

Acts of Kindness in Close Relationships Reduce Depression

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A THESIS SUBMITTED TO
THE FACULTY OF GRADUATE STUDIES
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE OF
MASTER OF ARTS

GRADUATE PROGRAM IN PSYCHOLOGY
YORK UNIVERSITY
TORONTO, ONTARIO

November 2012

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Abstract

This study investigated the benefits of performing kind acts within close relationships. Practicing kindness has been shown to strengthen relationships and increase social support. It was expected to be particularly relevant for needy people who are driven by a need for closeness and are vulnerable to depression in the face of interpersonal stress. It was hypothesized that a short-term, online kindness exercise would decrease depression and increase happiness in a community sample (at baseline $N = 364$), and would be particularly beneficial for individuals high on neediness. Participants were recruited online and randomly assigned to one of two conditions. Participants in the kindness condition performed a kind, loving gesture towards someone close and described the ensuing interaction, while participants in the control condition simply wrote about an interaction they had with someone close. Each exercise was repeated every second day for roughly three weeks. The kindness exercise was associated with significant decreases in depressive symptoms when compared to the control condition, and these decreases were maintained up to the two-month follow-up for the general sample. The findings for happiness were mixed and participants high on neediness did not show superior benefits over participants low on neediness from the kindness intervention. The results suggest that practicing kindness within the context of a close relationship can lead to general and sustained improvements in depression. Furthermore, this study offers support for the efficacy of brief, online interventions in the improvement of depressive symptoms.

Table of Contents

Abstract.....	ii
Table of Contents.....	iii
List of Tables.....	v
List of Figures.....	vi
Introduction.....	1
Positive Psychology.....	2
Dependency and Self-Criticism.....	4
Kindness.....	10
Method.....	14
Participants.....	14
Measures.....	15
Depressive Experiences Questionnaire (DEQ).....	15
Centre for Epidemiological Studies Depression Scale (CES-D).....	16
Orientations to Happiness Scale (OHS).....	16
Procedure.....	17
Results.....	18
Participant Characteristics.....	18
Correlations.....	19
Data-Analytic Strategy.....	20
Depression.....	21
Happiness.....	24
Meaning.....	24
Pleasure.....	25

Engagement.....27

Summary.....29

Discussion.....29

 Limitations.....34

 Conclusion.....36

References.....37

Appendices.....57

 Appendix A: Project HOPE Advertisement.....57

 Appendix B: Consent Form.....59

 Appendix C: Scales.....62

 Appendix D: Conditions.....71

 Appendix E: Debriefing Form.....77

List of Tables

Table 1: Sample sizes for kindness and control conditions over time.....	46
Table 2: Correlation matrix and descriptive statistics for study variables at baseline.....	47
Table 3: Expected marginal means for the CES-D for each condition over time.....	48
Table 4: Linear contrasts of the expected marginal mean CES-D scores by condition at each time point.....	49
Table 5: Expected marginal means for the OHS-M for each condition over time.....	50
Table 6: Linear contrasts of the expected marginal mean OHS-M scores by condition at each time point.....	51
Table 7: Expected marginal means for the OHS-P for each condition over time.....	52
Table 8: Linear contrasts of the expected marginal mean OHS-P scores by condition at each time point.....	53
Table 9: Expected marginal means for the OHS-E for each condition over time.....	54
Table 10: Linear contrasts of the expected marginal mean OHS-E scores by condition at each time point.....	55

List of Figures

Figure 1.56

Acts of Kindness in Close Relationships Reduce Depression

Kindness, also known as generosity, compassion, nurturance and altruistic love, is described as the inclination to be nice and compassionate towards others, to perform kind acts for them and show them you care (Peterson & Seligman, 2004). Kindness can be shown in concern for others, doing favors for them, taking care of them. It is considered a character strength, a strength that is morally valued and contributes to living a fulfilling life. Kindness is a component of the core virtue of Humanity, which encompasses all interpersonal strengths (Peterson & Seligman, 2004). Research has shown that kindness is related to life satisfaction (Park, Peterson, & Seligman, 2004) and is among the most commonly self-ascribed (“most like me”) strengths in 40 different countries around the world (Seligman, Steen, Park, & Peterson, 2005). Kindness is one of the 24 character strengths outlined by Peterson and Seligman as positive traits that make life worth living and falls under the rubric of the positive psychology movement.

This movement has been described as the study of positive experiences and positive traits (Seligman & Csikszentmihalyi, 2000), and includes research into interventions that are designed to bolster positive emotions, qualities, and well-being (Sin & Lyubomirsky, 2009). In addition to increasing happiness, a goal of positive psychology is the prevention of mental illness (Joseph & Wood, 2010; Mitchell, Vella-Brodrick, & Klein, 2010; Seligman & Csikszentmihalyi, 2000). This current study sought to expand the existing literature by exploring a positive psychology intervention based on kindness. This online exercise was aimed at increasing acts of kindness within close relationships. It was expected that this intervention would enhance participants’ overall well-being. Further, the relationship between kindness and personality variables that are risk factors for depression was investigated. Specifically, dependency was examined in

connection with this exercise and it was hypothesized that kindness would prove to be more helpful for individuals high on immature dependency, referred to as neediness in this study.

Positive Psychology

At the beginning of this century, Seligman and Csikszentmihalyi predicted that the positive psychology movement would begin to thrive and that researchers would seek, not just to combat illness, but to find “positive reasons for living” (Seligman & Csikszentmihalyi, 2000, p.13). Time has thus far proven them right and the positive psychology movement has prospered in the intervening years (Seligman et al., 2005; Mitchell et al., 2010). It has been argued that this research is filling an important gap within clinical psychology by focusing on individual flourishing and well-being, rather than psychopathology (Joseph & Wood, 2010; Seligman & Csikszentmihalyi, 2000).

Well-being is a complex concept that refers to more than just the absence of psychopathology (Ryan & Deci, 2001). In the literature, there are two approaches to well-being, characterized as eudaimonic well-being and hedonic well-being (Mitchell, Stanimirovic, Klein, & Vella-Brodrick, 2009; Ryan & Deci, 2001). The eudaimonic approach sees well-being as living to one’s fullest potential and fulfilling one’s true self. There is an emphasis on living a meaningful life and cultivating virtues (Ryan & Deci, 2001). Eudaimonic well-being is often called psychological well-being (Mitchell et al., 2009). Hedonic well-being is the pursuit of pleasure and avoidance of pain. This approach is called subjective well-being. Subjective well-being has three components: presence of positive affect, lack of negative affect, and satisfaction with life (Diener, Emmons, Larsen, & Griffin, 1985). Life satisfaction is a personal cognitive process, where an individual’s quality of life is judged against their internal standards. There are indications that well-being is best conceptualized as a combination of both eudaimonic and

hedonic well-being (Ryan & Deci, 2001) and some theorists have created models that encompass both aspects of well-being (Peterson, Park, & Seligman, 2005).

Research has indicated that there are three main factors that determine an individual's standard level of happiness, including one's genetically determined set point, life circumstances, and happiness-increasing activities (Lyubomirsky, Sheldon, & Schkade, 2005). Approximately 40% of one's level of chronic happiness can be affected by intentional exercises, suggesting that these interventions could potentially influence a large part of an individual's well-being. Indeed, it has been demonstrated that many positive psychology interventions are capable of improving well-being and decreasing depressive symptoms (see Sin & Lyubomirsky, 2009, for a review). These interventions have included using one's personal strengths (Mongrain & Anselmo-Matthews, 2005; Seligman et al., 2005), listening to uplifting music (Sergeant & Mongrain, 2011), expressing self-compassion (Shapira & Mongrain, 2010), practicing optimism (Dickerhoof, 2007; Shapira & Mongrain, 2011), practicing gratitude (Dickerhoof, 2007; Sergeant & Mongrain, 2011), and cultivating the habits and characteristics of happy people (Fordyce, 1977). The prevention of mental illness is another focus of positive psychology. Positive emotions have been shown to protect against illness by undoing the effects of negative emotions and bolstering resilience (Fredrickson, 2001; Garland et al., 2010). Interventions that protect against psychopathology, such as depression, and bolster well-being are therefore integral parts of the positive psychology movement.

The Internet has proven to be a useful tool in the dissemination of positive psychology interventions (Mitchell et al., 2010). Though the use of this medium is still relatively young, there have been multiple studies that successfully utilized the Internet to increase happiness (see Mitchell et al., 2010, for a review; Seligman et al., 2005; Sergeant & Mongrain, 2011; Shapira &

Mongrain, 2010). Compared to traditional methods, the Internet provides an efficacious, sustainable, accessible, and convenient alternative method of delivery (Korp, 2006; Mitchell et al., 2009; Mitchell et al., 2010; Ritterband et al., 2003). Through this medium, researchers may be able to reach populations that are traditionally underrepresented in the literature, such as those who live in rural areas or those who wish to remain anonymous (Korp, 2006; Mitchell et al., 2010). Additionally, the Internet can allow for greater tailoring of interventions by offering a broad range of exercises and assigning interventions based on the specific characteristics and needs of the individual (Mitchell et al., 2010; Ritterband et al., 2003).

Dependency and Self-Criticism

One approach is to tailor positive psychology interventions so that there is a ‘fit’ between the activity and the person (Lyubomirsky et al., 2005). For example, interventions intended to prevent or combat depressive symptoms could be tailored to suit the personality styles of individuals who are vulnerable to depression and remedy an area of vulnerability. Two personality dimensions that have been identified as underlying depressive experiences are dependency and self-criticism (Blatt, D’Afflitti, & Quinlan, 1976). Self-critical individuals are harshly critical of themselves and their concerns are internally-focused. These individuals tend to have intense feelings of insecurity, guilt, and inferiority. Self-critical people set high standards which they strive to meet, driven by fear of failure (Blatt & Zuroff, 1992).

Dependent individuals have feelings of neglect and helplessness, extreme insecurity in relationships and insatiable needs for reassurance (Blatt & Zuroff, 1992). They are preoccupied with relationships and experience chronic fears of being rejected or abandoned (Blatt et al., 1976). They strive to be close to others, craving reassurance. The core motivation of dependent people is to gain and preserve supportive relationships (Bornstein, 1992).

There is substantial evidence to suggest that these personality styles confer a vulnerability to clinical episodes of depression, over and above the role of previous episodes (Mongrain & Leather, 2006). Dependency and self-criticism have been linked to depression and depression severity (Luyten et al., 2007) and both personality constructs are related to higher levels of negative affect (Mongrain & Zuroff, 1995). Within a clinical context, dependency and self-criticism have been shown to differentiate between two distinct themes of depressive experiences: introjective and anaclitic (Blatt, Quinlan, Chevron, McDonald, & Zuroff, 1982). Self-critics are more prone to experience introjective depression, which is characterized by intense feelings of worthlessness and inadequacy, and fears of failure, while dependent individuals are vulnerable to anaclitic depression, characterized by feelings of dependence and weakness, fears of losing others, and the need to be close to others (Blatt et al., 1976; Zuroff, Igreja, & Mongrain, 1990). While both self-criticism and dependency have been linked to depression, the focus here is on dependency because the cultivation of kindness is expected to be particularly profitable for those characterized by dependent patterns in interpersonal relationships.

