



Gratitude and depression in young adults: The mediating role of self-esteem and well-being

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ABSTRACT

This study examined both the mediation effects of self-esteem and psychological well-being for the relationship between gratitude and depression in late adolescence. Two hundred and thirty-five Taiwanese university students completed the measures of gratitude, self-esteem, psychological well-being, and depression. Path analyses indicated that self-esteem and psychological well-being acted as full mediators of the association between gratitude and depression. The identified model also revealed a significant path from gratitude through self-esteem and psychological well-being to depression. A multi-group analysis found that the paths did not differ by genders. Implications for future research and limitations of the present findings are discussed.

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1. Introduction

Depression is not only an important indicator of low psychological adjustment, but also a universal major health concern. The World Health Organization has identified depression as a serious and growing threat to well-being (Moussavi, Chatterji, Verdes, Tandon, Patel, & Ustun, 2007). In contrast, gratitude has been shown an important resiliency to depression. For example, Seligman, Steen, Park, and Peterson (2005) tested the effect of gratitude on depressive symptoms experimentally by having participants write and deliver a letter of gratitude to someone to whom they were grateful. Those who participated in this simple act of gratitude expression reported fewer depressive symptoms than control participants, lending credibility to the notion that gratitude can reduce depressive symptoms. Nonetheless, it is surprising how little research has been conducted on the link between gratitude and depression which can have serious consequences for mental and physical health (e.g., suicide). The purposes of the current study were to replicate the relation between gratitude and depression and to expand previous literature by investigating the self-esteem and well-being in this relationship in Taiwanese population.

1.1. Gratitude and depression

Gratitude is related to a more positive and appreciative outlook toward life, involving a life orientation toward the positive in the world (Wood, Maltby, Stewart, & Joseph, 2008). This positive orientation can be theoretically contrasted with the depressive orientations

toward the negative in the self, world, and future (Beck, 1967). On the other hand, gratitude is associated with making positive attributions, and these attributions may protect people from becoming stressed and depressed. As noted, there are some evidences that gratitude is associated with fewer depressive symptoms (Seligman et al., 2005; Wood, Maltby, Gillett, Linley, & Joseph, 2008). The experimental and correlational findings also indicated that gratitude leads to decrease (or prevented an increase) levels of depression (Lambert, Fincham, & Stillman, 2012; Sin & Lyubomirsky, 2009). Therefore, gratitude should have negative effects on depression.

1.2. Gratitude, self-esteem, psychological well-being, and depression

The previous literature is clear that gratitude is associated with depression, but the extent to which intervening variables mediate their relationship is relatively less studied. A review of the literature has identified one promising mediator between gratitude and depression is self-esteem. According to moral affect theory, people high in gratitude are more likely to develop greater self-esteem and self-worth because focusing on receiving benefits from benefactors (McCullough, Kilpatrick, Emmons, & Larson, 2001). Some scholars found that people with high levels of gratitude were tend to evaluate themselves positively (Kashdan, Uswatte, & Julian, 2006; Toussaint & Friedman, 2009). Moreover, based on cognitive theory of depression (Beck, 1967), negative beliefs about the self are a diathesis exerting causal influence in the onset and maintenance of depression. Many studies suggested that low self-esteem is a key risk factor for depressive disorders (Orth, Robins, & Roberts, 2008; Sowislo & Orth, 2013; Wu & Huang, 2010). Therefore, gratitude might be associated with lower levels of depression by greater self-esteem.

