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著者	小林 太
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**Effects of Gratitude Savoring toward One's Parents on  
Subjective Well-Being in Japanese Undergraduate  
Students**

Futoshi Kobayashi

### **Author Note**

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Please address correspondence regarding this article to Futoshi Kobayashi (fkobayas@miyazaki-mic.ac.jp), Miyazaki International College, 1405 Kano Kiyotake-cho Miyazaki-shi Miyazaki 889-1605 JAPAN.

### **Abstract**

Regarding subjective well-being, the effect of gratitude savoring was compared with the effect of gratitude listing. Sixty-four Japanese undergraduate students were randomly assigned to Groups A, B, and C. The process for Group A involved recalling three things that made them grateful toward their parents, and making lists of them daily for seven days. The process for the Group B involved recalling one benefit from one's parent(s), noticing it, appreciating it, and expressing one's gratitude to one's parent(s) daily for seven days in order to savor the experiences of gratitude. The process for Group C involved recalling three impressive things, and making lists of them daily for seven days. Although participants in both Groups A and B significantly improved their scores on two out of three indicators of subjective well-being after the intervention, Group C significantly improved their scores on

all three indicators of subjective well-being after the intervention. There were no significant group differences regarding their subjective well-being before and after the intervention.

Further studies may be needed.

*Keywords:* gratitude, Japan, positive psychology, parent

Ryan and Deci (2001) explained that subjective well-being is made up of “three components: life satisfaction, the presence of positive mood, and the absence of negative mood, together often summarized as happiness” (p. 144). Gratitude, one of the positive affects, has been found to be correlated with various subjective well-being measures. For example, it demonstrated positive correlations with subjective happiness, life satisfaction, empathy, optimism, positive affect, and negative correlations with depression, anxiety, and negative affect (McCullough, Emmons, & Tsang, 2002; Watkins, Woodward, Stone, & Kolts, 2003).

Currently, there are at least two major gratitude intervention strategies for improving subjective well-being. One, the gratitude listing strategy, requires each participant to make daily lists for a certain duration of time (e.g., a week) of several things that happened in their life that make them feel grateful. The other is called gratitude visit, in which each participant spends some time writing a letter of gratitude that they will then read to someone whom he or she wants to express their gratitude to. Since Emmons and McCullough (2003) developed the gratitude listing strategy and Seligman, Steen, Park, and Peterson (2005) initiated the gratitude visit strategy, many researchers have demonstrated the effectiveness of these two methods to improve subjective well-being (See Wood, Froh, & Geraghty, 2010, for a review). However, significant effectiveness of gratitude listing strategy was not replicated clearly in Japanese samples (Aikawa, Yada, & Yoshino, 2013; Kobayashi, 2014; Otsuka, Hori, & Kawahito, 2012).

Recently, Gander, Proyer, Ruch, and Wyss (2013) compared the effectiveness between the gratitude listing strategy and a combination of the gratitude listing and gratitude visit strategies for improving subjective well-being. Although participants of both strategies significantly improved their subjective well-being after intervention, the combination did not show a significant difference from the gratitude listing strategy alone.

In my understanding, the combination of the gratitude listing and gratitude visit strategies of Gander, Proyer, Ruch, and Wyss (2013) did not offer an optimal combination which could in turn produce the optimal intervention effect on subjective well-being. Specifically, in their two-week intervention, their participants conducted various activities of the gratitude visit program in the first week, and kept writing gratitude listings daily in the second week. In other words, due to the design of the intervention, the participants might feel they were conducting two completely different activities that did not connect with each other meaningfully.

Bryant and his colleagues (Bryant, Chadwick, & Kluwe, 2011; Bryant & Veroff, 2007) claimed that positive psychologists should investigate how to savor positive experiences in order to create, preserve, and magnify positive emotions. Bryant, Chadwick, and Kluwe (2011) defined savoring as “the self-regulation of positive feelings, most typically generating, maintaining, or enhancing positive affect by attending to positive experiences from the past, present, or future” (p. 108). Along the same lines, regarding gratitude: one type of positive affect, Wood, Froh, and Geraghty (2010) and Watkins (2014) also suggested that not only noticing but also appreciating the positive events (i.e., benefits) is important to understand why gratitude improves one’s subjective well-being. Without appreciation, the benefits that are bestowed from the benefactor(s) and acknowledged by the beneficiary would not produce gratitude in the beneficiary’s mind. Lately, Watkins, Uher, and Pichinevskiy (2015) empirically demonstrated that one must notice the positive events that happened in one’s life and then appreciate them in order to create gratitude in one’s mind, and subsequently improve one’s subjective well-being. Moreover, Lambert, Clark, Durtschi, Fincham, and Graham (2010) demonstrated that those who appreciated their close friends and expressed their gratitude toward their friends twice a week for three weeks increased the

communal strength of the relationship more than those who felt appreciation but did not express their gratitude.