It should be noted that self-criticism and dependency are not mutually exclusive personality styles and individuals can be high on both or neither (Blatt et al., 1976). This is important to take into account when determining vulnerability to depression because those high on both facets appear to be susceptible to a more severe form of clinical depression (Blatt et al., 1982). Additionally, the co-occurrence of dependency and self-criticism is strongly associated with the recurrence of depression (Mongrain & Leather, 2006).

These personality styles, dependency and self-criticism, occur when one of two fundamental developmental tasks is distorted (Blatt & Maroudas, 1992). These tasks are the

capacity to form stable, satisfying interpersonal relationships and the formation of a stable, realistic, and positive identity. The exaggeration of one developmental pathway at the expense of the other can result in a dependent personality style or a self-critical personality style. For example, the overemphasis of maintaining one's interpersonal bonds through reassurance- and proximity-seeking can compromise the development of one's identity.

These disruptions in developmental processes can have their roots in childhood. Inconsistent, depriving, or overindulgent parenting leads to an anxious or ambivalent insecure attachment, which can in turn develop into dependency (Blatt & Maroudas, 1992; Zuroff, & Fitzpatrick, 1995). Disturbances in attachment relationships can lead to impaired mental representations of the self and others that later influence functioning in close relationships (Blatt & Homann, 1992). A parent who is unreliable, unavailable, or neglectful can lead to insecurities around the availability of care and nurturance. This creates a chronic preoccupation with interpersonal bonds, or dependency in a child which carries on into adulthood. The child never forms a stable mental representation of a caring parent and, without this internalization, the child never learns to self-soothe, leading to an overreliance on others for reassurance and support.

These mental representations of one's parents have been found to exert an influence on interpersonal behaviours (Mongrain, 1998). Dependent individuals have been found to expect favourable responses from their parents for friendly and submissive behaviours, but not for assertive or less prosocial acts. As a result, prosocial and passive behaviours are maintained and reinforced. For example, dependent people will attempt to placate others and behave in ways that will elicit positive responses, in order to avoid the possibility of rejection. As such, dependent women have been shown to defer to friends when their answers disagree, rather than contest the disagreement, in attempts to curtail conflict (Santor, & Zuroff, 1997). In a study of college

roommates, dependent students were perceived by their roommates as being warm, affectionate, and friendly (Mongrain, Lubbers, & Struthers, 2004). Consequently, dependent people elicited favourable responses from their roommates, despite having high levels of depression.

Additionally, dependent people tend to perceive receiving greater social support from peers than do self-critical people, and their peers report having more interpersonal contact and giving more social support to dependent individuals (Mongrain, 1998).

Despite this, there is also evidence that dependency is linked to rejection from others. During a conflict-resolution task, dependent women's partners became less positive and exhibited greater hostility towards the women, even though the women acted in a loving way (Mongrain, Vettese, Shuster, & Kendal, 1998). Another study found that depressed, dependent college students had progressively less contact with their roommates over the school year, and these roommates reported a high level of hostility towards the dependent person (Hokanson & Butler, 1992). These results are consistent with theories on reassurance-seeking and depression (Pettit & Joiner, 2006). Depressed individuals are prone to seek reassurance from others to assure themselves they are cared for (Joiner & Metalsky, 1995). When reassurance comes, the depressed person doubts the sincerity of the reassurance and attributes it to pity. However, they still crave reassurance and so repeatedly seek it, even while they doubt the genuineness. This repetitive pattern causes the other person to become frustrated and eventually rejecting towards the depressed individual, which can maintain or worsen the depression. Support for this theory has shown that excessive reassurance-seeking is a specific vulnerability factor for depression (Joiner & Metalsky, 2001; Joiner, Metalsky, Gencoz, & Gencoz, 2001). Thus, dependent individuals, who crave reassurance of affection and closeness, may inadvertently create negative interpersonal contexts where rejection is more likely.

Interpersonal stress has been found to be associated with high levels of illness in dependent college students (Bornstein, 1995). Family- and friend-related stress was also found to interact with dependency and predict depression (Shahar, Joiner, Zuroff, & Blatt, 2004). Further, Zuroff and Mongrain (1987) found that dependent female college students reported more anaclitic depression in response to a hypothetical situation involving a romantic break-up than in response to a failure situation. Overall, the combination of vulnerability to interpersonal disruptions and dysfunctional interpersonal patterns is problematic for dependent individuals and must be taken into account when seeking to improve their well-being.

Dependency has been further categorized into immature and mature forms (Blatt, Zohar, Quinlan, Zuroff, & Mongrain, 1995; Rude & Burnham, 1995; Schulte, Mongrain, & Flora, 2008). These facets are also known as neediness and connectedness, respectively. Needy individuals are characterized by extreme anxiety about rejection (Rude & Burnham, 1995) and are driven by a need for closeness, relying on others to alleviate their insecurities (Schulte, Mongrain, & Flora, 2008). Connected individuals value relationships and are similarly motivated interpersonally, but are sensitive to the needs of others (Rude and Burnham, 1995) and feel comfortable with closeness (Whiffen, Aube, Thompson, & Campbell, 2000). Neediness is associated with more problematic interpersonal behaviours; partners of needy individuals rated their behaviour as more submissive and interpersonally cold, compared to individuals high on connectedness. Only neediness has been consistently associated with increased risk for depression (Cogswell, Alloy, & Spasojevic, 2006; Rude & Burnham, 1995; Whiffen et al., 2000) even when controlling for past episodes of depression (Schulte et al., 2008), and has also been related to vulnerability, unassertiveness, and being self-conscious (Dunkley, Blankstein, Zuroff, Lecce, and Hui, 2006). Conversely, connectedness has been associated with warmth, altruism,

and agreeableness, and is considered a less maladaptive form of dependency (McBride, Zuroff, Bacchioni, & Bagby, 2006).

Based on the evidence supporting the link between depression and neediness, there have been some attempts to customize interventions for individuals with this vulnerability. While there has been success with interventions that increase well-being for self-critical individuals, such as practicing optimism (Shapira & Mongrain, 2010) and cultivating gratitude (Sergeant & Mongrain, 2011), and practicing self-compassion for individuals high on connectedness (Shapira & Mongrain, 2010), no study yet has found a self-help intervention that is specifically effective for needy individuals. In fact, some positive interventions have actually been found to have detrimental effects for those high on neediness (Sergeant & Mongrain, 2011). It was theorized that the lack of interpersonal aspects in these interventions was problematic for needy people, who rely on others for well-being. It is likely that interventions without personal contact will be ineffective for needy individuals, something that must be considered in light of the online medium.

The current study targeted the interpersonal deficiencies and vulnerabilities characteristic of needy persons. As outlined above, needy individuals have a tendency for excessive reassurance-seeking which can bring about rejecting responses from loved ones, triggering their insecurities and vulnerabilities. These problematic relationship dynamics can exacerbate depressive states in needy people. Social support has been found to alleviate the adverse effects of interpersonal stress on dependent people (Bornstein, 1995) and the presence of significant others has been found to reduce stress in dependent people during interpersonal tasks (Vettese & Mongrain, 2000). The interpersonal context of needy individuals is inextricably linked to their

happiness. Therefore, if a positive psychology intervention is going to benefit needy people, it will have to enhance their interpersonal contexts and meet their interpersonal needs.

Kindness

There is an increasing body of research on the benefits accrued by being kind and compassionate towards others. For example, studies on volunteering have found that, for older adults, being a volunteer can protect against decreases in psychological well-being (Greenfield & Marks, 2004) and reduce depression (Musick & Wilson, 2003), as well as enhance well-being (Thoits & Hewitt, 2001). Giving and receiving social support is associated with increased longevity among older adults (Brown, Nesse, Vinoku, & Smith, 2003). However, the effects of receiving support disappeared once giving support was taken into consideration, indicating that providing social support may be more advantageous. Similarly, a correlational study by Schwartz, Meisenhelder, Yunsheng and Reed (2003) found that both helping others and receiving help significantly predicted mental health, but that giving help was associated with higher levels of mental health. Simply noticing kindness can have an impact. Participants who were asked to count the number of kind acts they performed in a week became happier and kinder following the intervention (Otake, Shimai, Tanaka-Matsumi, Otsui, & Fredrickson, 2006).

Other experimental studies have tested the effects of kind acts. Buchanan and Bardi (2010) asked participants to perform acts of kindness on a daily basis for ten days and found a significant increase in life satisfaction from baseline to posttest. Another study gave participants money to be spent that day, either to benefit themselves or to benefit someone else (Dunn, Akin, & Norton, 2007). Participants who spent money on someone else reported greater happiness than those who spent money on themselves. Performing kind acts has been found to not only increase positive affect, but also increase relationship satisfaction for socially anxious individuals (Alden

& Trew, 2012). However, there were no follow-ups in these three studies after the intervention period to see if the effects of kindness interventions were maintained.

Kindness also has an impact on self-image. A study of unrelated bone-marrow donors found that some donors had improved self-evaluations following donation, and many of the donors felt that they were distinguished by their generosity and compassion (Simmons, Schimmel, & Butterworth, 1993). Helping others has been shown to decrease the strength of self-focused moods and increase the strength of other-focused moods, although helping caused overall positive mood changes (Millar, Millar, & Tesser, 1988). Moods were induced in participants by asking them to read positive or negative statements about themselves (self-focused) or a friend (other-focused). Participants who had self-focused negative moods experienced more positive mood changes when they helped others than when they helped themselves.

It is important to note that the relationship between kindness and happiness is bidirectional in that performing kind acts can increase happiness and happiness can increase the number of kind acts. Happy people are more likely to donate blood (O'Malley & Andrews, 1983), volunteer more (Thoits & Hewitt, 2001), and are more motivated to perform kind behaviours (Otake et al., 2006). Not only does offering help to another increase positive affect, but happy people are also more likely to offer help (Yinon & Landau, 1987). This could lead to increasing returns as performing kind acts enhances happiness and participants perform more kind acts as a result.

One study by Mongrain, Chin, and Shapira (2010) studied the effects of performing a compassionate action. This action could be carried out for anyone, friend or stranger, and was compared to a control condition where participants were asked to write about an early memory.

The exercises were completed every day for a week. The hypothesis was that the compassionate condition would be more beneficial in terms of well-being and, specifically, that individuals high in anxious attachment would make greater gains. It was found that those characterized by this insecure attachment style showed significant reductions in depression following the one week intervention. While compassionate actions resulted in lasting increases in self-esteem and happiness overall, anxiously attached individuals did not maintain their gains. It is possible that the important relationships in the participants' lives may not have been impacted by this exercise, providing limited relief for those participants characterized by interpersonal insecurity and dependence.

For the current study, it was hypothesized that a kind act focusing specifically on close relationships may be more beneficial and long lasting for those characterized by neediness. A reason for this is that kindness helps consolidate close relationships. A study by Crocker and Canevello (2008) found that setting compassionate goals predicted the amount of social support the participant received. First year university students completed pre- and posttest surveys of their received and given social support and interpersonal trust, as well as weekly measures of their compassionate and self-image goals. The more compassionate goals the participants set, the more social support they gave to their roommates and the more the social support they received from their roommates in return. Compassionate goals also predicted increased trust if the participant's self-image goals were low. The authors concluded that people with compassionate goals produce a "supportive environment" for themselves. By giving to others, they elicited more social support in return, improving the quality of the relationship. For needy individuals, stimulating support through compassionate actions could enhance their well-being by allowing them to feel more secure in their relationships and thereby addressing their main area of vulnerability.

