

# The Effect of Gratitude Intervention on Life Satisfaction of University students: The Role of Self-Esteem

Juanyuan Gao<sup>1</sup>, Xu Gao<sup>1,2,\*</sup>

<sup>1</sup> Department of Applied Psychology, Lingnan University, 8 Castle Peak Road, Tuen Mun, New Territories, Hong Kong, China

<sup>2</sup> Zhonghuan Information College Tianjin University of Technology, China

\* Corresponding author: Xu Gao (Email: giannagao@126.com)

**Abstract:** Gratitude education is very common in traditional Chinese education. Gratitude is both an emotion and a trait (Rash et al.,2011). It is a tendency to perceive benefits bestowed by others or by some impersonal source, and accompanied by positive, social emotions (Lin C.C.,2015). As a trait, gratitude draws attention to positive outcomes in life (Emmons et al.,2019). Furthermore, this project chooses life satisfaction and self-esteem as variables in the research. 'Life satisfaction is a subjective evaluation of overall quality of life', and is the key dimension of subjective well-being (Proctor et al.,2009). Self-esteem is a sense of individuals' general value or worth from his or her aspects (Rosenberg, 1979). Self-esteem is commonly considered as the "feeling that one is good enough" (Orth & Robins,2014). Life satisfaction and self-esteem are often used in studies of gratitude, but few of them find the complicated correlations between these three factors. So the purpose of this project is to explore whether gratitude interventions can enhance gratitude and subsequently increase life satisfaction and self-esteem.

**Keywords:** Gratitude education, Life satisfactions, Self-esteem.

## 1. Introduction

Gratitude is reported to be the most beneficial character strength, which is consistently and robustly associated with life satisfaction. The effects of the "Three Gratitude Things in Life" intervention on the subjective wellbeing of older individuals were studied by Alison Killen and Ann Macaskill.

According to their research, the intervention resulted in an increase in the subjective well-being measures of life satisfaction. Through the use of a gratitude inventory, Rash et al. investigated the impact of a gratitude intervention on wellbeing. Participants in the gratitude condition showed greater life satisfaction, the researchers discovered:

H1:Gratitude predicted significantly life satisfaction.

Moral affect theory states that persons who are highly grateful are more likely to grow in self-esteem because they concentrate on getting advantages from kind others. Some scholars found that people with high levels of gratitude tend to evaluate themselves positively. Moreover, self-esteem theoretically and empirically contributes to life satisfaction. We hypothesize the following relationships:

H2:Gratitude predicted significantly self-esteem

H3:self-esteem predicted significantly life satisfaction

Self-esteem partially mediated the relationship between gratitude and various indices of well-being. This shows that self-esteem, which is defined as one's overall perception of one's value or worth based on others' feedback, may be a process linking gratitude with greater well-being. Thus, gratitude is likely to be associated with higher levels of well-being by greater sense of self-esteem. We hypothesize the following relationships:

H4:Self-esteem mediates the relationship between gratitude and life satisfaction.

## 2. Method

### 2.1. Participants

Convenience sampling was used to gather data, and after

obtaining 48 college students as subjects, we randomly assigned them to the control group and experimental groups with Microsoft Excel. Each group had seven males and seventeen females, with an average age of roughly 24 years, which aimed to minimize the between-group bias.

### 2.2. Measures

The participants completed the online questionnaires three times: once before the intervention (pre-test, on 29 Mar), once shortly after the intervention (post-test, on 7 Apr), and once seven days after the intervention's end (follow-up test, on 14 Apr). Wenjuanxing as an online questionnaire tool was used for filling out the scales.

#### 2.2.1. Satisfaction with Life Scale

Satisfaction with Life Scale (SWLS) (Diener, Emmons, Larsen, & Grifffin, 1985) A 5-item scale that measures life satisfaction is the satisfaction with life scale. On a 7-point Likert scale, the responses are rated. Cronbach's alpha was 0.93.

#### 2.2.2. Gratitude Questionnaire

Gratitude Questionnaire-Six Item Form(GQ-6) (McCullough, Emmons, & Tsang, 2001) Participants score their level of agreement with each item on the GQ-6, which measures trait gratitude, from 1 (strongly disagree) to 7 (strongly agree). Cronbach's alpha was 0.79.

