

# The meaning of kindness and gratitude in Japan: A mixed-methods study

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**Abstract:** Kindness and gratitude expression have significant wellbeing enhancing effects. However, the effect of engaging in these activities may be influenced by cultural factors. The purpose of this research was to explore how Japanese young adults construe kindness and gratitude, as well as to investigate the effect of kindness and gratitude expression on their wellbeing. Fifty-eight Japanese students were randomly allocated to three groups: acts of kindness, gratitude expression, and memorable events (as control), and engaged in the activities for three weeks. Exploratory content analysis revealed that participants in the kindness and gratitude groups referred to similar types of social support when describing the activities they had engaged in, including instrumental support (offering objects), emotional support (encouragement), and informational support (teaching). As for the effect of kindness and gratitude on wellbeing, analyses revealed a significant decrease in depression and negative affect from pretest to posttest in all groups. Future research should clarify whether practicing the character strengths of kindness and gratitude is effective for participants with an Asian-cultural background.

**Keywords:** kindness; gratitude; wellbeing; depression; culture

## 1. Introduction

Moral philosophers distinguish between core virtues such as humanity, which can be achieved through the character strength of kindness, and transcendence, achieved through character strengths such as gratitude (Peterson & Seligman, 2004). Kindness and gratitude are significantly related to subjective wellbeing (Park, Peterson, & Seligman, 2004), and intentionally practicing these strengths of character has a happiness-increasing effect (e.g. Boehm, Lyubomirsky, & Sheldon, 2011; Emmons & McCullough, 2003). The results of previous studies have encouraged the development of “positive psychology interventions”, which promote the effectiveness of kindness and gratitude expression in increasing subjective wellbeing. However, there are few studies clarifying under what conditions practicing kindness and gratitude is most effective, by taking into consideration participants’ personality, as well as their social and cultural background. Furthermore, it is important to know how people of different ages and from different cultures construe kindness and gratitude, as their perceptions may shape the effectiveness of the intervention.

Not many previous studies have looked into how participants construe kindness and gratitude. While some positive-psychology interventions give examples of acts of kindness (Nelson et al., 2015) or expressions of gratitude reported by participants (Emmons & McCullough, 2003), fewer have actually analyzed people’s definitions of kindness and gratitude

in-depth. Focusing on children's and adolescents' definitions of kindness, Binfet and his colleagues reveal that kindness is mostly understood as helping, showing respect, giving, and encouraging (Binfet, 2020; Binfet & Passmore, 2019; Binfet & Whitehead, 2019). Another thematic analysis of adolescents' conceptualizations of kindness found themes such as helping, emotional support, generosity, forgiveness, honesty, and inclusion (Cotney & Banerjee, 2019). These analyses reveal that the core of kindness may be helping, giving, and emotional support, although many other behaviors in the domain of agreeableness, such as honesty, forgiveness, and respect, may also be conceptualized as kindness.

Researchers have also investigated the prototype of gratitude as defined by laypersons, and found some features that refer to eliciting situations, such as receiving a gift or being helped (Lambert, Graham, & Fincham, 2009). In a study on adolescents, gratitude was found to be associated with support from others, family, and friendship (Gottlieb & Froh, 2019), while children reported feeling grateful for engaging in interesting activities, companionship, support from friends and family, or receiving objects (Owens & Patterson, 2013). Although some qualitative attempts to analyze kindness and gratitude definitions exist, comparisons between examples of kindness and gratitude-eliciting situations have not yet been made. Furthermore, the meaning of kindness and gratitude may differ by culture, so investigating how people from different cultures construe kindness and gratitude is the first step in creating culturally-responsive interventions.

Culture may influence not only people's definitions of kindness and gratitude, but also the effectiveness of practicing these character strengths. Kindness and gratitude are two facets of the process of giving and receiving social support, and are heavily saturated with moral meaning. Therefore, kindness and gratitude expression might be strongly influenced by cultural and social values. In cultures where individuals may feel uneasy requesting social support because of relationship concerns (Kim, Sherman, Ko, & Taylor, 2006), expressing gratitude could foster a sense of indebtedness. Concerning indebtedness, previous studies show that gender may moderate the effect of gratitude on wellbeing, men benefitting less from gratitude expression than women, because men are more prone to experience burden and obligation when being the recipient of others' support (Kashdan, Mishra, Breen, & Froh, 2009). Similarly, people from Asian cultures where sensitivity to social obligations and indebtedness is high, may benefit less from gratitude interventions than people in Western cultures. Furthermore, as Asians are less prone to offering direct support (Chen, Kim, Sherman, & Hashimoto, 2015), the meaning of kindness (and the concrete behaviors labeled as kind) might be different compared to Western cultures. Without a profound understanding of the social and cultural factors affecting the way individuals interpret morally-relevant acts such as kindness and gratitude, it is difficult to assess whether or when practicing these character strengths is beneficial.

