A Grateful Me is a Healthy, Helpful Me

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Abstract: The study examines the effect of gratitude journaling on mental wellbeing and prosocial tendency while controlling for extraversion, openness, and neuroticism. Ninety-one young adults from Malaysia were randomly assigned to a gratitude (N = 50) or control (N = 41) group for 28 days. MANCOVA showed a non-significant effect of gratitude journaling on the outcome variables, controlling for personality differences (p = .240). Theoretically, the results indicate gratitude's benefits accrue over time with intrinsic motivation to practice it. Practically, the study's design provides insight into the operationalization of gratitude interventions.

Keywords: gratitude journaling, mental wellbeing, prosocial tendency, personality differences

INTRODUCTION, CONTEXT, RESEARCH OBJECTIVE(S)

Since the coronavirus was first identified in November 2019, the resulting pandemic has affected countless lives (Kok & Woo, 2021; Rasul et al., 2021). Throughout the pandemic, governments have imposed mandatory lockdowns and vaccinations (Verma et al., 2020). Studies indicate a decline in mental wellbeing throughout the COVID-19 pandemic. Wang et al. (2021) report risk factors such as being a young adult, low income, pre-existing morbidities, being female, and living alone would further exacerbate mental health struggles during this time. Considering the prevalence of the above-mentioned risk factors, this study aims to develop effective interventions to address current mental health issues and to promote prosocial tendency, which may also improve mental wellbeing (Hui et al., 2020).

LITERATURE REVIEW

Mental wellbeing is a concept that encompasses hedonic and eudaimonic wellbeing (Koushede et al., 2019). Research suggests that the two dimensions are complementary, where engagement in behaviors that improve one can also positively influence the other (Diener et al., 2002; Ryan et al., 2008). During times of crises, a prolonged state of feeling overwhelmed may lead to decreased mental wellbeing (Yıldırım & Solmaz, 2020). This can manifest as emotional exhaustion, inability to cope with stress, and lowered levels of self-efficacy.

Prosocial tendency refers to an individual's likelihood in engaging in prosocial actions (Ye et al., 2020). Past research has demonstrated that prosociality can contribute to greater mental wellbeing (Hui et al., 2020). However, experiencing low mental wellbeing can also negatively impact prosocial tendency. Varma et al. (2022) found that when individuals are reminded of a threat, practicing prosociality fails to increase positive affect, and increases emotional toll. Ye et al. (2020) also found that experiencing emotions like fear can decrease prosocial tendencies - potentially due to decreased empathy, narrowed awareness, and greater self-focus along with negative emotions (Albert et al., 2010; Eisenberg, 2002).

Gratitude and Mental Wellbeing

The broaden and build theory posits that the experience of positive emotions enables individuals to broaden their boundaries of awareness, resulting in greater capabilities for creative, flexible, and future-based thinking (Fredrickson, 2001, 2004a, 2004b, 2013). Broadened cognition, an increased receptivity and motivation to approach new ideas and form new perspectives can motivate individuals in developing personal, enduring resources for growth. Consequently, this builds resilience and promotes optimal functioning. Frequent experiences and expressions of positive emotions are also said to enhance the "build" process within the broaden and build hypothesis, one of which is gratitude.

State gratitude occurs when individuals are aware of and appreciate what is valuable and meaningful to them (Emmons et al., 2019). As an emotion that broadens (Fredrickson, 2004a), gratitude sparks adaptive and creative thinking from a motivation to display gratefulness. Moreover, gratitude, like other positive emotions, is coupled with an undoing effect on previously experienced negative emotions. The undoing effect (Fredrickson & Levenson, 1998) suggests that experiencing positive emotions can lead to tension reduction from previous negative emotions.

Studies suggest that gratitude is an important contributor to mental wellbeing by promoting positive behaviors to build ones' resources for optimal functioning at an individual and social level (Armenta et al., 2017) – on top of being hedonistically pleasant (Wood et al., 2009). Wood et al. (2009) also found that while mental wellbeing does not lead to gratitude, the experience of gratitude can lead to mental wellbeing. As mental wellbeing and gratitude are influenced by different factors, the relationship between these two variables is not reciprocal (Hill et al., 2013; Wood et al., 2008).