#### 2.2.3. Rosenberg Self-Esteem Scale

Rosenberg Self-Esteem Scale (RSE) (Rosenberg, 1965) The 10-item RSE questionnaire assesses overall self-esteem. A 4-point Likert scale, with 1 representing "strongly disagree" and 4 representing "strongly agree," is used to measure participants' responses. Cronbach's alpha was 0.87.

## 3. Procedure

At the beginning, all the participants were required to complete a pre-test. And then every evening at 9pm for the following ten days, participants in the gratitude intervention group were asked to list "three things to be grateful in a day"

with their feelings of each thing and their mood that day on an online questionnaire. Participants in the control group had no task to do in the same duration. Every evening at 10pm, seven practitioners were arranged to check whether every participant in the intervention group had finished their daily intervention. At our reminder, all participants submitted the questionnaires before the end of each day. Post-test was repeated on the day of completion of this intervention, and one-week after the intervention. Anonymity was maintained by using a code on each response questionnaire and participants were provided with generated code.

### 3.1. Intervention development

The design of the intervention process refers to the experiment that Rash, Matsuba and Prkachin conducted in 2011. The intervention has been conducted two times. At the first time, the intervention (Intervention Version1) procedure was almost the same as the adopted one: (1)Participants recruitment and random assignment; (2)Completed pre-test; (3)Completed intervention questionnaire; (4)Completed post-test. However, there were some different components in the procedure compared with two interventions. To compare with adopted intervention (Duration:4 weeks; Frequency: twice a week), Intervention Version 1 (Duration:1 week; Frequency: everyday) had shorter intervention duration but with higher intervention frequency under time constraints. As adopted intervention was conducted in the laboratory, Intervention Version 1 was conducted online, which was seen as more cost-effective (Killen& Macaskill, 2015).

### 3.2. Optimization of intervention measures

However, all the hypotheses were rejected as a result of Intervention Version 1. Some factors we found may bias such a result. Therefore, some modifications were conducted at the second time.

To compare with the Intervention Version 1, the current intervention (Intervention Version 2) expanded the participant sample size from 34 to 48, expanded intervention duration from 7 days to 10 days, focused on college students not on both students and employees. The memorable-event-controlled condition was replaced to no-treatment-controlled condition. This was because participants in memorable-event-controlled listed memorable things in a more positive side so that the effect of gratitude intervention was hard to detect (Cunha, et al., 2019). Moreover, a follow-up test was added to evaluate whether the effect of our intervention was long-lasting. Obviously, the Intervention Version 2 avoided the mid-term exam period in which everyone bears a lot of pressure so that participants in the intervention group were unable to express gratitude through the feelings of inability to repay or reciprocate, which diminished wellbeing (Offer, 2012). This was the most likely reason for the failure of the Intervention Version 1.

## 4. Result

### 4.1. Correlation analysis between variables

According to the independent samples t-test, there were significant differences between the experimental and control groups in the pre-test in terms of gratitude ( $t=-3.07$ ,  $p=0.006$ ), life satisfaction ( $t=-2.89$ ,  $p<0.004$ ) and self-esteem ( $t=-2.19$ ,  $p=0.034$ ).

Compared to the pre-test, the post- test showed more significant differences in gratitude ( $t=-2.82$ ,  $p=0.007$ ), life satisfaction ( $t=-4.13$ ,  $p<.001$ ), and self-esteem ( $t=-4.31$ ,  $p<.001$ ).

Seven days later, the experimental group was measured again and the difference between the control group and the experimental group was still significant.

**Table 1.** The result of independent samples t-test

Independent Samples T-Test		Statistic	df	p
pre life satisfaction	Student's t	-2.89	46.0	0.006
pre gratitude	Student's t	-3.07	46.0	0.004
Pre-self-esteem	Student's t	-2.19	46.0	0.034
post life satisfaction	Student's t	-4.13	46.0	< .001
post gratitude	Student's t	-2.82	46.0	0.007
post self-esteem	Student's t	-4.31	46.0	< .001
7days life satisfaction	Student's t	-3.36	46.0	0.002
7days gratitude	Student's t	-4.31	46.0	< .001
7days self-esteem	Student's t	-4.20 *	46.0	< .001

\* Levene's test is significant ( $p < .05$ ), suggesting a violation of the assumption of equal variances

### 4.2. Comparison between pre test and post test

From the paired samples t-test, it is clear that the experimental group differed significantly in life satisfaction ( $t=-4.16$ ,  $p<.001$ ) and self-esteem ( $t=-3.59$ ,  $p=0.002$ ) when comparing the post-test with the pre-test. However, it was not significant in gratitude ( $t=-1.38$ ,  $p=0.180$ ). After seven days

of re-measurement, the post-test was found to be significantly more significant than the post-test in life satisfaction ( $t=-5.42$ ,  $p<.001$ ), gratitude ( $t=5.17$ ,  $p<.001$ ) and self-esteem ( $t=-4.92$ ,  $p<.001$ ).

