

An Examination of The Effect of Loving Kindness Meditation in Reducing Homophobia

Project for Distinction

Ethan Mays

Stockton University

Abstract

Homosexual individuals are an at-risk population for discrimination, violence, and suicide, making it critical to investigate interventions to reduce prejudice against the homosexual population (Strunk et al., 2014). Previous research has found loving-kindness meditation to be an effective intervention in reducing implicit and explicit prejudice (e.g., racism) and increasing prosocial behavior and social connectedness, however, none has been specific to homophobia (Kang et al., 2014, Stell & Farsides, 2015). This research examined the effect of loving-kindness meditation (LKM) on reducing explicit and implicit homophobia. A total of 29 participants ($M_{age} = 23.9$), completed explicit (Homophobia Scale) and implicit (Implicit Association Test) measures of homophobia before (pretest) and after (posttest) three virtual sessions of LKM or an imagery (control) condition. Results revealed no differences in pre- to posttest scores for explicit or implicit homophobia. It is possible that loving-kindness meditation is not effective at reducing homophobia. However, potential limitations, implications and future directions are examined.

Key words: loving-kindness meditation, implicit bias, explicit bias, homophobia,

An Examination of The Effect of Loving Kindness Meditation in Reducing Homophobia

Meditation has been a fundamental element of Buddhism for thousands of years, creating peace, awareness, and compassion within a practitioner's life. Only recently, within the last 25 years, has it become a popular investigation in the Western hemisphere (for example, see Mascaro et al., 2015). Some research has focused on the relationship between meditation and its effect on reducing prejudice or bias against out-groups such as African Americans, and individuals who are disabled, homeless, handicapped, and elderly (for review see Oyler et al., 2022). Specifically, loving-kindness meditation (LKM) has been studied as a potential practice to reduce prejudiced attitudes, yielding promising results.

Prejudice can manifest in two ways: explicit and implicit attitudes. Explicit attitudes are shaped by beliefs and motivations and rely on propositional processes (Fabbro et al., 2017). These beliefs and motivations are learned from one's own culture. Culture creates in-groups and out-groups that are separated based on shared values and beliefs. Being able to define one's self as an in-group member can lead to prejudice, as the values and beliefs of an in-group can be shaped around disliking particular characteristics of an out-group that are thought of as undesirable and merit mistreatment (Baldwin, 2017). Propositional processes can be described as judgments derived from conclusive inferences of associative information. Essentially, we have an affective reaction to a stimulus and then form a judgment on the stimuli, assessing if we like it or not. For instance, when walking past a Black individual on the street, one clenches their purse or bag and crosses to the other side of the street to avoid the Black individual. This process helps us, whether it be negative or positive, validate our evaluations and beliefs, the core function of propositional processes (Gawronski & Bodenhausen, 2006). Explicit attitudes can be measured directly with self-measurements, when a person is asked to report on their beliefs, actions, and

attitudes. In contrast, implicit attitudes form from intuitive feelings and evaluations and rely on automatic and associative processes (Fabbro et al., 2017). Culture influences an individual's implicit attitudes as well, creating internalized unconscious associations about out-groups who do not fit into the culture. Associative processes involve automatic affective reactions to certain stimuli when encountered, such as feeling negative emotions when walking past a Black individual on the street. These associations do not warrant truth values, so the validity of evaluations being true or false is irrelevant. For example, an individual may experience negative affect toward a Black individual walking down the street despite their conscious awareness of this association being inaccurate (Gawronski & Bodenhausen, 2006). Implicit attitudes have to be measured indirectly since they involve automatic processes that are a part of the subconscious mind. One tool that can be used to measure implicit attitudes is the Implicit Association Test (IAT). The IAT is a computer-based test that presents the participant with two possible target concepts that they have to rapidly match to an attribute (e.g. ugly matched to Good or Bad). It is believed by researchers that the more a concept and an attribute are implicitly associated in memory, the faster and easier it will be for participants to associate concepts and attributes on the computer task (Fabbro et al., 2017).

Much of this growing body of research has focused on racial and ethnic prejudices, such as prejudice against Black and Asian individuals (Kang et al., 2014; Stell & Farsides, 2016). To date, I am not aware of existing research that has studied the effect of loving-kindness meditation on explicit and implicit homophobia. Homophobia can be described as prejudice towards an individual who is sexually attracted to their own sex. This research study investigated the effects of LKM on reducing explicit and implicit homophobia in participants between the ages of 18-40.

Social stigma and prejudice towards gay individuals have important consequences in our current society. The reality of homophobia is alarming, which can take the form of bullying, less financial aid for college, a lack of adequate medical care access, workplace harassment, false arrest, discrimination, and violence (D'haese, Dewaele, & Houtte, 2016; Strunk et al., 2014). These outcomes can occur in a number of settings that include school, the workplace, housing, the judicial and medical systems, and law enforcement (Strunk et al., 2014). To be specific, 1 in 6 LGBTQ adults report avoiding healthcare institutions due to fear of discrimination and past experiences of discrimination based on their sexual identity (Casey et al., 2019). In a national sample of 662 respondents, 13% reported being victims of violence based on their sexual orientation at least once in their adult life, most of which were reported by gay men (Herek, 2009). Moreover, 37% of individuals who identify as LGBT experienced public harassment within the last 6 months prior to a study conducted in 2014 (Strunk et al., 2014). In addition, Herek et al. (1999) found that 56% of respondents on a questionnaire had experienced verbal harassment in the previous year based on their sexual orientation, while 19% were threatened with violence, and 17% were chased or followed. This harassment can lead to internalizing symptoms, with lesbian and gay respondents that experienced an assault or other crime reporting significantly more symptoms of depression, anger, anxiety, and traumatic stress when compared to respondents of crimes that did not involve prejudice (Herek et al., 1999). More recent research has shown that LGBTQ individuals still face a plethora of discriminatory manifestations that include slurs, harassment, and violence (Casey et al., 2019). The LGBT community as a whole are also more likely to commit suicide or have suicidal ideation, which can be explained by discrimination and bias (Strunk et al. 2014). Specifically, LGBTQ adolescents are three times as likely than their heterosexual peers for risk of suicidal thoughts and behaviors (Hatchel et al.,

2021). People's lives and overall health are at stake, giving great importance to studying prejudiced attitudes toward those who identify as LGBTQ and methods to change these attitudes. One potential mechanism for reducing prejudice that has been previously studied is loving-kindness meditation.

Loving-kindness meditation is a compassion-based practice derived from Buddhism that intends to foster warm and compassionate feelings towards oneself and others, creating changes in emotion, motivation, and behavior (Hutcherson et al., 2008). During LKM, an individual imagines persons in their life for whom they hold strong loving feelings and send their love towards these people. Then, the individual directs these emotions toward themselves and then to others, eventually ending with all living organisms (Kang et al., 2014). How would such an exercise be effective at reducing explicit and implicit bias towards outgroups? This question can be answered by the two mechanisms underlying compassion-based meditations: cognitive reappraisals and perspective taking. Cognitive reappraisal alters our responses to events by changing the way we think about situations and is important in emotion regulation (Dahl et al., 2015). Implicit attitudes form from appraisals and intuitive emotions, two processes targeted by compassion-based meditation through reappraisal. Perspective taking, on the other hand, involves the consideration of how a particular situation would make oneself or another feel. It has been found to be an important factor in social emotions and in reducing intergroup bias (Dahl et al., 2015). Essentially, LKM changes certain systems in the brain to think differently about situations that affect ourselves and others, drawing on our emotional centers.