As previously stated, the fundamental drive behind dependency is to secure and maintain the availability of one's supportive relationships (Bornstein, 1992). Depressed individuals are prone to reassurance-seeking behaviours, which cause conflict in their relationships (Joiner & Metalsky, 1995). Needy individuals constantly attempt to soothe their fears of abandonment by requesting reassurance of care, but this eventually expedites rejection, exacerbating depression. By creating positive relationship encounters, needy participants may be able to capitalize on their agreeable traits (see Mongrain et al., 2004) and avoid the negative habits that can affect their well-being. This intervention should remedy the interpersonal deficiencies of needy individuals and improve their relationship dynamics.

This study sought to determine the effectiveness of a kindness intervention in improving well-being. The active intervention instructed participants to perform a kind act for someone with whom they have, or want to cultivate, a close relationship. The involvement of existing relationships was expected to allow for the creation of a more supportive environment that might help mitigate depressive affect. The exercise period of this study was relatively short compared to therapeutic interventions but in line with existing positive psychology studies. (Mongrain et al., 2010; Seligman et al., 2005; Sergeant & Mongrain, 2011; Shapira & Mongrain, 2010). The exercise was to be completed every second day for three and a half weeks and was compared to a control condition where participants were asked to report and reflect on an interaction they had that day, also every second day for three and a half weeks. Both exercise conditions were prefaced with similar rationales and both involved reporting on interpersonal situations. Only the active condition included a behavioural factor, allowing the kindness component to be more easily isolated. There were two follow-up measurements conducted for this study, at one month and two months following the end of the intervention period.

The hypotheses were as follows:

- 1) Participants in the kindness condition were expected to report greater increases in well-being, operationalized as increases in happiness and decreases in depression, compared to those in the control condition. This prediction is based on the literature documenting the positive impact of helping and the subjective well-being associated with kind acts (Alden & Trew, 2012; Buchanan & Bardi, 2010; Millar et al., 1988; Schwartz et al., 2003). It was expected that these gains would be maintained up to two months following the intervention period.
- 2) Participants high in neediness were expected to particularly benefit from the kindness condition compared to those low in neediness. Needy people are vulnerable to interpersonal stress (Bornstein, 1995) and are motivated to secure and maintain supportive relationships (Bornstein, 1992). The kindness exercise may alleviate these anxieties and stresses by cultivating stronger relationships (Crocker & Canevello, 2008).

Method

Participants

There were 364 initial participants between the ages of 18 to 73, with a mean age of 32.34. The sample was largely female (65.7%), and Caucasian (50.8%). The majority of participants had a post-secondary degree (63.5%) and a yearly income of \$20 000 or less (59.6%). This sample had a baseline mean score of 22.1 on the Centre for Epidemiological Studies of Depression Scale (CES-D; Radloff, 1977), indicating depressive symptoms in the mild to moderate range (Houston, et al., 2001; Zich, Attkisson, & Greenfield, 1990) and approximately 75.6% reported either having had a past incident of depression or being currently

depressed. Details on attrition from the initial sample appear in the “Participant Characteristics” section of the Results.

Participants were recruited between May, 2011, and January, 2012 and were required to be 18 or older and have daily access to the Internet. The wording of the advertisement can be found in Appendix A. There were no geographic limitations to participation and the sample was international, with almost half from North America (45.9%) and over a third from Asia (34.3%). Recruitment was conducted mainly online, through advertisements on Facebook, Kijiji, Craigslist, and Google Ads, as well as postings on Youtube and Twitter. Other advertising avenues included postings on online well-being and mental health websites. The majority of participants were recruited through Google Ads.

The incentive for participation was three \$600 draws. Participants were entered into each draw as they completed each of the three posttest assessments, which took place immediately at the end of the exercise period, one month later, and two months later. All aspects of the study were administered online.

Measures

Depressive Experiences Questionnaire (DEQ). The DEQ is a 66-item, self-report measure of dependent and self-critical personality styles (Blatt et al., 1976). Participants rate each item on a seven-point Likert scale that ranges from strong disagreement (1) to strong agreement (7) to indicate the degree they endorse different life experiences associated with depression. The three orthogonal factors that make up the DEQ are Dependency, Self-Criticism and Efficacy. Dependency has been further divided into mature (connectedness) and immature (neediness) dependency (Rude & Burnham, 1995).

The scales of the DEQ have strong internal consistency, with Cronbach's alphas of .80 to .81 for Dependency, .75 to .77 for Self-Criticism, and .69 to .73 for Efficacy. The DEQ has also demonstrated strong discriminant validity and convergent validity with the Anaclitic and Introjective Dysfunctional Attitude Scales (DAS) which measure analogous constructs to Dependency and Self-Criticism (Blaney & Kutcher, 1991). Additionally, the DEQ has shown high test-retest reliability, with correlations of .79 for both Dependency and Self-Criticism over a year (Zuroff et al., 1990).

Centre for Epidemiological Studies Depression Scale (CES-D). The CES-D is a 20-item, self-report measure that asks participants about the frequency of depressive symptoms during the past week (Radloff, 1977). The four-point scale allows participants to rate each item from 'rarely or none of the time' (1) to 'most or all of the time' (4). The CES-D has demonstrated high internal consistency with a Cronbach's alpha of .91 (Schulte et al., 2008). The CES-D is also effective at discriminating individual differences in symptom severity (Radloff, 1977), performing as well as or better than other frequently-used measures such as the Beck Depression Inventory (Santor, Zuroff, Ramsay, Cervantes, & Palacios, 1995).

Orientations to Happiness Scale (OHS). The OHS is an 18-item scale that assesses degree to which the participant endorses three approaches to happiness: engagement, pleasure, or meaning (Peterson et al., 2005). The five-point scale rates each item from 'not like me at all' to 'very much like me'. The pleasure subscale is similar to the construct of hedonic well-being, the meaning construct is similar to eudemonic well-being, and engagement captures the idea of "flow". This measure has demonstrated high internal consistency, with Cronbach's alphas of .82 for pleasure, .72 for engagement, and .82 for meaning, and convergent validity with a measure of life satisfaction (Peterson et al., 2005). While each of the three subscales has been shown to be

correlated with life satisfaction, engagement and meaning have stronger correlations with life satisfaction than does the pleasure subscale. The intercorrelations among the three subscales are moderate.

Procedure

After registering online and reading the consent form (See Appendix B), participants were directed to a set of baseline measures. These included a demographics questionnaire and the measures described in the previous section: the DEQ, the CES-D and the OHS. Copies of these measures can be found in Appendix C. Participants were given 48 hours to complete the questionnaires, after which time they lost any information they'd already saved. Participants were randomly assigned to an exercise condition and provided with a rationale for the benefit of their activity. They were also emailed a copy of their rationale and their exercise instructions. This study is part of a larger project that features 12 possible exercise conditions. The two conditions concerned here are the kindness condition and a control condition. The rationale and instructions for these conditions can be found in Appendix D.

The next day, participants were emailed and asked to return to the website to begin. In the treatment condition, participants were instructed to perform an act of kindness over the next two days for someone with whom they want to strengthen a close relationship. Two days later, the participants were sent an email asking them to return to the website to report back and describe the act of kindness they performed and were given instructions to perform a new kind act. They were told that this act could be directed at the same person or someone new. Participants were asked to complete a total of 12 kind acts over 25 days and report on each one. In the control condition, participants were instructed to describe an interaction they had that day with someone with whom they had a close relationship. Participants were asked to describe 12 interactions over

the same time period and with the same frequency as those in the active intervention. Participants received reminder emails every two days asking them to log on to the website and giving them their exercise instructions.

After finishing their final exercise, participants were sent to the first posttest assessment. They had 48 hours to complete the posttest questionnaires, which included the CES-D and the OHS. Participants who completed these were entered into the first draw. Two days later, a copy of their exercise instructions was sent to the participants in case they wished to pursue it on their own following the treatment period. No demands were placed on this additional component. One month after the posttest questionnaires, participants were emailed an invitation to return for their one-month assessment, which included the CES-D, and the OHS. After completion, participants were entered into the second draw. The same occurred at the final two-month assessment when participants were entered into the third and final draw. Two weeks and six weeks following posttest, participants were sent reinforcement emails that included the participants' exercise instructions so they could continue using the exercise if they wished. The debriefing for this study included relevant research into this area of psychology and can be found in Appendix E.

Results

Participant Characteristics

In this study, a total of 364 participants completed the baseline measures and were randomly assigned to either the kindness condition ($n = 172$) or the control condition ($n = 192$). Out of the original sample, only 28.8% ($n = 105$) completed the posttest measures, 31.0% ($n = 113$) completed the one month follow-up, and 20.9% ($n = 76$) completed the two month follow-up. This rate of attrition is similar to that of other online studies (Dandurand, Shultz, & Onishi, 2008). The sample sizes for each condition at each time point can be seen in Table 1. The

low response rate at posttest was potentially due to a lack of clarity in the information given to participants about the time limit for completing this follow-up. There was some ambiguity in the original instructions emailed to participants. Partway through data collection, these instructions were modified but some participants may have missed completing these measures in the initial stages of the project. However, those participants were still able to complete the follow-up measures.

Participants who completed all measures at all four time points were more heavily weighted in the statistical analysis so it is important to consider the characteristics of this group. Independent sample *t*-tests were used to compare the completers ($n = 49$) with non-completers ($n = 315$) on a number of demographic and baseline variables. Completers scored lower on neediness ($t(362) = 2.01, p = .045$ (two-tailed)), scored higher on the OTH-Meaning at baseline ($t(362) = -2.65, p = .008$ (two-tailed)), and scored lower on the CES-D at baseline ($t(362) = 2.42, p = .016$ (two-tailed)). Chi-square tests of independence were used to compare completers and non-completers on ethnicity and country of origin. Completers were more likely to be Caucasian ($\chi^2(1, N = 364) = 4.75, p = .032$) and were more likely to be from North America ($\chi^2(1, N = 364) = 6.89, p = .013$). Therefore, those who completed all follow-up measures were more likely to be Caucasian and to originally be from North America, and reported being less needy, happier in relation to meaning, and less depressed at baseline.

Correlations

A correlation matrix was constructed to examine the relationships between the demographic and study variables at baseline (see Table 2). Neediness was associated with higher depression and lower scores on meaning and engagement at baseline. Neediness was also negatively correlated with age and income, and needy people were more likely to be female.

Given these significant correlations, age, income and gender were controlled for in the subsequent analyses.

Data-Analytic Strategy

Multilevel modeling was used to test the hypotheses in this study. This approach allows for participants with missing data to be included in the analysis, which was necessary given the high level of attrition in our sample. Multilevel modeling provides less biased estimates of the fixed factors and accounts for the random effects of differences between individuals: different rates of change over time, different intercepts, and the different covariances of slopes and baseline scores. These random effects account for the variance that is not explained by the fixed effects. Multilevel modeling thus allows researchers to model both the between and within subject regression and requires fewer assumptions compared to other data analytic methods such as analysis of variance.