Gratitude and Prosocial Tendency

Fredrickson (2004a, 2013) suggests that gratitude motivates individuals to find ways to be prosocial and helpful to others - which builds social skills for expressing kindness and care for others (Algoe & Haidt, 2009). As a moral barometer, gratitude allows individuals to not only recognize that they have received help – but also motivates and inspires individuals to behave prosocially (Ma et al., 2017). Ma et al. (2017) also suggests that state gratitude is a stronger predictor of prosociality compared to trait gratitude - which is a stable characteristic of individuals. State gratitude also demonstrates a stronger association with prosociality compared to other emotions, such as empathy and happiness.

When individuals experience broadened cognition, individuals tend to creatively seek ways to behave prosocially, as a reflection of their gratitude. This motivation extends beyond expressions of direct reciprocity, but also indirect reciprocity. Interestingly, when gratitude is expressed, it reinforces further prosociality in individuals (McCullough et al., 2001). This study seeks to focus on upstream indirect reciprocity, which occurs when a recipient of help experiences gratitude, which then motivates them to help a third party (Ma et al., 2017). This study focuses on prosocial tendency as a behavioral expression of the aforementioned expression of reciprocity.

Enhancing Mental Wellbeing and Prosocial Tendency via Gratitude Interventions

Research suggests that positive interventions have the potential to account for up to 40% of variance in well-being (Lyubomirsky et al., 2011). Meta-analyses suggests that, when it comes to improving mental wellbeing – gratitude interventions can be as effective as "gold standard" interventions like Automatic Thought Records (ATR), a Cognitive Behavioral Therapy (CBT) intervention method (Davis et al., 2015; Dickens, 2017).

However, the benefits of gratitude interventions on enhancing prosocial tendency are less apparent. While Tong and Oh (2021) found a positive association between gratitude and prosociality, interventions seem to be less effective in demonstrating this link. Dickens (2017) found that while gratitude interventions had a small effect on enhancing prosocial behavior, this was only present in studies that compared gratitude interventions to negative interventions, such as listing hassles (Emmons & McCullough, 2003; Froh et al., 2008). When compared to no-treatment control groups, Froh et al. (2008) also found no significant changes in prosocial behavior.

Further research also suggests that gratitude interventions may not be a one-size-fits-all solution to reaping the benefits of gratitude, and are dependent on individual differences (Davis et al., 2015; Ng, 2015; Senf & Liau, 2012). Specifically, for outcomes relating to mental wellbeing, extraversion and openness improve the effectiveness of interventions (Senf & Liau,

2012); while neuroticism decreases the effectiveness of interventions (Ng, 2015). Regarding prosocial tendency, some studies suggest that extraversion and agreeableness enhance the effectiveness of interventions (Lyubomirsky et al., 2005; Van Tongeren et al., 2019), while others found no moderating effect of personality traits on the effectiveness of interventions (Kashdan et al., 2018)

Measuring the Effectiveness of Gratitude Interventions

Wood et al. (2016) noted the challenges in evaluating the effectiveness of gratitude interventions due to limited studies comparing gratitude interventions to neutral control groups. A neutral control group is helpful in pinpointing the specific effectiveness of gratitude interventions, rather than the negative effects of hassle conditions or comparable effects of other positive interventions (Dickens, 2017). Directions for future studies also suggested that controlling for personality differences may help researchers determine a more specific baseline for the effectiveness of gratitude interventions (Davis et al., 2015). Davis et al. (2015) found that while the effectiveness of gratitude interventions w on par with matched activity conditions, most studies report a small effect size, suggesting that interventions may not be as effective if used as broad-based interventions (Emmons et al., 2019). Employing rigorous experimental designs such as including a neutral control group and confounding variables may help in remedying this issue.