It is believed that empathy plays an essential role in kindness-based meditation (Mascaro et al., 2015). Empathy is the ability to take on another's perspective and experience their emotion. Empathy is supported by three components that are targeted by LKM: the amygdala,

affective simulation, and cognitive processing (Mascaro et al., 2015). Neurons in the amygdala were found to be crucial in emotional processing and visual information (Wang et al., 2014). The amygdala also functions as our defense system, receiving signals from our thalamus to access incoming threats for survival (Van Der Kolk, 2014). Affective simulation is a process that involves the limbic system matching its activity with that of a perceived target (Mascaro et al., 2015). Perceiving and contemplating another's suffering activates the bilateral anterior insula, a region in the brain that establishes connections with the limbic system and represents a mapping of someone else's body state onto one's own (Gogolla, 2017, Mascaro et al., 2015). Therefore, the bilateral anterior insula is associated with empathizing with another's affective state through limbic system connections. Cognitive reappraisals, a mechanism underlying LKM, have been linked to reductions in amygdala activation, thus reducing our threat response and allowing for emotion regulation (Mascaro et al., 2015). Empathy may function as a mediator between loving-kindness meditation and bias as well as underlying cognitive reappraisals and perspective taking, influencing a decrease in amygdala responses to a perceived threat.

A body of research is establishing evidence to support the potential prosocial implications of loving-kindness meditation as it relates to explicit and implicit bias. Hutcherson et al. (2008) assessed the affective impact of a 7-minute LKM on explicit and implicit evaluations and changes in mood to photographs of the self, close others (people the participant knew), and neutral strangers. They had a group of 93 participants split into a LKM condition and an Imagery condition. The LKM condition imagined two loved ones standing beside them sending their love to the participant. After four minutes, they opened their eyes and were instructed to redirect these feelings toward neutral strangers on a screen. The Imagery condition focused on two acquaintances' faces whom they had no strong feelings for and then focused their attention on

photographs of neutral strangers. The imagery condition was used in order to structurally resemble the LKM condition as much as possible while remaining neutral. Results from the study presented a significant effect of LKM on explicit positivity towards the self and non-targeted others and on implicit positivity towards the self but not non-targeted neutral strangers. Although these authors did not find significant effects of LKM on implicit positivity towards others, the effects of LKM on explicit positivity towards others are worth noting. Participants in the study explicitly stated that they felt more connected, similar, and positive toward others.

Kang et al. (2014) focused their study of LKM on its effect on attitude on an intergroup level regarding implicit prejudice. The authors posit that it is essential to investigate whether LKM can be extended to reduce implicit bias. As a result, they conducted a study that assessed the relationship between a 6-week loving-kindness meditation intervention on explicit and implicit attitudes toward Black and homeless individuals. Participants were split into three different groups, a loving-kindness meditation condition, a loving-kindness discussion condition, and a wait-list control. The LKM condition engaged in 30-minute meditation classes and did guided meditations at home that did not target any specific group. The loving-kindness discussion condition discussed ideas about LKM. Results indicated a significant reduction in implicit bias towards Black and homeless people due to the loving-kindness meditation intervention when compared to the two other conditions, revealing the need to engage in the LKM practice rather than learning about its principles. However, the researchers did not find any significant effects between loving-kindness meditation and explicit bias (Kang et al., 2014). The authors proposed that the lack of significance between LKM and explicit bias towards the stigmatized out groups was due to LKM not being directly related to intergroup relations, meaning LKM did not specifically target Black and homeless individuals. Since LKM did not

relate to intergroup relations, the authors suggested that participants were unaware of the relevance between LKM and their conscious attitudes toward acceptable and powerful social bias.

Stell and Farsides (2015) also examined loving-kindness meditation influence on implicit racial bias using an IAT. A 7-minute LKM was used for one condition and a visualization condition was used as a control. The control group was utilized to closely match the intervention, undergoing a procedure in which they thought about the physical characteristics of someone for whom they had no strong feelings, then paid close attention to the physical characteristics of gender matched Black individuals on a screen. They found that the 7-minute LKM was effective at reducing bias towards a focal outgroup (targeted Black individuals), but not a peripheral one (Asian individuals who were not targeted by the intervention). Similar to Kang et al. (2014), the meditation practice was able to produce significant effects in reducing bias towards Black individuals who were the target group for the study. However, LKM was not able to produce significant effects toward the non-targeted group, Asian individuals. These findings support Kang et al. (2014) claims that LKM works to reduce bias only when it is targeted toward a specific group, as Stell and Farsides (2015) found LKM to reduce bias towards the targeted Black individuals but not the Asian individuals who were not targeted. This study was the first of its kind to find that a short 7-minute intervention of LKM can reduce racial bias. Considering the length of time related to loving-kindness meditation, Hunsinger et al. (2014) explored the difference in racial bias between long-term compassion-based meditators and non-meditators. Results showed that the long-term compassion-based meditators expressed less racial bias and more empathy when compared to non-meditators. Both short and long-term compassion-based

meditation methods have shown reductions in bias towards out-groups, supporting that LKM to have the same effect in reducing homophobic bias.

Current Research

The goal of this research was to examine the effect of loving-kindness meditation on reducing explicit and implicit homophobia. No research to date, that I am aware of, has studied the effects of loving-kindness meditation on homophobia. This research is significant considering the implications and consequences of homophobia. Participants included both college students and individuals from the community, ranging from 18-46 years old. Participants were split into two conditions, consisting of a loving-kindness meditation condition and an imagery (control) condition. The LKM group listened to a total of eight minutes of an audio recording, four minutes extending loving feelings to close others and the last four minutes extending loving feelings to a picture of the targeted group, gay and lesbian individuals, matched to participants' gender and race/ethnicity. The imagery group was identical except the last four minutes focused on the physical characteristics of the same pictures used in the LKM condition. Each group engaged in three sessions in a one-week time frame via Zoom. It may be hard for individuals to obtain transportation and find parking, so it was decided to conduct the study online. The implicit measure was based on the Sexuality IAT from the Project Implicit website (Project Implicit) and the explicit measure was the Homophobia Scale. Participants took the IAT and The Homophobia Scale before and after the loving-kindness meditation and imagery intervention.

I hypothesized that loving-kindness meditation would reduce explicit and implicit bias when compared to the control condition. Research has shown LKM to be effective in reducing racial bias implicitly and explicitly (Kang et al., 2014, Stell & Farsides, 2015). There has also

been evidence to display that LKM invokes explicit positivity toward others (Hutcherson et al., 2008). Since LKM effectively reduced racial bias and created explicit positivity towards others, I believed it would do the same for homophobic bias.

Methods

Participants

A total of 29 participants ($M_{age} = 23.9$, $range = 18$ to 46) took part in the study. Of the twenty-nine participants, 69% were women, 20.7% were men, and 10.3% were non-binary. Race and ethnicity statistics revealed that 41.4% of the sample were White/Caucasian, 17.2% were Black/African American, 13.8% were Hispanic or Latino/a, 6.9% were South Asian or South Asian American, 3.4% were East Asian or East Asian American, and 6.9% were Biracial. See Table 1 for participants' economic status, education, religion, sexual orientation, and meditation practices.

