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LOVING KINDNESS MEDITATION: AN INTERVENTION TO INCREASE POSITIVITY FOLLOWING INTERPERSONAL TRANSGRESSIONS

MEDYTACJA MIŁUJĄCEJ DOBROCI – INTERWENCJA MAJĄCA NA CELU ZWIĘKSZENIE POZYTYWNEGO NASTAWIENIA PO TRANSGRESJACH INTERPERSONALNYCH

Abstract: To determine if a single 15-minute guided LKM intervention can increase an individual's feelings of forgiveness toward someone who has caused them harm. Participants (N = 49; mean age = 18-21 years) were asked to recollect and describe an incident where another individual hurt them then randomized to either a control, secular LKM, or spiritual LKM. Baseline measurements included demographics, emotional forgiveness scale (EFS), attitudes related to spirituality (ARES), anxiety and depression (PHQ-4), positive and negative affect (PANAS), single stress item (SSI), self-critical rumination scale, gratitude (GQ-6), and Batson empathy scale. All measures, excluding demographics and ARES, were assessed post-intervention. No significant differences were identified between groups for all measures except positive affect as measured by PANAS and gratitude as measured by GQ-6. These results remained significant even when covarying for baseline spiritual beliefs. Our single 15-minute intervention was successful in increasing gratitude for participants in the spiritual intervention group when compared to the control and borderline significance comparing the control and the secular intervention.

Keywords: forgiveness, meditation, gratitude, spirituality

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Introduction

What makes us happy? How can the same event, the same trauma, happen to two different people and produce dramatically different outcomes in each? How can we not only reduce negative emotions and treat mental illness but also empower positivity and encourage growth? These are just some of the questions that the field of 'positive psychology' is trying to answer. Formally beginning in 2000 with the publication of *Positive Psychology*, the positive psychology movement focuses on "ordinary people" rather than just those affected by mental illness (Seligman & Csikszentmihalyi, 2000; Wang et al., 2023). Psychopathology and mental illness had been the focus, if not the entirety, of psychology during much of the 1900s, but the emergence of positive psychology shifted researchers to wonder what we can do to make our lives better, to be happier, and to function better in our worlds. As outlined by Martin Seligman in the introduction to *Positive Psychology* (2000), researchers should look at the traits individuals possess that allow them to deal with stress more effectively, ways to encourage individuals strengths and find purpose in their lives, and overall be happier.

Mindfulness, the practice of focusing one's attention on the present and having nonjudgmental awareness of your current state of being, is widely considered the most traditional form of meditation (Kabat-Zinn, 2003). Mindfulness-based interventions have been reported to have similar efficacy to other active treatments for depression and anxiety (Goldberg et al., 2018). These interventions are believed to work by allowing individuals to reframe their view of themselves and the world (Fredrickson et al., 2008). In the present study, we focused on a different type of meditation, loving kindness meditation. Loving kindness (*mettā* in Pali), a concept originating from Buddhism, focuses on individuals moving past self-interests and personal focuses into a state of compassion, caring, and love for others and the universe as a whole (Hofmann et al., 2015; Kristeller & Johnson, 2005). Loving kindness meditation (LKM) traditionally also includes a divine sense of compassion and forgiveness towards all beings, including oneself.

Previous research has suggested that loving kindness meditation is associated with the promotion of positive emotions towards increasingly more challenging targets as the meditation progresses, from oneself to all beings in the world or universe. The proposed mechanism for LKM includes the continuous propagation and maintenance of positive intentions towards certain targets (Zeng et al., 2015). LKM, in Buddhism, is based on the promotion of what is referred to as the "four immeasurables," which are the major philosophical tenants of Mahāyanā, a sect of Buddhism. The four immeasurables are loving-kindness, compassion, empathetic joy, and equanimity. These four qualities have been shown, through analysis of 18 different data sets, to have a positive effect on mental health and show promise in clinical settings, though more research is necessary to confirm this relationship (Cheng & Tse, 2015).