In my opinion, the gratitude listing and gratitude visit strategies should be merged systematically in order to savor each benefit thoroughly. This would involve retrieving the benefit from one's memory system, noticing it, appreciating it (in order to create gratitude), and expressing one's gratitude to one's benefactor(s) in order to maximize the improvement of subjective well-being. In this way, each benefit that is bestowed from the benefactor can be thoroughly savored by the beneficiary.

Additionally, the present study investigated a certain type of gratitude: gratitude toward one's parent(s) because this kind of gratitude has been emphasized in Japanese culture and history (Matsudaira, 1984; Oohata, 1971; Shintou, 1986). Kobayashi (2014) found that the parental gratitude group significantly increased their scores in life satisfaction and subjective happiness, and the daily events listing group also significantly increased their scores in life satisfaction and empathy after the intervention.

In order to offer a more systematic approach, this study made three groups via random assignments. Group A, as a replication and a slight revision of gratitude listing of Kobayashi (2014), involved the process of recalling three things that evoked gratitude toward one's parent(s) and noticing them by daily listing for seven days. Group B, as a systematic combination of gratitude listing and gratitude visit, involved the process of recalling one benefit from one's parent(s), noticing it, appreciating it, and expressing one's gratitude to one's parent(s) daily for seven days. Group C, as a control group, involved the processes of retrieving three impressive incidents in their life and noticing them through daily listing for seven days. Although participants in Groups A and C recalled three incidents from their memories, participants in Group B were asked to recall only one incident because Group B had to savor the benefit of the chosen incident thoroughly via two additional activities (i.e.,

analyzing the benefit and expressing gratitude). This design was determined to be suitable as the daily assignments of the three groups should occupy an approximately equal duration of time (i.e., less than 10 minutes) in order to keep equivalency with their daily workload.

In order to measure the dependent variables, three well-established subjective well-being measurements (i.e., subjective happiness, life satisfaction, & positive and negative affect) were used following the definition of Ryan and Deci (2001).

There were two hypotheses. The first hypothesis was that the subjective well-being of Group B would manifest the highest scores, Group A would fall in the center, and Group C would exhibit the lowest scores after the intervention. The second hypothesis was that the only participants in Groups A and B would significantly improve their subjective well-being after the intervention.

## **Method**

### **Participants**

Initially 66 participants filled out the first survey, however one participant in Group A failed to answer the second survey after the intervention and another participant in Group A failed to answer some items in the first survey, therefore these initial participants were omitted from the data analyses. Thus, this study had a total of 64 participants comprised of 12 male students (18.8%) and 52 female students (81.2%) at a liberal arts college in Miyazaki, Japan. Their mean age was 20.2 (*SD* age = 3.87, age range = 18 - 46).

### **Materials**

**Subjective Happiness.** The Japanese Subjective Happiness Scale (JSHS) was developed from the original Subjective Happiness Scale (Lyubomirsky & Lepper, 1999) by Shimai, Otake, Utsuki, Ikemi, and Lyubomirsky (2004). The JSHS is designed to measure



global subjective happiness by rating four items on a 7-point Likert-type scale. It demonstrated sound internal consistency ( $\alpha = .82$ ), test-retest reliability (.86 for a 5-week interval), factorial validity, and convergent and discriminate validity in a Japanese undergraduate sample. Recently, it exhibited appropriate internal consistency ( $\alpha = .83$ ) and sound construct validity in another Japanese undergraduate sample (Kobayashi, 2013).

**Positive and Negative Affect.** Sato and Yasuda (2001) created the Japanese version of the Positive and Negative Affect Schedule (PANAS) from the original PANAS (Watson, Clark, & Tellegen, 1988). Based on the results of factor analysis, Sato and Yasuda (2001) chose eight adjectives to measure positive affect and another eight adjectives to measure negative affect. The Japanese PANAS is a Likert-type scale that is designed to measure participants' emotional state by rating each adjective from 1 (*does not apply to me at all*) to 6 (*applies to me greatly*). They also reported strong internal consistency for both positive affect ( $\alpha = .90$ ) and negative affect ( $\alpha = .91$ ). Recently, the Japanese PANAS exhibited satisfactory internal consistency for positive affect ( $\alpha = .87$ ) and negative affect ( $\alpha = .88$ ) and sound construct validity in a Japanese undergraduate sample (Kobayashi, 2013).

**Life Satisfaction.** Sumino (1994) created the Japanese version of the Satisfaction With Life Scale (SWLS) (Diener, Emmons, Larsen, & Griffin, 1985) by conducting five different studies with Japanese samples. As a Likert-type scale, it measures cognitive aspects of participants' subjective well-being by rating the five items from 1 (*strongly disagree*) to 7 (*strongly agree*). The Japanese SWLS demonstrated sound construct validity with high correlations with five relative scales and appropriate internal consistency in an undergraduate sample ( $\alpha = .84$ ) and a middle-age adult sample ( $\alpha = .90$ ), and a test-retest reliability of .80

with a 4-week interval. Kobayashi (2013) reported that it exhibited appropriate internal consistency ( $\alpha = .83$ ) and sound construct validity in an undergraduate sample.

