Effect of Self-Compassion on Evaluation and Choice of Healthy Food

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Abstract

In today's affluent food environment, investigating factors that facilitate resistance in the face of barriers to health goals may be vital for achieving successful promotion and regulation of health. This study was implemented to investigate the effect of self-compassion on the evaluation and choice of healthy vs. unhealthy food. In Study 1, participants (N = 101) primed with self-compassion evaluated unhealthy food more negatively than those primed with self-esteem. As predicted, however, there was no difference in attitude toward healthy food between the two priming conditions. In Study 2, participants (N = 54) were asked to choose between healthy and unhealthy food and then their self-compassion was measured. Results show that participants with high self-compassion chose healthy food more often than unhealthy food, while those with low self-compassion chose unhealthy food more than healthy food. The implications of the findings are discussed in terms of health campaign strategies and further research into the relation between self-compassion and health behaviors.

Key words: Self-Compassion, Self-Esteem, Food Evaluation and Choice, Healthy Food, Health Campaign

1. INTRODUCTION

With the increasing level of interest in health and diet-related diseases, finding ways to promote health behaviors and food choice is more important than ever before. In today's affluent food environment, many people set their health goals and strive to show health behaviors. However, their intentions and behaviors are often distracted by temptations and self-regulation failures (Schulze & Hu, 2002; Sirois, 2014; Park & Kang, 2015; Webb & Forman, 2013). Therefore, investigating factors that facilitate resistance in the face of barriers to health goals may be necessary for successful health promotion and regulation.

Several studies have examined the effect of self-compassion—a self regulatory concept defined as regarding oneself kindly and compassionately and exerting mindfulness in difficult times (Neff, 2003a)—on health-related behaviors (Adams & Leary, 2007; Ferrari et al., 2019; Terry & Leary, 2011; Webb & Forman, 2013). In their review of the linkage between self-compassion and health behaviors, Terry and Leary (2011) posited that self-compassion facilitates healthy functioning and adaptive behaviors when people are unhealthy.

Previous work has focused on reactions after health-breaking events such as overeating (Adams & Leary, 2007), smoking (Kelly et al., 2010), binge eating (Webb & Forman, 2013), illness (Brion et al., 2014), or to in-

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tentions to engage in exercising (Gedik, 2019; Magnus et al., 2010), rather than the health behaviors themselves (Terry et al., 2013). That is, there is no direct evidence that self-compassion promotes health related-behavior, with one exception (Sirois et al., 2015). Sirois and colleagues (2015) have provided preliminary evidence that people with high self-compassion were more likely to exhibit health-promoting behavior than those with low self-compassion. In the current study, we expand on this finding by exploring the intervention role of self-compassion in food evaluation and choice behaviors and testing the comparative effects of self-compassion and self-esteem.

2. THEORETICAL BACKGROUND

2.1. Self-compassion

Self-compassion refers to a tendency to treat oneself with kindness in a difficult and painful situation, to understand their own failure with a nonjudgmental attitude, and to perceive their experience as something everyone experiences (Neff, 2003a, 2003b; Terry & Leary, 2011; Yarnell et al., 2019). Self-compassion is composed of three components; self-kindness (vs. self judgment), common humanity (vs. isolation), and mindfulness (vs. over-identification). Self-kindness indicates that people care and understand themselves rather than judging and criticizing harshly. Common humanity refers to recognizing that people in general suffer from difficulties and make mistakes. By accepting that failures and difficulties are the normal human condition, self-compassionate people have a broad perspective and feel connected to others rather than feeling isolated. Finally, mindfulness involves a balanced view of one's emotions and cognitions without exaggerating or over-identifying one's negative feeling and thoughts (Neff, 2011; Terry & Leary, 2011).

Recent reports have found that people with high self-compassion are more likely to exhibit resilience

and less-negative reactions to negative events (Adams & Leary, 2007; Allen & Leary, 2010; Leary et al., 2007; Neff et al., 2007). Yamaguchi et al. (2014) explored the effect of self-compassion on depressive symptoms and found that people with high self-compassion exhibited less depressive symptoms.