LKM has been shown to affect how the viewing of sad faces is processed in neural networks, as experts in LKM processed the image of a sad face through pathways that are typically seen in compassion and emotional regulation rather than simply in the typical attention-processing pathways. This suggests that repeated practice and mastery of LKM changes how the brain processes negative emotions, and automatically directs these processes through compassion-related neural pathways (Lee et al., 2012). We suspect that although this phenomenon was observed only in those who are experts in LKM, the simple practice of LKM in non-experts could also promote the beginnings of processing the negative emotions of others in a more compassionate way, leading to an increased propensity for forgiveness and the promotion of positive emotions towards others and the reduction of negative emotions.

Back pain has been associated with both physical and psychological suffering, and LKM has been shown to be beneficial to those who suffer with back pain in both a pain and negative emotion setting. Anger has been studied in its relation to back pain, and LKM has been effective in mitigating the experience of both anger and resentment towards oneself and others, both of which have been shown to worsen physical pain and make coping and recovery more difficult. In a collaboration between Duke University Medical Center and the VA San Diego Healthcare System, patients suffering from chronic lower back pain were assigned to complete LKM as a treatment for their pain through weekly group LKM sessions for eight weeks led by both a clinical psychologist and an educator in health specializing in LKM. Pain decreased significantly with longer sessions of LKM, and anger was additionally decreased (Carson et al., 2005). We suspect that a reduction of anger lends itself to an increase in forgiveness and positive affect, and a reduction in rumination and negative affect.

Suffering from PTSD is associated with several negative psychological effects, and LKM has been shown to be effective in reducing the severity of symptoms of PTSD, along with decreasing depression and increasing mindfulness. Subjects in a study of veterans suffering from PTSD participated in a 12-week LKM program, and were measured at baseline, after intervention, and in a three-month follow-up. A large effect size was found for reduction of PTSD symptoms at the follow-up, and a medium effect size was found for reduction of depression at the follow-up (Kearney et al., 2013). Following this study, we suspect that depression scores will be lower after our intervention and forgiveness for incidents that may have been traumatic in nature will increase.

We aimed in this study to investigate the effects of both a spirituality-focused LKM design and a secular LKM design on the promotion of positive feelings, including state forgiveness, empathy, gratitude, and positive affect, and the mitigation of negative feelings, including anxiety, depression, rumination, stress, and negative affect. We also aimed to examine the connection between personal attitudes towards spirituality and the effects of LKM practice. We suspect that our control condition will not experience any significant changes in posttest measurements, whereas our intervention will experience an increase in positive feelings and a decrease in

negative feelings, mediated by spirituality and the spiritual or secular condition of the intervention. Additionally, after reviewing literature related to forgiveness, we propose that our intervention group will experience an increase in positive emotions, especially forgiveness, and a decrease in negative emotions, including depression and anxiety. Forgiveness is a central theme to many religions so we believe that more spiritual individuals will also demonstrate more forgiveness. We suspect that after recalling a hurtful event, our participants will experience relief from unforgiveness as participants have experienced relief from physical and psychological pain in other studies conducted on loving kindness meditation. We also hypothesize that these effects will increase with stronger baseline measures of personal spirituality, and with the spiritual version of the intervention.

Methods

Participants completed a questionnaire including demographic information, a spirituality assessment, pre- measures, and post- measures. Following the informed consent and demographic questions, participants were asked to think of a situation in which someone else had hurt them. We did not want to elicit a state of panic or trigger any significant stress responses, so they were specifically asked to remember a situation that caused a moderate but not excessive amount of harm, a situation that could be categorized as between a four and seven out of ten on a scale of one to ten. Participants were then asked a series of questions relating to the event, including: how deeply they were hurt; who hurt them; how long ago the event happened; if the transgressor is still alive; and finally asked to voluntarily write a short summary of the event. Pre- measures were then collected after the individual described the event. Our intervention consisted of a 15-minute guided loving kindness meditation with either spiritual or secular themes. Individuals in the control group were asked a series of questions relating to the number, color, and location of different objects or shapes in images. This was done to keep them engaged for a similar amount of time as the intervention to assess the impact of time on changes in measures.