### **Procedure**

I sent out e-mail invitations to all of the undergraduate students in the institution where I work after receiving an approval from the Institutional Review Board and the Dean of the School of International Liberal Arts. Students who came to my office read the informed consent form, the general description of the present study, and their rights and financial rewards of participation. Those who agreed to participate were randomly assigned to Group A ( $n = 22$ ), who would recall three things that made them feel gratitude toward their parent(s), and notice them by daily listing for seven days or Group B ( $n = 22$ ) who would recall one benefit from their parent(s), notice it, appreciate it, and express gratitude to their parent(s) daily for seven days or Group C ( $n = 22$ ) who would recall three impressive incidents in their life and notice them by daily listing for seven days. Each participant was given a unique identification number (e.g., A1) randomly and used the number for answering any materials that were used in the study. After completing the surveys of subjective happiness, positive and negative affect, and life satisfaction, the participants were given notebooks and asked to do daily assignments before going to bed. All participants returned to my office a week later, completed the survey again and submitted their notebooks. Finally, 1,000 Japanese yen (approximately US \$8 in December 2015) was given as financial reward to each participant.

### **Results**

A 3 (between subjects: treatment group) X 2 (within subjects: time of assessment) Multivariate Analysis of Variance (MANOVA) was conducted toward three dependent

variables: subjective happiness, life satisfaction and affect balance. Each participant's affect balance was calculated by subtracting the total number of negative affect from that of positive affect. The results showed that there were no significant multivariate effects across the interaction between group and time,  $V = .022$ ,  $F(6, 120) = .223$ ,  $p = .969$ ,  $\eta_p^2 = .011$ , and of group,  $V = .026$ ,  $F(6, 120) = .268$ ,  $p = .951$ ,  $\eta_p^2 = .013$ , but there were significant main effects of time,  $V = .387$ ,  $F(3, 59) = 12.42$ ,  $p < .001$ ,  $\eta_p^2 = .387$ . Follow-up univariate tests revealed significant time effects on subjective happiness,  $F(1, 61) = 14.78$ ,  $p < .001$ ,  $\eta_p^2 = .195$ , affect balance,  $F(1, 61) = 15.24$ ,  $p < .001$ ,  $\eta_p^2 = .200$ , and life satisfaction,  $F(1, 61) = 23.96$ ,  $p < .001$ ,  $\eta_p^2 = .282$ . Both the interaction effect and the group effect were not significant ( $F_s < 1$ ).

Regarding subjective happiness, post-hoc tests with a Bonferroni adjustment revealed that Group A significantly increased their scores after the intervention,  $t(19) = 2.35$ ,  $p = .022$ , mean difference = 1.400, 95% CI = [0.206, 2.594], Cohen's  $d = 0.524$ , Group B increased their scores after the intervention,  $t(21) = 1.68$ ,  $p = .099$ , mean difference = 0.955, 95% CI = [-0.184, 2.093], Cohen's  $d = 0.357$ , and Group C significantly increased their scores after the intervention,  $t(21) = 2.63$ ,  $p = .011$ , mean difference = 1.500, 95% CI = [0.361, 2.639], Cohen's  $d = 0.561$ . See Table 1 and Figure 1.

Regarding affect balance, post-hoc tests with a Bonferroni adjustment revealed that Group A increased their scores after the intervention,  $t(19) = 1.74$ ,  $p = .088$ , mean difference = 2.800, 95% CI = [-0.426, 6.026], Cohen's  $d = 0.388$ , Group B significantly increased their scores after the intervention,  $t(21) = 2.07$ ,  $p = .043$ , mean difference = 3.182, 95% CI = [0.106, 6.258], Cohen's  $d = 0.441$ , and Group C significantly increased their scores after the intervention,  $t(21) = 2.99$ ,  $p = .004$ , mean difference = 4.591, 95% CI = [1.515, 7.667], Cohen's  $d = 0.636$ . See Table 1 and Figure 2.

Regarding life satisfaction, post-hoc tests with a Bonferroni adjustment revealed that Group A significantly increased their scores after the intervention,  $t(19) = 2.42, p = .019$ , mean difference = 2.350, 95% CI = [0.407, 4.293], Cohen's  $d = 0.541$ , Group B significantly increased their scores after the intervention,  $t(21) = 2.89, p = .005$ , mean difference = 2.682, 95% CI = [0.829, 4.535], Cohen's  $d = 0.617$  and Group C significantly increased their scores after the intervention,  $t(21) = 3.19, p = .002$ , mean difference = 2.955, 95% CI = [1.102, 4.807], Cohen's  $d = 0.680$ . See Table 1 and Figure 3.