Multilevel models were created for each dependent variable and full maximum likelihood estimation was used to estimate the model parameters. This method estimates the parameters so that the observed data has the greatest likelihood of occurring in the predicted distribution. Maximum likelihood was used, rather than restricted maximum likelihood, as there were sufficient observations per cluster (a possible set of four observations per individual participant) and more than 20 clusters (individual participants) (Snijders & Bosker, 2012). Each model included the random effects specified previously, a random effect for time and the fixed effects variables of condition, neediness, and treatment completion. The mean score on neediness within each condition was subtracted from the individual scores in order to obtain a contextualized variable that would more precisely estimate the within subject effects. 'Treatment completion' was a fixed factor variable created to evaluate the changes due to the treatment that occurred

after baseline. Essentially, treatment completion models the amount of change in the intercept after baseline. In contrast with the 'time' variable which takes into account differences over the entire study period, this factor was utilized to isolate the immediate response to the intervention at posttest. Each model also included the following interaction terms for these four variables:

- 1) time by condition to compare the effects of the kindness versus control conditions over the entire course of the study;
- 2) time by neediness to determine whether this personality variable produced different rates of change over time and across both conditions;
- 3) treatment completion by condition to compare the effectiveness of the kindness versus control conditions immediately at posttest;
- 4) treatment completion by neediness to determine whether this personality variable produced different outcomes at posttest across both conditions;
- 5) condition by neediness to determine whether this personality variable interacted with the effectiveness of the kindness condition versus the control condition;
- 6) time by neediness by condition to determine whether needy individuals profited more from the kindness condition over the course of the study;
- 7) and treatment completion by neediness by condition to establish whether needy individuals might benefit more from the kindness exercise immediately following the intervention period.

Based on the practice of similar studies, the alpha level was set at 0.05.

Depression

The assumption of a normally distributed conditional distribution was found to be violated for this dependent variable. Driven by the apparent positive skew of the CES-D scores,

the pattern of residuals showed linear dependence on the predictors. Other families of distributions were tested, and a Poisson process was assumed, providing the most normal-linked residuals against the linear predictor. This distribution provided link-normalized residuals and a strong theoretical fit. This type of distribution has a positive skew, is bounded by zero, and can be used to model count data (non-negative integers that arise from counting rather than ranking). This is a theoretical match for CES-D scores, which result from counting the frequency of responses to the questionnaire items.¹

The model tested included a series of important predictors and indicators. In the model were three control variables (age, gender, and income), time, the fixed effects (condition, neediness, and treatment completion), and the higher-order interactions previously specified. The random effects of this model indicate that, controlling for the variables listed above, participants' baseline scores of depression varied significantly (Estimate = 0.31, SE = 0.04, $z = 8.48, p < .001$). Additionally, the baseline scores marginally covaried with the rates of change (Estimate = 0.027, SE = 0.014, $z = 1.92, p = .055$), indicating that participants' higher on depression had a lower rate of change compared to those with lower baseline scores. However, the rates of change among individual participants were not significantly different, (Estimate = 0.017, SE = 0.0099, $z = 1.69, p < .091$), indicating that, while there was some variance in the steepness of the slopes, the participants' slopes were somewhat similar on average.

¹ In practice, a Poisson process often encounters overdispersion that can bias parameter estimates. In certain cases, negative binomial models are considered superior. Residual diagnostics indicated this was not the case; these data were generated more closely by a Poisson process with outliers. Techniques to address the overdispersion, specifically the robust sandwich estimator, were employed to unbiased the parameter estimates.

Looking at the fixed effects, there was a significant interaction between treatment completion and condition (Estimate = -0.376, SE = 0.010, $z = -2.59$, $p = .01$). The direction of the estimate indicates that participants in the kindness condition demonstrated a significant reduction in CES-D scores at the time of posttest, in comparison with the control condition. Therefore, those in the kindness condition reported benefitting more at the conclusion of the intervention period. There was a significant main effect for neediness (Estimate = -0.376, SE = 0.010, $z = -2.59$, $p = .01$), indicating that participants who were higher on neediness had higher depression scores at baseline. There was also a significant main effect of time (Estimate = -0.093, SE = .042, $z = -2.00$, $p = .046$), indicating an average decrease in the expected CES-D scores over time in both conditions.

To better understand these results, custom hypothesis testing was done to determine if the expected means for each condition were significantly different at each time point. The expected marginal means can be found in Table 3.² The results of four linear contrasts can be found in Table 4. The results of these tests indicate that the expected means of the two conditions were significantly different at every time point. Additionally, the predicted mean of the kindness condition was higher than the mean of the control condition at baseline, and then became lower at posttest and remained significantly lower up to two months. Taken as a whole, the results indicate that those participants in the kindness condition showed a significant reduction in depression following treatment completion, with a continued downward trend up to two months afterwards. See Figure 1 for a graph of the predicted means for each condition over time.

² The expected marginal means are the predicted responses calculated by the model for a given condition, controlling for the differences in all the other variables.

None of the three-way interactions with neediness were significant, contrary to the hypothesized results, indicating that participants high on neediness did not respond differently to the kindness condition than participants low on neediness.

Happiness

The three subscales of the Orientations to Happiness scale, including meaning, pleasure, and engagement, are discussed separately below. Each model included the control variables (age, gender, and income), time, and the fixed effects of condition, neediness, and treatment completion, as well as the higher-order interactions listed previously.

Meaning

The estimated random effects variance of the model for meaning suggests that, controlling for the fixed effects listed above, the rate of change between participants varied significantly (Estimate = 22.62, SE = 2.09, $z = 10.84$, $p < .001$). This indicates that participants' slopes were very different overall. Additionally, participants' baseline levels of meaning varied significantly (Estimate = 0.65, SE = 0.34, $z = 1.89$, $p = .029$), but the baseline values did not covary with the rates of change (Estimate = -1.11, SE = 0.73, $z = -1.51$, $p = .13$), indicating that starting values did not determine trajectories.

This model should be considered in light of the large estimated random effects. The slopes variance in particular is very large, indicating that individual participants' rates of change were very different, after controlling for the fixed effects. The random effects in this model account for the majority of the variance in the scores while the level 1 predictors account for only approximately a 6.3% reduction in the residual error. This indicates that the differences

between participants are not well predicted by the model. Overall, this model does not have very good predictive power. Given this, the following results should be interpreted cautiously.

Looking at the fixed effects, there was a significant main effect of neediness (Estimate = -1.83, SE = .55, $t = -3.31$, $p < .001$) that indicates participants high on neediness had lower scores on meaning at baseline. There were no other significant main effects and no significant two-way or three-way interactions, contrary to the hypotheses. Condition did not produce changes in meaning scores over time and participants high on neediness did not respond differently to the kindness condition than participants low on neediness on the meaning subscale.

Custom hypothesis testing was done to confirm a lack of significant difference between the two conditions. The expected marginal means per condition at each time point can be found in Table 5. The results of four linear contrasts can be found in Table 6. The results of these tests indicate that the expected means of the two conditions were not significantly different at any time point. Additional contrast estimates indicate that the average slopes of each condition were not significantly different (Coefficient = .734, SE = 0.413, $z = 1.78$, $p = .076$). These results are consistent with the lack of significant effects in the model.

Pleasure

The estimated random effects variance of the model for pleasure suggests that, controlling for the fixed effects, the rate of change between participants varied significantly (Estimate = 18.08, SE = 1.77, $z = 10.19$, $p < .001$). This indicates that participants' slopes were very different overall. Additionally, participants' baseline levels of pleasure varied significantly (Estimate = 0.75, SE = 0.36, $z = 2.08$, $p = .019$), but the baseline values did not covary with the rates of change (Estimate = -.98, SE = 0.67, $z = -1.47$, $p = .14$).

This model should be considered with respect to the large estimated random effects. In particular, the slopes variance was very large, indicating that participants' rates of change were very different after controlling for the fixed effects. The random effects account for the majority of variations in the scores. Specifically, there was only approximately a 6.2% reduction in the residual error due to the level 1 predictors. This indicates that the differences between participants are not well predicted by the model. Given this, the following results should be interpreted cautiously.

Looking at the fixed effects, there was a significant main effect of condition (Estimate = -1.27, SE = 0.596, $t = -2.14$, $p < .033$) that indicates participants in the kindness condition were expected to score lower on pleasure at baseline than those in the control condition. There was also a statistically significant interaction between treatment completion and condition (Estimate = 1.59, SE = .79, $t = 2.01$, $p = .045$), indicating that participants in the kindness condition saw a significant increase in pleasure scores at posttest, in comparison with the control condition. Therefore, those in the kindness condition appear to have a higher orientation to pleasure at the conclusion of the intervention period. However, the significant time by condition interaction (Estimate = -1.03, SE = 0.44, $t = -2.37$, $p = .018$) indicates that participants in the kindness condition reported an overall decrease in pleasure over the course of the entire study. In summary, these results indicate an initial increase in pleasure for those in the kindness control compared to the control condition at posttest, but these gains were not maintained. By the two-month follow-up, participants in the kindness condition were expected to see an overall decrease in pleasure compared to the control group.

Contrary to the hypotheses, none of the three-way interactions with neediness were significant. This indicates that participants high on neediness did not respond differently to the kindness condition than participants low on neediness on the pleasure subscale.

These results were explored through linear contrasts of the expected means of pleasure for each condition at each time point. The expected marginal means can be found in Table 7. The results of four linear contrasts can be found in Table 8. The results of these tests indicate that the expected means of the two conditions were only significantly different at the two month follow-up, where the predicted mean of the control condition is higher than the predicted mean of the kindness condition. Additional contrast estimates indicate that there was a significant difference between the average slopes of each condition (Coefficient = 1.014, SE = 0.426, $z = 2.38$, $p = .017$). The average slope of the kindness condition indicated an overall decrease in pleasure over time, while the average slope of the control condition indicates a slight overall increase. These results suggest that participants in the kindness condition were expected to have lower means at the two month follow-up when compared to participants in the control condition, supporting the previous findings that participants in the control condition saw greater improvement in pleasure.

Engagement

The estimated random effects variance of the model for engagement suggests that, controlling for the variables previously specified, the rate of change between participants varied significantly (Estimate = 11.95, SE = 1.30, $z = 9.16$, $p < .001$), indicating that participants' slopes were very different overall. However, the baseline levels of engagement did not vary significantly (Estimate = 0.096, SE = 0.236, $z = 0.41$, $p = 0.3417$) and the baseline values did not covary with the rates of change (Estimate = 0.106, SE = 0.468, $z = 0.23$, $p = 0.82$).

As with the other two subscales for the happiness measure, this model should be considered with respect to the large estimated random effects. In particular, the slopes variance is large, indicating that participants' rates of change were very different after controlling for the fixed effects. The random effects account for the majority of variations in the scores. Specifically, there was only approximately a 13.3% reduction in the residual error accounted for by the level 1 predictors. This indicates that the differences between participants are not well predicted by the model. Given this, the following results should be interpreted cautiously.

A significant main effect of time was obtained (Estimate = .59, SE = .25, $t = 2.35$, $p < .019$). Given the direction of the estimate, it appears that there is a linear increase in the expected average of the engagement scores over time across both conditions. There was also a significant time by condition interaction (Estimate = -.78, SE = 0.38, $t = -2.04$, $p < .042$). The direction indicates that participants in the kindness condition showed less of an increase in engagement over time. Therefore, while both conditions showed an increase in engagement over time, the increase seen in the kindness condition was lower. Additionally, there was a significant main effect of neediness (Estimate = -1.25, SE = .46, $t = -2.71$, $p < .01$), indicating that participants high on neediness had lower scores on engagement at baseline. Contrary to the hypotheses, none of the three-way interactions with neediness were significant. This indicates that participants high on neediness did not respond differently to the kindness condition than participants low on neediness on the engagement subscale.