The Present Study

The present study aimed to investigate the effects of gratitude journaling on mental wellbeing and prosocial tendencies while controlling for personality differences in extraversion, openness, and neuroticism. This 28-day experiment compared a gratitude journaling intervention group to a daily journaling neutral control group. Dependent and control variables were measured pre-intervention and post-intervention.

To improve on the effectiveness of gratitude interventions, it is important to first validate its effectiveness after controlling for influencing factors (Adair et al., 2020; Simpson, 2020). Specifically, for prosocial tendencies – testing if gratitude interventions can facilitate an increase in prosocial tendencies can help us better understand the application of Fredrickson's (2013) broaden and build theory.

The present study proposes the following hypothesis:

> *Controlling for personality differences (extraversion, openness, neuroticism), participants in the gratitude journaling intervention will report significantly increased mental wellbeing and increased prosocial tendencies compared to the participants in the control group.*

METHOD

Participants and Procedure

A total of 91 young adults aged 18 to 26 (M= 20.30, SD= 1.12) from Malaysia, including 74 women (81.3%), 16 men (17.6%), and 1 gender non-binary individual (1.1%) were recruited for this study. The acquired sample fell short of the ideal sample size of 180 participants as determined with an effect size of 0.06 and alpha level of 0.05. However, due to the measures taken to ensure the rigour of the experiment, the author believes that these

findings will still contribute meaningfully to the overall literature regarding gratitude interventions.

Participants were recruited via student experiment portal in exchange for extra credit, or via social media platforms. After filling up pre-test forms, participants who met the study's inclusion criteria were randomly assigned to either the intervention or the control group - The distribution of participants were: 50 in the gratitude journaling intervention group (54.9%) and 41 in the daily journaling control group (45.1%). Due to the general level of drop-out rates in past studies (Geraghty et al., 2010; Przezdziecki & Sherman, 2016), the study assigned more participants for the intervention group.

For 28 days, participants were given four online reminders daily for their task via two channels at 5pm and 10pm. On the last day of the intervention, participants filled out the post-test forms. A debrief was sent out to participants 14 days after the intervention. All 91 participants completed the study, where participants who completed at least 75% of the total number of tasks were included in the final data analysis.

Materials

Gratitude Journaling

Prompts in both intervention and control groups were adapted from past research (Adair et al., 2020; Emmons & McCullough, 2003) and modified by the researcher. Examples of prompts include: "What are five good things that happened today?" (gratitude intervention) and "What activities did you do today?" (control group).

The Gratitude Adjectives Checklist (GAC) (Emmons et al., 2019; McCullough et al., 2002) was used to assess the effectiveness of the experimental manipulation. An increase in the total score between the pre-test and post-test indicated effective manipulation. The internal consistency of the GAC is α =.91 as reported by Emmons et al. (2019) and in this study.

Mental Wellbeing

The Short Warwick-Edinburgh Mental Wellbeing Scale (SWEMWBS) was used (Koushede et al., 2019) to measure mental wellbeing. There are 7 statements, including "I've been feeling optimistic about the future". An increase in the total score between the pre-test and post-test indicated an increase in mental wellbeing.

The internal consistency of the SWEMWBS is α =.88 (Koushede et al., 2019), and α =.83 in this study. The SWEMWBS measures hedonic and eudaimonic mental wellbeing, and is validated across several countries (Koushede et al., 2019; Shah et al., 2021; Stewart-Brown et al., 2009).

Prosocial Tendencies

A deception measure was used to measure prosocial tendency. Studies suggest that the use of deception measures may be ideal in mitigating social desirability bias and may provide greater accuracy compared to self-report measures (Lammers et al., 2011; Will et al., 2016). In this study, participants were asked to pledge donations for a sponsor of the study, a local mental health organization. An increase in the average amount pledged between the pre-test and post-test indicated an increase in prosocial tendencies in each group.

Personality Differences

The Mini-International Personality Item Pool (Mini-IPIP) was used to measure personality differences (Donnellan et al., 2006). Only the subscales of neuroticism, extraversion, and openness were used in this study as covariates. Examples of statements are

"I have frequent mood swings" (neuroticism), "I talk to a lot of different people at parties" (extraversion), and "I have a vivid imagination" (openness). A higher mean score indicates that the trait is more apparent in the participant.

