-Wilk's test ( $p > .05$ ) and no outliers were detected. Thus an independent sample  $t$ -test was performed. The average age for both groups was 37 years ( $SD = 9.16$  for VIA group and 12.37 for the control group). There was not a statically significant difference between the groups in terms of age  $t(22) = -1.17, p = .254$ . For the variable of ethnicity no statically significant differences existed between the groups,  $z = -.78, p > .05$ . The average education level for the control group was high school/GED and the average education for the VIA group was associates degree. No statistical significant difference emerged between the groups on the variable of education,  $z = -1.23, p > .05$ . The average income for both groups was >

\$1,000 per month. There was not a statically significant difference between the groups on the variable of income  $t(22) = -.11, p = .254$ .

**Group differences on demographics for entire sample.** To determine if significant differences in demographics existed among both the non-completers and completers a series of analysis were conducted. An independent sample  $t$ -test was used to examine possible significant group differences in age, since it was normally distributed. All the other variables were not normally distributed and thus the non-parametric alternative to the independent sample test, the Wilcoxon Mann Whitney, was conducted.

The average age for the VIA condition was 37 years ( $SD = 9.94$ ) and the average for the control condition was 38 years ( $SD = 10.90$ ). No statistically significant difference were found between the groups in terms of age  $t(35) = -2.95, p = .770$ . There were no statically significant differences on the variables of education ( $z = -.73, p > .05$ ), income ( $z = -.09, p > .05$ ), ethnicity ( $z = -.36, p > .05$ ), or sexual identity ( $z = -.96, p > .05$ ) between the groups. The average education for the control group was middle school and high school/GED for the VIA group. The average income for the VIA group was  $>$  \$1,000 per month and the average income for the control was “no income” in the last month. Although none of the demographic variables were statistical significant between the groups, the lower education and income among control group members may have contributed to the higher rate of attrition seem amongst this group.

### **Differences Between Pre-Test and One-Month Follow Up**

To examine whether there was a significant difference between the pre-test and the one-month follow-up on the mental health outcome measures, a series of one-way paired sample  $t$ -tests were conducted. Effect sizes were calculated using Cohen's  $d$ . The

assumptions of the paired sample  $t$ -test were met for all the variables. There were statistically significant improvements from pre-test to the one-month follow-up on all six of the outcome measures examined and medium to large effect sizes were found. See Table 4 for details.

**Table 4.** Means, Standard Deviations,  $t$ -test results, and effect sizes of the BSI Depression subscale, BSI Anxiety subscale, BSI Interpersonal Sensitivity subscale, PCL-C-5, DERS, and FFMQ from Pre-Test to One Month Follow-Up  $N = 24$ .

	<u>BSI Depression*</u>		<u>BSI Anxiety*</u>		<u>BSI Interpersonal Sensitivity*</u>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Pre	53.63	11.66	53.00	13.80	51.33	10.83
Follow-up	43.04	7.24	43.54	9.35	46.50	9.15
<i>t(p) d, 95%CI</i>	5.08 (.000), 1.09, [6.28, 14.89]		4.03 (.001), .80, [4.60, 14.30]		2.34 (.029), .48, [.56, 9.11]	
	<u>PCL*</u>		<u>DERS*</u>		<u>FFMQ*</u>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Pre	49.83	17.17	98.00	29.92	45.83	9.72
Follow-up	29.95	17.45	71.08	17.42	52.75	6.91
<i>t(p) d, 95%CI</i>	6.45 (.000), 1.15, [13.50, 26.25]		5.49 (.000), 1.10 [16.77, 37.06]		-3.48 (.002), .82, [-11.02, -2.80]	

**Differences between pre-test and one-month follow-up for each group.** Paired sample  $t$ -tests were also conducted to see how each group performed from pre-test to one-month follow-up. All the assumptions of the paired sample  $t$ -test were met for the control group, with the exception of the BSI interpersonal sensitivity, which was not normally distributed as assessed by Shapiro-Wilk's test ( $p = .034$ ). The DERS, PCL, and BSI depression subscales showed statistically significant improvements from the pre-test to the one-month follow-up and medium to large effect sizes were found. See Table 5 for details. All the assumptions of the paired sample  $t$ -test were met for the VIA group. There were statistically significant improvements from pre-test to the one-month follow-up on

all six of the outcome measures examined and medium to large effect sizes were found.