Individuals were recruited through multiple sources including community advertisements, flyers, Stockton's SONA system, and professional listservs (e.g., Cognitive Development Society). Participants signed up online, where they were provided an outline of the study and then directed to Microsoft Bookings to schedule three Zoom sessions. Individuals were randomly assigned to the LKM condition or the imagery condition. All participants created a unique code that they used for all parts of the study for confidentiality. Participants were compensated \$15 when they completed the study.

Materials

The materials consisted of the following: loving-kindness meditation, the Imagery condition, the Implicit Association Test, and the Homophobia Scale.

Loving-kindness meditation. Participants engaged in an eight-minute loving-kindness meditation based on scripts from the research article by Saitta (2022) and the LKM on the UCLA Health Systems website. Participants listened to a pre-recorded meditation script via zoom which directed them through a series of steps, known as guided meditation. When arriving at the first session, participants were directed to rid the environment of all distractions, and to position themselves in a comfortable and relaxed position. Next, the test subject was prompted to think of a person in their life who brings them happiness, such as a close friend or relative. The close friend, relative, or child is imagined as being present, on either side of them, as well as the feelings that they bring to the participant. Finally, the participant wished the imagined being affirmations of wellness, stating, “may you be happy, may you be healthy, may you be safe, may you be loved, may you be at peace.” The participant then slowly opened their eyes and focused their attention on a person on the screen. They were told that the individual is a gay/lesbian man/woman and asked to remember the feelings they shared with the loved one from earlier in the meditation. Afterward, the participant sent the same affirmations of wellness they sent to their loved one to the individual on the screen. See Appendix A for script.

Faces for the target group were selected from the Chicago Face Dataset (Ma et al., 2015). The Chicago Face Dataset provides ratings of attractiveness, which the faces were matched on. See Appendix B for pictures of faces.

Imagery Condition. The imagery condition resembled the LKM intervention to the fullest extent possible. Similar to Stell and Farsides (2015) individuals were instructed to imagine the physical characteristics of two people they know and have no strong feelings for in the first four minutes of the meditation. Afterward, they opened their eyes and focused on the physical features of the same racial and gender matched gay/lesbian person on the screen. The

same pictures that were presented in the LKM condition were displayed in the Imagery condition. See Appendix A for script.

Implicit Association Test (IAT). The Sexuality IAT, a variation of the original measure created by Greenwald et al. (1998) was used to assess the association between a target and an attribute. It's a computerized task that runs in 7 blocks, where participants are provided two targets, one on the left and the other on the right side of the screen. In the first block, participants must match attribute words and pictures relating to the first two targets, "Gay people" (left side of the screen) and "Straight people" (right side of the screen). The attribute words and targets for the first block include "homosexual", "gay", "straight", "heterosexual", two men holding hands, and a man and a woman holding hands. The next two targets in the second block are "Bad" and "Good", to which participants match attributes such as "ugly, horrible, disgusting" or "amazing, terrific, beautiful." In the third and fourth block, the two target words "Good" and "Straight people" are matched on the left-hand side of the screen while the two target words "Bad" and "Gay people" are matched on the right-hand side of the screen. Attribute words from both blocks one and two are used in blocks three and four. Block five switches the targets "Gay people" and "Straight people" to opposite sides of the screen, so that "Straight people" is on the left and "Gay people" is on the right. The sixth and seventh block follow suit of the fifth block, categorizing "Straight people" with "Good" on the left side of the computer and "Gay people" with "bad" on the right side of the computer. Blocks 1-3, 5, and 6 are considered the practice blocks while blocks 4 and 7 are the testing blocks. The testing blocks can be divided into stereotypical congruent and stereotypical incongruent trials. Block four, the trial matching "Good" attributes with "Gay People", is stereotypically incongruent due to biases that the gay/lesbian community face. Block seven, the trial matching "Good" attributes with "Straight People", is considered the

stereotypical congruent trial. Quicker responses associating negative attributes to the target word “Gay” when compared to the target word “Straight” indicates homophobic attitudes. Studies on loving-kindness meditation have consistently used the IAT to measure implicit attitudes towards out-groups, such as racial bias and implicit attitudes towards individuals who are homeless (Stell & Farsides, 2016; Kang et al., 2014). The IAT for this study was self-created using E-Prime, and was based on the Sexuality IAT from the Project Implicit website (<https://www.projectimplicit.net/>). See Appendix C for picture stimuli of Gay and Straight for the IAT, and Table 2 for the sequence of trial blocks.

The Homophobia Scale. The Homophobia Scale, developed by Wright et al. (1999), assesses participants' explicit attitudes toward homosexuals. Participants were asked about their agreement with questions such as “Gay people make me nervous” on a 5-point Likert scale 1 (*strongly agree*) to 5 (*strongly disagree*). Scores ranged between 5 and 35, with higher scores indicating higher levels of homophobic attitudes. The scale shows strong reliability, Cronbach's alpha = .94. All explicit measures were created on Qualtrics as they were administered virtually. See Appendix D for scale.

Procedure

There were two conditions: one with the loving-kindness meditation intervention and one with the imagery condition (control). The loving-kindness meditation intervention was conducted over three sessions in the span of one week via Zoom. Three sessions were found to be optimal for testing the intervention due to time management and previous research. Both Hutcherson et al. (2008) and Stell & Farsides (2016) used a one-time 7-minute LKM intervention, finding significant effects in reducing racial bias and producing positive emotions towards other strangers on an explicit level.

First, The Homophobia Scale and Implicit Association Test were emailed 24 hours in advance to the online zoom sessions so individuals could complete them in a timely manner. Participants joined via zoom, were welcomed to the study and asked to follow the instruction on the recording. They attended three zoom sessions, completing either the LKM intervention or the Imagery condition depending on their assignment. Once the audio part of the third session was complete, participants were asked to complete the IAT and homophobia scale before logging off.

Results

Analysis of The Homophobia Scale. The Homophobia Scale was measured on a 5-point Likert scale with a set of 25 questions. Nine items on the Homophobia Scale were reversed scored. To acquire participants' scores on the pre- and posttest, scores were averaged by summing each test (pre and post) and dividing by the number of items on the questionnaire. This resulted in a final score between 1 and 5. Higher scores indicated less homophobic bias while lower scores indicated an increase in homophobic bias. Even though participants were randomly assigned to the control and experimental groups, it was possible that there was a failure of randomization due to the small sample size. To ensure the experimental and control groups had similar rates of homophobia, an independent-samples-t-test was conducted with the pre-test total as the dependent variable and the condition (LKM, imagery) as the independent variable. Results indicated that there was no difference in explicit homophobic bias between the loving-kindness meditation condition ($M = 4.84, SD = 0.27$) and the imagery condition ($M = 4.77, SD = 0.26$), $t(27) = 0.631, p = 0.534$, prior to engaging in the interventions, showing that confounds were distributed evenly across the sample. To analyze the effect of the LKM intervention on participants' explicit homophobia, an independent-samples-t-test was conducted using the difference of pre-test and post-test total scores. First, a difference score was created by

subtracting posttest scores from the pretest scores. Then, an independent-samples-t-test was conducted, using the difference scores as the dependent variable and the condition as the independent variable. Results revealed no significant difference in difference scores between the LKM group ($M = 0$, $SD = 0.14$) and the imagery group ($M = -0.003$, $SD = 0.15$), $t(27) = 0.056$, $p = 0.478$. See Table 3 for pre- and posttest means.