## Discussion

The participants in Group A significantly increased their subjective happiness and life satisfaction, the participants in Group B significantly increased their affect balance and life satisfaction, and the participants in Group C significantly increased all three indicators of subjective well-being after the intervention. There were no significant group differences regarding all three indicators of subjective well-being before and after the intervention. Thus, neither of my hypotheses was supported.

To begin discussion of the findings, first allow me to examine the issues of comparison between gratitude listing strategy (i.e., Group A) and the combination of the gratitude listing and gratitude visit strategies (i.e., Group B). Although the participants in Groups A and B significantly improved two out of three indicators of subjective well-being after intervention, there were no significant differences between the groups. In addition, the results of post-hoc tests exhibited similar magnitudes of effect size for all the dependent variables in both groups. After the present study was conducted, a meta-analysis of gratitude interventions was published (Davis et al., 2016). In meta-analyzing 19 different studies, Davis et al. (2016) reported that interventions which involved expressions of gratitude had similar magnitudes of effect size for psychological well-being (Cohen's  $d = 0.20$ ) compared

with interventions that used gratitude listings (Cohen's  $d = 0.20$ ). Altogether, these findings might indicate the difficulty of creating a synergic effect from a combination of effective gratitude intervention strategies for improving subjective well-being.

Secondly, I would like to offer some discussion regarding the significant effects of Group C on all three indicators of subjective well-being. In meta-analyzing nine different studies, Davis et al. (2016) reported that gratitude interventions that included either the gratitude listing or gratitude visit strategy did not perform “better than the psychologically active condition ( $d = -.03$ ; 95% CI [-.13, .07];  $Q[8] = 5.50$ ,  $p = .703$ )” (p. 24) regarding psychological well-being. The participants in Group C daily recalled and listed three impressive events, therefore, they were psychologically active and their assignments could become an effective intervention toward subjective well-being in the present study. In the future, a control group in gratitude intervention studies might be better to use the measurement-only condition because Davis et al. (2016) found significant effects of gratitude interventions on psychological well-being compared to the measurement-only condition “( $d = .31$ , 95% confidence interval [CI = .04, .58];  $k = 5$ )” (p. 20).

From the results of meta-analysis, Davis et al. (2016) found weak support for the effectiveness of gratitude interventions and speculated that such effectiveness might be produced by placebo effects. If the participants engage in simple and regular activities (such as thinking and doing about something daily), they expect some positive psychological consequences because they participated in the psychological research. Such an expectation could create the positive psychological consequences in the measurements that the researchers used. Such a placebo hypothesis can suitably explain the results of the present study and the results of three previous gratitude listing intervention studies with Japanese samples (Aikawa, Yada, & Yoshino, 2013; Kobayashi, 2014; Otsuka, Hori, & Kawahito,

2012). Researchers who investigate the effectiveness of gratitude intervention might benefit from consideration of such a placebo hypothesis.

Finally, it is necessary to recognize that there are several shortcomings of the present study. First, the sample size was so small that the findings might be the result of idiosyncrasies within the sample. Second, the measurements in this study were all self-reports that inherently include a danger of self-serving bias. Third, the Japanese participants in this study might be qualitatively different from other typical Japanese undergraduate students because they usually speak English and study liberal arts subjects in English in their college life.

Although this study failed to support the two hypotheses, I believe it deserves attention because psychologists should reveal both significant and null findings in order to alleviate the “file drawer” problem (Rosenthal, 1979) and grasp the whole picture. I assume such a practice will lead to true advances in psychological research. In addition, Cumming (2012) recommended that psychological researchers consider effect sizes and confidence intervals more thoroughly instead of merely searching for statistically significant results because we can search for the truth in using meta-analysis with effect sizes and confidence intervals. I hope the present study can be useful in future meta-analyses.