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Similarly, psychological well-being, representing a life lived the fullest, which makes most use of human potentials and growth (Ryan & Deci, 2001), may be hypothesized to act as a mediator of the relationship. According to broaden-and-build theory, gratitude can broaden people's momentary repertoires of cognition and behavior, and build their enduring personal resources, which in turn enhance psychological and social well-being (Fredrickson, 2001, 2004). Numerous evidences showed the contribution of gratitude to well-being (see Wood, Froh, & Geraghty, 2010 for a review). Furthermore, based on phase model of psychotherapy (Howard, Lueger, Maling, & Martinovich, 1993), enhanced well-being is a necessary condition for depressive symptom reduction to occur (Budge, Owen, Kopta, Minami, Hanson, & Hirsch, 2013; Callahan, Swift, & Hynan, 2006). That is, there are sequential relationships in the development of well-being and depression, with well-being qualities creating a foundation for reduction in maladjustment symptoms. Some studies indicated that people with high levels of well-being would have fewer depressive disorders (Chaplin, 2006; Syu, Yu, Chen, & Chung, 2013). Therefore, gratitude might be associated with lower levels of depression by greater psychological well-being.

In addition, a large volume of research has been published examining self-esteem and psychological well-being. Theoretical work has emphasized the importance of self-esteem as determinants of well-being (Campbell, 1981; Kernis, 2003). Empirical studies have shown that self-esteem significantly predicted one's level of psychological well-being (Marshall & Brown, 2007; Sedikides, Gregg, & Hart, 2007). Other findings have also suggested that people with greater sense of self-esteem have higher levels of psychological well-being (Baumeister, Campbell, Krueger, & Vohs, 2003; Cheng & Furnham, 2003; Wang & Castañeda-Sound, 2008). From these observations, gratitude may influence people's depression via two mechanisms: self-esteem and psychological well-being such that self-esteem may enhance a person's well-being, which in turn reduces his depression.

1.3. The current study

The goal of this study is to test the concurrent mediation effects of self-esteem and psychological well-being on the relationship between gratitude and depression. Considering the link of depression to self-esteem (e.g., Orth et al., 2008; Sowislo & Orth, 2013; Wu & Huang, 2010), and to psychological well-being (e.g., Chaplin, 2006; Syu et al., 2013), and the important role of gratitude in depression (e.g., Lambert et al., 2012; Seligman et al., 2005; Sin & Lyubomirsky, 2009; Wood, Maltby, Gillett et al., 2008), we predicted that self-esteem and psychological well-being might act as mediators of the relationship.

Further, previous research has shown that a multi-mediator model may be more meaningful than a single-mediator model, because it may provide our relative importance of these mediators. For instance, Park, Paul Heppner, and Lee (2010) found that only maladaptive coping might directly mediate between perfectionism and psychological distress, even though the mediating effects of maladaptive coping and self-esteem have been examined separately in the previous literature (Dunn, Whelton, & Sharpe, 2006).

In summary, the current study tested the mediation effects of self-esteem and psychological well-being on the relationship between gratitude and depression among university students in Taiwan. Based on the previous studies, we proposed the following hypotheses: (1) Gratitude predicted significantly depression. (2) Self-esteem and psychological well-being mediated the association between gratitude and depression.

2. Method

2.1. Participants and procedure

Two hundred and thirty-five Taiwanese from grade one to grade four undergraduates from three universities in Taiwan volunteered to

participate in the study (mean age = 20.04 years, $SD = .98$ years). In the sample, 145 were females and 90 were males.

A multi-section questionnaire was administered to the participants in a quiet classroom environment. All the questionnaires administrated in this study were in Chinese language. Researchers instructed the students who took part in the study, and then gave the students a set of questionnaires containing the items of the scales. The participants did not place their names on the measures and the confidentiality of their responses was assured. It took approximately 15 min for the students to complete all the instruments.

2.2. Measures

2.2.1. Gratitude

Gratitude was measured by the Chinese version of the Gratitude Questionnaire (Chen, Chen, Kee, & Tsai, 2009). It includes 5 items (e.g., I feel thankful for what I have received in life) to measure a person's experience and level of gratitude. The scale has shown good reliability (Cronbach's α is .80) and good construct validity through CFA and cross-validation (Chen et al., 2009). Each item is answered on a 6-point Likert type scale ranging from 1 = strongly disagree to 6 = strongly agree. In the present study, the Cronbach's alpha coefficient was .85.

