



The effects of self-construals, self-criticism, and self-compassion on depressive symptoms



Ayano Yamaguchi ^{a,*}, Min-Sun Kim ^{b,1}, Satoshi Akutsu ^{c,2}

^a College of Foreign Studies, Reitaku University, 2-1-1 Hikarigaoka, Kashiwa-shi, Chiba-ken 277-8686, Japan

^b Communicology, University of Hawaii at Manoa, HI, USA

^c Graduate School of International Corporate Strategy (ICS), Hitotsubashi University, 2-1-2 Hitotsubashi, Chiyoda-ku, Tokyo 101-8439, Japan

ARTICLE INFO

Article history:

Received 9 December 2013

Received in revised form 5 March 2014

Accepted 8 March 2014

Available online 7 May 2014

Keywords:

Culture

Depressive symptoms

Self-construal

Self-criticism

Self-compassion

Mental health and well-being

ABSTRACT

The purpose of this exploratory study was to cross-culturally examine associations among self-construals, comparative vs. internalized self-criticisms, self-compassion, and depressive symptoms. 1200 undergraduates in the city of Kyoto, Japan, and 420 college students in Tennessee and Michigan participated in this study. The results indicated that both independent and interdependent self-construals were negatively related to comparative self-criticism while positively related to internalized self-criticism. Both forms of self-criticism negatively affected self-compassion, while self-compassion lowered depressive symptoms. In the U.S., independent (vs. interdependent) self-construal had stronger impact on both types of self-criticism, while in Japan, interdependent (vs. independent) self-construal had stronger impact on both types of self-criticism, indicating that culturally dominant self-construal has a larger influence on self-criticism. In both cultures, internal (vs. comparative) self-criticism has a less negative impact on self-compassion. Cultural specific tests are described to support the findings.

© 2014 Elsevier Ltd. All rights reserved.

1. Introduction

Research on self-criticism has paid increasing attention to depressive symptoms that affect health and well-being (Blatt, Hart, Quinlan, Leadbeater, & Auerbach, 1993; Thompson & Zuroff, 2004). Claims that self-criticism engenders depressive symptoms have been applied to cross-cultural contexts (Markus & Kitayama, 1991). In addition to self-criticism, Neff (2003, 2008) established self-compassion as a promising new concept related to depressive symptoms. Studies on self-compassion in Western cultures have demonstrated that people who show compassion towards themselves experience greater psychological health and resilience than those who lack self-compassion.

It has been proposed that self-criticism is more prevalent among East Asians because awareness of personal shortcomings aids self-improvement efforts needed to function harmoniously within a group (Heine, 2003). Neff (2003) argues that if self-criticism is a key factor among those who have lower level

of self-compassion, this could be a greater problem for East Asians than for Euro-Americans. However, Neff (2003) also suggests that the relationship between self-criticism and depressive symptoms in East Asian cultures may not be the same as that in Western cultures. Japanese people may believe that, opposite to self-compassion, means of shame, rather harsh self-judgment, and threat of isolation are needed to better improve themselves. It could be misleading to generalize the implication of self-critical behavior observed in Western cultures to East Asian cultures like Japan, since cultural backgrounds need to be considered to understand the relationships between key variables. This generalization, indeed, has been called into question by cultural psychologists (Markus & Kitayama, 1991). The effect of self-compassion on depressive symptoms, however, has not been extensively examined in cross-cultural research.

The purpose of this study was to examine the cultural underpinnings of self-criticism and the lack of self-compassion, which may lead to higher levels of depressive symptoms. Drawing on the theory of independence–interdependence cultural self-construals (Markus & Kitayama, 1991), we argue that comparative self-criticism may not always be directly linked to depressive symptoms in cultures that emphasize *independence*. In contrast, internalized self-criticism is likely to be functional in cultures characterized by *interdependence*. We further argue that self-compassion may be negatively

* Corresponding author. Tel.: +81 4 7173 3605.

E-mail addresses: ayamag13@reitaku-u.ac.jp (A. Yamaguchi), kmin@hawaii.edu (M.-S. Kim), akutsu@ics.hit-u.ac.jp (S. Akutsu).

¹ Tel.: +1 (808) 956 8317.