See Table 6 for details.

**Table 5.** Means, Standard Deviations, t-test results, and effect sizes of the BSI Depression subscale, BSI Anxiety subscale, BSI Interpersonal Sensitivity subscale, PCL-C-5, DERS, and FFMQ from Pre-Test to One Month Follow-Up for the Control Group N = 11.

	<u>BSI Depression*</u>		<u>BSI Anxiety</u>		<u>BSI Interpersonal Sensitivity</u>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Pre	56.45	14.16	54.00	15.74	52.73	9.48
Follow-up	46.09	7.40	46.73	7.53	51.90	6.82
<i>t(p) d, 95%CI</i>	2.94 (.015), .92, [2.50, 18.23]		2.14 (.058), .59 [-.305, 14.85]		.30 (.772), .10 [-5.28, 6.93]	
	<u>PCL*</u>		<u>DERS*</u>		<u>FFMQ*</u>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Pre	52.27	16.76	99.46	29.60	46.09	10.03
Follow-up	34.91	16.53	75.18	19.71	50.27	5.06
<i>t(p) d, 95%CI</i>	4.67 (.001), 1.04 [9.07, 25.65]		3.25 (.009), .97, [7.65, 40.89]		-2.08 (.063), .53, [-8.65, .28]	

**Table 6.** Means, Standard Deviations, t-test results, and effect sizes of the BSI Depression subscale, BSI Anxiety subscale, BSI Interpersonal Sensitivity subscale, PCL-C-5, DERS, and FFMQ from Pre-Test to One Month Follow-Up for the VIA Group N = 13.

	<u>BSI Depression*</u>		<u>BSI Anxiety*</u>		<u>BSI Interpersonal Sensitivity*</u>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Pre	51.23	8.95	52.15	12.52	50.15	12.11
Follow-up	40.46	6.26	40.84	10.16	41.92	8.49
<i>t(p) d, 95%CI</i>	4.21 (.001), 1.39, [5.19, 16.34]		3.46 (.005), .99, [4.19, 18.43]		2.96 (.012), .79, [2.17, 14.29]	
	<u>PCL*</u>		<u>DERS*</u>		<u>FFMQ*</u>	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Pre	47.77	17.90	96.77	31.34	45.61	9.87
Follow-up	25.77	17.73	67.62	15.16	54.84	7.72
<i>t(p) d, 95%CI</i>	4.59 (.001), 1.24, [11.55, 32.46]		4.35 (.001), 1.18, [14.54, 43.77]		-2.89 (.014), 1.04, [-16.18, -2.28]	

## Research Question 1: Examining Outcomes for the Experimental vs. Control

### Condition

**Outcomes at baseline measurement.** Both groups were reporting DERS scores above the clinical cutoff of 80, denoting that both groups, on average endorsed significant problems with emotion regulation (Harrison et al., 2010). Of those in the control group 72.7% reported DERS scores greater than 80 at the pre-test and 69.2% of those in the VIA group reported DERS scores greater than 80 at the pre-test indicating that majority of the sample experienced clinically relevant deficits in emotion regulation. Both groups also reported average PCL-5 scores above 33 indicating clinically significant PTSD symptomology (Bovin et al., 2016). Specifically, 84.6% of those in the VIA group and 90.9% of the control group reported PCL score greater than 33 at the pre-test. Neither group was reporting average *t*-scores greater than or equal to 65, which signifies clinically significant elevations (Derogatis, 1993), on the BSI Depression, Anxiety, or Interpersonal Sensitivity subscales. However, each group was reporting *t*-scores greater than 50, indicating above average symptomology (Derogatis, 1993). While cutoff scores for the FFMQ are not available, average FFMQ scores for both groups were approximately half way between the lowest and highest score on this measure, in the 50<sup>th</sup> percentile. See Table 7 for details.

**Table 7.** Pre-test Means and Standard Deviations of the BSI Depression subscale, BSI Anxiety subscale, BSI Interpersonal Sensitivity subscale, PCL-C-5, DERS, and FFMQ; N = 24.