2.2.2. Self-esteem

Self-esteem was measured by the Rosenberg Self-esteem Scale (RSES; Rosenberg, 1965), which is a 10-item (e.g., I take a positive attitude toward myself) to measure a person's global self-esteem. A meta-analysis of the scale by Schmitt and Allik (2005) found that the scale was a very popular test whose validity and reliability tests are used in 53 countries. The Chinese version of the RSES has been found to be a reliable and valid measurement in assessing self-esteem in Chinese populations (Kong & You, 2013). Each item is answered on a 6-point Likert type scale ranging from 1 = strongly disagree to 6 = strongly agree. In the present study, the Cronbach's alpha coefficient was .87.

2.2.3. Psychological well-being

Psychological well-being was measured by the Flourishing Scale (FS; Diener et al., 2010). The FS consists of 8 items (e.g., I am engaged and interested in my daily activities) to measure a person's overall psychological well-being. The scale has been reported to have high levels of internal consistency (Cronbach's $\alpha = .87$) and 1-month test-retest reliabilities as well as robust one-factor structure obtained through factor analysis. Moreover, the scale has been found to be strongly associated with the Basic Need Satisfaction Scale ($r = .78$) and Ryff's PWB scale ($r = .73$) (Diener et al., 2010). The Chinese version of the FS has been proved to exhibit excellent psychometric properties in Chinese populations (Lin, 2015). Each item is answered on a 6-point Likert type scale ranging from 1 = strongly disagree to 6 = strongly agree. In the present study, the Cronbach's alpha coefficient was .93.

2.2.4. Depression

Depression was assessed by the Center for Epidemiologic Studies Depression scale 10-item Boston form (CESD-10; Kohout, Berkman, Evans, & Cornoni-Huntley, 1993) consisting of 10 items (e.g., I felt depressed) to measure a person's depressive symptoms. The scale has been reported to have good internal consistency and exhibit a single factor through exploratory factor analyses across different sample groups (Carpenter et al., 1998). The Chinese version of the CESD-10 has been proved to exhibit excellent psychometric properties in Chinese populations (Yu, Lin, & Hsu, 2013). Each item is answered on a 4-point Likert type scale ranging from 0 = rarely or none of the time to 3 = most or all of the time. In the present study, the Cronbach's alpha coefficient was .85.

2.3. Data analysis

The two-step procedure recommended by Anderson and Gerbing (1988) was adopted to analyze the mediation effects. The measurement model was first tested to assess the extent to which each of the latent variables was represented by its indicators. If the measurement model was accepted, then test the structural model via the maximum likelihood estimation in AMOS 19.0 program. In order to control for inflated measurement errors due to multiple items for the latent variable, three item parcels were created for each of gratitude, self-esteem, psychological well-being, and depression factors by using an item-to-construct balance approach (i.e., successively assigning highest and lowest loading items across parcels; Little, Cunningham, Shahar, & Widaman, 2002).

The following five indices were used to evaluate the goodness of fit of the model (Hu & Bentler, 1999): Chi-square statistics, standardized root-mean-square residual (SRMR) less than .08, root-mean-square error of approximation (RMSEA) less than .10, the goodness of fit index (GFI) above .90, and comparative fit index (CFI) above .95. To compare two or more models, we additionally examined Akaike Information Criterion (AIC) with smaller values representing a better fit of the hypothesized model and expected cross-validation index (ECVI) with the smallest values exhibiting the greatest potential for replication.

3. Results

3.1. Measurement model

The measurement model consisted of four latent factors (gratitude, self-esteem, psychological well-being, and depression) and 12 observed variables. An initial test of the measurement model revealed a satisfactory fit to the data: $\chi^2(48, N = 235) = 133.78, p < .05$; RMSEA = .087; SRMR = .054; GFI = .91; CFI = .96. All the factor loadings for the indicators on the latent variables were significant ($p < .001$), indicating that all the latent factors were well represented by their respective indicators. In addition, as shown in Table 1, all the latent constructs were significantly correlated in conceptually expected ways ($p < .001$).