Analysis of the Implicit Association Task (IAT). Participants' reaction time mean scores were calculated using E-DataAid by summing the reaction times of the pre and post-stereotypically incongruent trials and dividing them by the number of stimuli presented. Next, the reaction time means from the post-incongruent trials were subtracted from the pre-incongruent trials to obtain a difference score. The same process was completed for stereotypical congruent trials. Negative difference scores show an increase in reaction times from pre to post, indicating an increase in implicit bias while positive difference scores reflect a decrease in implicit bias. To ensure the experimental and control groups had similar rates of implicit homophobia, an independent-samples-t-test was conducted with the pre-test means of the stereotypical incongruent trials. Results indicated that there was no difference in implicit homophobic bias between the loving-kindness meditation condition ($M = 7174.69$, $SD = 24558.19$) and the imagery condition ($M = 1133.05$, $SD = 322.74$), $t(27) = 0.884$, $p = .385$, prior to engaging in the interventions, showing that confounds were distributed evenly across the sample.

A 2 x 2 (Congruency [congruent, incongruent] x Condition [LKM, Imagery]) mixed ANOVA was conducted to assess the effect of LKM on stereotypically congruent and incongruent difference scores. Results revealed no main effects or interaction, such that there were no differences between the LKM stereotypical congruent trials ($M = -40.09$) and Imagery

stereotypical congruent trials ($M = 487.75$), nor differences found in reaction time scores between the LKM stereotypical incongruent condition ($M = 599.94$) and imagery stereotypical incongruent condition ($M = -1969.16$), $F(1,27) = 1.44$, $p = .239$.

Despite these null results, Greenwald et al. (2003) explain that differences in the size of means often correlate with the variability of data that the means are computed from. Underlying variability from the difference in means can be adjusted by using standard deviations. In accordance with this finding, I analyzed standard deviations difference scores to indicate if LKM significantly reduced implicit bias towards gay individuals. Difference scores were calculated by subtracting posttest SDs from pretest SDs. To determine whether there was a difference between SD difference scores, a 2 x 2 (Congruency [congruent, incongruent] x Condition [LKM, Imagery]) mixed ANOVA was conducted. Results revealed no main effects or interaction, such that there were no differences between the LKM stereotypical congruent trials ($M = -264.75$) and Imagery stereotypical congruent trials ($M = 852.20$), nor differences found in reaction time scores between the LKM stereotypical incongruent condition ($M = 31050.12$) and imagery stereotypical incongruent condition ($M = 752.53$), $F(1,27) = .82$, $p = .372$.

Discussion

The present study sought to understand the effect of loving-kindness meditation intervention on explicit and implicit homophobic bias. Specifically, it was hypothesized that the loving-kindness meditation would reduce both explicit and implicit homophobia, as has been demonstrated in previous literature for racial bias (Kang et al., 2014, Stell & Farsides, 2015). This expectation that the intervention would reduce homophobic bias was based on previous evidence. For example, LKM belongs within the constructive family of meditations, utilizing cognitive reappraisals and perspective taking to increase prosocial emotions and thought patterns

(Dahl et al., 2015). Cognitive reappraisal changes the way people view events, being an important factor in emotion regulation. Implicit attitudes form from appraisals and intuitive emotions, thus it was believed LKM would reduce homophobic bias by way of cognitive reappraisal, reconfiguring thought patterns towards gay people (Dahl et al., 2015). The LKM intervention was also meant to have participants contemplate and consider gay people's lives, drawing on perspective taking to reduce homophobia. Perspective taking has also been found to be an important factor in social emotions and in reducing intergroup bias, another reason for LKM to have been effective in reducing homophobic attitudes (Dahl et al., 2015). Providing further evidence for my hypothesis, previous evidence found significant results with a short 7-minute LKM intervention in reducing racial bias and promoting positivity towards the self and non-targeted others (Hutcherson et al., 2008; Stell & Farsides, 2015). This provided evidence that an three 8-minute LKM intervention conducted via Zoom would produce a significant reduction in participants' homophobic bias. However, results of this study indicated that the loving-kindness intervention was not significant in reducing explicit or implicit homophobic bias when compared to the imagery condition.

However, there is a body of research that has found the effects of LKM may be inconsistent. Kreplin (2018) conducted a systematic review of various types of meditations, examining whether these meditations were empirically supported to reduce bias and increase compassion. Four of the 54 meditation studies included in the review investigated LKM. The authors found that the meditations were only effective in the categories of compassion and empathy but not aggression, connectedness, and or prejudice (Kreplin et al., 2018). In addition, other types of meditation may be more effective in reducing prejudice than LKM. Dahl et al. (2015) explain a range of meditations labeled as the deconstructive family, as they focus on self-

inquiry and insight to reflect upon and dismantle maladaptive mind systems while exploring perception, emotion, and cognition. One may need to focus on their own internal dialogue and feelings in order to disrupt systems that evoke negative implicit attitudes toward others.

Mindfulness meditation could possibly reduce homophobic bias, as it can be considered a part of the deconstructive family since the practice focuses the practitioner's attention on the present moment, nonjudgmentally accessing thoughts and feelings separate from the self. This allows one to focus on self-inquiry and explore emotions and perceptions without attaching to them and thus allowing them to be released (Lueke & Gibson, 2015). According to Lueke & Gibson (2015), a 10-minute mindfulness meditation was able to reduce implicit bias against Black individuals and older people. Using LKM as a mechanism to decrease homophobic bias may not be effective, but other interventions could show potential success in the quest to diminish homophobia.

An alternative explanation, though, is that LKM may be effective to reduce homophobia but certain aspects of this study inhibited these possible results. Although a significant effect was not found in the current study, the direction of the mean reaction time difference scores for the incongruent trial was positive, meaning participants became faster in their responses, displaying less bias when compared to the imagery group. The present study may have not produced significant results because the intervention was conducted online with an audio recording. Kreplin et al. (2018) explained in their analysis that meditation interventions were only moderated by a meditation teacher who was a co-author of the study was effective. The benefits of a loving-kindness meditation intervention, people may need to be in the presence of an actual meditation teacher rather than with an audio recording. It may be necessary for individuals to connect with the meditation teacher in person so that they are grounded in the present moment,

therefore able to connect to the target group of the meditation. While past studies have found that a single 7-minute LKM session can decrease racial implicit bias, some studies have found it takes longer to produce the same results. For example, Kang et al. (2014) conducted a 6-week intervention that produced significant results in reducing explicit racial bias. More sessions may be essential in reducing homophobic bias in order to consistently break down implicit stereotypes and negative attitudes. Zhou et al. (2022) found that multi-week loving-kindness and compassion meditations had the potential to reduce negative attitudes toward others. A LKM intervention lasting only a week might not be sufficient in reducing bias. Moreover, it could be the meditation is effective in higher rates of homophobia. The sample obtained for this study was mostly college students and educated individuals, who may be more open-minded and less homophobic than other cohorts in the general population. With the sample obtained for this study, it may be that it lacks the variability that would be seen in the general population when it comes to homophobia. An LKM intervention may still elicit reduced amounts of homophobic bias in individuals if the meditation were conducted in person and with a live instructor, not an audio recording.