	BSI Depression		BSI Anxiety		BSI Interpersonal Sensitivity	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
C	56.46	15.74	54.00	15.74	52.73	9.48
TX	51.23	8.95	52.15	12.52	50.15	12.11
	PCL		DERS		FFMQ	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
C	52.27	16.77	99.46	29.60	46.09	10.03
TX	47.77	17.90	96.77	31.34	45.62	9.87

To examine whether there was a significant difference between the VIA

(experimental group) and the control group on the mental health outcome measures, a

series of one-way Analyses of Covariance (ANCOVA) were conducted with pre-treatment scores as the covariate and one-month post-treatment scores as the dependent variable. See Table 8 for details. Medium to large effect sizes were found on five of the six of the outcome measures examined and one (BSI interpersonal sensitivity) met statistical significance. Effect sizes were calculated using partial  $\eta^2$ . There were no outliers in the data as assessed by no cases with standardized residuals greater than +/- three standard deviations, with the exception of BSI anxiety, which had one outlier greater than +/-three standard deviations. The outlier was removed which lead to significant differences between the two groups. The data was re-examined to ensure no data entry errors occurred and the outlier appears to represent a natural variation, consistent with the individuals self-report of anxiety, thus the outlier was retained in the final analysis. One of the outcome measures violated the assumptions of an ANCOVA (the FFMQ violated the assumption of homogeneity of variances as assessed by Levene's test of homogeneity of variance  $p = .016$ ). A square root transformation was performed in an attempt to correct the violation of homogeneity of variances. However, Levene's test of homogeneity of variance remained significant ( $p = .002$ ). Given that an ANCOVA is considered to be robust to violations of homogeneity of variance (Cochran, 1957; Peckham, 1968), particularly when the sample size ratio is closest to 1:1 (Potthoff, 1974) results for the FFMQ were interpreted in spite of this violation.

**Table 8.** One-month follow-up Means, Standard Deviations, ANCOVA results, and effect sizes of the BSI Depression subscale, BSI Anxiety subscale, BSI Interpersonal Sensitivity subscale, PCL-C-5, DERS, and FFMQ; N = 24.

	<u>BSI Depression</u>			<u>BSI Anxiety</u>			<u>BSI Interpersonal Sensitivity*</u>		
	<i>M</i>	<i>SD</i>	<i>95%CI</i>	<i>M</i>	<i>SD</i>	<i>95%CI</i>	<i>M</i>	<i>SD</i>	<i>95%CI</i>
C	46.09	7.40	[41.39, 49.27]	46.73	7.53	[42.76, 49.83]	51.91	6.82	[47.12, 55.68]
TX	40.46	6.27	[37.50, 44.71]	40.85	10.16	[36.78, 45.54]	41.92	8.49	[38.42, 46.29]
<i>F(p) partial <math>\eta^2</math></i>	2.64 (.119) .111			2.79 (.110) .117			10.38 (.004) .33		
	<u>PCL</u>			<u>DERS</u>			<u>FFMQ</u>		
	<i>M</i>	<i>SD</i>	<i>95%CI</i>	<i>M</i>	<i>SD</i>	<i>95%CI</i>	<i>M</i>	<i>SD</i>	<i>95%CI</i>
C	34.91	16.53	[24.66, 42.21]	75.18	19.71	[65.77, 83.60]	50.27	5.06	[46.27, 54.15]
TX	25.77	17.72	[18.95, 35.08]	67.62	15.16	[59.84, 76.23]	54.85	7.72	[51.28, 58.53]
<i>F(p) partial <math>\eta^2</math></i>	1.24 (.277) .06			1.30 (.267) .058			3.33 (.082) .137		

Note: \* statistical significances.

### Research Question 2: Skills Use in the VIA vs. Control Condition

A series of t-tests were used to examine whether the participants in the VIA experimental condition used mindfulness, emotion regulation, validation, interpersonal effectiveness, and distress tolerance skills more frequently than the participants in the control condition. The data met all the assumptions of the t-tests except that data for the control group for interpersonal effectiveness skill use was not normally distributed, as assessed by Shapiro-Wilk's test ( $p = .006$ ). Thus, a Mann-Whitney U test was run to determine if there were any significant differences in interpersonal effectiveness skill use between those in the control group and those in the VIA group. The results were significant for mindfulness skills only. See Table 9 for details.