Custom hypothesis testing was done to determine whether the expected means of engagement for each condition were significantly different at each time point. The expected marginal means can be found in Table 9. The results of four linear contrasts can be found in Table 10. The results of these tests indicate that the expected means of the two conditions were

not significantly different at any time point. The significant differences between the control group and the kindness group as seen in the model did not appear, indicating this effect may be weak.

Summary

Multilevel modeling supports the effectiveness of the kindness condition over the control condition in decreasing symptoms of depression. Although participants in the kindness condition were significantly higher on depression scores at baseline, they reported a significant decrease at posttest. These improvements were maintained up to two months following the intervention period. With regards to happiness, the results were mixed. Although participants in the kindness condition saw an initial increase in pleasure immediately following the intervention, the control group had significantly higher pleasure scores at the two-month follow-up. Both groups saw improvements in engagement. However, the models for the happiness (OHS) subscales should be interpreted cautiously; they did not predict the data well and the majority of the variance in the OHS models was due to individual slopes variance. Additionally, there were no interactions with neediness found in any model. Participants high on neediness were higher on depression and lower on meaning and engagement at baseline. However, they did not respond differently to the kindness intervention compared to those low on neediness.

Discussion

The aim of this study was to test the effectiveness of a short-term kindness intervention in improving well-being in a community sample. It was hypothesized that performing kind acts within a close relationship would decrease depression and increase happiness, and that these benefits would be sustained for up to two months following the completion of the exercise. It was also predicted that participants who were high on neediness, and therefore susceptible to

depression, would benefit more from this exercise given the hypothesized appeal to their specific motivations and vulnerabilities.

The results provide partial support for these hypotheses. Participants who performed kind acts saw a significant reduction in depression symptoms following the treatment period. Specifically, those in the kindness condition went from being more depressed than the control condition at baseline, to being significantly less depressed at posttest. These improvements were sustained up to two months afterwards, with a downward trend in depression scores that could indicate continued effectiveness of the condition. The impact of kindness in close relationships seen here is consistent with theories about the interpersonal context of depression (Pettit & Joiner, 2006). Depressed people are vulnerable to dysfunctional interpersonal cycles, due to maladaptive behaviours such as reassurance-seeking, that can cause them to be rejected by significant others. Acts of kindness can create more supportive relationship environments and foster social support (Crocker & Canevello, 2008), leading to positive relationship experiences and a secure interpersonal context. As mentioned, this sample of participants began the study with mild to moderate levels of depression. By practicing kindness with their loved ones, these participants likely disrupted the negative cycles that can exacerbate and maintain depression, leading to a significant reduction in symptoms. It's important to note as well that the expected mean depression score in the kindness condition at the two month follow-up was well below the cut-off score for mild depression, usually given as 16 (Zich, et al., 1990).

However, the results for happiness were mixed and did not support the hypotheses. The models tested found no observable differences due to treatment for meaning and were varied with regards to pleasure and engagement. The model for engagement suggested that participants in the kindness condition saw less of an increase compared to those in the control condition;

however this was not supported by the planned contrasts. For pleasure, the results indicate that participants in the kindness condition saw an initial increase following the intervention period, but then evidenced an overall decrease in pleasure in comparison to the control condition by the two month follow-up. Participants appear to have decreased in pleasure following the kindness intervention, contrary to the hypotheses. One potential explanation is that the kindness condition caused a decrease in hedonic priorities. Upon examination, this subscale includes items such as “Life is too short to postpone the pleasure it can provide.” and “In choosing what to do, I always take into account whether it will be pleasurable.”. It is possible that an exercise involving a compassionate act may have run contrary to this hedonistic orientation. However, these explanations are tentative and further research is necessary to determine why kindness was related to an overall decrease in pleasure.

Additionally, the majority of participants had widely varied reactions to the conditions in terms of the happiness subscales and did not follow the paths predicted by the model. One possible explanation for this high variance is that there were unaccounted for moderating variables that would have increased the predictive power of the model. For example, previous research into the benefits of kindness has suggested factors that may moderate the effects of showing compassion. A study by Williamson and Clark (1989) found that helping another person led to improvements in mood only if the participant wanted a communal relationship with the other person, rather than an exchange relationship. A communal relationship involves two partners helping one another in response to needs (e.g., family members), whereas an exchange relationship refers to help provided with the expectation of equal returns (e.g., acquaintances). Based on the design of the study, it would be assumed that participants would choose communal relationships as the focus of their kind acts, but these relationships may still have been based on exchange principles. It has also been suggested that even communal relationships have a

reciprocal basis (Batson, 1993). These exchange principles may be less immediate in an ongoing relationship but could have become apparent over the study period. The types of reciprocation expected may differ on the basis of relationships as well. Possible positive effects of the kindness intervention may have failed if the kind acts were not appreciated by a loved one or did not result in increased support and affection. Future research should further explore this negative side of kindness and elucidate alternative moderating variables. Understanding this relationship may allow future interventions to be more carefully calibrated to participants' individual differences.

It is also possible that, as it appears, the kindness intervention did not influence the trajectories observed for happiness as it was operationalized in this study. The Orientations to Happiness scale measures three ways of being happy (Peterson et al., 2005) rather than specific mood states, likely resulting in trait-based outcomes that would be difficult to influence in the three week intervention period. Future research should utilize happiness measures that are better able to capture fluctuations in mood in the short-term.

Additionally, the hypothesized interactions with neediness were not seen. Participants who were high on neediness did not benefit more from the kindness intervention compared to those low on neediness in either happiness or depression. Performing kind acts was theorized to strengthen needy participants' relationships and so assuage their strong drive for intimacy, while amending their interpersonal deficiencies. While all participants benefitted significantly in terms of depressive symptoms, the superior results expected for needy individuals were not seen.

This could be due to the deep-rooted, global concerns about rejection that needy individuals face and the fact that brief changes in their relationship behaviours would not alter those insecurities. Needy participants, as part of the overall sample, saw a significant decrease in

depression in the kindness condition, which is likely due to increased positive relationship encounters and a more supportive atmosphere. However, needy individuals did not profit more than the average participant perhaps due to the stability of negative schemas associated with depressive vulnerability and these schemas are not so easily amenable to change. Likely, any improvements in the interpersonal context within the few weeks of the intervention period were insufficient to produce significantly larger changes in depression. In other words, this intervention appealed equally to all participants and was not specifically helpful to needy people because it did not effectively combat the vulnerabilities associated with neediness.

An alternative avenue for future research comes from the personality development behind neediness, or immature dependency. This form of interpersonal dependency is theorized to occur when the development of a stable identity is neglected, and the interpersonal developmental pathway is exaggerated (Blatt & Maroudas, 1992). Meeting the interpersonal needs of needy individuals combats only half the issue, while the lack of stable sense of self is ignored. Future attempts to tailor positive psychology interventions for this group might profit from a focus on building up this neglected area of development. Thus, a truly effective intervention may combine both interpersonal and intrapersonal exercises to meet all the needs of needy individuals.

The current study was effective in demonstrating the value of kindness. While the hypotheses were not wholly supported, it is clear that kindness within close relationships can lead to improvement in emotional well-being. The inclusion of a control condition very similar to the kindness condition indicates that the active component of this intervention was the act of kindness. These results corroborate past research on the efficacy of kindness in improving well-being, here through the reduction of depression. With the addition of a two month follow-up not

seen in many previous kindness intervention studies, the long-lasting effects of practicing kindness were demonstrated.

Depression is a debilitating illness that has a lifetime prevalence in Canada of approximately 12.2% (Patten et al., 2006.). Short-term interventions that have the potential to reduce depression in a sustained way are therefore an important aspect of treatment for people in need. In this study, the average level of depression for this sample fell to below the cut-off point of even mild depression, even though the majority of participants began the study in the clinical range. Additionally, the majority of participants reported having a current or past episode of depression. This study has provided new insight into the long term benefits of kindness, and this intervention could credibly be included in treatment packages or self-help exercises offered to those seeking care.

This study also supports the efficacy of online interventions and research. Using the Internet allows researchers to contact participants outside of their geographic regions. This is particularly important in the case of those unable or unwilling to participate in therapeutic interventions or those located far from major research/treatment centres. Additionally, all recruitment, instruction, and contact can be done through email and websites, making these types of studies and exercises more cost-effective and efficient in contacting large numbers of respondents. The Internet provides an alternative medium for delivering positive psychology interventions to large and diverse populations.

Limitations

The high rate of attrition in this study places some limits on the interpretation of the results. Participants who dropped out were, on average, higher on neediness, more depressed, and less happy than participants who completed all time points. The conclusions drawn about the

efficacy of this intervention must be tempered with the consideration that the individuals who were worse off were more likely to drop out prematurely. It is therefore important to note that despite the positive influence on depression, individuals who were more depressed were less likely to complete the intervention and, therefore, could not profit. Future research should examine various forms of delivery to improve retention, as well as investigate how to approach populations that are less likely to adhere.

The sample in this study was also moderately depressed at baseline. It is likely that depressed people were drawn to this study because of its promise to increase well-being. Therefore, the results may not generalize to the total population and the findings may have been more or less profound in a non-depressed sample. The results are also more applicable for individuals interested in self-help interventions, which is appropriate given that this is the intended audience. However, we cannot form conclusions on the absolute benefits of performing acts of kindness across the general population, including those who were underrepresented in our sample (i.e., men, those living outside of North America, and non-Caucasians).

While this exercise was effective at influencing depression, there was no conclusive impact on happiness. This corroborates the idea that depression and happiness are related but distinct aspects of well-being and an intervention that improves one may not necessarily improve the other. Conversely, the limitations of our assessment tool may pre-empt conclusions on the impact of kindness on happy mood states. Though this kindness exercise is appropriate for use in benefitting depression, future researchers may also incorporate other positive psychology interventions for a global approach to well-being.

Conclusion

Overall, this study supports the effectiveness of a brief kindness intervention in reducing depression. The online medium offers an efficient and cost-effective alternative to traditional formats for people in need. Practicing kind acts within the context of a close relationship may be a viable route towards the sustained reduction of depressive symptoms in the general population.

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Table 1

Sample size for kindness and control conditions over time.

	Baseline	Posttest	One Month	Two Months
Kindness	172	50	58	36
Control	192	55	55	40
Total	364	105	113	76

Table 2

Correlation matrix and descriptive statistics for study variables at baseline.