## References

- Aikawa, A., Yada, S., & Yoshino, Y. (2013). Kanshya wo kazoerukoto ga shukanteki uerubiinngu ni oyobosu kouka ni tuite no kainyu jikken [An interventional experiment on the effect of counting gratitude on subjective well-being]. *Tokyougakugeidaigakukiyou sougoukyoikukagakukei I*, 64, 125-138.
- Bryant, F. B., Chadwick, E. D., & Kluwe, K. (2011). Understanding the processes that regulate positive emotional experience: Unsolved problems and future directions for theory and research on savoring. *International Journal of Wellbeing*, 1, 107-126.  
doi:10.5502/ijw.v1i1.18
- Bryant, F. B., & Veroff, J. (2007). *Savoring: A new model of positive experience*. Mahwah, NJ: Lawrence Erlbaum.
- Cumming, G. (2012). *Understanding the new statistics: Effect size, confidence interval, and meta-analysis*. New York, NY: Routledge.
- Davis, D. E., Choe, E., Meyers, J., Wade, N., Varjas, K., Gifford, A., Quinn, A., Hook, J. N., Van Tongeren, D. R., Griffin, B. J., & Worthington, E. L., Jr. (2016). Thankful for little things: A meta-analysis of gratitude interventions. *Journal of Counseling Psychology*, 63, 20-31. doi:10.1037/cou0000107
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction With Life Scale. *Journal of Personality Assessment*, 49, 71-75.  
doi:10.1207/s15327752jpa4901\_13
- Emmons, R. A., & McCullough, M. E. (2003). Counting blessings versus burdens: An empirical investigation of gratitude and subjective wellbeing in daily life. *Journal of Personality and Social Psychology*, 84, 377-389. doi:10.1037/0022-3514.84.2.377
- Gander, F., Proyer, R. T., Ruch, W., & Wyss, T. (2013). Strength-based positive interventions: Further evidence for their potential in enhancing well-being and

alleviating depression. *Journal of Happiness Studies*, *14*, 1241-1259.

doi:10.1007/s10902-012-9380-0

Kobayashi, F. (2013). Development and validation of the Gratitude Questionnaire (GQ) in Japanese undergraduate students. *Comparative Culture*, *18*, 1-18.

Kobayashi, F. (2014). Daily gratitude towards one's parents and subjective well-being of Japanese undergraduate students. *Comparative Culture*, *19*, 1-17.

Lambert, N. M., Clark, M. S., Durtschi, J., Fincham, F. D., & Graham, S. M. (2010). Benefits of expressing gratitude: Expressing gratitude to a partner changes one's view of the relationship. *Psychological Science*, *21*, 574-580. doi:10.1177/0956797610364003

Lyubomirsky, S., & Lepper, H. S. (1999). A measure of subjective happiness: Preliminary reliability and construct validation. *Social Indicators Research*, *46*, 137-155.

doi:10.1023/A:1006824100041

Matsudaira, K. (1984). *Nisshinkan doujikin gendaigoyaku* [Ethics textbook at Nisshinkan in contemporary Japanese language]. Tokyo, Japan: Sanshintosho.

McCullough, M. E., Emmons, R. A., & Tsang, J.-A. (2002). The grateful disposition: A conceptual and empirical topography. *Journal of Personality and Social Psychology*, *82*, 112-127. doi:10.1037/0022-3514.82.1.112

Oohata, S. (1971). *Doutoku no rekishi* [History of ethics]. Tokyo, Japan: Yuzankaku.

Otsuka, Y., Hori, M., & Kawahito, J. (2012). Improving well-being with a gratitude exercise in Japanese workers: A randomized controlled trial. *International Journal of Psychology and Counseling*, *4*, 86-91. doi:10.5897/IJPC11.031

Rosenthal, R. (1979). The file drawer problem and tolerance for null results. *Psychological Bulletin*, *86*, 638-641. doi:10.1037/0033-2909.86.3.638

Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology*, *52*, 141-166.



doi:10.1146/annurev.psych.52.1.141

- Sato, A., & Yasuda, A. (2001). Nihongo ban PANAS no sakusei [Development of the Japanese version of Positive and Negative Affect Schedule (PANAS) scales]. *Japanese Journal of Personality, 9*, 138-139.
- Seligman, M. E. P., Steen, T. A., Park, N., & Peterson, C. (2005). Positive psychology progress: Empirical validation of interventions. *American Psychologist, 60*, 410-421. doi:10.1037/0003-066X.60.5.410
- Shimai, S., Otake, K., Utsuki, N., Ikemi, A., & Lyubomirsky, S. (2004). Nihonban syukanteki koufukukan shakudo (Subjective Happiness Scale: SHS) no shinraisei to datousei no kentou [Development of a Japanese version of the Subjective Happiness Scale (SHS), and examination of its validity and reliability]. *Japanese Journal of Public Health, 51*, 845-853.
- Shintou, K. (1986). *Shiryou "tennouchouoku" senshuu* [Reference materials for selected Emperors' imperial rescripts]. Tokyo, Japan: Nippon gitsugyou shuupansha.
- Sumino, Z. (1994). Jinsei ni taisuru manzoku syakudo (the Satisfaction With Life Scale [SWLS]) nihonban sakusei no kokoromi [Development of the Japanese version of the Satisfaction With Life Scale]. *Proceedings of the 36th Annual Meeting of the Japanese Association of Educational Psychology, 36*, 192.
- Watkins, P. C. (2014). *Gratitude and the good life: Toward a psychology of appreciation*. Dordrecht, Netherlands: Springer.
- Watkins, P. C., Uher, J., & Pichinevskiy, S. (2015). Grateful recounting enhances subjective well-being: The importance of grateful processing. *Journal of Positive Psychology, 10*, 91-98. doi:10.1080/17439760.2014.927909