² Tel.: +81 3 4212 3046.

linked to depressive symptoms across cultures. In order to address these cross-cultural factors of self-criticism and self-compassion, we examined depressive symptoms among college students in two different cultures.

This article is organized as follows. First, we review the independent and interdependent self-construals, self-criticism, self-compassion, and depressive symptoms in relation to each other as delineated in the psychology and communications literature. We further explicate the concept of self-criticism by introducing comparative and internal self-criticism and explore their relationship to self-compassion from a cross-cultural perspective. Second, we propose a conceptual model specifying the respective influences of the cultural self-construals, two types of self-criticism, and self-compassion on depressive symptoms. Third, we describe a study conducted to test the conceptual model, followed by an analysis of the results. The concluding section discusses implications, limitations, and possible directions for future research.

1.1. *Self-construal, self-criticism, and self-compassion across cultures*

Markus and Kitayama (1991) found that Western cultures tend to construe the self as separate from its social context, and thus emphasize autonomy and independence, which is independent self-construal. In contrast, Eastern cultures conventionally construe and construct the self as a constituent of a broader social context; their concept of *self* entails characteristics and qualities of the social environment, which is interdependent self-construal. It is proposed that self-construal varies among cultures based on an emphasis on either independence or interdependence (Markus & Kitayama, 1991).

Kitayama and colleagues used cultural self-construal theory to support their proposition that, in interdependent East-Asian cultures such as Japanese, people tend to be more self-critical than they are in independent cultures such as Euro-American (Kitayama & Markus, 2000). Researchers have argued that self-criticism is adaptive for those individuals in interdependent cultures, because an awareness of personal shortcomings helps them address the required self-improvement efforts for them to function harmoniously within a group (e.g., Heine, 2003). If so, levels of self-compassion may be lower among East Asians than Euro-Americans, given that self-criticism is a key trait among those who lack self-compassion.

Untoward impact of self-criticism on depressive symptoms among Euro-Americans may not necessarily exist among East Asians as suggested by some cross-cultural studies because of the complicated nature of interdependent self-construal (Kagitcibasi, 2005). The present study provides an evidence of this cultural variation, which would help us better understand how interdependent self-construal relates to self-compassion from a cross-cultural perspective. The promotion of self-criticism and the reflection of social conformity and harsh self-regulatory tactics are more likely to promote interdependence with the feelings of human interconnectedness (Neff, Pisitsungkagarn, & Hsieh, 2008). Thus, it is suggested that interdependence may hinder the impact of self-compassion on depressive symptoms. On the other hand, independence may involve and promote care and concern for the self (Singelis, 1994), which may increase self-compassion. However, independence may also promote feelings of separation or isolation, thus undermining self-compassion.

1.2. *Comparative vs. internalized self-criticism*

Thompson and Zuroff (2004) developed the Level of Self-Criticism (LOSC) scale to measure two-dimensional concepts and

developmental levels, which are comparative self-criticism and internalized self-criticism. They developed and explained comparative self-criticism as a negative perspective and view of the self as compared to others or as an unfavorable comparison of the self with others, who are seen as superior and hostile or critical. For example, from the cross-cultural perspectives, the Euro-Americans are more likely to view their own shortcomings in comparison to others. With regard to comparative self-criticism, they aim for self-enhancement, independence, seeking to confirm their positive internal attributes of self and self-esteem. By contrast, Thompson and Zuroff (2004) developed and explained internalized self-criticism as a negative perspective and view of the self as compared to internal, personal standards wherein people respond to success by seeing it as failure. The consequence of internalized self-criticism may be equally critical in both East Asian cultures and Western cultures.

While similar relational concepts to self-compassion have long been studied in psychology (Baumeister, Heatherton, & Tice, 1993; Sedikides, 1993; Taylor & Brown, 1988), Neff (2003) developed Self-Compassion Scale (SCS) and showed that if a person has a higher score on this scale, s/he tends to have lower scores on various depressive symptoms and anxiety self-report scales. Following research also confirmed that people with greater self-compassion were less likely to have high levels of depressive symptoms and anxiety (e.g., Neff, Rude, & Kirkpatrick, 2007). As such, the literature makes a strong argument for a relationship between self-compassion and positive psychological outcomes (e.g., less depressive symptoms and anxiety). However, little is known about its background mechanisms, especially about culture-related background mechanisms.