**Table 9.** Skill Use

	Mindfulness*		Emotion regulation		Distress tolerance		Interpersonal effectiveness		Validation	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>Mdn</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
C	3.09/21-30 times	1.76	3.46/21-30 times	2.64	4.9/31-40 times	3.58	3 /21-30 times	3.30	3.83/21-30 times	3.02
TX	5/41-50 times	2.42	4.85/41-50 times	2.55	5.62/41-50 times	2.96	5/ 41-50 times	2.55	5.39/41-50 times	2.70
<i>t(p) d, 95%CI</i>	2.176 (.04) [.09, 3.73].	.91,	1.326 (.199) [-.79, 3.57].	.54,	.801 (.432), .22, [-1.70, 3.84].		<i>U</i> = 49, <i>z</i> = -1.319, <i>p</i> = .207,		1.365 (.186), .55, [-.81, 3.95].	

Note: \* statistical significances.

### Research Question 3: Acceptability of the VIAs

Central tendencies from experimental condition participants' responses to the questions regarding the acceptability of the VIAs (Did this video help you better understand the concept/skill? and Did you enjoy the video?) were examined to address the third research question: *Will participants in the experimental VIA condition, rate the VIAs as acceptable?* Over all participants agreed that the VIAs were helpful to understanding the skills ( $M = 3.78$ ,  $Mdn = 4$ ,  $Mo = 4$ ) and reported that they enjoyed the VIAs ( $M = 3.78$ ,  $Mdn = 4$ ,  $Mo = 4$ ). Measures of central tendency for each of the videos are displayed in Tables 10 and 11.

**Tables 10.** Helpfulness of Videos

	VIA 1	VIA 2	VIA 3	VIA 4	VIA 5	VIA 6	VIA 7	VIA 8	VIA 9	VIA 10	VIA 11
<i>M</i>	3.77	4.38	4.31	4.39	3.23	3.67	4	3.69	3.85	3.70	3.62
<i>Mdn</i>	4	5	5	5	4	4	4	4	4	4	4
<i>Mo</i>	5	5	5	5	4	5	4	4	4	4	4

**Tables 11.** Participant Acceptability of Videos

	VIA 1	VIA 2	VIA 3	VIA 4	VIA 5	VIA 6	VIA 7	VIA 8	VIA 9	VIA 10	VIA 11
<i>M</i>	3.92	4.08	4.08	3.92	2.9	3.25	3.83	3.62	3.70	3.61	3.46
<i>Mdn</i>	4	4	4	4	3	3.5	4	4	4	4	4
<i>Mo</i>	4	4	5	5	1& 4	4	4	4	4	4	4

**Research Question 4: Feasibility of the intervention**

Of the 39 participants to enroll in the two-day skills group, 21 were randomly assigned to the control condition and 18 were randomly assigned to the VIA condition. Of the 36 to complete both days, 24 completed the one-month follow-up (13 from the VIA condition and 11 from the control condition). Of 13 participants assigned to the VIA condition who completed the one month follow-up, 12 (92.3%) watched all 11 videos and 69.23% passed the manipulation check (MC) for all the VIAs (one participant failed the MC for VIA 4, one participant failed the MC for VIA 6, and two participants failed the MC for VIA 10). Of the remaining five participants assigned to the VIA condition who did not complete the one-month follow-up, all five watched none of the VIAs. The completion rate for the VIAs for the total sample was 61.11%.

## Chapter 5: Discussion

Treating the psychological aftermath of IPV victimization is crucial for breaking the cycle of violence (Classen et al., 2005; Messman-Moore & Long, 2003; Messman-Moore et al. 2005; Risser et al., 2006; Trevillion et al., 2012). Common treatment approaches with victims of IPV focus on one or more commonly experienced psychological disorders (e.g. depression, PTSD, etc.). However, victimization outcomes are idiographic, meaning characteristics of the abuse, victim specific factors, and societal/cultural factors will play a role in shaping the psychological experience in the aftermath of abuse (Briere & Jordan, 2004; Kuijpers et al., 2011). DSM-5 diagnoses are unable to capture the complexity of the victimization symptomatic experience (Briere & Jordan, 2004). Further victims of IPV often struggle with psychological issues that do not meet criteria for one specific disorder, such as self-esteem issues, interpersonal issues, distrust, etc. (Cloitre et al., 2004; Ford, Courtois, Steele, Hart, & Nijenhuis, 2005; Zlotnick et al., 2006). Therefore attending to factors that underlie various psychological disorders and issues rather than disorders themselves provides a promising alternative treatment avenue. This is consistent with previous research recommending that interventions for victims of IPV aim to help victims gain more balanced emotions and behaviors, through coping and interpersonal skills (Kuijpers et al., 2012).