There were no differences in life satisfaction, gratitude and self-esteem in the control group.

**Table 2.** The result of paired samples t-test

Variables	Time	Control group			Intervention group		
		student's t	df	P	student's t	df	P
life satisfaction	pre	-	-	-	-	-	-
	post	-0.925	23	0.365	-4.16	23	<.001
	after 7 days	-3.04	23	0.006	-5.42	23	<.001
gratitude	pre	-	-	-	-	-	-
	post	-1.551	23	0.0134	-1.38	23	0.180
	after 7 days	-2.40	23	0.025	-5.17	23	<.001
self-esteem	pre	-	-	-	-	-	-
	post	0.115	23	0.909	-3.59	23	0.002
	after 7 days	-1.60	23	0.122	-4.92	23	<.001

### 4.3. The impact of gratitude on life satisfaction

By the one-way ANOVA, only self-esteem was significant ( $F=6.27699$ ,  $p=0.016$ ;  $F=4.59345$ ,  $p=0.037$ ), and we infer that the gratitude intervention may have only a direct effect on

self-esteem and an indirect effect on life satisfaction.

Mediated relationships were tested and gratitude interventions were found to indeed influence life satisfaction through self-esteem. It was an indirect and not direct effect.

**Table 3.** Comparison of control group

One-Way ANOVA (Welch's)				
	F	df1	df2	p
life satisfaction post-pre	2.69826	1	41.3	0.108
life satisfaction post2-pre	0.74708	1	43.0	0.392
gratitude post-pre	0.00688	1	45.9	0.934
gratitude post2-pre	3.95610	1	46.0	0.053
self-esteem post-pre	6.27699	1	45.6	0.016
self-esteem post2-pre	4.59345	1	45.7	0.037

**Table 4.** The result of one-way ANOVA

Mediation Estimates				
Effect	Estimate	SE	Z	p
Indirect	0.262	0.132	1.984	0.047
Direct	0.154	0.241	0.640	0.522
Total	0.417	0.248	1.678	0.093

  

Path Estimates						
		Estimate	SE	Z	p	
Intervention	→	Self-esteem	0.246	0.0961	2.559	0.010
Self-esteem	→	Life satisfaction	1.067	0.3399	3.140	0.002
Intervention	→	Life satisfaction	0.154	0.2411	0.640	0.522

## 5. Discussion

### 5.1. Excluding unpredictable variables

The intervention measures in the experiment have some limitations, such as sample size, education level, occupation, and nationality, which are all related to cultural differences, and different experimenters can lead to unpredictable variables.

From the intervention of the experiment, it can be found that the research results are different from previous studies, that is, gratitude can predict significant life satisfaction. Therefore, the article reviewed the three gratitude events recorded by the experimental group every day and found that some of them were writing emotional diaries, such as feeling

unhappy about dealing with too much taxi fare or resuming work tomorrow. The intervention period for the experiment is 10 days, with a frequency of every day. Perhaps something is putting pressure on the participants, as previous studies were conducted twice a week for 4 weeks. The 10 day research cycle is too short to change a person's gratitude, as gratitude is a personality measure that cannot be changed in a short period of time. Due to Chinese culture, it is easy for people to feel guilty about gratitude. For example, waking up late makes me relax, but many deadlines need to be met. Eating delicious food made by my mother makes me grateful, but guilt used to make her dislike it, and so on.

## 5.2. Prospects for research methods

Although interventions have been improved from version 1 to version 2, there are still some improvements that need to be considered in the future if similar studies are conducted. For example, it is necessary to clearly list the first, second, and third things to be grateful for, rather than reminding participants when recording. Clear requirements need to be made for participants, as the 5 different emotions they are required to choose cannot cover the various emotions of Chinese people. This will also make them focus more on feelings rather than gratitude. Due to random grouping, researchers do not know if anything special has happened to individuals. If they break up, relatives die, or parents recently divorce, researchers need to clean up the data to better control the variables.