Limitations

A potential limitation in measuring homophobia may have been due to the Homophobia Scale itself. The questions reflected extreme prejudice, like violence against gay individuals, such as keying their cars or using offensive slurs. Levy (2016) posits that people's self-reported attitudes may not reflect the extent of their bias since they do not want to appear as being prejudiced. Indeed, people's implicit bias is often much higher than their explicit bias because explicit bias violates social norms, which is not to be prejudiced. It could be that questions that tested for more subtle forms of homophobia would produce more variability. An additional

limitation is the small sample size and demographic characteristics of the sample. Most participants were young college students who were well-educated and diverse, thus, they most likely were very accepting of students of different backgrounds. Results may change based on the population engaging in the meditation. This study is also limited because it did not utilize a manipulation check. A scale evaluating participants' emotions during the meditation sessions could have been employed, such as the Differential Emotion Subscale (DES). The DES can be used to further evaluate the effectiveness of LKM to see if it is producing desired effects within the participants in the study. Fortunately, this study has not been terminated and further data collection will continue.

Future Directions

Future research should consider giving the meditation intervention to participants in person with a live instructor and examining whether this will have an effect on biases toward the gay community. A potential population to conduct future research with is older individuals. It is possible that older people may have variability in homophobic attitudes, though this has not been tested as of yet. If older adults display more homophobic bias than younger individuals, an LKM intervention may be beneficial in reducing homophobia and thus reducing distress experienced by the LGBTQ community. It would be important and necessary to further investigate this issue because of the implications and consequences of homophobia, as it can lead to mental health issues and even suicide (Herek et al. 1999, Strunk et al., 2014). Another relevant avenue to explore may be the utilization of different meditation/mindfulness techniques. As stated previously, a 10-minute mindfulness meditation was effective in decreasing racial and age bias (Lueke & Gibson, 2015). LKM may not be an intervention useful in reducing homophobic bias, but other practices such as mindfulness may produce different effects. LKM is still a potential

factor in the reduction of prejudice against the gay/lesbian community and must be explored further in regards to different populations and modes of delivering the meditation.

Conclusion

The current study utilized a loving-kindness meditation intervention to examine its effect on reducing homophobic bias. Past research has shown LKM to be effective in reducing other forms of bias and fostering prosocial emotions. Participants' explicit and implicit homophobia was measured before and after three virtual sessions of either LKM meditation or a control group. No significant results were found for reducing explicit or implicit bias. LKM may not an effective intervention in reducing bias specific to homophobia. However, these null effects could be explained by a certain factors: a pre-recorded audio meditation, the procedure being conducted online, and sa mall sample size. Despite the findings from this study, LKM may still be a prospective intervention in reducing prejudice and further research must be conducted to expand on this imperative question.

References

- Baldwin, J. (2017). "Culture, prejudice, racism, and discrimination" in *Oxford Research Encyclopedia of Communication*, ed J. Nussbaum (New York, NY: Oxford University Press). <https://doi.org/10.1093/acrefore/9780190228613.013.164>
- Barkan, S. E. (2016). *Social Problems: Continuity and Change*. V.I.O, FlatWorld Education Inc.
- Casey, L. S., Reisner, S. L., Findling, M. G., Blendon, R. J., Benson, J. M., Sayde, J. M., & Miller, C. (2019). Discrimination in the United States: Experiences of lesbian, gay, bisexual, transgender, and queer Americans. *Health services research, 54*, 1454-1466. <https://doi.org/10.1111/1475-6773.13229>
- Dahl, C. J., Lutz, A., & Davidson, R. J. (2015). Reconstructing and deconstructing the self: cognitive mechanisms in meditation practice. *Trends in cognitive sciences, 19*(9), 515-523. <https://doi.org/10.1016/j.tics.2015.07.001>
- D'haese, L., Dewaele, A., & Houtte, M. V. (2016). Homophobic violence, coping styles, visibility management, and mental health: A survey of Flemish lesbian, gay, and bisexual individuals. *Journal of homosexuality, 63*(9), 1211-1235. <https://doi.org/10.1080/00918369.2016.1150057>
- Fabbro, A., Crescentini, C., Matiz, A., Clarici, A., & Fabbro, F. (2017). Effects of mindfulness meditation on conscious and non-conscious components of the mind. *Applied Sciences, 7*(4), 349. <https://doi.org/10.3390/app7040349>
- Gawronski, B., & Bodenhausen, G. V. (2006). Associative and propositional processes in evaluation: an integrative review of implicit and explicit attitude change. *Psychological bulletin, 132*(5), 692. <https://doi.org/10.1037/0033-2909.132.5.692>

Gogolla, N. (2017). The insular cortex. *Current Biology*, 27(12), R580-R586.

<https://doi.org/10.1016/j.cub.2017.05.010>

Gonsalkorale, K., Sherman, J. W., & Klauer, K. C. (2009). Aging and prejudice: Diminished regulation of automatic race bias among older adults. *Journal of Experimental Social Psychology*, 45(2), 410-414. <https://doi.org/10.1016/j.jesp.2008.11.004>

Greenwald, A. G., McGhee, D. E., & Schwartz, J. L. (1998). Measuring individual differences in implicit cognition: the implicit association test. *Journal of personality and social psychology*, 74(6), 1464. <https://doi.org/10.1037/0022-3514.74.6.1464>

Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and using the implicit association test: I. An improved scoring algorithm. *Journal of personality and social psychology*, 85(2), 197. <https://doi.org/10.1037/0022-3514.85.2.197>

Guided meditations. UCLA Health System. (n.d.). Retrieved October 23, 2022, from

<https://www.uclahealth.org/programs/marc/free-guided-meditations/guided-meditations>

Hatchel, T., Polanin, J. R., & Espelage, D. L. (2021). Suicidal thoughts and behaviors among LGBTQ youth: Meta-analyses and a systematic review. *Archives of suicide research*, 25(1), 1-37. <https://doi.org/10.1080/13811118.2019.1663329>

Herek, G. M. (2009). Sexual stigma and sexual prejudice in the United States: A conceptual framework. In *Contemporary perspectives on lesbian, gay, and bisexual identities* (pp. 65-111). Springer, New York, NY. <https://doi.org/10.1007/978-0-387-09556-1>

Herek, G. M., Gillis, J. R., & Cogan, J. C. (1999). Psychological sequelae of hate-crime victimization among lesbian, gay, and bisexual adults. *Journal of Consulting and Clinical Psychology*, 67(6), 945. <https://doi.org/10.1037/0022-006X.67.6.945>