Watkins, P. C., Woodward, K., Stone, T., & Kolts, R. D. (2003). Gratitude and happiness:

The development of a measure of gratitude and its relationship with subjective well-being. *Social Behavior and Personality*, *31*, 431-452.

doi:10.2224/sbp.2003.31.5.431

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief

measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, *54*, 1063-1070. doi:10.1037/0022-3514.54.6.1063

Wood, A. M., Froh, J. J., & Geraghty, A. W. A. (2010). Gratitude and well-being: A review and theoretical integration. *Clinical Psychology Review*, *30*, 890-905.

doi:10.1016/j.cpr.2010.1003.1005

Table 1  
*Means, Standard Errors, and 95% Confidence Intervals by Treatment Group and Time of Assessment*

Dependent Variable	Treatment Group	<i>n</i>	Time of Assessment			
			Pre-Treatment ( <i>SE</i> )	95% CI	Post-Treatment ( <i>SE</i> )	95% CI
Subjective Happiness	Group A	20	19.30 (0.831)	[17.64, 20.96]	20.70 (0.776)	[19.15, 22.25]
	Group B	22	19.68 (0.792)	[18.10, 21.27]	20.64 (0.740)	[19.16, 22.12]
	Group C	22	19.82 (0.792)	[18.23, 21.40]	21.32 (0.740)	[19.84, 22.80]
Affect Balance	Group A	20	6.650 (1.959)	[2.732, 10.568]	9.450 (2.433)	[4.586, 14.314]
	Group B	22	8.182 (1.868)	[4.447, 11.917]	11.364 (2.319)	[6.726, 16.001]
	Group C	22	9.045 (1.868)	[5.310, 12.781]	13.636 (2.319)	[8.999, 18.274]
Life Satisfaction	Group A	20	19.10 (1.223)	[16.65, 21.55]	21.45 (1.325)	[18.80, 24.10]
	Group B	22	19.73 (1.166)	[17.40, 22.06]	22.41 (1.263)	[19.88, 24.94]
	Group C	22	20.18 (1.166)	[17.85, 22.51]	23.14 (1.263)	[20.61, 25.66]

*Note.* *SE* = standard error, *CI* = confidence interval.