Previous research hints to the fact that cultural factors influence whether intentionally practicing kindness or gratitude promotes wellbeing. For example, Boehm and her colleagues showed that Anglo Americans gain more benefits from expressing gratitude compared to Asian Americans (Boehm et al., 2011). In another study, Koreans did not show improvements in wellbeing after participating in a gratitude intervention, while Americans did (Layous, Lee, Choi, & Lyubomirsky, 2013). Also, gratitude expression caused increases in both positive and negative affect for participants with an Asian cultural background, whereby Anglo Americans did not experience an increase in negative affect (Titova, Wagstaff, & Parks, 2017). In Japan, the positive effect of performing acts of kindness has been replicated in one study (Otake, Shimai, Tanaka-Matsumi, Otsui, & Fredrickson, 2006), but gratitude-expression did not boost participants' happiness in another (Aikawa, Yada, & Yoshino, 2013). Taken together, these results suggest that

in Asian contexts, gratitude-expression may not be a culturally-responsive intervention. Before designing a culturally-informed kindness- or gratitude-based intervention, it is necessary to clarify how the constructs of kindness and gratitude are defined and experienced in those cultures. Accordingly, the main purpose of our study is to explore how Japanese conceptualize kindness and gratitude.

It is important to point out that the majority of studies supporting the effectiveness of kindness and gratitude in increasing wellbeing has employed mainly Western participants. Although culture may influence how people construe not only kindness and gratitude, but also happiness (Oishi, Graham, Kesebir, & Galinha, 2013), the number of studies investigating the effects of positive psychology interventions beyond the Western world remains low. A recent meta-analysis on randomized controlled trials aimed at increasing participants' wellbeing (Hendriks et al., 2019) shows that although the number of studies conducted in non-Western cultures has been increasing in recent years, Western samples still account for 78.2% of all studies. Among the studies included in this meta-analysis, only three (1.6%) employed a Japanese sample, compared to 74 (39.4%) which sampled American participants. Considering these facts, more research in non-Western cultures is needed. Accordingly, the second aim of our study is to investigate the effect of kindness and gratitude interventions on the wellbeing of Japanese young adults.

### 1.1 The current study

We designed a three-week longitudinal study aiming to enhance wellbeing by practicing kindness and gratitude. Two experimental conditions were created: acts of kindness (performing small acts of kindness) and gratitude expression (expressing gratitude to other people). A third condition, memorable events (writing the most memorable events of the week), was created as a control, having no clear wellbeing boosting effect.

First, by qualitatively analyzing the concrete examples of kindness and gratitude given by participants, our aim is to gain insight into what "kindness" and "gratitude" mean for Japanese young adults, what the most common or easy to enact acts of kindness and expressions of gratitude are, and whether kindness and gratitude refer to the same types of support provision (same behaviors seen from the giver and the receiver's perspectives). Second, we also explore whether practicing kindness and gratitude increases Japanese participants' wellbeing. As a general hypothesis, we expect kindness and gratitude to increase wellbeing relative to the memorable events condition (Hypothesis 1). However, in line with previous cross-cultural research (Layous et al., 2013), we expect to find smaller benefits for Japanese participants in the gratitude condition, compared to those in the kindness condition (Hypothesis 2).

## 2. Method

### 2.1 Participants

Ninety-six undergraduates responded to the pretest questionnaires. There were 32 participants in the kindness group (nine males), 38 participants in the gratitude group (16 males) and 26 participants in the memorable events group (nine males). We eliminated participants who did not provide posttest responses (37) and one international student. The final sample consisted of 58 participants (21 males, 37 females,  $M_{age} = 19.29$ ,  $SD = 2.00$ ), 18 participants in the kindness group (five males), 18 participants in the gratitude group (seven males) and 22 participants in the memorable events group (nine males). A post-hoc power-analysis using Gpower (version 3.1.9.4) revealed that the final sample size provided 92% power to detect a medium within-

between factors interaction effect of  $\eta^2_p = 0.06$ , with an alpha level of 0.05 in a repeated-measures design with two repeated measurements (pre-post).

## 2.2 Procedure

We launched the invitation to participate in the study during Psychology-related classes at a public university in Japan. After explaining orally the purpose of the study and the schedule of the intervention, we offered participants an envelope that contained the description of the study, its schedule, the QR code to the pretest online questionnaire, an identification number (randomly generated using a free online random number generator), and a pen as incentive. There were three different QR code sheets prepared, one for each experimental condition (kindness, gratitude, memorable events), and the sheets were randomly distributed to participants. The participants were not informed of the number of experimental conditions or the content of the activities, and were asked to keep their activity secret during the whole intervention period. However, all participants were informed that their activities have potential wellbeing increasing effects.