Empirical studies also show that self-compassion is associated with psychological well-being (Neff, 2009, 2011) and self-compassionate people are more likely to have positive affect and greater life satisfaction and they are less depressed and less anxious than those with low self-compassion (Neff, 2003b, 2009; Neff et al., 2008; Terry et al., 2013). For example, Neff et al. (2005) showed that people with higher self-compassion expressed greater competence and held higher persistence towards academic goals when faced with obstacles. Another study found that self-compassion predicted life satisfaction (Yang et al., 2016). More recently, Sun et al. (2016) found that Hong Kong adolescents high in self-compassion exhibited higher psychological wellbeing.

As mentioned above, self-compassion prevents health breaking behaviors such as overeating, binge eating, smoking, and illness (Adams & Leary, 2007; Brion et al., 2014; Kelly et al., 2010; Webb & Forman, 2013) and facilitates healthy functioning and adaptive behaviors (Holden et al., 2020; Sirois et al., 2015; Terry & Leary, 2011). As such, previous findings suggest that self-compassion is a potentially important construct in promoting health related behaviors.

2.2 Comparison between self-compassion and self-esteem

Self-compassion has been differentiated from self-esteem conceptually and empirically (Leary et al., 2007; Neff, 2003b; Neff & Vonk, 2009). Both self-compassion and self-esteem are a positive self-view. Self-esteem is related to self-worth that is conditional on personal competence and performance. Self-compassion, in contrast, is nonevaluative toward one's incompetence and

failures (e.g., Crocker & Wolfe, 2001; Leary et al., 2007; Neff et al., 2007). As such, self-esteem is prone to self-deficits. However, because self-compassion includes unconditional self-worth, self-attitude is not influenced by one's inadequacy or failure. Also, the positive self feelings that distinguish people with high self-compassion are not likely to involve narcissism or self-enhancing tendencies that people with high self-esteem exhibit (Leary & MacDonald, 2003; Neff, 2003b). Thus, self-compassion is regarded as a healthier form of self-attitude and important in dealing with how individuals cope with problems (Karanika and Hogg, 2016).

Based on the principles of evolutionary biopsychology, Gilbert and Irons (2005) have suggested that self-compassion is related to activation of the self-soothing system (associated with feelings of safeness) and deactivation of the threat system (associated with insecurity and defensiveness), while self-esteem is associated with evaluation of one's superiority. Thus, self-compassion is likely to promote emotional regulation, but self-esteem is not.

Prior research indicates that self-compassionate people show lower levels of negative affect and greater self-worth stability (Neff et al., 2007; Neff & Vonk, 2009), and appraise themselves more objectively than those with high self-esteem (Leary et al., 2007; Neff et al., 2007). For example, Leary et al. (2007) found that, when encountering negative life events, self-compassionate people tended to accept that there are negative as well as positive aspects of their personality. People high in self-esteem, on the other hand, engaged in self-serving biases and attributed negative events less to themselves than those low in self-esteem. In a similar vein, self-compassionate participants regarded their weakness as more malleable and had a higher level of self-improvement than those with self-esteem (Breines & Chen, 2012).

3. RESEARCH HYPOTHESES

As discussed above, self-compassion is a potential quality associated with the practice of health behaviors via its components of self-kindness, common humanity, and mindfulness working on self-regulation. Self-compassion is associated with a higher level of positive emotion (Neff, 2003b; Neff et al., 2007) and produces positive affects by admitting negative states (Germer & Neff, 2013). Positive affect increases self-regulation which is related to the practice of health-promoting behaviors (Conner, 2013; Steptoe, 2010; Tice et al., 2007). Therefore, positive regulatory force of self-compassion may explain, in part, its association with health behaviors (Sirois et al., 2015).

Recent research suggests that self-compassion may facilitate health-promoting behaviors (Terry and Leary, 2011). Self-compassion reduces defensiveness and negative emotions resulting in adaptive health-related behaviors. Related studies found that self-compassionate people tend to resort to medical treatment more quickly (Terry et al., 2012) and are more inclined to utilize medical equipment, when needed (Allen et al., 2012). It was also found that higher self-compassion promotes higher mindful eating (Taylor et al., 2015). Thus encouraging people to address self-compassion decreases negative affect and makes them exert their self-regulation on undesirable events (e.g., eating unhealthy food), possibly reducing their preference for and the choice of unhealthy food.