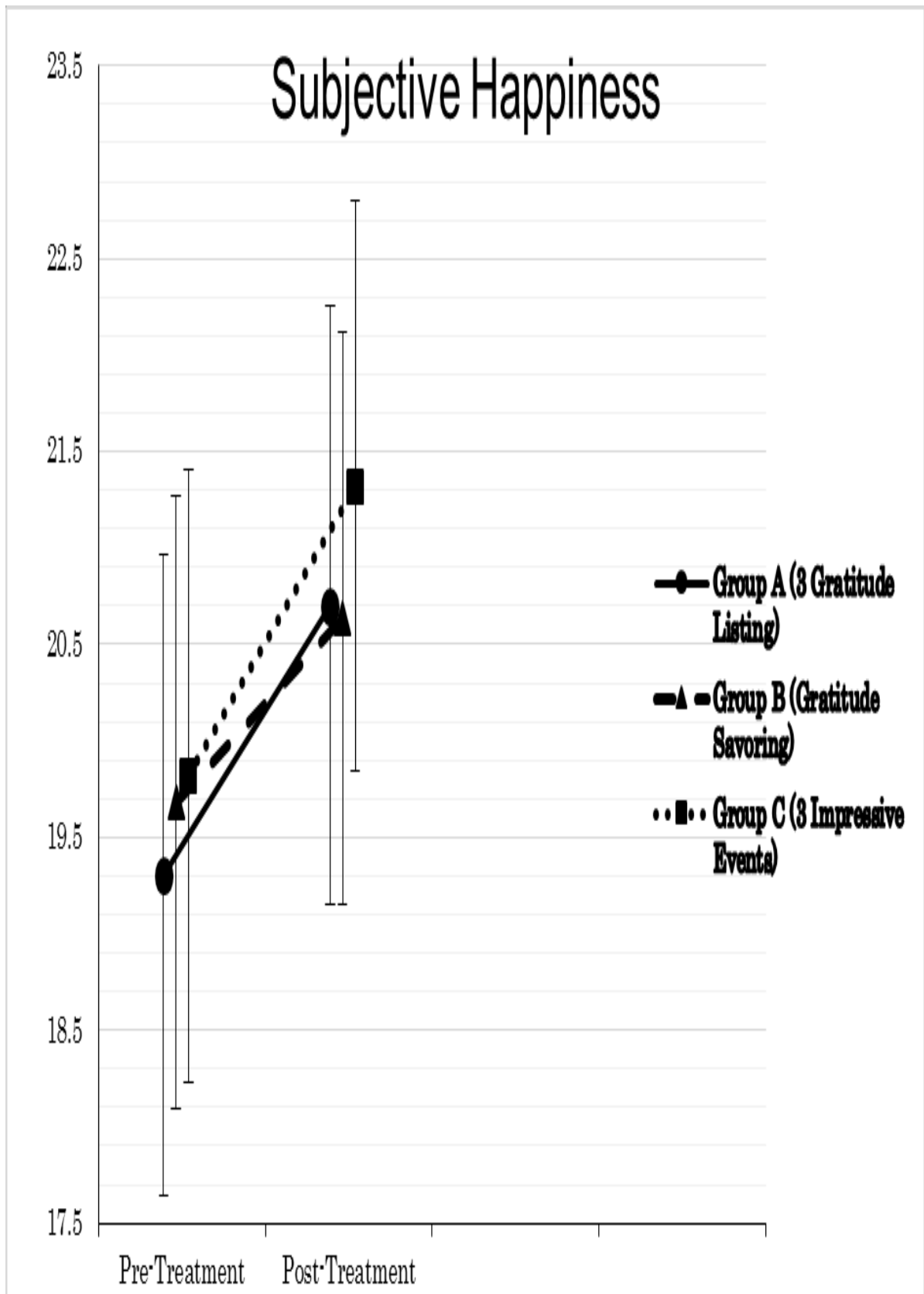
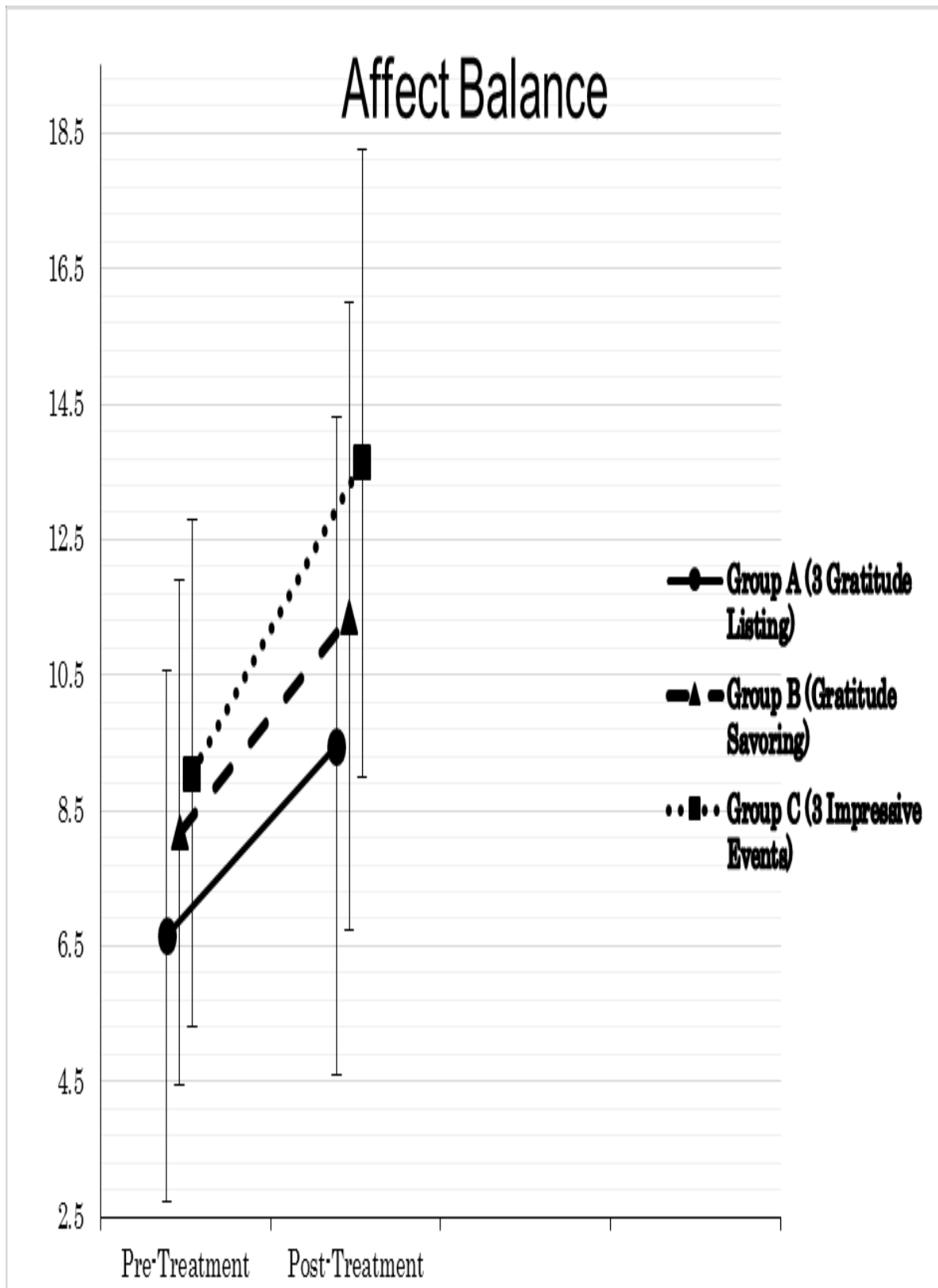


Figure 1. Changes in subjective happiness from pre-treatment to post-treatment. Error bars indicate 95% confidence intervals.