- Hunsinger, M., Livingston, R., & Isbell, L. (2014). Spirituality and intergroup harmony: Meditation and racial prejudice. *Mindfulness*, 5(2), 139-144.
<https://doi.org/10.1007/s12671-012-0159-5>
- Hutcherson, C. A., Seppala, E. M., & Gross, J. J. (2008). Loving-kindness meditation increases social connectedness. *Emotion*, 8(5), 720. <https://doi.org/10.1037/a0013237>
- Kang, Y., Gray, J. R., & Dovidio, J. F. (2014). The nondiscriminating heart: Lovingkindness meditation training decreases implicit intergroup bias. *Journal of Experimental Psychology: General*, 143, 1306–1313. <https://doi.org/10.1037/a0034150>
- Kreplin, U., Farias, M., & Brazil, I. A. (2018). The limited prosocial effects of meditation: A systematic review and meta-analysis. *Scientific reports*, 8(1), 2403.
<https://doi.org/10.1038/s41598-018-20299-z>
- Levy, N. (2017). Am I a racist? Implicit bias and the ascription of racism. *The Philosophical Quarterly*, 67(268), 534-551. <https://doi.org/10.1093/pq/pqw070>
- Lueke, A., & Gibson, B. (2015). Mindfulness meditation reduces implicit age and race bias: The role of reduced automaticity of responding. *Social Psychological and Personality Science*, 6(3), 284-291. <https://doi.org/10.1177/1948550614559651>
- Mascaro, J. S., Darcher, A., Negi, L. T., & Raison, C. L. (2015). The neural mediators of kindness-based meditation: a theoretical model. *Frontiers in Psychology*, 6, 109.
<https://doi.org/10.3389/fpsyg.2015.00109>

Oyler, D. L., Price-Blackshear, M. A., Pratscher, S. D., & Bettencourt, B. A. (2022).

Mindfulness and intergroup bias: A systematic review. *Group Processes & Intergroup Relations*, 25(4), 1107-1138. <https://doi.org/10.1177/1368430220978694>

Project implicit. Project Implicit. (n.d.). Retrieved October 23, 2022, from

<https://www.projectimplicit.net/>

Saitta, C. D. (2022). *Does the focus of loving-kindness meditation matter for reducing implicit bias?* [Master's thesis, State University of New York]. SUNY.

<http://hdl.handle.net/20.500.12648/7189>

Stell, A. J., & Farsides, T. (2016). Brief loving-kindness meditation reduces racial bias, mediated by positive other-regarding emotions. *Motivation and Emotion*, 40(1), 140-147.

<https://doi.org/10.1007/s11031-015-9514-x>

Strunk, K., & Takewell, W. (2014). LGBT bias and discrimination: Occurrence, outcomes, and the impact of policy change.

Van der Kolk, B. (2014). *The body keeps the score: Mind, brain and body in the transformation of trauma*. Penguin Books.

Wang, S., Tudusciuc, O., Mamelak, A. N., Ross, I. B., Adolphs, R., & Rutishauser, U. (2014).

Neurons in the human amygdala selective for perceived emotion. *Proceedings of the National Academy of Sciences*, 111(30), E3110-E3119.

<https://doi.org/10.1073/pnas.1323342111>

Wright, L. W., Adams, H. E., & Bernat, J. (1999). Development and validation of the homophobia scale. *Journal of Psychopathology and Behavioral Assessment*, 21(4), 337-347. <https://doi.org/10.1023/A:1022172816258>

Table 1

Means Descriptive Statistics ($M = 29$)

Measure	Number	Percent
Heterosexual/Straight	16	55.2%
Queer	4	13.8%
Bisexual	3	10.3%
Gay/Lesbian	2	6.9%
Pansexual	2	6.9%
Middle Class	12	41.4%
Lower Middle Class	7	24%
Working Class	6	20.7%
Upper Middle Class	3	10.3%
Upper Class	1	3.4%
Some college	16	55.2%
Bachelor's Degree	7	24.1%
High School or GED	3	10.3%
MA Degree	3	10.3%
Non-religious	14	48.3%
Christian	11	37.9%
Prefer not to say	4	13.8%
Meditation	20	69%
Meditating 1 - 3x a week	21	72.4%
Meditating 1-2 weeks	7	24.1%
Meditating 3 - 4 weeks	1	3.4%
Meditating 1 - 6 months	4	13.8%

Meditating 6 - 12 months	2	6.9%
Meditating 1 + years	6	20.7%
Meditating 5 + years	2	6.9%
Mindfulness meditation	19	65.5%
Loving-kindness meditation	3	10.3%
Mantra meditation	3	10.3%

Table 2

Sequence of Trial Blocks in Sexuality IAT

Block	No. of trials	Function	Left-key response	Right-key response
1	12	Practice	Straight People	Gay People
2	16	Practice	Good Attributes	Bad Attributes
3	27	Practice	Straight + Good	Gay + Bad
4	27	Test	Straight + Good	Gay + Bad
5	11	Practice	Gay People	Straight People
6	27	Practice	Gay + Good	Bad + Straight
7	27	Test	Gay + Good	Bad + Straight

Table 3

The Homophobia Scale Difference Score Results

Condition	Pretest Score	Posttest Score	Difference Score
LKM	4.835	4.835	.000
Imagery	4.772	4.775	.003