3.2. Structural model

First, the direct path coefficient from the predictor (gratitude) to the criterion (depression, $\beta = -.36, p < .001$) in the absence of mediators was significant. Second, in order to find the best model, we assessed three alternative models. A partially-mediated model (Model 1) with two mediators and a direct path from gratitude to depression revealed a not good fit to the data (Table 2). Moreover, the standardized path coefficient from gratitude to depression was non-significant ($\beta = .02, p > .05$). Thus, a fully-mediated model (Model 2) was tested subsequently with this path constrained to zero, which still revealed a not good fit to the data (Table 2). There was no great difference between Model 1 and Model 2 according to the results of Chi-square difference: $\Delta\chi^2(1, N = 235) = .02, p > .05$. Next, a path from self-esteem to psychological well-being was added to the fully-mediated model (Model 3) based on previous findings and the results showed a very good fit to the data (Table 2). The significant Chi-square difference

Table 1
Descriptive statistics and zero-order correlations for all the measures.

Variables	Mean	SD	1	2	3	4
1 Gratitude	24.82	3.82	–			
2 Self-esteem	39.58	7.03	.30	–		
3 Psychological well-being	36.83	6.52	.65	.60	–	
4 Depression	17.36	4.91	–.31	–.55	–.50	–

Note: $N = 235$. All correlation coefficients were significant at $p < .001$.

Table 2
Fit indices among competing models.

	χ^2	df	RMSEA	SRMR	GFI	CFI	AIC	ECVI
Model 1	219.91	49	.122	.111	.87	.91	277.91	1.19
Model 2	219.93	50	.121	.111	.87	.91	275.93	1.18
Model 3	133.79	49	.086	.054	.91	.96	191.79	.82

Note: $N = 235$. RMSEA root-mean-square error of approximation, SRMR standardized root-mean-square residual, GFI goodness of fit index, CFI comparative fit index, AIC Akaike Information Criterion, ECVI expected cross-validation index.

was obtained when comparing Model 2 to Model 3: $\Delta\chi^2(1, N = 235) = 86.14, p < .001$, and all the indices have been significantly improved, indicated that this additional path significantly contributed to the model. Moreover, all the standardized path coefficients were significant. Thus, Model 3 was selected as the best model (Fig. 1).

The significance of the mediating effects of self-esteem and psychological well-being were tested using the Bootstrap estimation procedure. We generated 1000 bootstrapping samples from the original data set ($N = 235$) by random sampling. Table 3 displays the indirect effects and their associated 95% confidence intervals. As shown in Table 3, gratitude exerted significant indirect effect on depression via self-esteem and psychological well-being.

3.3. Gender differences

We found no statistically significant gender differences in self-esteem, psychological well-being and depression but females scored higher than males on gratitude at a statistically significant level.

We used multi-group analysis to identify whether the path coefficients differ significantly across genders. We compared the first model, which allows the structural paths to vary across sexes, with the second model, which constrains the structural paths across sexes to be equal to examine the gender differences. All the other paths (i.e., factor loadings, error variances and structure covariances) were constrained to be equal. The non-significant Chi-square differences between the two models, $\Delta\chi^2(5, N = 235) = 3.51, p > .05$, indicated that the final model was not found to differ by gender, lending preliminary support to its robustness. We also calculated the critical ratios of differences (CRD) by dividing the difference between two estimates by an estimate of the standard error of the difference (Arbuckle, 2003). All the paths did not differ across genders.