However, self-esteem is prone to and is likely to be influenced by one's inadequacy or failure (Leary et al., 2007; Neff et al., 2007). People in general do not let their self-esteem be hurt by negative events and inducing self-esteem makes people engage in self-serving biases and regard negative events (e.g., eating unhealthy food) as being less related to themselves. Therefore, people high in self-esteem will probably evaluate unhealthy food less negatively. Based on these arguments, the following hypotheses were proposed:

H1a: High self-compassion participants will evaluate unhealthy food more negatively than high self-esteem participants (Study 1).

H1b: Evaluation of healthy food will not differ between high self-compassion participants and high self-esteem participants (Study 1).

H2: High self-compassion participants will choose healthy food more than unhealthy food, whereas low self-compassion participants will choose unhealthy food more than healthy food (Study 2).

For this purpose, this study will induce self-compassion and self-esteem situationally by state manipulation (study 1) and conceptualize self-compassion as a stable trait (study 2). Self-compassion is regarded as both an internal trait (Neff, 2003a; Sirois et al., 2015) and state factor (Leary et al., 2007; Shapira and Mongrain, 2010; Shapiro et al., 2007). Neff (2003a) developed a 26-item Self-Compassion Scale to measure self-compassion as a personality trait. Shapira and Mongrain (2010) manipulated self-compassion by asking participants to write self-compassionate letters to themselves for seven days. Findings of this study will provide evidence of the direct impact of self-compassion on health-promoting behaviors and have important implications for future research on self-compassion and health-related behaviors.

4. STUDY 1

4.1. Method

Study design and participants

Study 1 employed a mixed factor design with one between factor (priming: self-compassion vs. self-esteem) and one within factor (food type: healthy vs. unhealthy). A total of 101 undergraduate students participated in the study (male 56, female 45, average age 23 years). Participants were recruited from two undergraduate courses in a university in Seoul area and they earned extra credit for research participation requirement.

4.2. Procedure

The study consisted of three stages. In the first stage, we manipulated participant self-compassion or self-esteem via priming instructions (see next section for details). In the second stage, subjects were presented with food stimuli. In the third stage, the subjects filled out a questionnaire regarding dependent variables. Specifically, we first asked all participants to perform a priming task to manipulate the participants into either having self-compassion or self-esteem. After the task completion, participants were shown 12 food ads (4 healthy food items, 4 unhealthy food items, and 4 non-food control items), each of which was presented randomly. And then, participants completed questionnaires including attitude toward the food, PANAS emotion measures, and demographic variables.

4.3. Food stimulus development

In developing food stimulus, we considered several healthy and unhealthy food categories and selected four healthy food categories (yogurt, milk, fruit juice, and tofu) and four unhealthy food categories (soft drink, fast food burger, biscuit, and ice cream). Healthy food includes yogurt, milk, fruit juice, and tofu while unhealthy food includes soft drink, fast food burger, biscuit, and ice cream. A pretest was performed to ensure that stimulus food ads were properly perceived as healthy or unhealthy. A total of 47 participants were asked to indicate their agreement on the item, "It is good for health" on a seven-point scale from 1 (strongly disagree) to 7 (strongly agree). Participants perceived four healthy food categories ($M_{healthy}$ = 6.88, SD = 1.44) as being significantly healthier than four unhealthy food categories ($M_{unhealthy}$ = 2.78 SD = 1.37), t = 15.71, df = 46, p < .001. Therefore, healthy and unhealthy food stimuli are appropriately selected.

4.4. Priming self-compassion and self-esteem

Participants were instructed to write about a negative experience from the past for five minutes and were asked to think about the negative event that made them feel badly about themselves. Specifically, participants were led to describe the event in details regarding what happened to whom, how they felt and what they did at the time. Participants were then randomly assigned to one of two experimental conditions; self-compassion priming and self-esteem priming.

In the self-compassion priming condition, participants were led to think about the event in a self-compassionate way by answering three questions designed to prompt three components of self-compassion (Leary et al., 2007; Neff, 2003a). The self-kindness prompt asked participants to write down sentences about kindness and concern for themselves. The second prompt was designed to induce common humanity and participants listed how other people also experience similar events. To prompt mindfulness, the third question required participants to write a paragraph about their feelings that described the event in an objective way.

Participants in the self-esteem priming condition answered three questions focusing on self-esteem induction. To make participants feel good about themselves, the prompts asked them 1) to list their positive aspects that show their competence and value, 2) to write down sentences that they are not related to the negative event, and 3) to describe that the event does not represent their real characteristics.