The DBT for IPV treatment focuses on providing victims with skills to combat emotional and inter/intrapersonal difficulties (Iverson et al., 2009; Lee & Fruzzetti, 2017). Part of the success of the treatment has to do with the special attention it pays to validating the victim. Within this theoretical framework validation is crucial as victims often come from invalidating environments and suffer in the ability to self-validate

(Iverson et al., 2009). DBT for IPV allows the individual to learn skills important to changing their current situation and mental health while in a safe and validating environment. The ability to validate will in turn help victims deal with difficult emotions and situations, including interpersonal situations, in a more adaptive and effective manner. Mindfulness skills are also core to the treatment, and these skills are interwoven in *all* the skills discussed within the treatment; to use any one of the skills one must first be mindful (Iverson et al., 2009; Linehan, 2014). Given that skill use is the mechanism of change within this treatment paradigm (Lindenboim et al., 2007; Linehan et al., 2015; Neacsiu et al., 2010; Stepp et al., 2008), it has been argued that efforts to increase skill use in clients are needed (Rizvi et al., 2016). One way to increase skill use is through the use of treatment adjuncts.

The focus of this study was to evaluate a novel treatment adjunct, the VIAs, which were developed to be engaging and a low burden to the participants and providers. To evaluate the preliminary efficacy, client acceptability, and the feasibility of the VIAs a Stage One Pilot Trial was conducted. Specifically, the objective was to determine whether those exposed to the VIAs experienced greater reductions in three of the most commonly experienced psychological issues (depression, anxiety, and PTSD) and greater improvements on psychological constructs believed to underlie psychological health (i.e. interpersonal sensitivity, mindfulness, and emotion dysregulation) compared to those who were not exposed to the VIAs. Additionally, how frequently those in the VIA condition used the skills taught in group and in the VIAs was compared to those in the control condition to address the question do the VIAs lead to greater skill use? Finally, the acceptability of the VIA and how feasible the VIAs were to implement were examined.

### **Preliminary Efficacy at Improving Treatment Outcomes**

**Anxiety symptomology.** While a statically significant difference between the VIA condition and the control condition was not found, this is likely the result of the small sample size. However, the medium to large effect size (Cohen, 1969) suggests that the VIA may have contributed to the greater reductions in anxiety seen amongst VIA condition participants. The skills foundational to the DBT for IPV treatment and those that were presented in the VIAs are intended to reduce anxiety symptomology. Other mindfulness-based interventions demonstrate meaningful and lasting reductions in stress and anxiety (Hofmann, Sawyer, Witt, & Oh, 2010). Further, DBT's emphasis on tolerating anxiety (via distress tolerance) and providing skills to ameliorate anxiety (i.e. opposite action and checking the facts) are intended to help clients cope with their anxiety in a more adaptive manner (Linehan, 2014). DBT informed treatments have been shown to significantly reduce anxiety (Lothes, Mochrie, & St. John, 2014) and a previous study implementing the DBT for IPV treatment has shown similar reductions in anxiety (Iverson et al., 2009). Meta-analyses have found e-health based therapies as effective interventions for anxiety disorders (Andrews, Cuijpers, Craske, McEvoy, & Titov, 2010; Davies, Morriss, & Glazebrook, 2014) and the VIAs may have served a similar role.

**Depression symptomology.** Again the lack of statically significant differences between the conditions may be due to the study being underpowered. But, the medium to large effect size (Cohen, 1969) provides support that the VIAs lead to greater reductions in depressive symptomology. The reductions in depression symptomology are consistent with the implementation of the skills and concepts taught in the DBT for IPV skills group and the VIAs. Mindfulness, CBT/change oriented strategies (e.g. opposite action and

checking the facts), and the components of Behavioral Activation (e.g. mastery, opposite action, planning for positive experiences, etc.) are each effective treatment components for depression in their own right (Cuijpers, Berking, Andersson, Quigley, Kleiboer, & Dobson, 2013; Cuijpers, Van Straten, & Warmerdam, 2007; Hofmann et al., 2010; Segal, & Teasdale, 2018). Thus, the combination of each of these clinically useful treatment strategies likely accounts for the observed effect and may even have had a synergistic effect. Indeed, DBT has documented success in treating even treatment resistant depression (Harley, Sprich, Safren, Jacobo, & Fava, 2008) and the DBT for IPV skills group has previously shown success in decreasing depression symptomology in victims of IPV (Iverson et al., 2009; Lee & Fruzzetti, 2017). As with anxiety, e-health based therapies have demonstrated success as effective interventions for depressive disorders (Andrews et al., 2010; Davies et al., 2014; Richards & Richardson, 2012) and VIAs may have served a similar function.