Participants were recruited using the Luther College general psychology pool, social media, and word of mouth. There were no exclusion criteria for this study. Participants were randomly assigned to groups. Individual spirituality was assessed using the Attitudes Related to Spirituality Scale (ARES) and given the option of briefly describing their spirituality in their own words, but spirituality was not used to assign participants to treatments.

Measures

Forgiveness. We used the Emotional Forgiveness Scale (EFS) to measure state forgiveness (Worthington et al., 2015). The EFS is an eight-item inventory to which

respondents indicate the level to which they agree with each statement. The EFS demonstrates both reliability and validity.

Attitudes on Spirituality. We used the Attitudes Related to Spirituality Scale (ARES) to measure participants' spiritual beliefs (Braghetta et al., 2021). The ARES is an 11-item self-report questionnaire that demonstrates both reliability and validity in measuring individual spiritual and religious beliefs.

Anxiety and Depression. We used the Patient Health Questionnaire (PHQ-4) to measure participants' levels of anxiety and depression. This measure is a four-item scale, where participants report their levels of anxiety and depression by determining how much they agree with certain statements, from "not at all" to "extremely". This scale is shown to be high in both reliability and validity, especially in college students (Khubchandani et al., 2016).

Positive and Negative Affect. We used the PANAS scale to measure participants' levels of positive and negative affect. This measure is a ten-item measure, where participants report how much they are feeling different emotions at the current moment, from "very slightly or not at all" to "extremely." This measure is shown to be both reliable and valid(Crawford & Henry, 2004).

Stress. We used the Single Stress Item (SSI) scale to measure participants' levels of stress. This is a one-item scale which asks participants to rate how intensely they feel stressed, from "not at all" to "very much." This scale has been shown to exhibit both reliability and validity (Elo et al., 2003).

Rumination. We used a Self-Critical Rumination Scale to measure participants' levels of rumination. This is a six-item scale that asks participants to rate how much they agree or disagree with certain statements about rumination. This scale is shown to have good reliability and validity (Nagy et al., 2016).

Gratitude. We used the Gratitude Questionnaire (GQ-6) to measure participants' levels of gratitude. This is a six-item scale that asks participants to rate how much they agree or disagree with statements about gratitude. This scale is shown to be both reliable and valid (Jans-Beken et al., n.d.).

Empathy. We used Batson's Empathy scale to measure participants' levels of empathy. This is a six-item scale that asks participants rate how much they are currently experiencing different empathetic emotions (Kidwell, 2009).

Results

We obtained full measures from 29 individuals. 11 individuals were randomly assigned to the control group, 10 were randomly assigned to the secular intervention group, and 8 were randomly assigned to the spiritual intervention group.

A total of 29 individuals contributed enough pre- and post- data to be included in analysis. The majority (75.9%) were female. Most (82.8%) were aged 18-21 and the highest level of education completed for the majority (86.2%) was high school or equivalent. 23 individuals listed their primary area of employment as student, with

one individual each listing retired; unemployed; education; health care; religious; and other. Most (58.6%) were single but 17.2% were in a committed relationship and 17.2% were married. The average household annual income was between $60,001 and $80,000 (M = 3.93) and slightly more than half (58.6%) had four or more people in their household. Over half (51.7%) identified as Christian, with the other half being made up mostly of nonreligious (27.6%) and broadly spiritual (13.8%) individuals. Only one individual identified as explicitly atheistic, and another identified as Buddhist.