Participants' emotions were assessed on a seven-point scale comprising two positive (happy, delighted) and six negative (sad, depressed, angry, annoyed, nervous, anxious) items. The Cronbach's alpha of positive emotions was .92 and that of negative emotions was .83.

4.5. Dependent measure

Participants were asked to evaluate healthy and unhealthy food using the following four seven-point se-mantic differential scale items (MacKenzie et al., 1986): good/bad, favorable/unfavorable, positive/negative, and like/dislike (Cronbach's alpha = .90). By averaging mean scores of four healthy food items (yogurt, milk, fruit juice, tofu), a single mean score was produced, serving as dependent measure for healthy food. By the same token, we averaged mean scores of four unhealthy food items (fast food burger, biscuit, ice cream) and used a single mean score as a dependent measure for unhealthy food.

4.6. Results

A mixed measures ANOVA was conducted with one between factor (priming: self-compassion vs. self-esteem) and one within factor (food type: healthy vs. unhealthy). It was found that an interaction effect of priming and food type was not statistically significant ($F = 2.00$, n.s., $\eta2 = .020$) while main effects of priming ($F = 4.08$, $p < .05.$, $\eta2 = .040$) and food type ($F = 45.04$, $p < .001$, $\eta2 = .313$) were both statistically significant.

In order to test H1a, evaluation of unhealthy food according to priming condition (self-compassion vs. self-esteem) was analyzed. As shown in Table 1, self-compassion–primed participants ($M = 4.34$) evaluated unhealthy food more negatively than did self-esteem–primed participants ($M = 5.00$, $t = 2.615$, $p < .05$, $\eta2 = .065$). H1b predicted that evaluation of healthy food would not differ between self-compassion– and self-esteem–primed conditions. As shown in Table 2, evaluation of healthy food was not significantly different between self-compassion–primed participants ($M = 5.52$) and self-esteem–primed participants ($M = 5.76$, $t = .881$, n.s., $\eta2 = .008$). Therefore, H1a and H1b are supported.

Table 1. Evaluation of unhealthy food according to priming condition

Priming	N	Mean	SD	df	t
Self-esteem	51	5.00	1.15	99	2.615**
Self-compassion	50	4.34	1.35		

**p<.05

Table 2. Evaluation of healthy food according to priming condition

Priming	N	Mean	SD	df	t
Self-esteem	51	5.76	1.25	99	.881
Self-compassion	50	5.52	1.54		

To assess the difference in the effect of emotions on food attitude between the self-compassion and self-esteem conditions, participants' emotion ratings (PANAS) were analyzed. Results show that for positive and negative emotions, there was no significant difference between self-compassion and self-esteem conditions (positive emotions: Mself-compassion=3.53, Mself-esteem=3.21, negative emotions: Mself-compassion =3.18, Mself-esteem =3.14, All p's =n.s.), indicating that positive and negative emotions did not affect self-compassion– and self-esteem–primed participants' attitudes toward healthy and unhealthy foods.

5. STUDY 2

Study 1 indicates that people primed with self-compassion evaluated unhealthy food more negatively than those with self-esteem while there was no difference in evaluation of healthy food between the two priming conditions. Study 2 was performed to expand and confirm this finding by exploring the effect of self-compassion as a measured internal trait and by implementing a task of choosing directly between healthy and unhealthy food.

5.1. Method

Participants

Study 2 employed a single-factor (self-compassion: high vs. low) design and a total of 54 undergraduates (50% female) participated in this study. Participants were recruited from one undergraduate class in a university in Seoul area and they ranged in age from 20 to 26 years (M = 20.6, SD = 2.6).

5.2 Procedure

Participants were told that the purpose of the study was to understand how people make decisions regarding everyday events. They were given a scenario as follows: "One day at lunchtime, you are considering choosing between hamburger and bibimbab for your lunch. Hamburger and bibimbab are of the same price. Which of the two would you choose?" Participants were asked to choose between the two menus. Participants next completed a questionnaire assessing their level of self-compassion and their eating habits by determining how frequently they had hamburger (bibimbab) on a seven-point scale, together with demographic variables.