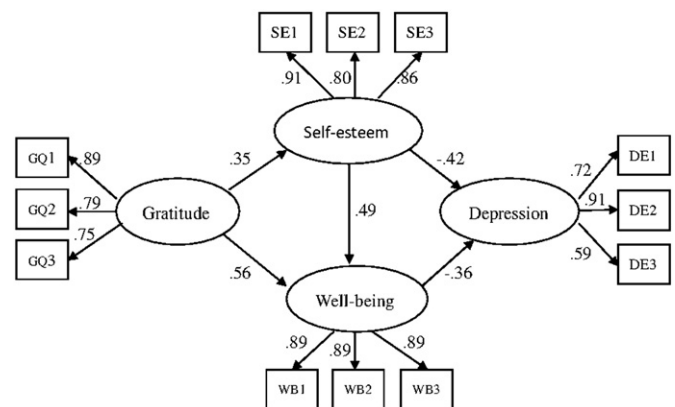


Fig. 1. The finalized model. Note. Factor loading are standardized. GQ1–GQ3 are three parcels of gratitude; SE1–SE3 are three parcels of self-esteem; WB1–WB3 are three parcels of psychological well-being; DE1–DE3 are three parcels of depression. All the path coefficients are significant at the .001 level.

Table 3
Standardized indirect effects and 95% confidence intervals.

Model pathways	Estimated	95% CI	
		Lower	Upper
Gratitude → self-esteem → psychological well-being	.17 ^a	.11	.26
Self-esteem → psychological well-being → depression	-.18 ^a	-.30	-.09
Gratitude → self-esteem/psychological well-being → depression (total indirect effect ^b)	-.41 ^a	-.53	-.28

^a Empirical 95% confidence interval does not overlap with zero.

^b Total indirect effect is from three pathways: gratitude → self-esteem → depression (–.15), gratitude → psychological well-being → depression (–.20), and gratitude → self-esteem → psychological well-being → depression (–.06).

4. Discussion

The present study aimed at testing the important role of self-esteem and psychological well-being in the association between gratitude and depression during young adults. In line with our expectations, the specific indirect effect of gratitude on depression via self-esteem was significant. That is, people with higher levels of gratitude had a propensity to perceive greater self-esteem, which may contribute to a decrease in their level of depression. This is in line with the previously reported mediating model of self-esteem. For example, Toussaint and Friedman (2009) as well as Kashdan et al. (2006) found that people with high levels of gratitude were more likely to evaluate themselves positively and have greater sense of self-esteem, and self-esteem is key factor for individuals' depressive disorders (Orth et al., 2008; Sowislo & Orth, 2013; Wu & Huang, 2010). Based on moral affect theory (McCullough et al., 2001) and cognitive theory of depression (Beck, 1967), people high in gratitude are more likely to develop high levels of self-esteem and self-worth, which in turn counteract symptoms of depression.

Likewise, in accord with our expectations, the specific indirect effect of gratitude on depression via psychological well-being was significant. That is, people with higher levels of gratitude had a propensity to perceive greater psychological well-being, which may contribute to a decrease in their level of depression. Fredrickson's (2001, 2004) broaden-and-build theory and Howard et al.'s (1993) phase model of psychotherapy provides a framework for understanding how gratitude might have resilient effects on depression. The broaden-and-build theory suggests that gratitude can build enduring personal resources and enhance people's psychological well-being, which in turn reduces depressive symptoms.

In addition, the path of evaluative gratitude → self-esteem → psychological well-being → depression was also supported. This path indicated that psychological well-being is a mediator between self-esteem and depression while self-esteem partially mediates the relationship between gratitude and psychological well-being. This result is consistent with previous researches reporting a positive correlation between self-esteem and psychological well-being (Baumeister et al., 2003; Cheng & Furnham, 2003; Wang & Castañeda-Sound, 2008). Wang and Castañeda-Sound (2008) indicated that people with greater self-esteem would have higher levels of psychological well-being. In this study, grateful people are prone to perceive high sense of self-esteem, which may enhance their psychological well-being and in turn lead to a decrease in their level of depression.