2. Proposed model

This study explored whether self-criticism and self-compassion are associated with depressive symptoms in cross-cultural contexts (Kitayama & Markus, 2000; Markus & Kitayama, 1991; Neff et al., 2008). We aimed to obtain a better understanding of the mechanisms involved in the relationship among self-construal, self-criticism, self-compassion, and depressive symptoms for the two contrasting cultures. In particular, we sought to ascertain the degree to which people engage in the two types of self-construal (independence vs. interdependence) and the degree to which they use (comparative vs. internalized) self-criticism and self-compassion in each culture. Then we sought to determine the influences such psychological factors have on levels of depressive symptoms and compared them between two cultures.

Heine, Lehman, Markus, and Kitayama (1999) argue that, in relation to self-compassion, self-criticism may not necessarily be a psychological problem for individuals who live in interdependent cultures. Nevertheless, when self-criticism is harsh and combined with feelings of isolation and over-identification, a lack of self-compassion may remain problematic. Thus, we expect self-criticism and self-compassion to be associated with levels of depressive symptoms across cultures. In order to link positive and functional values of lower depressive symptoms and better health conditions, we used the Level of Self-Criticism (LOSC) scale, Self-Compassion Scale (SCS), and self-construal scale. These scales may address the concerns and maintenance mechanisms of the cross-cultural outlook that can influence reports of depressive symptoms and well-being. A graphical presentation of the conceptual model that links the aforementioned factors is provided in Fig. 1.

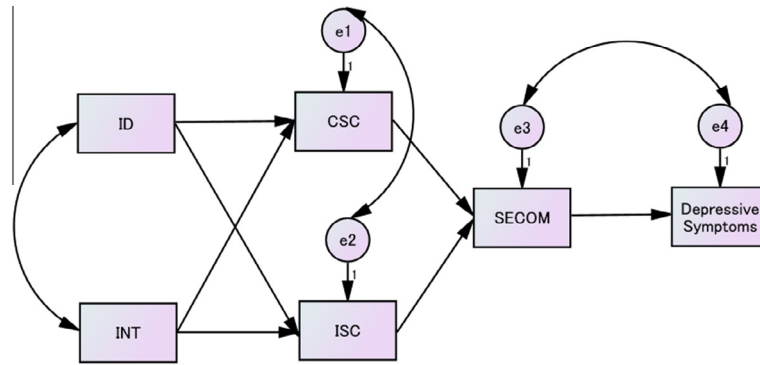


Fig. 1. Proposed conceptual model of self-construal, self-criticism, self-compassion on depressive symptoms *ID: Independent Self-Construal, INT: Interdependent Self-Construal, CSC: Comparative Self-Criticism, ISC: Internalized Self-Criticism, SECOM: Self-Compassion Scale.

3. Method

3.1. Participants

One group of participants in this study comprised 1,200 college students at Kyoto Sangyo University in Kyoto, Japan. The average age of the sample was 19.6 ($SD = .97$). Female participants accounted for 36% ($n = 437$) of the overall sample; men accounted for 64% ($n = 763$). A second group of participants comprised 420 college students enrolled at universities in Tennessee and Michigan (102 males, 318 females, mean age = 21 years, and $SD = 3.62$). The students participated in the study on a voluntary basis. The description of participants included cultural background information that participants were asked about the extent to which they identified with their ethnic or racial group.

3.2. Analysis plan

To establish *measurement invariance*, all scales were subjected to confirmatory factor analyses using AMOS 18.0 (Arbuckle, 2009), which was employed in addition to maximum likelihood estimation. The goal was to identify items that form cross-culturally comparable scales (Meredith, 1993). For evaluating the invariant measurement models, we drew on Little's (2000) rational modeling approach. We preferred the rational modeling approach to the traditional chi-square difference test because the latter is overly sensitive (González-Romá & Hernández, 2006). The test score of chi-square is also not necessarily an indicator of a poor model fit (Bagozzi & Yi, 1988). For model fit evaluation, Hu and Bentler's (1999) criteria were followed: models with root mean square error of approximation (RMSEA) less than .08, comparative fit index (CFI) greater than .95, and goodness of fit (GFI) greater than .95 were considered to show a reasonable fit.