Figure 1

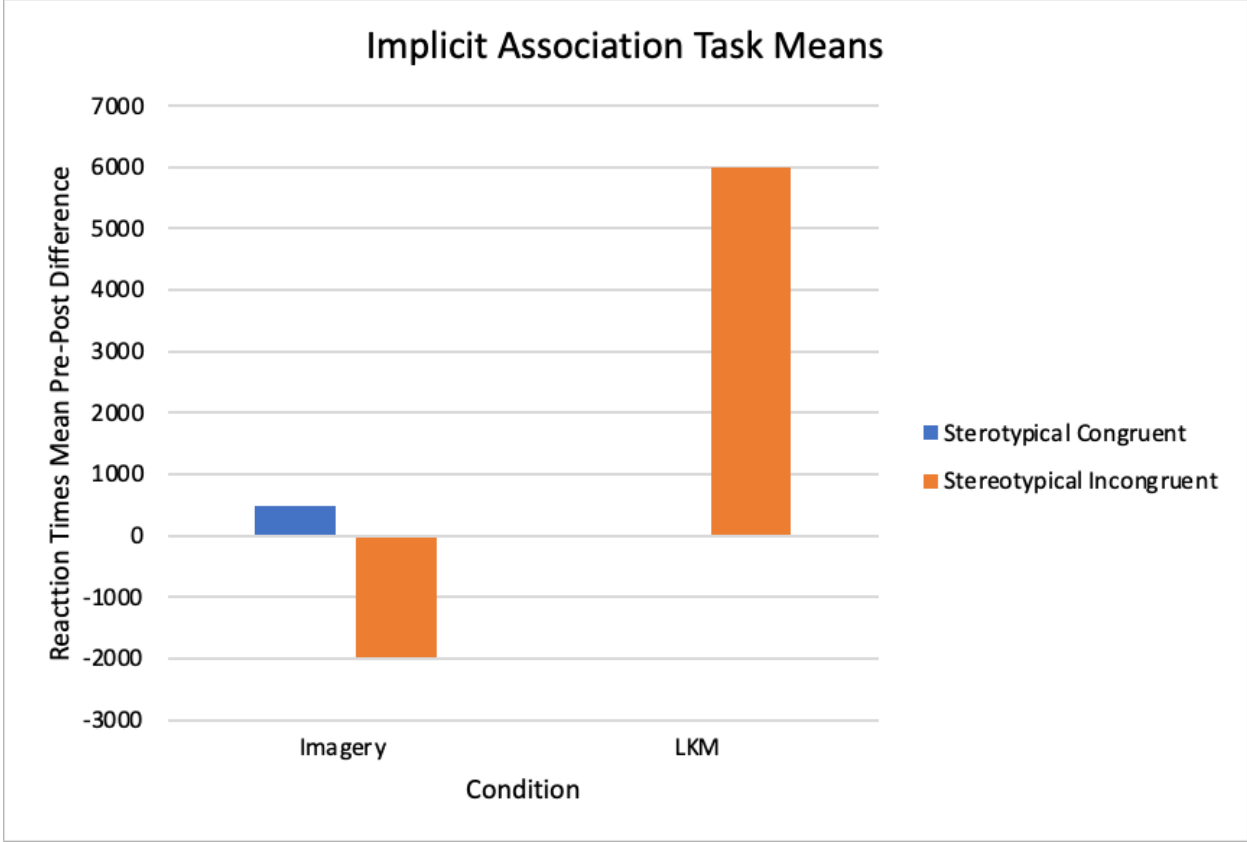
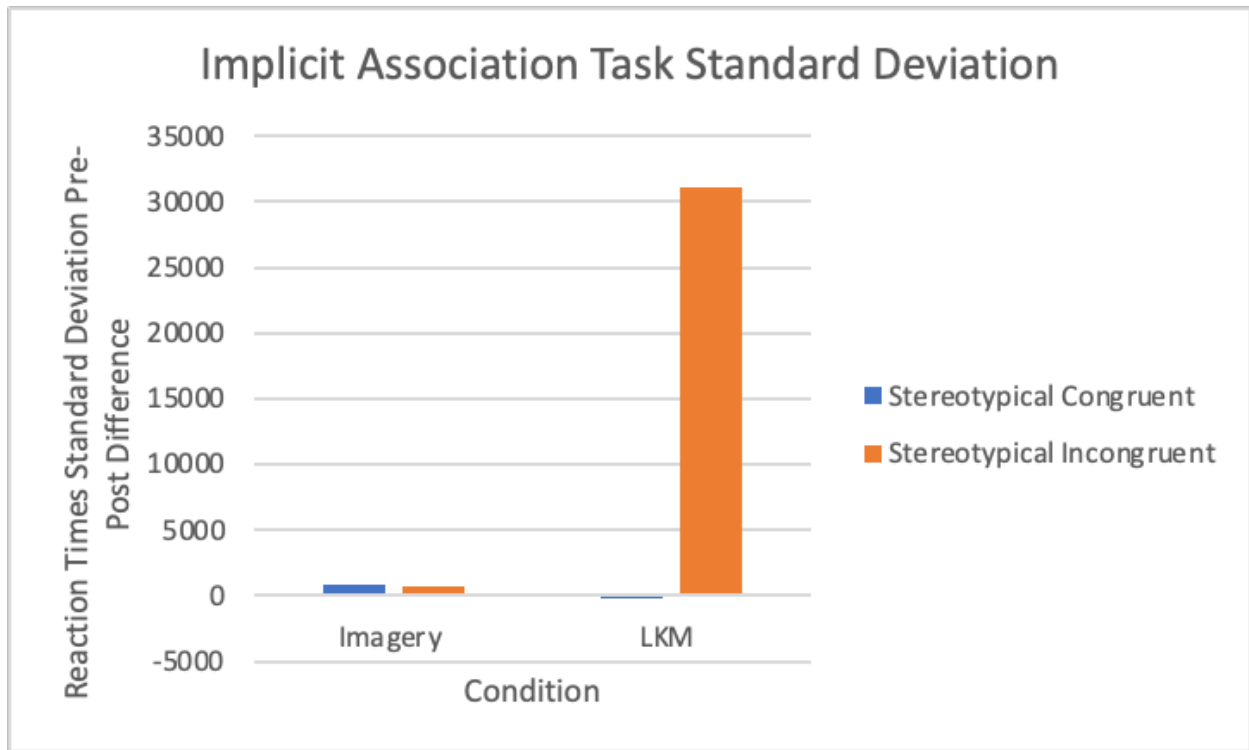


Figure 2



Appendix A

Loving-Kindness Meditation Script

Hello and welcome to the loving-kindness meditation

Let's begin by getting into a position that you will be comfortable in for the next 10 minutes

Sit in a posture that will allow you to be comfortable, but alert

You can sit in a chair or lie down on the floor

Whatever makes you comfortable

5 second pause

As you settle in, close your eyes

Try to keep them closed for the duration of the meditation

5 second pause

Once you feel ready, start by focusing on your breathing

Take a few deep breaths to relax your body

Breath in (*voice breathes in*)

And breathe out (*voice breathes out*)

Repeats breathing motion once more

While you continue breathing, pay close attention to wherever you notice the sensations of breathing the most.

This may be the tip of your nose, inside your throat or chest, or the rising and falling of your stomach

6 second pause

Now, move your focus towards how you are feeling

2 second pause

Check in to your body and notice the sensations and feelings going on inside

2 second pause

Whatever it is, whatever is here, let it be

6 second pause

Now, we will begin by moving your focus to your heart

2 second pause

As you do this, visualize someone in your life that makes you feel happy

2 second pause

Someone whom, when you first think of, lights you up with joy

Someone with not too complicated a relationship

2 second pause

Just a general sense, that when you think of them you feel happy

It can be a relative or a close friend

A child or a pet, like a dog or cat that you love

Imagine them on either side of you, with a hand on your shoulder

You can feel them, sense them, see them

3 second pause

As you imagine them, think of the feelings they bring to you

2 second pause

Maybe you feel some warmth, or butterflies in your stomach

Maybe they bring a smile to your face, a sense of expansiveness

3 second pause

Now, having this loved one in mind, offer them a gentle wish of well-being by repeating the following phrases:

May you be happy

4 second pause

May you be healthy

4 second pause

May you be safe

4 second pause

May you be loved

4 second pause

May you be at peace

4 second pause

Now, take a deep breath and slowly blink open your eyes

Focus on the individual on the screen

This individual is gay

Consider how gay people share a similar human experience to you - they desire to live, to love, to laugh, to grow

Just like you, this gay individual has feelings, thoughts, dreams and goals

Think about how you might share many goals with them - to learn, to love, to be happy, to be healthy, to be safe

3 second pause

Imagine how they feel when they've had a bad day

Or how they feel when they've had a good day

Imagine what feelings you might both experience - feelings of anxiety, fear, sadness, happiness, anger, and joy

2 second pause

As you look at them, focus on the feelings that were experienced earlier

Remember the feelings of love you share with that special person in your life

Remember the sensations and feelings that person gave you

Maybe it was warmth, happiness, butterflies, or joy

Reflect on this love and send them towards the individual on the screen

Imagine those feelings flowing out of your heart and towards the gay individual on the screen

Offer a gentle wish of well-being to them by repeating the following phrases:

May you be happy

4 second pause

May you be healthy

4 second pause

May you be safe

4 second pause

May you be loved

4 second pause

May you be at peace

4 second pause

As this meditation comes to a close

Slowly blink open your eyes and return to the present moment

Thank you for meditating with me

Imagery Condition Script

Hello and welcome to the meditation

Let's begin by getting into a position that you will be comfortable in for the next 10 minutes

Sit in a posture that will allow you to be comfortable, but alert

You can sit in a chair or lie down on the floor

Whatever makes you comfortable

5 second pause

As you settle in, close your eyes

Try to keep them closed for the duration of the meditation

5 second pause

Once you feel ready, start by focusing on your breathing

Take a few deep breaths to relax your body

Breath in (*voice breathes in*)

And breathe out (*voice breathes out*)

Repeats breathing motion twice more

While you continue breathing, pay close attention to wherever you notice the sensations of breathing the most.