The 3 subscales used in the Mini-IPIP present a reliability score of α = .77, .68, .65 for extraversion, neuroticism, and openness respectively (Donnellan et al., 2006). The present study reports a reliability score of α = .77, .64, .77 for the subscales of extraversion, neuroticism, and openness respectively.

RESULTS

Data collation and descriptive statistics

Descriptive statistics showed that participants in the gratitude journaling group had a greater increase in mental wellbeing (M= 3.74, SD= 4.38) compared to participants in the control group (M= 1.97, SD= 4.55). For prosocial tendency, the gratitude journaling group had a decrease in average donations pledged (M= -1.88, SD= 8.81), while the control group had an increase in average donations pledged (M= 0.39, SD= 9.25).

Assumption and Manipulation Testing

The experimental manipulation of gratitude was tested using an independent t-test. There is a statistically significant group difference in gratitude, with $t(89) = 2.76$, $p = .007$, 95% CI [0.43, 2.66]. Participants in the gratitude journaling group (M= 1.86, SD= 2.79) reported greater increase in gratitude than participants in the control group (M=0.32, SD=2.48). This indicates a successful experimental manipulation.

The assumption of normality was met for all variables within groups ($p > .05$) with the exception of prosocial tendency. The assumption of normality was not met for prosocial tendency for independent variable level 1, gratitude journaling, Shapiro-Wilk(50)=.47, $p<.001$ and level 2, control group, Shapiro-Wilk(41)=.29, $p<.001$.

A scatterplot matrix was plotted to test the assumption of linearity between dependent variables and covariates. The assumption was not met across the variables, except for extraversion with openness, and mental wellbeing with neuroticism and openness.

The assumption of homogeneity of variances and covariances was first tested using Box's Test of Equality of Covariance Matrices. As the value in this test was non-significant (p=.408), Wilk's Lamda will be used to interpret the assumption of homogeneity of variances and covariances. The assumption was met, $F(2, 166) = 1.15$, $p = .335$, Wilks' $\Lambda = .947$, partial $\eta^2 = .027$. The interaction effect between the independent variable and covariates was also non-significant for mental wellbeing, $F(2, 84) = 2.07$, $p = .132$, partial $\eta^2 = .047$ and prosocial differences, $F(2, 84) = 0.37$, $p = .692$, partial $\eta^2 = .009$. Overall, the assumption of homogeneity of variances and covariances was met.

Inferential Testing

MANCOVA (Refer to Table 1) was used in this study, where one independent variable with two levels, two dependent variables, and three covariates were analysed. Analysis indicated that Levene's test for Equality of Variances was non-significant for mental wellbeing, $F(1,89)=0.04$, p=.853 and prosocial tendency, $F(1,89)=0.34$, p=.562.

The MANCOVA showed no statistically significant effect of gratitude journaling on the combined dependent variables after controlling for personality differences, $F(2, 85) = 1.45$, $p = .240$, Wilks' $\Lambda = .967$, partial $\eta^2 = .033$. The hypothesis was rejected.

Table 1

MANCOVA Results and Descriptive Statistics for Mental wellbeing and Prosocial Tendency

Group	Mental Wellbeing		Prosocial Tendency	
	M	*SD*	M	*SD*
Gratitude Journaling	3.74	4.38	-1.88	8.81
Control Group	1.98	4.55	0.39	9.25

MANCOVA	*df*	*F*	*p*	Wilks' Λ	η^2
Group	85	1.45	.240	.97	.03
Extraversion (Ex)	85	1.10	.337	.98	.03
Neuroticism (Ne)	85	3.18	.047*	.93	.07
Openness (Op)	85	1.24	.295	.97	.03
Interaction	166	1.15	.335	.95	.03

Note. Levene's test for Equality of Variances not significant for mental wellbeing, F=0.04, p=.853 and prosocial tendency F=0.34, p=.562.