3.3. Measurement instruments

The *self-construal* scale (Leung & Kim, 1997) was used to measure independent and interdependent self-construals. Responses to the 29 items were measured on a 7-point scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Higher scores indicated higher levels of independent and interdependent self-construal. The measurement invariance models fit the data well: CFI = .924, GFI = .935, RMSEA = .042, (IND); and CFI = .923, GFI = .944, RMSEA = .042 (INT). Cronbach's alphas were .90 (IND) and .80 (INT). Thus, these measurement models were accepted because all the relevant indices had good values in this study.

Self-criticism was measured using the Level of Self-Criticism (LOSC) scale (Thompson & Zuroff, 2004). Responses to 22 items

were measured on a 7-point scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Higher scores indicated a higher level of self-criticism. The measurement invariance models fit the data well: CFI = .934, GFI = .968, RMSEA = .042 (CSC), and CFI = .981, GFI = .982, RMSEA = .026 (ISC). Cronbach's alphas were .78 (CSC) and .84 (ISC). Thus, these measurement models were accepted because all the relevant indices had good values in this study.

Self-compassion was measured with the 26-item Self-Compassion Scale (SCS) (Neff, 2003), which consists of six subscales; self-kindness, self-judgment, common humanity, isolation, mindfulness, and over-identification. The students were asked to indicate their degree of agreement with each statement on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). Higher scores indicated a higher level of self-compassion. The measurement invariance models fit the data well: CFI = .909, GFI = .910, RMSEA = .037. Cronbach's alpha was .84. Thus, these measurement models were accepted because all the relevant indices had good values in this study.

Depressive symptoms were measured using the Center for Epidemiological Studies of Depression Scale (CES-D; Radloff, 1977) in which respondents are asked to rate how they felt during the past week on a 7-point scale ranging from 1 (*none of the time*) to 7 (*all of the time*). Higher scores indicate higher levels of depressive symptoms. The measurement invariance models fit the data well: CFI = .922, GFI = .936, and RMSEA = .035. Cronbach's alpha was also high at .87. Thus, this measurement model was accepted because all the relevant indices had good values in this study.

4. Results

4.1. Preliminary analyses

The descriptive statistics in this study are shown in Table 1. The mean CSC score for all participants was 4.17 ($SD = .62$) on a scale of 1–7, and the mean ISC score for all participants was 4.32 ($SD = .87$) on a scale of 1–7. Table 1 also shows the means and standard deviations for all variables in the model. Correlation analysis was conducted to assess the potential for multicollinearity among the variables. Table 2 shows the correlation matrix. Most of the correlations were significant at $p < .001$. To better care about the concerns of multicollinearity, we organized the goal pursuit predictors, which are based on the theoretical model.

4.2. Model analysis

The model specified in Fig. 1 was estimated and evaluated with path analysis, structural equation modeling using AMOS 18.0

Table 1
Means, Standard Deviations for Study Measures in Japan and Mainland US.

	Mean		SD	
	US	JA	US	JA
1. ID	4.42	5.20	0.76	0.85
2. INT	4.43	4.62	0.75	0.83
3. CSC	4.17	3.67	0.62	0.81
4. ISC	4.32	4.58	0.87	0.91
5. SECOM	3.91	3.90	0.50	0.71
6. Depressive Symptoms	2.63	2.63	0.42	0.55

Note: IND = Independent Self-Construal; INT = Interdependent Self-Construal; CSC = Comparative Self-Criticism; ISC = Internalized Self-Criticism, SECOM = Self-Compassion.

(Arbuckle, 2009), and a chi-square test providing a measure of the GFI of the data to the model (Byrne, 2001). To endure accurate results for the GFI test, a sample size of 100–200 is recommended (Hoyle, 2009), which was met for our analysis. The final model for the U.S., with standardized path coefficients, is presented in Fig. 2. The model fit did well appreciably. The fit of the model presented in Fig. 2 was good except for the Chi-square test, $\chi^2(10) = 135.96$, $p < .001$ (CFI = .960, GFI = .970, RMSEA = .08). All path coefficients were significant at $p < .001$. The covariance between ID and INT was significant at $p < .001$. From this analysis, we concluded that the effects of ID and INT on depressive symptoms are fully influenced through comparative and internalized self-criticism and self-compassion. This model is preferred because it is the most parsimonious one that still provides excellent data (Byrne, 2001; Hoyle, 2009).