Additional interesting results of this study are found. One is that gratitude was more strongly associated with psychological well-being compared to self-esteem. Another is that self-esteem and psychological well-being acted as full mediators of the association between gratitude and depression in young adults. Moreover, effect contrasts indicated that the specific indirect effect of gratitude on depression through psychological well-being was significantly greater than that through self-esteem. These results suggest that psychological well-being plays a more important role in gratitude as a predictor variable of depression

than self-esteem. This is probably because psychological well-being functions as a proximal factor that protects people from the depressive symptoms (e.g., Howard et al., 1993); consistent with the path analysis of the present study (gratitude → self-esteem → psychological well-being → depression). This is the first study that reports concurrent mediation effects of self-esteem and psychological well-being on the relationship between gratitude and depression and therefore this is still an area that needs further exploration.

We also indicated that females were more grateful than males. This is in accordance with the previous studies that report females had higher scores than males on tests of gratitude (Froh, Yurkewicz, & Kashdan, 2009; Kashdan, Mishra, Breen, & Froh, 2009). This is probably because males consider the experience and expression of gratitude as evidence of vulnerability and weakness, which may threaten their masculinity and social status (Levant & Kopecky, 1995). In addition, the final model did not differ by gender, indicating that males and females have the same mechanism underlying the relationship between gratitude and depression.

Some limitations of the present study must be mentioned. One of the limitations was that the study was a cross-sectional design such that the temporal sequence of the independent variables, mediator, and dependent variables cannot be verified (Maxwell, Cole, & Mitchell, 2011). Longitudinal studies should be needed in order to draw any conclusions about the causality or directionality of the relationships between gratitude, self-esteem, psychological well-being and depression. A second limitation was that the data relied exclusively on self-report measures. Although the measures were selected for their good reliability and validity, self-report measures are subjective by nature and vulnerable to bias (e.g., social desirability). The use of multiple methods for evaluation (e.g., peer reports) may decrease the influence of subjectivity. A third limitation was that the study group composed of high numbers of participants was females, which limits the generalizability of the findings of the current study. Therefore, studies similar to this study should be conducted by recruiting similar amounts of females and males to balance gender proportions.

Despite these limitations, there are a few important contributions in this study. The current study substantially extended our insight into a complicated interplay among gratitude, self-esteem, psychological well-being and depression among Taiwanese university students. The findings provide external validity for the self-esteem and psychological well-being mediated model in Taiwan, underscoring the key role of self-esteem and psychological well-being. The significant path from gratitude through self-esteem and psychological well-being to depression shed light on the underlying mechanisms between gratitude and depression. Although a causal relationship cannot be determined by a cross-sectional design mentioned above in limitations, some experimental works have demonstrated that the interventions (e.g., gratitude journals and gratitude exercises) could elevate level of individuals' gratitude (see Wood et al., 2010 for a review). Similarly, an intervention aimed at increasing participants' gratitude might find that such an intervention increases self-esteem and well-being, with increases in self-esteem and well-being accounting for variance in decreases in depression. In consideration of the probable mechanisms, our findings may provide valuable guidance for how to implement positive psychological interventions aimed at enhancement of well-being as well as at reduction of maladjustment. With this in mind, the cultivation of gratitude may work as a preventive therapy to help individuals decrease their depressive symptoms in the future. It may also function as an active therapy by helping them gain self-esteem and enhance their psychological well-being.

On the other hand, this study is based on the positive psychology theoretical framework, so our findings should be appropriate and reasonable. Although some scholars (e.g., Fowers, 2008; Miller, 2008; Sundararajan, 2008) have suggested some critiques, for example, Miller (2008) regarded positive psychology as "transporting circular reasoning, tautology, failure to clearly define or properly apply terms,

the identification of causal relations where none exist, and unjustified generalization” (p. 591), we believe that the different perspectives and debates will expand our knowledge about positive psychology. Whether the positions or assumptions are close to or far from positive psychology, both of their ultimate aims undoubtedly are to improve human functioning and promote human flourishing.

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