5.3 Independent measure

Self-compassion was measured using the 26-item self-compassion scale developed by Neff (2003a). The self-compassion scale consists of the three components of self-compassion and their negative counterparts, self-kindness (self-judgment), common humanity (isolation), and mindfulness (over-identification). Because the six subscales are significantly intercorrelated, they are well explained by the single factor of self-compassion (Neff, 2003a). The Cronbach's alpha coefficient of the single factor was .902. Participants were divided into high and low self-compassion groups based on the median value (= 4.06).

5.4 Dependent measure

Participants were given a lunch menu and asked to indicate their choice of lunch between hamburger and bibimbab. In Korea, hamburger is regarded as an unhealthy junk food which is mainly sold in fast food restaurants such as McDonald's and Burger King and bibimbab is a traditional Korean healthy dish. A pretest was performed to make sure that hamburger and bibimbab were properly perceived as unhealthy and

healthy, respectively. A total of 16 participants were asked to indicate their agreement on the item, "It is good for health" on a seven-point scale from 1 (strongly disagree) to 7 (strongly agree). One sample t-test showed that hamburger was perceived unhealthy (M = 2.62, SD = 1.20, t = -7.89, p < .001) whereas bibimbab was perceived healthy (M = 7.19, SD = 1.75, t = 4.97, p < .001). Therefore, healthy and unhealthy food stimuli were properly selected.

5.5. Results

Before hypothesis testing, participants' eating habits in terms of how frequently they have hamburger (bibimbab) were analyzed between the high and low self-compassion groups. Results indicate that the frequency of eating bibimbab was not significantly different between the high (M = 4.85) and low (M = 4.61) self-compassion groups (t = .669, n.s.), and that of eating hamburger was not significantly different between the high (M = 4.42) and low (M = 3.80) self-compassion groups (t = 1.328, n.s.).

When participants were asked to choose between a healthy food (bibimbab) and an unhealthy food (hamburger) as their lunch, it was found that those with high self-compassion chose bibimbab (67.8%, standard residual = 1.3) more than hamburger (34.6%, standard

Figure 1. Choice of healthy vs. unhealthy food according to self-compassion condition

residual = -1.2), while those with low self-compassion chose hamburger (65.3%, standard residual = 1.2) more than bibimbab (32.2%, standard residual = -1.2); the difference is statistically significant (χ^2=5.967, p < .05, effect size (phi) = .332) (Figure 1). Thus, H2 is supported.

6. DISCUSSION

This study investigated the effect of self-compassion as an important self-regulatory factor on evaluation and choice of unhealthy food. To this end, Study 1 primed participants with either self-compassion or self-esteem and asked them to evaluate healthy and unhealthy food items. It was predicted that self-compassion–primed participants would evaluate unhealthy food more negatively than those with a self-esteem condition (H1a), while evaluation of healthy food will not be different between the two priming conditions (H1b). Results indicate that participants in the self-compassion condition evaluated unhealthy food more negatively than did those in the self-esteem condition, thereby supporting H1a. As predicted by H1b, there was no difference in attitude toward healthy food between the two priming conditions.

Whereas self-compassion was manipulated as a state in Study 1, it was regarded as a trait and measured in Study 2. Hypothesis 2 predicted that high self-compassionate people would prefer healthy to unhealthy food, while the reverse would be the case for low self-compassionate people. It was found that participants with high self-compassion chose healthy food (bibimbab) more than unhealthy food (hamburger), while those with low self-compassion showed the opposite trend, which supports H2.

This study has obvious implications for academicians and health-related practitioners. Terry and Leary (2011),
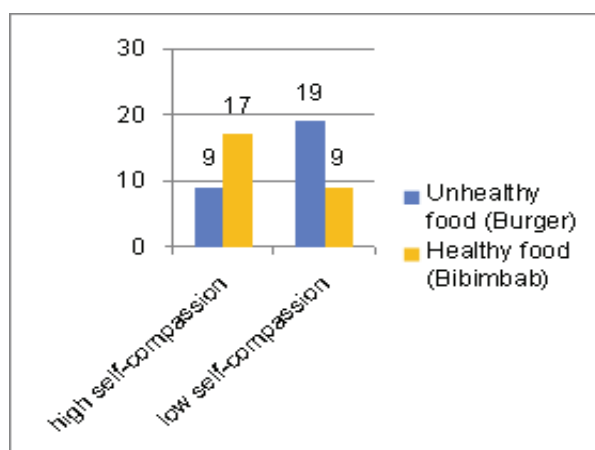
in their review of the literature on self-compassion, suggested that self-compassion may promote engagement in positive health behaviors. Our findings provide direct evidence that self-compassion has a self-regulatory benefit for food evaluation and choice behaviors. Our study also extends prior research on self-compassion and health in several important ways. First of all, prior research indicates that self-compassion is regarded as both a trait and state factor (Neff, 2003a; Leary et al, 2007; Shapiro et al., 2007). Recently, Sirois and colleagues (2015) have proposed that self-compassion as a personality trait promotes healthy behaviors. In our study, however, we introduced self-compassion as a state manipulation (Study 1) and measured it using the 26-item Self-Compassion Scale (SCS; Neff, 2003a). Both state and trait aspects of self-compassion positively affect food-related behaviors. As in our Study 1, administering self-compassion interventions is relatively easy, which makes them useful for promoting health-related behaviors.