DISCUSSION

Gratitude as a Lifelong Practice for Mental Wellbeing

While participants in the gratitude journaling intervention reported a greater increase in mental wellbeing, the effect was non-significant when personality controls were included. This could have been due to the newness of the habit introduced to the sample. Research suggests that gratitude interventions involve skill and habit-building, requiring time to acquire measurable benefits (Lo & Leung, 2020; Seligman et al., 2005). Fredrickson (2013) also emphasized that positive emotions serve as a catalyst for growth, where repeated experiences compound over time to build enduring resources incrementally.

Research suggests that the benefits of mental habits are greater when they become automatic (Lyubomirsky et al., 2011; Watkins & Nolen-Hoeksema, 2014). Lo and Leung (2020) suggest that it takes 110 days of consistent practice for a habit to reach automaticity. Consistent practice involves stable cues, intrinsic motivation, and repetition. In this study, participants were cued twice daily for 28 days to complete their journals. While intrinsic motivation was not measured in this study, it is interesting to note that even participants who were recruited from non-department related channels (N=6) consistently engaged in interventions without extrinsic rewards.

Habit-building takes time, which implies that reaping the full benefits of gratitude journaling may take even longer. Past research found that benefits of gratitude interventions were only significant after one-month and six-months follow-ups, and only in those who continued the habit after the study had ended (Lyubomirsky et al., 2011; Seligman et al., 2005). Small behavioral changes can compound over time and should be treated as a continuous practice to engage in positive reappraisal of daily events (Ma et al., 2017; Wood et al., 2016). As such, the greater increase in mental wellbeing, though non-significant, points towards two ideas: (1) gratitude interventions may not be a quick solution, but rather a long-term habit to

build resilience, (2) the greater increase in mental wellbeing could be the start of a trajectory of potential benefits experienced once gratitude journaling becomes an automatic habit.

Consistent with previous studies, having no dropouts in this 28-day study could indicate that gratitude journaling may be an enjoyable habit to start and build (Davis et al., 2015). Despite the extrinsic rewards that may have motivated participants to join the study, qualitative feedback from participants included mentions such as "This activity is now my routine, I feel odd if I don't complete it".

Measuring Prosocial Tendency

This study examined the effect of gratitude intervention on prosocial tendency by improving state gratitude and found no significant effect. Upstream reciprocity - the experience of gratitude which motivates individuals to pay it forward (Ma et al., 2017), was the focus of this study. Comparatively, downstream indirect reciprocity - the experience of moral elevation and gratitude from observing prosocial acts leading to prosocial behavior (Algoe & Haidt, 2009; Ma et al., 2017) may be a better candidate for investigation. Metrics of donations pledged could have been shown to participants as a way to observe a prosocial act.

While gratitude influences indirect reciprocity (Bartlett & DeSteno, 2006), it may be a stronger influence on direct reciprocity (Algoe, 2012; Ma et al., 2017). Gratitude triggers social bonding and indebtedness, which motivates individuals to strengthen bonds with a responsive benefactor, making direct reciprocity a more likely action to take (Algoe, 2012; Wood et al., 2016). Research found that in-vivo inductions, such as imagining how one's good deeds may influence others, were more effective than recall-based interventions, which were employed in this study (Algoe, 2012; Ma et al., 2017; Seligman et al., 2005; Wood et al., 2016). Thus, interventions may look into incorporating journaling prompts that involve in-vivo inductions to target improvement in prosocial tendency.

Prosociality can increase when individuals feel valued, and the benefactor is responsive (Algoe, 2012). However, the present study's measure did not provide positive feedback to promote pledges. The non-significant findings of the present study suggests that: (1) upstream indirect reciprocity may not be a good candidate as an outcome variable to measure prosocial tendency for this form of gratitude intervention and (2) providing cues to indicate appreciation in this measure could have improved the effectiveness. In view of these two points, future studies should look into improving the operationalization and design of prosocial tendency measures.