We computed a one-way ANOVA comparing mean differences from pre- to post-measures in forgiveness, PHQ-4 depression, PHQ-4 anxiety, rumination, empathy, GQ-6, PANAS negative, and PANAS positive for each group. A significant difference was found between the groups for changes in GQ-6 ($F(2,24) = 3.514$, $p < .05$) and PANAS positive ($F(2,25) = 4.857$, $p < .05$) (Table 1). No other significant differences were found for any of the other measures. LSD was used to determine the nature of the differences between groups for changes in both GQ-6 and PANAS positive. This analysis revealed that individuals in the spiritual intervention group showed greater increases in GQ-6 scores (M = .2381, sd = .31706) than the control group (M = -.3167, sd = .39636). Individuals in the secular intervention group (M = .1100, sd = .59214) did not have significantly different changes in GQ-6 scores from either of the other two groups. Additionally, the analysis also revealed that individuals in the control group (M = .3400, sd = .53375) and the spiritual intervention group (M = .4000, sd = .52915) both had greater changes in PANAS positive scores than the secular intervention group (M = -.4200, sd = .87661). Individuals in the control group and spiritual intervention group did not show significant differences in changes in PANAS positive scores. Effect sizes for GQ-6 and PANAS positive were both identified as small to medium ($\eta^2 = .226$; $\eta^2 = .280$).

Table 1. Means, Standard Deviations, and One-Way Analyses of Variance of GQ-6 Change and PANAS Positive Change by Group

Measure	Control		Secular		Spiritual		F	η^2
	M	SD	M	SD	M	SD		
GQ-6 change	-.3167	.39636	.1100	.59214	.2381	.31706	3.514*	.226
PANAS positive change	.3400	.53375	-.4200	.87661	.4000	.52915	4.857*	.280

*$p < .05$.

A one-way between-subjects ANCOVA was calculated to examine the effect of group on GQ-6 and PANAS positive change, covarying out the effect of individual spirituality (Table 2; Table 3). Individual spirituality was not significantly related to GQ-6 change ($F(1,22) = .461$, $p > .05$). Group was significantly related to GQ-6 change ($F(2,22) = 3.780$, $p < .05$) even when covarying out individual spirituality. Similarly, individual spirituality was not significantly related to PANAS positive

change ($F(1,23) = .008$, $p > .05$). Group was significantly related to PANAS positive change ($F(2,23) = 4.168$, $p < .05$) even when covarying out individual spirituality.

Table 2. Analysis of Covariance for GQ-6 Change by Group with Spirituality as Covariant

Source	SS	df	MS	F	p
Spirituality	.103	1	.103	.461	.504
Group	1.682	2	.841	3.780*	.039
Error	4.896	22	.223		
Total	6.693	27			

*p < .05.

Table 3. Analysis of Covariance for PANAS Positive Change by Group with Spirituality as Covariant

Source	SS	df	MS	F	p
Spirituality	.003	1	.003	.008	.931
Group	3.716	2	1.858	4.168*	.029
Error	10.253	23	.446		
Total	16.649	28			

*p < .05.

Discussion

Our first hypothesis was that individuals receiving either the spiritual or secular LKM intervention would experience an increase in forgiveness toward the individual that caused them harm. As LKM is done with the intent of increasing compassion toward others, it is reasonable to conclude that a LKM intervention would increase forgiveness regardless of the spirituality of the content. Our study did not find any evidence supporting this hypothesis. There was no significant change in forgiveness between any of the groups. However, there were significant differences in changes for two measures we collected that were not related to our initial hypotheses.

Two measures were identified as showing significant differences between groups, PANAS positive and GQ-6. The PANAS positive indicates positive affect in individuals. There was a significant difference in average change in PANAS positive between groups 1 and 2 and groups 2 and 3 but not between 1 and 3. Individuals in both the control and spiritual intervention groups on average saw an increase in their positive affect scores while individuals in the secular intervention group on average saw a decrease. This suggests that there could be an aspect of the secular intervention that causes individuals to experience a reduction in their positive affect when compared to the control or spiritual intervention. One possibility is that, because the spiritual LKM intervention was recorded by a different individual than the secular LKM

intervention, some aspect of the secular intervention caused participants' discomfort. Of note is that there were no significant differences in negative affect between groups, indicating that the secular intervention only decreased positive affect without influencing negative affect. Our findings were not consistent with existing literature that found significant increases in positive affect throughout a 7-week intervention or a 12-session LKM intervention (Fredrickson et al., 2008; Hofmann et al., 2015), though this is likely due to the short duration of our intervention.