Our primary research objective was to propose and test a model that delineates the process by which the dimensions of self-construal influence depressive symptoms. The model also incorporates anti-coping resources (comparative vs. internalized self-criticism) and a coping resource (self-compassion) as factors having potential effects on depressive symptoms. A path analysis was conducted to test the integrated model as it relates to the effects of self-construals, self-criticism, and self-compassion on depressive symptoms. As shown in Fig. 2, for participants in the U.S., independent self-construal negatively influenced comparative self-criticism ($\beta = -.25$, $t = -5.07$, $p < .01$) and positively influenced internalized self-criticism ($\beta = .33$, $t = 7.10$, $p < .01$). Interdependent self-construal positively influenced comparative self-criticism ($\beta = .14$, $t = 2.89$, $p < .01$) and positively influenced internalized self-criticism ($\beta = .18$, $t = 3.66$, $p < .01$). Comparative self-criticism negatively influenced self-compassion ($\beta = -.50$, $t = -16.00$, $p < .01$), as did internalized self-criticism ($\beta = -.40$, $t = -12.00$, $p < .01$). Self-compassion, in turn, negatively influenced depressive symptoms ($\beta = -.60$, $t = -11.00$, $p < .01$). Please note that these β s are not necessarily the same as path coefficients depicted in Fig. 2.

As also shown in Fig. 2, for participants in Japan, independent self-construal negatively influenced comparative self-criticism ($\beta = -.07$, $t = -2.38$, $p < .01$) and positively influenced internalized self-criticism ($\beta = .16$, $t = 4.88$, $p < .01$). Interdependent self-

construal positively influenced comparative self-criticism ($\beta = .14$, $t = 5.126$, $p < .01$) and internalized self-criticism ($\beta = .34$, $t = 10.98$, $p < .01$). Comparative self-criticism negatively influenced self-compassion ($\beta = -.45$, $t = -18.80$, $p < .01$), as did internalized self-criticism ($\beta = -.53$, $t = -11.10$, $p < .01$). Self-compassion, in turn, negatively influenced depressive symptoms ($\beta = -.63$, $t = -14.62$, $p < .01$).

In order to examine cultural variations in the proposed path model, the critical ratios for difference between the two estimations (i.e., using the U.S. sample and using the Japanese sample, respectively) for the same parameters were calculated. These results are depicted in Fig. 3, as a culturally general path model of the role of comparative and internalized self-criticisms as well as self-compassion as mediating factors in the relationship between self-construals and depressive symptoms. Culturally general or similar processes are depicted as solid lines, while culturally different processes are depicted as broken lines. The results show that the culturally general or similar processes are the positive relationship between interdependent self-construal and comparative self-criticism, and the negative relationship between self-compassion and depressive symptoms. Except for these relationships, our study found cultural differences in the positive relationships between independent self-construal and internalized self-criticism, and between interdependent self-construal and internalized self-criticism. It also found cultural differences in the negative relationships between independent self-construal and comparative self-criticism, between comparative self-criticism and self-compassion, and between internalized self-criticism and self-compassion.

5. Discussion and conclusion

This study explicitly examined how self-construals, self-criticisms, and self-compassion affect depressive symptoms and provided evidence that comparative and internalized self-criticisms as well as self-compassion influence the relationships between two types of self-construals and depressive symptoms. More specifically, the study showed that comparative and internalized self-criticisms worked as anti-coping mechanisms, while self-compassion worked as a coping mechanism for depressive symptoms. While previous studies identified some antecedents of depressive symptoms such as worry and rumination (Hong, 2007), current study is the first to link self-criticisms and self-compassion to depressive symptoms.

Building on the research by Kitayama, Markus, and their colleagues (Diener & Suh, 1999; Heine et al., 1999; Kitayama & Uchida, 2005; Uchida, Kitayama, Mesquita, Reyes, & Morling, 2008), we also explored the cultural variations in our model. While the path model showed that both of independent and interdependent self-construals impacted more on internalized self-criticism than on comparative self-criticism, the relative impact of each self-construal was opposite between the two cultures. Also, self-compassion, as a coping mechanism, had greater effects in the

Table 2
Correlation of Variables in the Multivariate Model.