Other Individual Differences

This study did not find significant improvements in mental wellbeing and prosocial tendency when controlling for personality differences. However, other individual differences such as trait gratitude and intrinsic motivation might have been confounding variables that affected efficacy. While state gratitude is a stronger predictor of prosociality compared to trait gratitude (Ma et al., 2017), trait gratitude plays a greater role when studying mental wellbeing (Dickens, 2017; Harbaugh & Vasey, 2014). The resistance hypothesis posits that those lower in trait gratitude may benefit more from interventions, as there may be a ceiling effect for the benefits of intervention (Harbaugh & Vasey, 2014). Future studies may compare individuals with varying levels of trait gratitude to verify this hypothesis.

Limitations and Future Studies

This study had limitations as it studied a smaller and homogenous sample of young adults from the same department in university. This limits the generalizability of the findings to the general young adult population in Malaysia.

Despite efforts to demonstrate the efficacy of gratitude interventions, the dependent variable of prosocial tendency was not well controlled and measured. Qualitative feedback from participants also suggests that the measure of prosocial tendency was not comprehensive enough. For example, one participant noted that "the organization we were asked to donate to is so famous that I thought they'd have enough donations already". Future studies could consider incorporating more specific measures of prosocial tendency by considering the type of benefactor and clearer purpose of collecting donations.

The present study also suggests that future studies focus on engineering gratitude interventions that are easy to integrate into daily schedules to improve habit-building and automaticity (Lo & Leung, 2020; Seligman et al., 2005). Specifically, the efficacy of the current 28-day intervention needs to be further assessed using follow-up measures of wellbeing and checks for self-maintenance of the gratitude journaling habit.

Practical Suggestions

The present study provides theoretical and practical implications for the following: Building habit automaticity is important in ensuring that individuals reap the long-term benefits of gratitude interventions (Lo & Leung, 2020). The cues given throughout the intervention period appear to be adequate in facilitating the habit-building process. This provides insight into planning journaling interventions that are less prone to attrition.

While past findings have suggested that gratitude interventions are beneficial for mental wellbeing and prosocial tendency, this study cautions against making these claims prematurely. The findings suggest that gratitude interventions may bring positive benefits, but potentially only in the long run. As Algoe (2012) and Fredrickson (2004a) suggest, gratitude plays an incremental role in influencing wellbeing and prosociality in the long run – a claim that can be tested using longitudinal designs.

All in all, the findings of this study suggest that gratitude interventions may bring more significant benefits as a long-term practice or supplementary intervention instead. The present study suggests that for clinical settings, practitioners may consider employing gratitude interventions as a supplementary intervention, as opposed to a standalone intervention to facilitate psychotherapy. Consistent with Wood et al. (2016), the present study also suggests that evidence for the efficacy of gratitude journaling is insufficient to confidently recommend it as a standalone intervention.

Conclusion

Gratitude is an emotion that has been shown to confer benefits to wellbeing. The present study emphasizes that the positive effects of gratitude might only be observed in the long term. This study suggests improvements to the design of future gratitude interventions. Putting individuals on a trajectory of growth by encouraging habit-building could motivate participants to continue engaging in positive interventions in the long run. This may, in turn, benefit their lives, and potentially, the community around them as well.

ACKNOWLEDGEMENTS AND FUNDING

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors. The author thanks the anonymous reviewers for comments on the initial submission of this manuscript.

STATEMENT OF ETHICAL CLEARANCE

The study was cleared for data collection by the Ethics Review Board (ERB), Department of Psychology, HELP University. Ethical clearance granted 23rd May 2022.

DATA AVAILABILITY STATEMENT

Data is available upon request from the author.

DECLARATION OF ORIGINALITY

I declare that the current submission is our work and is not being considered for publication elsewhere. I certify that referenced work used in this submission has been properly acknowledged in text and in the reference list.

CONFLICT OF INTEREST STATEMENT

The author reports no conflicts of interest.

PUBLISHER'S NOTE

The views and claims expressed in this article do not represent the Board of Editors and the Reviewers.

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