**Interpersonal sensitivity.** The BSI interpersonal sensitive subscale reached statistical significance between the control and VIA conditions and a large effect size was found (Cohen, 1969), suggesting this construct may have been most heavily impacted by the VIAs. The concept of validation is central to the DBT treatment paradigm (Linehan, 2014). Thus, the improvements on the interpersonal sensitivity subscale (which captures self doubt, feelings of inadequacy, and distress during interpersonal exchanges [Derogatis, 1993]) may be due to enhanced validation skills learned in the group and in VIAs nine, 10, and 11. Web-based interventions have shown preliminary success in improving self-esteem with other populations (Nosek, Robinson-Whelen, Hughes, & Nosek, 2016). Further, interpersonal effectiveness is a core component of DBT, the DBT

for IPV skills group (Iverson et al., 2009; Lee & Fruzzetti, 2017; Linehan, 2014), and a focus of VIAs five and six, which may have led participants to experience less discomfort and greater competency in interpersonal contexts. Those in the VIA condition reported significantly greater use of mindfulness skills (discussed below) compared to those in the control group and mindfulness and self-esteem are significantly associated (Randal, Pratt, & Bucci, 2015), such that mindfulness allows individuals to ruminate less about their negative self-concepts (Pepping, O'Donovan, & Davis, 2013). Research has found self-esteem to mediate the relationship between mindfulness and decreased anxiety and depression symptomology (Bajaj, Robins, & Pande, 2016; Rasmussen & Pidgeon, 2011). The VIAs may have facilitated greater mindfulness practice via reminding participants to practice the skills taught in group, resulting in enhanced self-esteem, which in turn contributed to decreased psychological distress. Thus, future research should investigate whether improvements in validation act as a mediator between mindfulness and improvement in other areas of mental health.

**PTSD symptomology.** While the DBT for IPV treatment protocol is not intended to treat PTSD per se, the concepts and skills taught in the group and the VIAs are relevant to PTSD. For example, opposite action and distress tolerance facilitate non-avoidance, necessary for the amelioration of PTSD symptomology (Foa, Hembree, & Rothbaum, 2007). Further, mindfulness-based interventions have demonstrated success in treating PTSD (Banks, Newman, & Saleem, 2015) and in improving trauma symptoms in victims of IPV (Dutton et al., 2013; Lee et al., 2017). Past research examining the DBT for IPV skills group documented significant reductions in PTSD symptomology (Lee & Fruzzetti, 2017). Of the 21 women with PCL-5 scores above 33 at the pre-test, 57% ( $n =$

12) reported scores less than 33 at the one-month follow-up, indicating similar efficacy. However, differences between the groups were marginal, with the VIA condition only reporting slightly better outcomes ( $p = .277$ ) and small effect sizes (Cohen, 1969). Thus the VIA's appear to have contributed not all to minimally to the resolution of PTSD symptomology. The app, PTSD coach, has demonstrated modest efficacy in improving PTSD symptoms in community samples (Miner, Kuhn, Hoffman, Owen, Ruzek, & Taylor, 2016). Since avoidance is a hallmark of PTSD the therapeutic alliance may be necessary to promote behaviors that combat PTSD symptomology and technology-based interventions and adjuncts may offer only minimal treatment gains.