	1	2	3	4	5	6	7	8
1. Age	1.00							
2. Gender ^a	.01	1.00						
3. Income ^b	.34**	.12**	1.00					
4. Neediness ^c	-.22**	.11**	-.12**	1.00				
5. CES-D (baseline) ^d	-.10	.02	-.09	.46**	1.00			
6. OHS-M (baseline) ^e	.09	.03	.01	-.25**	-.28**	1.00		
7. OHS-P (baseline) ^e	-.09	-.12*	-.15**	-.08	-.04	.31**	1.00	
8. OHS-E (baseline) ^e	.07	-.12*	-.08	-.29**	-.10	.48**	.42**	1.00
Mean	32.34	1.66	2.99	.19	22.10	20.82	19.44	17.88
Standard deviation	11.19	.48	2.67	.84	13.15	5.41	4.96	4.34

^a Male = 1, Female = 2. ^b Yearly household income reported as 1 = "Less than \$10,000", 2 = "\$10,000-\$20,000", 3 = "\$20,000-\$30,000", 4 = "\$30,000-\$40,000", 5 = "\$40,000-\$50,000", 6 = "\$50,000-\$60,000", 7 = "\$60,000-\$70,000", 8 = "\$70,000-\$80,000", 9 = "\$80,000-\$90,000", 10 = "\$90,000-\$100,000", 11 = "Above \$100,000". ^c As measured by the Depressive Experiences Questionnaire (Blatt et al., 1995; Rude & Burnham, 1995). ^d Centre for Epidemiological Studies Depression Scale (Radloff, 1977). ^e Orientations to Happiness Scale: Meaning, Pleasure, and Engagement (Peterson, Park, & Seligman, 2005).

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

Table 3

Expected marginal means for the CES-D^a for each condition over time.

Time	Condition	Expected mean (Standard error)	95% CI ^b
Baseline	Control	21.41 (.09)	21.24 – 21.59
	Kindness	22.78 (.09)	22.60 – 22.96
Posttest	Control	19.58 (.07)	19.44 – 19.73
	Kindness	13.48 (.07)	13.34 – 13.62
One Month	Control	16.21 (.06)	16.09 – 16.33
	Kindness	15.64 (.06)	15.53 – 15.76
Two Months	Control	17.86 (.06)	17.74 – 17.98
	Kindness	12.78 (.07)	12.65 – 12.92

^a Centre for Epidemiological Studies Depression Scale (Radloff, 1977). ^b Confidence Interval.

Table 4

Linear contrasts of the expected marginal mean CES-D^a scores by condition at each time point.

Time	Coefficient	Standard error	z	p-value	95% CI ^b
Baseline	-1.36	.13	-10.70	< .001	21.24 – 21.59
Posttest	6.11	.10	61.68	< .001	19.44 – 19.73
One Month	.57	.09	6.33	< .001	.39 – .74
Two Months	5.08	.09	53.66	< .001	4.89 – 5.26

^a Centre for Epidemiological Studies Depression Scale (Radloff, 1977). ^b Confidence Interval.

Table 5

Expected marginal means for the OHS-M^a for each condition over time.

Time	Condition	Expected mean (Standard error)	95% CI ^b
Baseline	Control	21.02 (.38)	20.27 – 21.76
	Kindness	20.61 (.40)	19.82 – 21.40
Posttest	Control	21.67 (.49)	20.72 – 22.62
	Kindness	21.79 (.51)	20.80 – 22.79
One Month	Control	21.94 (.45)	21.06 – 22.82
	Kindness	21.12 (.46)	20.23 – 22.12
Two Months	Control	22.10 (.56)	21.00 – 23.20
	Kindness	20.84 (.60)	19.67 – 22.02

^a Orientations to Happiness Scale: Meaning (Peterson, Park, & Seligman, 2005). ^b Confidence Interval.

Table 6

Linear contrasts of the expected marginal mean OHS-M^a scores by condition at each time point.

Time	Coefficient	Standard error	z	p-value	95% CI ^b
Baseline	.41	.55	0.73	.46	-.68 – 1.49
Posttest	-.12	.70	-0.18	.86	-1.50 – 1.25
One Month	.82	.64	1.27	.20	-.44 – 2.07
Two Months	1.26	.82	1.54	.12	-.34 – 2.86

^a Orientations to Happiness Scale: Meaning (Peterson, Park, & Seligman, 2005). ^b Confidence Interval.

Table 7

Expected marginal means for the OHS-P^a for each condition over time.

Time	Condition	Expected mean (Standard error)	95% CI ^b
Baseline	Control	19.73 (.35)	19.05 – 20.42
	Kindness	19.10 (.37)	18.38 – 19.83
Posttest	Control	19.41 (.47)	18.50 – 20.32
	Kindness	19.81 (.49)	18.86 – 20.77
One Month	Control	19.73 (.43)	18.89 – 20.58
	Kindness	19.15 (.44)	18.89 – 20.00
Two Months	Control	20.00 (.56)	18.91 – 21.01
	Kindness	18.19 (.59)	17.03 – 19.34

^a Orientations to Happiness Scale: Pleasure (Peterson, Park, & Seligman, 2005). ^b Confidence Interval.

Table 8

Linear contrasts of the expected marginal mean OHS-P^a scores by condition at each time point.

Time	Coefficient	Standard error	z	p-value	95% CI ^b
Baseline	.63	.51	1.24	.22	-.37 – 1.63
Posttest	-.40	.67	-0.60	.55	-1.72 – .91
One Month	.58	.61	0.95	.34	-.62 – 1.78
Two Months	1.81	.81	2.24	.03	.23 – 3.40

^a Orientations to Happiness Scale: Pleasure (Peterson, Park, & Seligman, 2005). ^b Confidence Interval.

Table 9

Expected marginal means for the OHS-E^a for each condition over time.

Time	Condition	Expected mean (Standard error)	95% CI ^b
Baseline	Control	17.92 (.30)	17.34 – 18.51
	Kindness	17.84 (.31)	17.22 – 18.45
Posttest	Control	17.86 (.42)	17.02 – 18.69
	Kindness	18.52 (.44)	17.65 – 19.38
One Month	Control	18.11 (.38)	17.86 – 19.33
	Kindness	18.11 (.38)	17.37 – 18.63
Two Months	Control	19.06 (.48)	18.12 – 19.99
	Kindness	18.06 (.51)	17.06 – 19.06

^a Orientations to Happiness Scale: Engagement (Peterson, Park, & Seligman, 2005). ^b Confidence Interval.

Table 10

Linear contrasts of the expected marginal mean OHS-E^a scores by condition at each time point.

Time	Coefficient	Standard error	z	p-value	95% CI ^b
Baseline	.08	.43	0.20	.85	-.73 – .93
Posttest	-.66	.61	-1.08	.28	-1.85 – .54
One Month	.48	.54	0.90	.37	-.56 – 1.53
Two Months	1.00	.69	1.44	.15	-.36 – 2.35

^a Orientations to Happiness Scale: Engagement (Peterson, Park, & Seligman, 2005). ^b Confidence Interval.

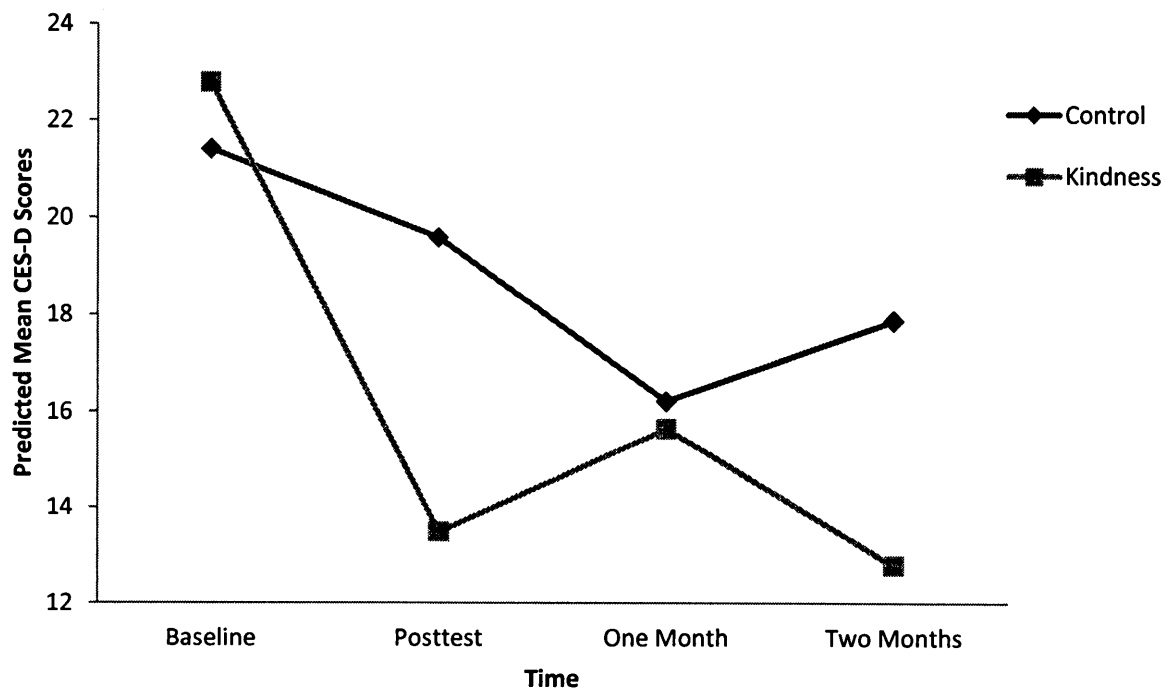


Figure 1. Predicted mean CES-D^a scores by condition over time. Compared to participants in the control condition, those in the kindness condition saw significantly greater decreases in depression over time.

^aCentre for Epidemiological Studies Depression Scale (Radloff, 1977).

Appendix A
Project HOPE Advertisement

Want to feel happier?

Interested in personal growth and emotional well-being? By engaging in 12 brief online activities, you can participate in some exciting new research being carried out at York University. Upon completion, you will be entered in up to three \$600 draws!

Appendix B

Consent Form

Consent Form

This study will examine the short- and long-term effects of various online activities or exercises on personal growth and emotional well-being. You must be 18 years old to participate.

Participation in this study will involve logging on to this website on 12 separate days and will consist of the following steps:

On the first day you will complete a set of personality and mood questionnaires on this website. This phase of the study will require approximately 30 minutes. You are then randomly assigned to one of the online activities being studied.

You will receive reminder e-mails asking you to return to the website to complete your activity. You will complete your exercise every other day (you are allowed to miss some days). It will take 5 to 10 minutes each time. Afterwards, you will also be asked to complete some questionnaires (15 minutes).

In order to assess long-term effects of these activities, we will email you to complete some questionnaires 1 and 2 months later. These will take approximately 15 minutes to complete. You can stop participating at any time, and do not have to complete all aspects of the project.

Participants will be entered in a draw for \$600 after completing their activity. After completing the questionnaires at 1 month, participants will be entered into another \$600 draw. After completing the questionnaires at 2 months, participants will be entered into another \$600 draw. Thus, an individual completing all phases of the study will be entered into three separate \$600 draws. Odds of winning depend on the final number of participants completing each phase of the study. Failure to participate in the first follow-up session does not exclude the possibility of participating in the second follow-up.

Risks and Benefits: There are no evident risks inherent in this project. In previous research of this type, several participants have reported improvements in their well-being, such as feeling happier over a period of months. If you would like additional resources for psychological help, we can easily provide you with more information. Simply contact us at project@yorku.ca.

Voluntary Participation: Your participation in the study is completely voluntary. You may refrain from answering any questions you are not comfortable with.

Withdrawal from the Study: You can stop participating in the study at any time, for any reason, if you so decide. Your decision to stop participating, or to refuse to answer particular questions, will not affect your relationship with the researchers, York University, or any other group associated with this project. In the event you withdraw from the study, all associated data collected will be immediately destroyed wherever possible.