The GQ-6, a measure of gratitude, demonstrated a significant increase in scores between the control group and the spiritual intervention group. This indicates that the spiritual LKM intervention was significantly more effective in increasing gratitude compared to the control group. One thing to note is that a LSD analysis found that the difference between the control group (M = -.3167, sd = .39636) and the spiritual group (M = .2381, sd = .31706) was statistically significant, but it also identified the difference between the control group (M = -.3167, sd = .39636) and the secular group (M = .1100, sd = .59214) as nearly significant (p = .051). Given our relatively small sample size (N = 29) and small group sizes for the control (N = 10) and secular intervention (N = 10), the borderline significance suggests that both secular and spiritual based LKM are more effective in increasing gratitude than the control, although we recommend further testing be done before making final conclusions. These findings are supported by existing literature, with several studies identifying increases in gratitude through LKM (Hofmann et al., 2011, 2015).

Our second hypothesis was that baseline spirituality would influence the extent to which individuals experience changes in forgiveness. We did not find any evidence to support this hypothesis. Interestingly, when we analyzed the two measures that did show significant changes between groups, gratitude and positive affect, an individual's baseline spirituality had no significant impact on the effectiveness of the intervention they received. When we examined the influence of existing spirituality on the two measures that were identified as having significant differences between groups, we found that existing spirituality did not change how individuals responded to the interventions. The spiritual LKM intervention significantly increased gratitude scores when compared to a control regardless of if the individual receiving the intervention identified as having spiritual beliefs. Both spiritual and secular loving kindness meditations appear to have significant influences on increasing gratitude for individuals both with and without prior spiritual beliefs. Similarly, changes in positive affect remained significant when accounting for individual spiritual beliefs, though these results are substantially less impactful considering the only change found was a decrease in positive affect for the secular group while changes in the control and spiritual interventions were equal.

One potential limitation of this study includes the fact that individuals only engaged in one 15-minute session of LKM. Most other studies include multiple longer sessions of LKM over the course of multiple weeks or months(Fredrickson et al., 2008; Hofmann et al., 2011, 2015). In these studies, effects were typically seen with

60-minute sessions over the course of seven to twelve weeks. However, other studies have found that brief (7-minute) sessions can induce small to moderate changes in positive affect(Hutcherson et al., 2008). Fredrickson et al. (2008) found increasing changes in positive affect throughout the course of a 7-week intervention. Further research should be conducted into the effects of short-term versus long-term LKM interventions. Another limitation of our study is that there was a significant lack of religious diversity. About half (51.7%) identified as Christian and the remaining individuals were either nonreligious (27.6%) or spiritual but not part of a specific religion (13.8%). Additionally one participant identified as an atheist. The only participant who identified as religious but not Christian was Buddhist. Therefore, we cannot generalize our results to members of different faith backgrounds. The spiritual intervention was not specifically based in Christianity, but we do not have enough religious diversity within our sample to conclude whether or not the effects of the intervention would generalize to members of other faith traditions.

Although we did not find a relationship between either a spirituality-based loving kindness meditation or a secular loving-kindness meditation and forgiveness, we suspect that future studies which incorporate a program of repeated loving-kindness meditations targeting a memory of a past hurtful experience may result in higher levels of forgiveness, considering the results from other studies which targeted emotions tangential to forgiveness. Positive psychological approaches to dealing with negative emotions from a past offense other than LKM may also be helpful in promoting forgiveness. Following the Buddhist philosophies around compassion and caring for others in a spiritual sense, we also suspect that future spirituality-based interventions would be helpful in promoting positive emotions towards oneself and others.

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