**Mindfulness.** The measure of mindfulness approached statistical significance between the control and VIA conditions ( $p = .08$ ) and a large effect size was observed (Cohen, 1969), indicating the VIAs may have increased participants' mindfulness. Alternatively, the VIAs may have prompted participants to think of the group and the skills they learned in group. Mindfulness is the corner stone of the group and is curial to all the skills taught in group (Iverson et al., 2009; Linehan, 2014) and thus thinking of the group may have encouraged participants to practice mindfulness. As discussed below, a statistically significant difference was found between the VIA condition and the control condition in regards to mindfulness skill use, further supporting the hypothesis that the VIAs contributed to the greater improvements seen in mindfulness among the VIA participants. Mindfulness-based interventions have demonstrated efficacy in treating a myriad of psychological disorders and problems (Banks et al., 2015; Hofmann et al., 2010; Lee et al., 2017; Michalopoulou et al., 2015). Thus, the differences in improvements in mindfulness between the VIA and control conditions may help explain

the superior outcomes in the other mental health domains reported by the VIA condition. A recent meta-analysis found technology-based mindfulness interventions efficacious (Spijkerman, Pots, & Bohlmeijer, 2016); thus engendering mindfulness and increasing mindfulness practice appears feasible via technology-facilitated interventions.

**Emotion dysregulation.** Deficits in emotion regulation may arise after IPV experiences (Iverson et al., 2009), may predict IPV victimization experiences (Dutton, 1995), and are believed to underlie many psychological problems (Barlow et al., 2004), and therefor represents an important treatment target. The content of the DBT for IPV skills group and the VIAs all relate to emotion regulation and thus the improvements in emotion regulation seen follows and is consistent with pervious research (Lee & Fruzzetti, 2017). Although a medium effect size (Cohen, 1969) in emotion dysregulation between the VIA and control condition was observed, it was somewhat surprising that a larger effect size and statistical significance was not found, given the medium to large effect sizes between the groups in anxiety, depression, mindfulness, and interpersonal sensitivity, which are interconnected with emotion (dys)regulation. However, the small sample may account for this result. Studies assessing technology-based interventions examining emotion regulation as an outcome are lacking and it may be the case that emotion dysregulation is difficult to target via technology, although this seems unlikely given the treatment success of technology based treatments and treatment adjuncts in other domains related to emotion regulation (Ameringen et al., 2017; Clough & Casey, 2011; Mantani et al., 2017).

### **Skill Use**

Mindfulness is core to the DBT treatment paradigm (Linehan 2014) and a

multitude of studies have found mindfulness-based interventions (including web-based mindfulness interventions) to benefit an array of disorders (Iverson et al., 2009; Hofmann et al., 2010; Lee & Fruzzetti, 2017; Linehan et al., 1999; Spijkerman et al., 2016). Thus the statistically and clinically significant differences between the control condition and the VIA condition in the frequency of mindfulness skill usage may account for the positive findings regarding the preliminary efficacy of the two-day DBT for IPV skills group supplemented with the VIAs at improving psychological health. This follows given that skill use is the proposed mechanism of change within the DBT treatment paradigm (Lindenboim et al., 2007; Linehan et al., 2015; Neacsiu et al., 2010; Stepp et al., 2008). While skill use between the control condition and the VIA condition did not reach statistical significance for frequency of emotion regulation, distress tolerance, interpersonal effectiveness, or validation skill use, the VIA condition reported greater usage of all of these skills compared to the control group, demonstrating small and medium effect sizes (Cohen, 1988, Cohen, 1969). Again, these clinically significance difference in skill use between the groups may contribute to the greater positive clinical outcomes among those in the VIA condition. The VIAs may have served as a reminder for participants to practice the skills and/or prompted them to think of the group and the skills learned in group. Further, consistent with SCT and CTML theoretical frameworks the VIAs may have explicated the skills in a way that made them more accessible to participants, thus enhancing the likelihood that participants would use them. Finally the differences in the groups may be due to a dosage effect, such that the increased exposure to the skills and concepts resulted in greater skill use and thus enhanced treatment outcomes. This begs the question: what is the optimal does? The goals of the VIAs were

to place minimal burden on the participants, however treatment adjuncts that are more interactive than passive may result in further treatment gains.