Confidentiality: All information, including your online responses for the exercises and questionnaires will be kept confidential to the limits allowed by law. Participants will be assigned ID numbers, which will be used in place of names in the custody of the research team and which will be unavailable to others. The master list matching names (and contact information) to ID numbers will only be available to the researcher in charge of contacting you (e.g., for purposes of winning one of the three \$600 draws). Please note that the data will be collected via the project website (www.projecthopecanada.com) and stored in a password secured database on a password secured server and will only be accessible by the research team. All information derived from this study will be used for research purposes only, and the data obtained will be destroyed within a year of the final publication. All information you supply during the research will be held in confidence and your name will not appear in any report or publication of the research.

This research has been reviewed and approved by the Human Participants Review Sub-Committee, York University's Ethics Review Board and conforms to the standards of the Canadian Tri-Council Research Ethics guidelines. If you have any questions about this process or about your rights as a participant in the study, please contact the Sr. Manager & Policy Advisor for the Office of Research Ethics, 5th Floor, York Research Tower, York University (telephone 416-736-5914 or e-mail ore@yorku.ca). You may also contact Dr. Mongrain, the project director (416) 736-5515, Ext. 66193 or at project@yorku.ca with any concerns you may have.

Participant Consent

By clicking the Agree icon below you are stating that you understand the above information and agree to participate in this study conducted by Dr. Mongrain. You are not waiving any legal rights by signing this form. This does not commit you to all phases of the project and you may withdraw from it at any time. A copy of this page will be sent to the email address you have provided for us.

Appendix C

Scales

- 1) Depressive Experiences Questionnaire (DEQ)
- 2) Centre for Epidemiological Studies of Depression (CES-D)
- 3) Orientations to Happiness Scale (OHS)

(1) DEQ

Listed below are a number of statements concerning personal characteristics and traits. Read each item and decide whether you agree or disagree and to what extent. If you strongly agree, circle 7; if you strongly disagree, circle 1; The midpoint, if you are neutral or undecided, is 4.

	Strongly Disagree						Strongly Agree
1. I set my personal goals and standards as high as possible.	1	2	3	4	5	6	7
2. Without support from others who are close to me, I would be helpless.	1	2	3	4	5	6	7
3. I tend to be satisfied with my current plans and goals, rather than striving for higher goals.	1	2	3	4	5	6	7
4. Sometimes I feel very big, and other times I feel very small.	1	2	3	4	5	6	7
5. When I am closely involved with someone, I never feel jealous.	1	2	3	4	5	6	7
6. I urgently need things that only other people can provide.	1	2	3	4	5	6	7
7. I often find that I don't live up to my own standards or ideals.	1	2	3	4	5	6	7
8. I feel I am always making full use of my potential abilities.	1	2	3	4	5	6	7
9. The lack of permanence in human relationships doesn't bother me.	1	2	3	4	5	6	7
10. If I fail to live up to expectations, I feel unworthy.	1	2	3	4	5	6	7
11. Many times I feel helpless.	1	2	3	4	5	6	7
12. I seldom worry about being criticized for things I have said or done.	1	2	3	4	5	6	7
13. There is a considerable difference between how I am now and how I would like to be.	1	2	3	4	5	6	7
14. I enjoy sharp competition with others.	1	2	3	4	5	6	7
15. I feel I have many responsibilities that I must meet.	1	2	3	4	5	6	7
16. There are times when I feel "empty" inside.	1	2	3	4	5	6	7
17. I tend not to be satisfied with what I have.	1	2	3	4	5	6	7
18. I don't care whether or not I live up to what other people expect of me.	1	2	3	4	5	6	7

	Strongly Disagree			Strongly Agree			
	1	2	3	4	5	6	7
19. I become frightened when I feel alone.	1	2	3	4	5	6	7
20. I would feel like I'd be losing an important part of myself if I lost a very close friend.	1	2	3	4	5	6	7
21. People will accept me no matter how many mistakes I have made.	1	2	3	4	5	6	7
22. I have difficulty breaking off a relationship that is making me unhappy.	1	2	3	4	5	6	7
23. I often think about the danger of losing someone who is close to me.	1	2	3	4	5	6	7
24. Other people have high expectations of me.	1	2	3	4	5	6	7
25. When I am with others, I tend to devalue or "undersell" myself.	1	2	3	4	5	6	7
26. I am not very concerned with how other people respond to me.	1	2	3	4	5	6	7
27. No matter how close a relationship between two people is, there is always a large amount of uncertainty and conflict.	1	2	3	4	5	6	7
28. I am very sensitive to others for signs of rejection.	1	2	3	4	5	6	7
29. It's important for my family that I succeed.	1	2	3	4	5	6	7
30. Often, I feel I have disappointed others.	1	2	3	4	5	6	7
31. If someone makes me angry, I let him (her) know how I feel.	1	2	3	4	5	6	7
32. I constantly try, and very often go out of my way, to please or help people I am close to.	1	2	3	4	5	6	7
33. I have many inner resources (abilities, strengths).	1	2	3	4	5	6	7
34. I find it very difficult to say "No" to the requests of friends.	1	2	3	4	5	6	7
35. I never really feel secure in a close relationship.	1	2	3	4	5	6	7
36. The way I feel about myself frequently varies: there are times when I feel extremely good about myself and other times when I see only the bad in me and feel like a total failure	1	2	3	4	5	6	7
37. Often, I feel threatened by change.	1	2	3	4	5	6	7
38. Even if the person who is closest to me were to leave, I could still "go it alone."	1	2	3	4	5	6	7

	Strongly Disagree			Strongly Agree			
39. One must continually work to gain love from another person: that is, love has to be earned.	1	2	3	4	5	6	7
40. I am very sensitive to the effects my words or actions have on the feelings of other people.	1	2	3	4	5	6	7
41. I often blame myself for things I have done or said to someone.	1	2	3	4	5	6	7
42. I am a very independent person.	1	2	3	4	5	6	7
43. I often feel guilty.	1	2	3	4	5	6	7
44. I think of myself as a very complex person, one who has "many sides."	1	2	3	4	5	6	7
45. I worry a lot about offending or hurting someone who is close to me.	1	2	3	4	5	6	7
46. Anger frightens me.	1	2	3	4	5	6	7
47. It is not "who you are," but "what you have accomplished" that counts.	1	2	3	4	5	6	7
48. I feel good about myself whether I succeed or fail.	1	2	3	4	5	6	7
49. I can easily put my own feelings and problems aside, and devote my complete attention to the feelings and problems of someone else.	1	2	3	4	5	6	7
50. If someone I cared about became angry with me, I would feel threatened that he (she) might leave me.	1	2	3	4	5	6	7
51. I feel comfortable when I am given important responsibilities.	1	2	3	4	5	6	7
52. After a fight with a friend, I must make amends as soon as possible.	1	2	3	4	5	6	7
53. I have a difficult time accepting weaknesses in myself.	1	2	3	4	5	6	7
54. It is more important that I enjoy my work than it is for me to have my work approved.	1	2	3	4	5	6	7
55. After an argument, I feel very lonely.	1	2	3	4	5	6	7
56. In my relationships with others, I am very concerned about what they can give to me.	1	2	3	4	5	6	7
57. I rarely think about my family.	1	2	3	4	5	6	7

	Strongly Disagree				Strongly Agree		
58. Very frequently, my feelings toward someone close to me vary: there are times when I feel completely angry and other times when I feel all-loving towards that person.	1	2	3	4	5	6	7
59. What I do and say has a very strong impact on those around me.	1	2	3	4	5	6	7
60. I sometimes feel that I am "special."	1	2	3	4	5	6	7
61. I grew up in an extremely close family.	1	2	3	4	5	6	7
62. I am very satisfied with myself and my accomplishments.	1	2	3	4	5	6	7
63. I want many things from someone I am close to.	1	2	3	4	5	6	7
64. I tend to be very critical of myself.	1	2	3	4	5	6	7
65. Being alone doesn't bother me at all.	1	2	3	4	5	6	7
66. I very frequently compare myself to standards or goals.	1	2	3	4	5	6	7

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(2) CESD

Using the scale below, indicate the number which best describes how often you felt or behaved this way, DURING THE PAST WEEK.

- 1 = Rarely or none of the time (less than 1 day)
- 2 = Some or a little of the time (1-2 days)
- 3 = Occasionally or a moderate amount of time (3-4 days)
- 4 = Most or all of the time (5-7 days)

During the past week:

- _____ 1. I was bothered by things that usually don't bother me.
- _____ 2. I did not feel like eating; my appetite was poor.
- _____ 3. I felt that I could not shake off the blues even with the help from my family or friends.
- _____ 4. I felt that I was just as good as other people.
- _____ 5. I had trouble keeping my mind on what I was doing.
- _____ 6. I felt depressed.
- _____ 7. I felt that everything I did was an effort.
- _____ 8. I felt hopeful about the future.
- _____ 9. I thought my life had been a failure.
- _____ 10. I felt fearful.
- _____ 11. My sleep was restless.
- _____ 12. I was happy.
- _____ 13. I talked less than usual.
- _____ 14. I felt lonely.
- _____ 15. People were unfriendly.
- _____ 16. I enjoyed life.
- _____ 17. I had crying spells.
- _____ 18. I felt sad.
- _____ 19. I felt that people disliked me.
- _____ 20. I could not get going.

(3) Ways of Life

All of the questions reflect statements that many people would find desirable, but we want you to answer only in terms of whether the statement describes how you actually live your life. Please be honest and accurate!

1. Regardless of what I am doing, time passes very quickly.
 Very Much Like Me
 Mostly Like Me
 Somewhat Like Me
 A Little Like Me
 Not Like Me at All
2. My life serves a higher purpose.
 Very Much Like Me
 Mostly Like Me
 Somewhat Like Me
 A Little Like Me
 Not Like Me at All
3. Life is too short to postpone the pleasures it can provide.
 Very Much Like Me
 Mostly Like Me
 Somewhat Like Me
 A Little Like Me
 Not Like Me at All
4. I seek out situations that challenge my skills and abilities.
 Very Much Like Me
 Mostly Like Me
 Somewhat Like Me
 A Little Like Me
 Not Like Me at All
5. In choosing what to do, I always take into account whether it will benefit other people.
 Very Much Like Me
 Mostly Like Me
 Somewhat Like Me
 A Little Like Me
 Not Like Me at All
6. Whether at work or play, I am usually "in a zone" and not conscious of myself.
 Very Much Like Me
 Mostly Like Me
 Somewhat Like Me
 A Little Like Me
 Not Like Me at All
7. I am always very absorbed in what I do.
 Very Much Like Me
 Mostly Like Me
 Somewhat Like Me

- A Little Like Me
 Not Like Me at All
8. I go out of my way to feel euphoric.
 Very Much Like Me
 Mostly Like Me
 Somewhat Like Me
 A Little Like Me
 Not Like Me at All
9. In choosing what to do, I always take into account whether I can lose myself in it.
 Very Much Like Me
 Mostly Like Me
 Somewhat Like Me
 A Little Like Me
 Not Like Me at All
10. I am rarely distracted by what is going on around me.
 Very Much Like Me
 Mostly Like Me
 Somewhat Like Me
 A Little Like Me
 Not Like Me at All
11. I have a responsibility to make the world a better place.
 Very Much Like Me
 Mostly Like Me
 Somewhat Like Me
 A Little Like Me
 Not Like Me at All
12. My life has a lasting meaning.
 Very Much Like Me
 Mostly Like Me
 Somewhat Like Me
 A Little Like Me
 Not Like Me at All
13. In choosing what to do, I always take into account whether it will be pleasurable.
 Very Much Like Me
 Mostly Like Me
 Somewhat Like Me
 A Little Like Me
 Not Like Me at All
14. What I do matters to society.
 Very Much Like Me
 Mostly Like Me
 Somewhat Like Me
 A Little Like Me
 Not Like Me at All
15. I agree with this statement: "Life is short—eat dessert first."
 Very Much Like Me