## 6. Conclusion

Gratitude is an indispensable positive psychology in life. In our subconscious, we believe that gratitude has a direct impact on people's life satisfaction. But based on our 10-day intervention study, we found that gratitude does not directly affect people's life satisfaction. This indicates that our daily gratitude intervention activities cannot directly improve the life satisfaction of the subjects. At the same time, during our intervention research experiments, we found that the true factor that matches life satisfaction is people's self-esteem. Through data analysis, we understand that gratitude can help people gain a better sense of self-esteem, to improve their life satisfaction through the enhancement of self-esteem. Therefore, we call on everyone to actively participate in other activities that can effectively enhance self-esteem, in addition to participating in gratitude activities, to help you achieve a more satisfactory life state by increasing self-esteem.

## References

- [1] Bono, G., Froh, J. J., & Forreth, R. (2014). Gratitude in school: Benefits to students and schools.
- [2] Cunha, L. F., Pellanda, L. C., & Reppold, C. T. (2019). Positive psychology and gratitude interventions: A randomized clinical trial. *Frontiers in psychology*, 10, 584.
- [3] Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, 49, 71–75.
- [4] Diener, E., & Diener, M. (1995). Cross-cultural correlates of life satisfaction and self-esteem. *Journal of Personality and Social Psychology*, 68, 653–663.
- [5] Emmons, R. A., Froh, J., & Rose, R. (2019). Gratitude. In M. W. Gallagher & S. J. Lopez (Eds.), *Positive psychological assessment: A handbook of models and measures* (pp. 317–332). American Psychological Association.
- [6] Hermans, H. J. M. (1992). Unhappy self-esteem: A meaningful exception to the rule. *Journal of Psychology*, 126, 555–570.
- [7] Kahneman, D., Diener, E., & Schwarz, N. (1999). *Wellbeing: The foundations of hedonic psychology*. New York: Russell Sage Foundation.
- [8] Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, 49, 71–75.
- [9] Diener, E., & Diener, M. (1995). Cross-cultural correlates of life satisfaction and self-esteem. *Journal of Personality and Social Psychology*, 68, 653–663.
- [10] Hermans, H. J. M. (1992). Unhappy self-esteem: A meaningful exception to the rule. *Journal of Psychology*, 126, 555–570.
- [11] Kahneman, D., Diener, E., & Schwarz, N. (1999). *Wellbeing: The foundations of hedonic psychology*. New York: Russell Sage Foundation.
- [12] Kong, F., & Zhao, J. (2013). Affective mediators of the relationship between trait emotional intelligence and life satisfaction in young adults. *Personality and Individual Differences*, 54, 197–201.
- [13] Kashdan, T. B., Uswatte, G., & Julian, T. (2006). Gratitude and hedonic and eudaemonic well-being in Vietnam war veterans. *Behaviour Research and Therapy*, 44, 177–199.
- [14] Killen, A., & Macaskill, A. (2015). Using a gratitude intervention to enhance well-being in older adults. *Journal of Happiness Studies*, 16, 947–964.
- [15] Lin, C. C. (2015). Self-esteem mediates the relationship between dispositional gratitude and well-being. *Personality and Individual Differences*, 85, 145–148.
- [16] McCullough, M. E., Kilpatrick, S. D., Emmons, R. A., & Larson, D. B. (2001). Is gratitude a moral affect? *Psychological Bulletin*, 127(2), 249–266.
- [17] Orth, U., Robins, R. W., & Widaman, K. F. (2012). Life-span development of self-esteem and its effects on important life outcomes. *Journal of Personality and Social Psychology*, 102, 1271–1288.
- [18] Park, N., Peterson, C., & Seligman, M. (2004). Strengths of character and wellbeing. *Journal of Social and Clinical Psychology*, 23(5), 603–619.
- [19] Proctor, C. L., Linley, P. A., & Maltby, J. (2009). Youth life satisfaction: A review of the literature. *Journal of happiness studies*, 10, 583–630.
- [20] Park, N., Peterson, C., & Seligman, M. (2004). Strengths of character and wellbeing. *Journal of Social and Clinical Psychology*, 23(5), 603–619.
- [21] Rash, J. A., Matsuba, M. K., & Prkachin, K. M. (2011). Gratitude and well-being: Who benefits the most from a gratitude intervention? *Applied Psychology: Health and Well-Being*, 3(3), 350–369.
- [22] Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.