Secondly, in this study, we compared self-compassion with self-esteem and found a differential impact on food evaluation and choice, thereby identifying self-compassion as a unique self-regulatory buffer contributing to health practice. Researchers indicate that self-compassion and self-esteem are related to but different from each other conceptually and empirically (Gilbert & Irons, 2005; Neff et al., 2007). Self-esteem has positive aspect but egoistic part of it exists as well (Jordan et al., 2003; Neff, 2003a). The problem is that it is not clear how and why people possess egoistic vs positive part of self-esteem. Prior research suggests that people in general tend to keep a sense of high self-esteem because it is certainly better to feel worthy and proud about themselves than worthless and ashamed (Neff, 2011). However, people with high self-esteem also have unrealistic self-concept of their own ability and attractiveness, oftentimes resulting in expressing ag-

gressiveness or retaliating against offenders (Twenge et al., 2008). Pursuing self-esteem also causes problems when it is related to evaluation of self-worth in certain domains such as academic and work performance or social approval (Neff, 2011). This indicates that essential elements necessary for success in life are sometimes disregarded in order to maintain high self-esteem. For example, a person spends most of time in developing academic career may neglect the importance of health because his/her self-esteem is more focused on being a great scholar.

However, unlike self-esteem, self-compassion is not contingent on success or failure of specific domain performance and it offers balanced self-view in the face of different domains or events (Neff, 2009, 2011). In this regard, this study provides empirical support for the role of self-compassion in regulating behaviors that research on self-esteem has neglected.

Lastly, one possible process that underlies different influences of self-compassion and self-esteem on heath behavior may be that self-compassionate individuals evaluate events including themselves (e.g., healthy vs unhealthy food choice) more accurately than those with high self-esteem. It is because people with high self-esteem are likely to be influenced by either self-criticism or self-enhancement (Leavy et al., 2007). Hence, the reason why self-compassion and self-esteem facilitates healthy choice differently needs to be examined with additional research.

As discussed above, previous research has paid attention to reactions after health-breaking events such as overeating, smoking, and binge eating rather than health behaviors themselves. In this regard, findings of this study will benefit health-promotion strategists. When developing health-promoting communication strategies, practitioners may need to consider personality characteristics such as self-compassion and self-esteem. For example, the effectiveness of a health campaign that

encourages people not to eat unhealthy food will be higher for self-compassionate people than those with high self-esteem. Also, health professionals may utilize both self-compassion scale and self-compassion interventions to facilitate health behaviors. For instance, campaign messages can request that recipients recall past negative events and then administer three prompts to induce self-kindness, common humanity, and mindfulness, as described in Study 1.

The results of this study must be considered in light of several limitations. We did not examine the mechanisms underlying the impact of self-compassion on food evaluation and choice behaviors. That is, what mediates the effect of self-compassion on health behaviors (e.g., motivation, cognition, or emotion) was not specifically tested. Although, in Study 1, we found no effects of positive and negative emotions, future research should investigate the mediating link between self-compassion and health behaviors. It is also recommendable to measure emotions before and after self-compassion priming and examine the change of mood. Additionally, the participants of both studies are mainly students who tend to be less concerned about their health than older persons. Generalization of our findings requires further studies including subjects of other age groups.

In conclusion, self-compassion is a potential self-regulatory quality that should be a focus of health research. This study presents direct evidence that self-compassion regulates and promotes engagement in healthy choice and evaluation of food. Further research is needed to explore the role of self-compassion in moderating health-related behaviors and the underlying mechanisms thereof.

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