	1	2	3	4	5	6					
1. ID	–	.300**	.460**	-.210**	-.001	.382**	.300**	-.092	.085**	-.066	.042
2. INT		–	.068	.130**	.270**	.400**	-.093	-.083**	.064	-.053	
3. CSC			–	.465**	.571**	-.653**	-.612**	.550**	.383**		
4. ISC				–	-.675**	-.534**	.335**	.342**			
5. SECOM					–	-.370**	.357**				
6. Depressive Symptoms						–					

Note: IND = Independent Self-Construal; INT = Interdependent Self-Construal; CSC = Comparative Self-Criticism; ISC = Internalized Self-Criticism; SECOM = Self-Compassion. * $p < .05$, ** $p < .01$.

Parameter: US Japan.

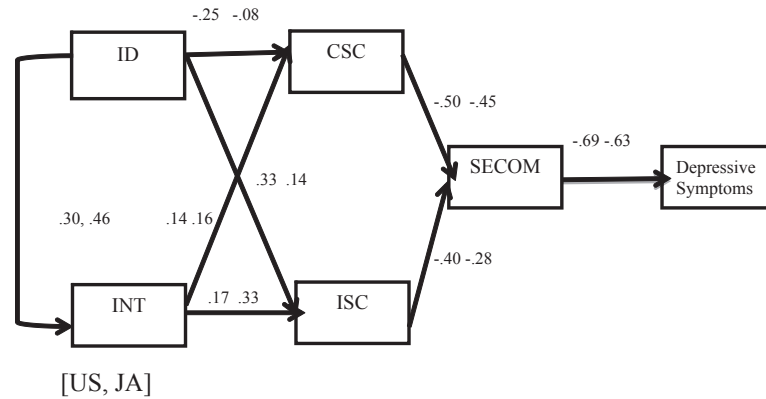


Fig. 2. Final model of self-construal, self-criticism, self-compassion on depressive symptoms in the US and Japan. *ID: Independent Self-Construal, INT: Interdependent Self-Construal, CSC: Comparative Self-Criticism, ISC: Internalized Self-Criticism, SECOM: Self-Compassion Scale. *Parameter: US Japan.

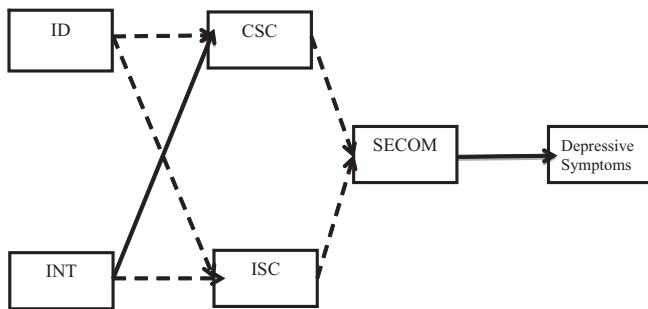


Fig. 3. Culturally general or similar processes and culturally different processes in path model. *ID: Independent Self-Construal, INT: Interdependent Self-Construal, CSC: Comparative Self-Criticism, ISC: Internalized Self-Criticism, SECOM: Self-Compassion Scale. *Solid line: culturally general or similar processes; Broken line: culturally different processes.

relationship between self-construals and depressive symptoms than the effects of internalized self-criticism and self-compassion.

Regarding the role of self-criticism and self-compassion in the mechanism of concerns for maintenance and functionality of self-face, which may contribute to self-esteem, we partially found that college students in the U.S. with stronger independent self-construal, have stronger tendencies of internalized (vs. comparative) self-criticism and appear to be less self-compassionate, resulting in higher level of depressive symptoms. Thus, our findings are partially consistent with [Kitayama and Markus's \(2000\)](#) theoretical approach of Euro-American well-being. Our results are also partially consistent with [Neff's \(2003\)](#) theoretical approach. We found that college students in the U.S. have higher levels of internalized self-critical tendencies, which constitute higher levels of self-criticism, and are more likely to maintain the higher levels of positive self-face. In general, individuals in the U.S. maintain good self-images and positive self-esteem, albeit with higher levels of depressive symptoms and lower levels of well-being, which may ultimately result in a higher risk of depressive symptoms and/or other potentially fatal mental health episodes. On the other hand, with regard to the role of self-criticism and self-compassion in the mechanism of concern for other-face maintenance and functionality, which may be a self-critical tendency, we consistently found that college students in Japan with higher levels of comparative self-criticism tendencies appear to foster and promote a lower tendency to be self-compassionate, which in turn decreases their level of depressive symptoms, compared to internalized self-criticism. Consequently, our findings are partially consistent with [Kitayama and Markus's \(2000\)](#) theoretical model of East Asian (mainly Japanese) well-being.