*Figure 2.* Changes in affect balance from pre-treatment to post-treatment. Error bars indicate 95% confidence intervals.

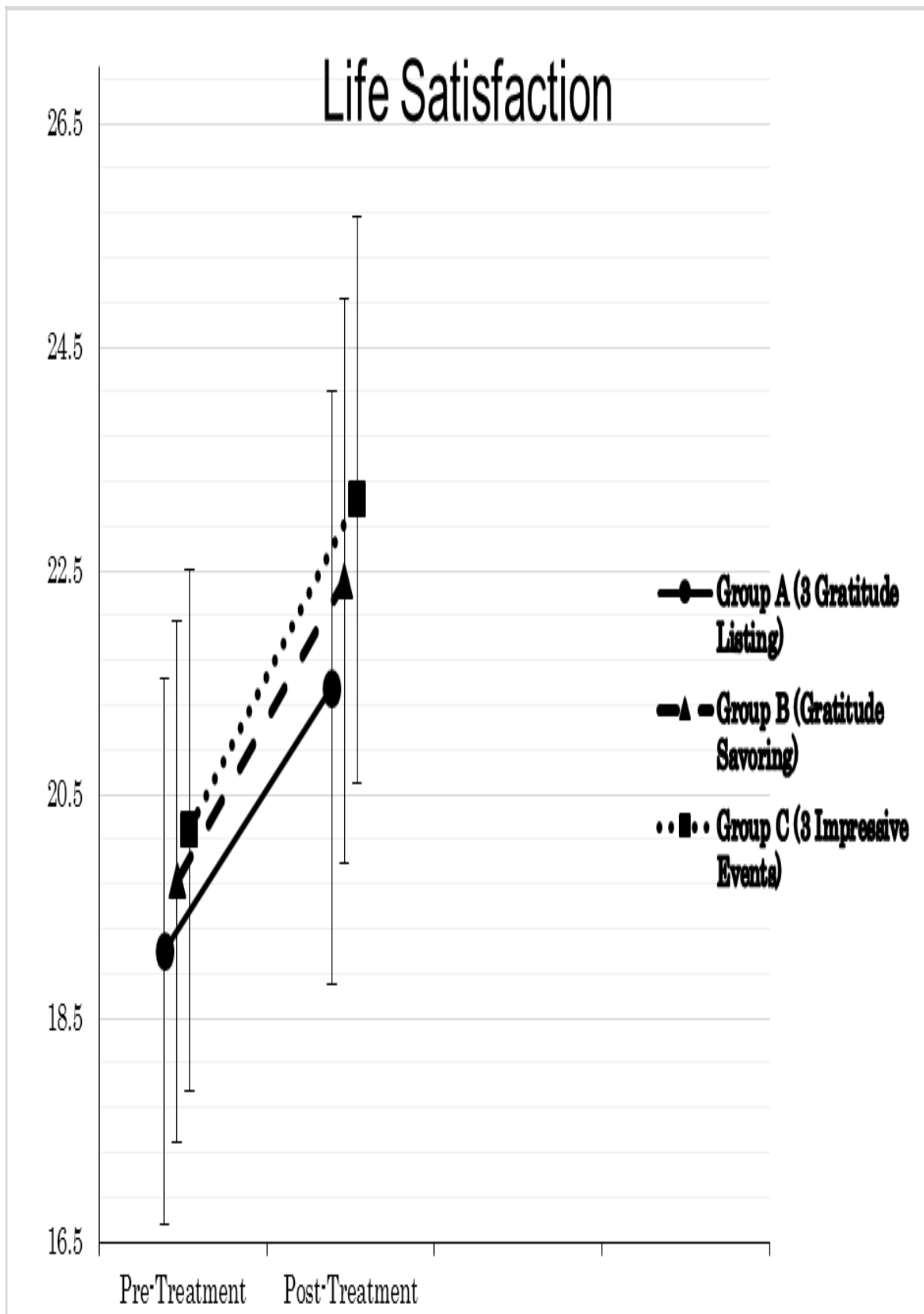


Figure 3. Changes in life satisfaction from pre-treatment to post-treatment. Error bars indicate 95% confidence intervals.