This may be the tip of your nose, inside your throat or chest, or the rising and falling of your stomach

6 second pause

Now, move your focus towards how you are feeling

2 second pause

Check in to your body and notice the sensations and feelings going on inside

2 second pause

Whatever it is, whatever is here, let it be

6 second pause

Now that you are settled in, we will begin by moving your focus from your breath to your thoughts

2 second pause

As you do this, visualize an acquaintance in your life that you do not know very well

2 second pause

This can be a classmate you passed in the hallways,

Maybe a coworker you share slim conversation with

Or a neighbor you see every now and then

3 second pause

It can be anyone who you have been in contact with but is not a close friend

Just someone you know whom you share no particular intimate connection with

3 second pause

As you visualize them, imagine that they are in the room with you

2 second pause

Imagine they are standing behind you, maybe with a hand on your shoulder

You can smell them, hear them, and see them

3 second pause

Now, as you visualize this person in your mind restate the following phrases:

I see your forehead

4 second pause

I see your eyes

4 second pause

I see your nose

4 second pause

I see your chin

4 second pause

I see your face

4 second pause

Now, take a deep breath and slowly blink open your eyes

Focus on the individual on the screen

This individual is gay

Think of what the person looks like

Focus on all of their physical features

2 second pause

Identify their hair first

Does their hair look wavy, straight, or curled

2 second pause

Is it brown, black, blonde, or maybe gray

3 second pause

Identify their forehead

2 second pause

Does it look smooth or rough

Is it wrinkled or filled with freckles

3 second pause

Move down to their eyes, what color are they

Brown, green, blue, or any other variation

2 second pause

Are their eyes big or small, do they have wrinkles under or at the sides of their eyes

3 second pause

Shift your focus to their nose

Is it big or small, wide or thin, oily or dry

Does their nose have a curve or is it straight and narrow

3 second pause

Look at their lips, are they thin or wide, chapped or smooth

Do their lips have a rosy pink shade or a darkened coffee undertone

3 second pause

What does their chin look like

Is their chin rounded, is it narrow

Is it wide, or maybe even pointy

Now, focus on all of their facial characteristics as a whole

As you look at this gay individual, repeat the following phrases:

I see your forehead

4 second pause

I see your eyes

4 second pause

I see your nose

4 second pause

I see your chin

4 second pause

I see your face

4 second pause

As this meditation comes to a close

Slowly blink open your eyes and return to the present moment

Thank you for meditating with me

Be well

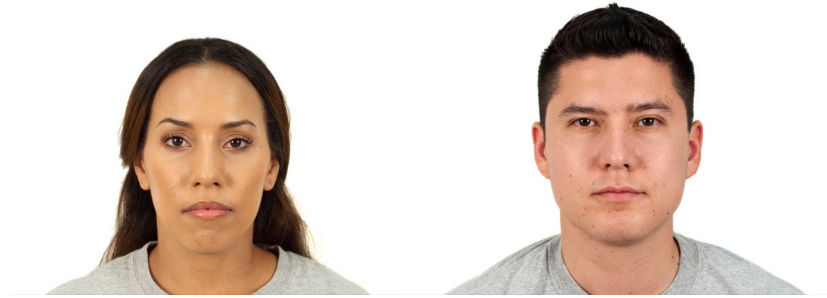
Appendix B

Face Images

Black Woman/Man:



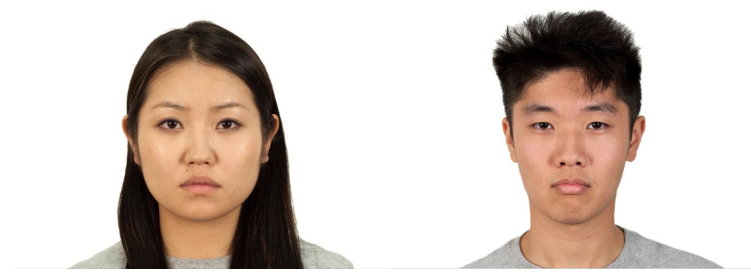
Latina Woman/Man:



White Woman/Man:



East Asian Woman/Man:






South Asian woman/Man:




Appendix C

For the upcoming parts of this study, you will categorize items into groups as fast as you can. The four groups and the items that belong to each are listed below.

Category	Items
Good	Attractive, Terrific, Cheer, Delight, Laughing, Fabulous, Glad, Beautiful
Bad	Abuse, Horrible, Hatred, Disaster, Humiliate, Angry, Poison, Disgust
Gay	  Gay People, Homosexual, Gay
Straight	 Straight, Straight People, Heterosexual

There are 7 parts and the instructions change for each part. Pay attention!

Press "E" for
Good
 or
Gay People



Press "I" for
Bad
 or
Straight People

Appendix D

The Homophobia Scale

This questionnaire is designed to measure your thoughts, feelings, and behaviors with regard to homosexuality. It is not a test, so there are no right or wrong answers. Answer each item by circling the number after each question as follows:

1. Strongly agree
2. Agree
3. Neither agree or disagree
4. Disagree
5. Strongly disagree

1. Gay people make me nervous.	1	2	3	4	5
2. Gay people deserve what they get.	1	2	3	4	5
3. Homosexuality is acceptable to me.	1	2	3	4	5
4. If I discovered a friend was gay I would end the friendship.	1	2	3	4	5
5. I think homosexual people should not work with children.	1	2	3	4	5
6. I make derogatory remarks about gay people	1	2	3	4	5
7. I enjoy the company of gay people.	1	2	3	4	5
8. Marriage between homosexual individuals is acceptable.	1	2	3	4	5
9. I make derogatory remarks like “faggot” or “queer” to people who I suspect are gay.	1	2	3	4	5
10. It does not matter to me whether my friends are gay or straight.	1	2	3	4	5
11. It would not upset me if I learned a close friend was gay.	1	2	3	4	5
12. Homosexuality is immoral.	1	2	3	4	5
13. I tease and make jokes about gay people	1	2	3	4	5
14. I feel like you can not trust a person who is homosexual.	1	2	3	4	5
15. I fear homosexual persons will make sexual advances towards me.	1	2	3	4	5
16. Organizations that promote gay rights are necessary.	1	2	3	4	5
17. I have damaged property of gay persons, such as “keying” their cars.	1	2	3	4	5
18. I would feel comfortable having a gay roommate.	1	2	3	4	5
19. I would hit a homosexual for coming on to me.	1	2	3	4	5

20. Homosexual behavior should not be against the law.	1	2	3	4	5
21. I avoid gay individuals.	1	2	3	4	5
22. It does not bother me to see two homosexual people together in public.	1	2	3	4	5
23. When I see a gay person I think, "What a waste."	1	2	3	4	5
24. When I meet someone I try to find out if he/she is gay.	1	2	3	4	5
25. I have rocky relationships with people that I suspect are gay.	1	2	3	4	5