In conclusion, our findings suggest that self-criticism and self-compassion utilize multiple pathways to exert influence on depressive symptoms in terms of mental health and well-being among both U.S. and Japanese college students. The findings also suggest that self-criticism and self-compassion play a significant role as coping or anti-coping mechanisms and face-maintenance strategies, which may be comparative self-criticism rather than internalized self-criticism. More importantly, this study provides a more substantial clarification of the mechanism and model, insofar as college students in the U.S. and Japan are more likely to exhibit self-compassion as a functional tool for maintaining face, which could be the role of comparative self-criticism rather than internalized self-criticism, thus leading to decreased levels of depressive symptoms. Specifically, we identified how an increase in comparative self-criticism tendencies in college students in the U.S. and Japan leads to less internalized self-criticism, which leads to high self-compassion tendencies, which in turn, result in a lower level of depressive symptoms compared to those employing internalized self-criticism. [Neff \(2003\)](#) explained that if individuals are compassionate with themselves while confronting their own experiences of suffering, inadequacy, or failure, they offer themselves warmth and understanding rather than being coldly indifferent or berating themselves with self-criticism, specifically internalized self-criticism. As a result, individuals are more likely to recognize that being imperfect, making mistakes, and encountering difficulties are part of the shared human experience - something that we all go through, rather than being something that happens to "me" alone as an isolated, separate self in order to address and qualify this issue as compassion, as opposed to mere self-love.

From the perspective of this study, contradictory expectations occur in cross-cultural validation with respect to the multiple dimensions of interdependence derived from self-construal theory ([Kagitcibasi, 2005](#); [Markus & Kitayama, 1991](#)) and the challenges in understanding how different self-construals influence self-compassion. For instance, interdependent self-construal taps into people's feelings of human interconnectedness, and is more likely to promote self-compassion. However, it is also more likely to hinder self-compassion to the extent that it reflects concerns and worries with social conformity and harsh self-regulatory tactics. On the other hand, independent self-construal involves care and concern for the self ([Singelis, 1994](#)), which is more likely to increase self-compassion. Nevertheless, it may connote feelings of separation or isolation, thus undermining the role of self-compassion. Moreover, [Neff \(2003\)](#) suggested another possible process; self-compassionate people entertain relatively more mastery goals than performance goals with respect to self-criticism.

6. Limitations and directions for future study

Several limitations of the study should be noted. First, in the interest of cultural validity, this sample is limited to college students in the U.S. and Japan. To investigate cultural variation, data must be collected from different locations, such as European countries or other countries. Second, the measurement of all constructs in this study is self-reported. Thus, collecting information from various sources and measurements in future studies would be helpful. Third, the cross-sectional design of this study limits its ability to discern causal relationships, a limitation that can be resolved in a longitudinal study. Owing to differences in cultural orientation from generation to generation, the differences between the self-criticism and self-compassion of parents and college students may create an intergenerational conflict in the social environment. Determining the specific coping mechanism, i.e., self-compassion, and the strategies employed by parents and college students may provide the necessary steps toward understanding conflict resolution within the Japanese or U.S. family members.