- Mostly Like Me
 Somewhat Like Me
 A Little Like Me
 Not Like Me at All
16. I love to do things that excite my senses.
 Very Much Like Me
 Mostly Like Me
 Somewhat Like Me
 A Little Like Me
 Not Like Me at All
17. I have spent a lot of time thinking about what life means and how I fit into its big picture.
 Very Much Like Me
 Mostly Like Me
 Somewhat Like Me
 A Little Like Me
 Not Like Me at All
18. For me, the good life is the pleasurable life.
 Very Much Like Me
 Mostly Like Me
 Somewhat Like Me
 A Little Like Me
 Not Like Me at All

Appendix D

Conditions

- 1) Rationale for kindness condition
- 2) Instructions for kindness condition (First day)
- 3) Instructions for kindness condition (All subsequent days)
 - 4) Rationale for control condition
 - 5) Instructions for control condition

(1) Kindness Rationale

Kindness is a character strength that means acting supportive, kind and caring towards others. This can involve doing favours and good deeds for others or helping them. Research has shown that being kind and compassionate to a significant other can lead to increased self-esteem, reduced depressive symptoms and general happiness. Practicing compassion can lead to better relationships and greater life satisfaction. The goal of this exercise is to help you learn to be compassionate towards someone you're close with.

Over the next few weeks, we will provide instructions on how to increase your kindness toward a significant person in your life. Each exercise only needs to last 5-15 minutes, although you may wish to extend it further. Kindness takes practice to develop, so we ask you to think of this exercise as helping you to gradually build a new strength that you can use all the time. The benefits of this work may not be immediate, but like exercising to 'get in shape', the advantages can emerge over time with continued practice.

To review:

- 1) You will log onto this website every other day for a little over 3 weeks.
- 2) Each visit, you will take a few minutes to read the instructions for your exercise.
- 3) At the end of the month, you will be asked some questions about your overall well-being.

We'll be in touch tomorrow!

(2) Kindness Instructions (First day)

To begin, think of someone close to you. This person can be a relative, a good friend, or significant other. This person should have an important presence in your life and should be someone with whom you want to cultivate a better relationship. Specifically, you should try and strengthen a close relationship using this exercise. Over the next day or two, try to actively demonstrate kindness in your interactions with this person. That is, behave in a loving or helpful way towards this individual.

Some examples of acts of kindness include:

- Making dinner for your significant other after a long day
- Being supportive to a friend who is going through a hard time
- Helping a parent
- Trying to meet the needs of the person you care about
- Being more physically affectionate towards a close one
- Being understanding and supportive of a close one

These are only some examples of ways you can act compassionately within a close relationship. Try to think about the best acts of kindness you can show this person.

You will receive an email within two days to ask you to visit our website and tell us about your experience.

(3) Kindness Instructions (Subsequent days)

Welcome Back!

Were you able to perform an act of kindness since you last logged on?

If yes, please describe your kind action.

Over the next day or two, try to perform another kind act for a loved one. This can be the same loved one or someone different. This person should have an important presence in your life and should be someone with whom you want to cultivate a better relationship. Specifically, you should try and strengthen a close relationship using this exercise. Over the next day or two, try to perform a kind act for this person. That is, behave in a loving or helpful way towards this individual.

Some examples of acts of kindness include:

- Making dinner for your significant other after a long day
- Being supportive to a friend who is going through a hard time
- Helping a parent
- Trying to meet the needs of the person you care about
- Being more physically affectionate towards a close one
- Being understanding and supportive of a close one

These are only some examples of ways you can act compassionately within a close relationship. Try to think about the best acts of kindness you can show this person.

You will receive an email within two days to ask you to visit our website and tell us about your experience.

(4) Interpersonal Reflection Rationale

When you get caught up in your day-to-day life, you can sometimes forget to enjoy the company of those who are important to you. Having fulfilling relationships is one important measure of living an enjoyable life. By taking the time to reflect on moments in these relationships, you can develop a better understanding of your role in them. You can also learn about yourself and learn to appreciate the impact these people have on you.

Over the next few weeks, we will provide instructions on how to reflect on interactions in your life. Each exercise only needs to last 5-15 minutes, although you may wish to extend it further. This type of awareness takes practice to develop, so we ask you to think of this exercise as helping you to gradually build a new strength that you can use all the time. The benefits of this work may not be immediate, but like exercising to 'get in shape,' the advantages can emerge over time with continued practice.

To review:

- 1) You will log on to this website every other day for a little over 3 weeks.
- 2) Each visit, you will take a few minutes to complete your exercise.
- 3) At the end of the month, you will be asked some questions about your overall well-being.

We'll be in touch tomorrow!

(5) Interpersonal Reflection Instructions

To begin, think of someone close to you. This person can be a relative, a good friend, or romantic partner. Now think of an interaction you had today with this individual. This could be a neutral, positive or negative interaction. Take some time to describe this interaction below:

Briefly review what you wrote above. Perhaps you recalled aspects of this encounter that you hadn't previously considered. Reflecting on this interaction may help you better understand the relationship.

You will receive an email from us within two days asking you to visit our website in order to do your next exercise.

Appendix E

Debriefing Form

Project HOPE: Promoting Psychological Resilience and Positivity

Debriefing for Research Participants

Thank you for your participation in this project. Your contribution is invaluable to the development of new interventions aimed at increasing well-being and combating vulnerability to depression. There were 12 separate online conditions being tested in this study. You were randomly assigned to either an active or control condition, which are described in more detail below, and were asked to complete an online exercise every other day for just over three weeks. Overall, the active exercises were aimed at enhancing positivity, strengthening one's ability to be kind to oneself, coping better with distress, and developing more compassionate relations with others. The effectiveness of these interventions in decreasing depressive symptoms and increasing happiness are now being determined with the follow-up assessments that you completed at 1 month and 2 months. We are thus in the process of determining the long-term effects of these exercises on psychological well-being.

Theoretical Background For Each Condition

In the past, online self-help exercises similar to those included in this study have been shown to increase psychological well-being over time (Mongrain & Anselmo, 2010; Mongrain, Chin & Shapira, 2011; Shapira & Mongrain, 2010; Sergeant & Mongrain, submitted). The exercises described below are primarily based on the main tenets of positive psychology, a field of psychology that focuses on enhancing well-being through the cultivation of personal strengths and resources (see Seligman, Steen, Parks & Peterson, 2005).

- 1. Loving Kindness.** This condition involved practicing a loving-kindness meditation, wherein one fosters feelings of warmth and kindness to oneself, loved ones, and difficult people in their life. Practicing loving-kindness has been shown to improve psychological well-being, including increases in positive emotions and social connectedness, and decreases in depressive symptoms (Fredrickson, Cohn, Coffey, Pek & Finkel, 2008; Hutcherson, Seppala & Gross, 2008).
- 2. Challenging Your Negative Thinking.** This condition was a cognitive-behavioural exercise that required participants to describe a distressing event that occurred during the day, and to answer questions designed to challenge negative thinking. Cognitive behaviour protocols have been reported to result in significant reductions in depressive symptoms (Butler, Chapman, Forman & Beck, 2006).
- 3. Loving Kindness/Challenging Negative Thinking.** This condition involved alternating between practicing a loving-kindness meditation (Exercise 1) and learning to challenge your negative thinking (Exercise 2). Combining a meditation-based and cognitively-focused therapeutic technique has evidenced benefits in previous research, such as preventing depressive relapse (Teasdale et al., 2000).
- 4. Meditation.** This condition involved practicing a relaxation meditation exercise. This practice was expected to have minimal effects on mood, and served as a control for the Loving-Kindness exercise.

5. **Reflecting on Your Day.** This exercise asked individuals to describe their day and reflect on what transpired. As a control condition for the ‘Challenging Your Negative Thinking’ exercise and ‘Cultivating Your Curiosity’ exercise (Exercise 8 below), it was comparatively expected to result in lesser improvements in well-being.
6. **Meditation/Reflecting on Your Day.** This condition involved alternating between two control exercises: Meditation (Exercise 4) and Reflecting on Your day (Exercise 5). This condition served as a control for the combined Loving Kindness/Challenging Negative Thinking exercise, and was anticipated to have minimal effects on mood.
7. **Kindness.** In this exercise, participants were asked to perform an act of kindness to someone close to them in order to cultivate kindness. Showing compassion towards others through kind acts has been shown to increase well-being, namely higher self-esteem and happiness (Mongrain Chin & Shapira, in press). Research has also shown that performing compassionate behaviours also leads to reduced depressive symptoms (Taylor & Turner, 2001).
8. **Cultivating Your Curiosity.** Participants assigned to this exercise were asked to engage in novel and new activities in the domains of love, work, and play. Individuals high on trait curiosity have been shown to have greater psychological well-being (Kashdan & Silvia, 2009). Curiosity has also been identified as a character strength in the positive psychology literature (Peterson & Seligman, 2004).
9. **Optimism.** This exercise involved attending to the positive elements in one’s life, as well as goal-setting and planning for success with the intention of cultivating optimism. Being optimistic is associated with a number of benefits associated with well-being, including high levels of happiness, low susceptibility to physical illness, effective coping with stress, low rates of depression, positive thinking, and a sense of efficacy in the face of obstacles (Carver, Sheier, & Segerstrom, 2010; Peters, Flink, Boersma, & Linton, 2010; Segerstrom, 2006).
10. **Positivity.** Participants assigned to this exercise were asked to engage in activities that promoted the ten facets of positivity, such as joy, gratitude, amusement, pride, hope, and so forth. Positivity has been found to increase personal resources, which in turn allows individuals to flourish and thrive (Fredrickson et al., 2008).
11. **Self-awareness.** This condition involved describing and reflecting on 1) one’s day and 2) the fantasy of an ideal day. This condition was intended to serve as a control condition for the Optimism exercise, and was expected to produce fewer benefits in psychological well-being compared to the latter.
12. **Interpersonal Reflection.** Participants were asked to describe a meaningful interaction with someone close to them. This condition was a control for the Kindness exercise, and thus was anticipated to have minimal effects on mood.

The goal of Project HOPE is to determine whether any of these exercises are successful in improving mood and well-being in the short run, as well as over a 3-month period. If significant effects are found, this study could help to further pave the way for new types of interventions that may be useful for individuals looking to improve their psychological well-being.

You can contact the project director, Dr. Myriam Mongrain at project@yorku.ca if you have any additional questions or concerns, or if you would like to receive copies of future publications emanating from this project. All individuals were provided with copies of their assigned exercise via e-mail. If you were assigned to a control condition and would like a copy of one of the study exercises, please do not hesitate to e-mail us.

Thank you once again for your invaluable contribution to this research.

Yours Truly,

Dr. Myriam Mongrain
Project Director
Psychology Department

York University

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