### **Acceptability of the VIAs**

As whole, participants viewed the VIAs as helpful to understanding the skills and reported liking the content of the VIAs. This follows given the ubiquity of media in western culture and the fact that media/technology interventions demonstrate efficacy and acceptability as therapeutic adjuncts (Ameringen et al., 2017; Clough & Casey, 2011; Mantani, et al., 2017). The VIAs that were perceived as most helpful were VIA two, three, four, and seven, and pertained to the topics of behavioral chains, checking the facts, opposite action, and tolerating distress. Each of these videos depicts characters faced with an emotionally challenging situation and practicing a skill to overcome their situations. The video participants found least helpful was VIA five, which provided an overview of interpersonal effectiveness. In this video the concept was explained without utilizing a character going through a struggle. The VIAs participants reported liking the most were VIA two and three (behavioral chains and checking the facts) and the VIA participants reported liking the least was VIA five (interpersonal effectiveness). In accordance with SCT, VIAs that depicted a character (the model) struggling with similar situations to what the participant may be facing and successfully implementing (modeling) the skill(s) taught in group and the VIAs may have enhanced the participants' understanding of the skill and increased the likelihood of them using it in emotionally distressing situations (Bandura, 1963; Bandura, 2001; Bandura, 2004). Behavioral chains, checking the facts, opposite action, and tolerating distress can help individuals understand their distressing emotions and/or situations and cope with them in an

adaptive, proactive, manner. Thus, the high acceptability of these VIAs may ultimately have contributed to the superior treatment outcomes of the VIA group compared to the control group.

### **Feasibility**

Attrition between completion of the two-day skills group and the one-month follow-up was slightly higher than Lee and Fruzzetti's (2017) study (38.5% to 35%, respectively), albeit they had a three-month follow-up. The large portion of women in the current study who reported low to no income likely accounts for the attrition rate, as their phones were often disconnected by the follow-up. Of the completers the vast majority (92.3%) watched all 11 of the VIAs and attended to and understood the content as assessed by passing the manipulation check. However, none of the non-completers watched the VIAs. This may have been due to lack of phone/internet access or low engagement.

### **Limitations**

There were several limitations to this study, chiefly the small sample size resulting in the study being underpowered. However, small sample sizes correspond to an increase in a type two error; thus the fact that statically significance difference were obtained in spite of the small sample supports the clinical utility of the VIAs. As with any research in the realm of human behavioral sciences the issue of participant bias may account for the positive outcomes. While this could result in participants rating the VIAs more or less favorably, the use of the control condition mitigates this concern in terms of preliminary efficacy of the VIAs on clinical outcome measures and skill use. Another limitation of the study is the need to control for covariates, such as staying in the abusive relationship

or starting a new abusive relationship, starting or continuing therapy between the end of group and the one-month follow-up, income, education, etc. Finally, the need to determine whether the enhanced outcomes in terms of the clinical measures and self-reported skill use resulted from the content of the VIAs themselves, were due to other characteristics of the sample, or merely the fact that participants were being contacted, which may have led to participants feeling more supported, remains.

### **Future Directions**

Given the promising results of this Stage One Pilot Trial, a Stage Two Pilot Trial (efficacy research in clinics) with a larger sample warrants consideration. Alternatively, refinement to the VIAs such that they possessed a higher production value/quality may further increase their acceptability, and ultimately improve their clinical utility, as the current VIAs were written, directed, acted, and filmed with very limited funding. In a similar vein conducting a focus group with victims of IPV regarding how the VIA could be improved and incorporating that feedback into the VIA production could enhance their acceptability and clinical utility. Web-based interventions for victims of IPV have also shown success in improving mental health outcomes (Nguyen-Feng et al., 2016; Constantino et al., 2014); thus incorporating the VIAs in to a web-based treatment may be a promising avenue to decrease the client provider treatment gap and to disseminate treatment to underserved populations.

### **Conclusion**

Given the myriad and often comorbid psychological disorders and deleterious mental health outcomes that arises after IPV victimization (Dillon et al., 2013) transdiagnostic interventions that target mechanisms underlying the commonly occurring

psychological sequelae represent a promising treatment option. This Stage One Pilot Trial was conducted in the hope of enhancing treatment outcomes and improving mental health of victims of IPV using a low-cost intervention adjunct designed to minimize the client provider treatment gap. The results of this study suggest that treatment adjuncts for the DBT for IPV two-day skills group, such as the VIAs, are feasible to implement and viewed by clients as acceptable. Additionally, those in the intervention group reported greater skill use and experienced better outcomes with regard to emotion regulation, depression symptoms, anxiety symptoms, interpersonal sensitivity, PTSD symptoms, and mindfulness compared to those in the control condition. These positive findings support further research regarding the use of multimedia as a treatment adjunct.

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