7 References

- Arbuckle, J. L. (2009). *AMOS (Version 7.0) [computer program]*. Chicago: SPSS.
- Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16(Spring), 74–94.
- Baumeister, R. F., Heatherton, T. F., & Tice, D. M. (1993). When ego threats lead to self-regulation failure: Negative consequences of high self-esteem. *Journal of Personality and Social Psychology*, 64, 141–156.
- Blatt, S. J., Hart, B., Quinlan, D. M., Leadbeater, B., & Auerbach, J. (1993). Interpersonal and self-critical dysphoria and behavioral problems in adolescence. *Journal of Youth and Adolescence*, 22, 253–269.
- Byrne, B. M. (2001). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. Mahway, NJ: Lawrence Erlbaum Associates.
- Diener, E., & Suh, E. M. (1999). National differences in subjective well-being. In D. Kahneman, E. Diener, & N. Schwarz (Eds.), *Well-being: The foundations of hedonic psychology* (pp. 434–450). New York: Russell-Sage.
- González-Romá, V., & Hernández, A. (2006). Power and Type I error of the mean and covariance structure analysis model for detecting differential item functioning in graded response items. *Multivariate Behavioral Research*, 41, 29–53.
- Heine, S. J., Lehman, D. R., Markus, H. R., & Kitayama, S. (1999). Is there a universal need for positive self-regard? *Psychological Review*, 106, 766–794.
- Heine, S. J. (2003). An exploration of cultural variation in self-enhancing and self-improving motivations. In V. Murphy-Berman & J. J. Berman (Eds.), *Cross-cultural differences in perspectives on the self* (pp. 118–145). Lincoln: University of Nebraska Press.
- Hong, R. Y. (2007). Worry and rumination: Differential associations with anxious and depressive symptoms and coping behaviour. *Behaviour Research and Therapy*, 45, 277–290.
- Hoyle, R. H. (2009). *Structural Equation Modeling*. Thousand Oaks, CA: SAGE Publications.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6, 1–55.
- Kagitcibasi, C. (2005). Autonomy and relatedness in cultural context: Implications for self and family. *Journal of Cross-Cultural Psychology*, 36, 403–422.
- Kitayama, S., & Markus, H. R. (2000). The Pursuit of happiness and the realization of sympathy: Cultural patterns of self, social relations, and well-being. In E. D. Diener & E. M. Suh (Eds.), *Culture and subjective well-being* (pp. 113–161). Cambridge, MA: MIT Press.
- Kitayama, S., & Uchida, Y. (2005). Interdependent agency: An alternative system for action. In R. M. Sorrentino, D. Cohen, J. M. Olson, & M. P. Zanna (Eds.), *Cultural and social behavior: The Ontario Symposium* (Vol. 10, pp. 137–164). Mahwah, NJ: Lawrence Erlbaum.
- Leung, T., & Kim, M. S. (1997). *A revised self-construal scale*. Department of Speech: University of Hawaii at Manoa, Honolulu, Hawaii.
- Little, T. D. (2000). On the comparability of constructs in cross-cultural research: A critique of Cheung and Rensvold. *Journal of Cross-Cultural Psychology*, 31, 213–219.
- Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, 98, 224–253.
- Meredith, W. (1993). Measurement invariance, factor analysis and factorial invariance. *Psychometrika*, 58, 525–543.
- Neff, K. D. (2003). The development and validation of a scale to measure self-compassion. *Self and Identity*, 2, 223–250.
- Neff, K. D., Pisitsungkarn, K., & Hsieh, Y.-P. (2008). Self-compassion and self-construal in the United States, Thailand, and Taiwan. *Journal of Cross-Cultural Psychology*, 39, 267–285.
- Neff, K. D., Rude, S. S., & Kirkpatrick, K. (2007). An examination of self-compassion in relation to positive psychological functioning and personality traits. *Journal of Research in Personality*, 41, 908–916.
- Radloff, L. (1977). The CES-D scale: A self report depression scale for research in the general population. *Applied Psychology Measurement*, 1, 385–401.
- Sedikides, C. (1993). Assessment, enhancement, and verification determinants of the self-evaluation process. *Journal of Personality and Social Psychology*, 65, 317–338.
- Singelis, T. M. (1994). The measurement of independent and interdependent self-construals. *Personality and Social Psychology Bulletin*, 20, 580–591.
- Taylor, S. E., & Brown, J. D. (1988). Illusion and well-being: A social psychological perspective on mental health. *Psychological Bulletin*, 103, 193–210.
- Thompson, R., & Zuroff, D. C. (2004). The levels of self-criticism scale: comparative-self-criticism and internalized self-criticism. *Personality & Individual Differences*, 36, 419–430.
- Uchida, Y., Kitayama, S., Mesquita, B., Reyes, J. A. S., & Morling, B. (2008). Is Perceived emotional support beneficial? Well-being and health in independent and interdependent cultures. *Personality and Social Psychology Bulletin*, 34, 741–754.