Participants were instructed to access the link to the pretest questionnaire until the end of the next day (see Materials, pretest measures). One week later, we sent participants the link to week 1 questionnaire, and two weeks later, the link to the week 2 questionnaire was sent (see Materials, weekly measures). Three weeks after the beginning of the intervention, we sent the link to the posttest questionnaire (see Materials, posttest measures). In total, there were four assessments (pretest, week 1, week 2, posttest) over the course of three weeks.

## 2.3 Materials

### 2.3.1 Pretest measures.

Before completing the questionnaire, participants provided demographic information: age, gender, nationality (Japanese or not) and university year. We used the K6 (Kessler et al., 2002; for the Japanese version see Furukawa et al., 2008;  $\alpha = .82$ ) to measure depression. We employed the questionnaire's original instructions, which asked participants to evaluate their symptoms for the last 30 days, on a scale from 1 to 5 (1 = none of the time, 5 = all of the time). The Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985; for the Japanese version see Oishi, 2009;  $\alpha = .87$ ) was used to measure subjective wellbeing, on a scale from 1 (strongly disagree) to 7 (strongly agree). In addition, we measured loneliness with the UCLA Loneliness Scale version 3 (Russell, 1996; for the Japanese version see Masuda, Tadaka, & Dai, 2012;  $\alpha = .93$ ). The questionnaire has 20 items (for example, "How often do you feel alone?"), measured on a Likert scale from 1 (never) to 4 (often). Because the instructions for the SWLS and the UCLA do not mention a specific time period, participants were asked to respond how they feel in general. We also measured positive and negative affect, with the 20-item PANAS (Watson, Clark, & Tellegen, 1988; for the Japanese version see Kawahito, Otsuka, Kaida, & Nakata, 2011; positive affect  $\alpha = .76$ , negative affect  $\alpha = .78$ ). Items were measured on a Likert scale from 1 (very slightly or not at all) to 5 (extremely). Considering that affect may fluctuate significantly over time, we chose a relatively short time span (one week) and asked participants to evaluate how strongly they had experienced each affect during the last week.

### 2.3.2 Activity description

After completing pretest measures, participants read the description of the activity they had been assigned to. Participants in the kindness group were informed they had been assigned to the

“Acts of kindness activity” and that they had to perform acts of kindness three times per week for the next three weeks. Participants in the gratitude group learned that they had been assigned to the “Gratitude expression activity”, and that they had to express gratitude (directly or indirectly) three times every week. Participants in the memorable events group found out that they had been assigned to the “Event review activity”, which implied recalling the most important three events they had experienced during the week.

### 2.3.3 Weekly measures

At the end of each week, participants received the link to the weekly questionnaires. The questionnaires asked them to describe shortly how they had carried out their assigned activities during the week. Participants in the kindness group described three acts of kindness they had done over the week, participants in the gratitude group described three situations when they had expressed gratitude during the week, and participants in the memorable events condition described three of the most important events they had experienced during the week. After the open-ended questions, participants responded to PANAS (week 1 positive affect  $\alpha = .79$ , negative affect  $\alpha = .88$ ; week 2 positive affect  $\alpha = .85$ , negative affect  $\alpha = .87$ ), evaluating how strongly they had felt each affect during the last week.

### 2.3.4 Posttest measures

At the end of week three, participants received the posttest questionnaire. As in week 1 and 2, participants first described what they had done during the week (three gratitude acts, three acts of kindness, or three experienced events, depending on the experimental condition) and responded to PANAS (positive affect  $\alpha = .79$ , negative affect  $\alpha = .85$ ). Then, they responded to all other wellbeing measures: they evaluated their depressive symptoms on K6 ( $\alpha = .81$ ) and how lonely they had felt on the UCLA version 3 ( $\alpha = .91$ ), and responded again to the SWLS ( $\alpha = .80$ ). Because the K6 and UCLA measure how frequently participants experience depressive symptoms and loneliness, we tried to capture recent changes in frequency of experiencing loneliness and depression. Therefore, we asked participants to refer to the last two-three days when evaluating how depressed or lonely they had felt. However, instructions for the SWLS were not changed, because the questionnaire measures agreement with statements about general satisfaction with life, and setting a time span to evaluate changes in agreement with general statements was unnatural.

Finally, they responded to a series of check-items: if they had kept their assigned activity a secret (yes, no), how many times they had expressed gratitude to someone and how many times they had performed acts of kindness during the last three weeks, on a 7-point scale, from “Not at all” to “More than nine times (more than three times per week)”, and if they had any comments about the study. Participants who responded to all questionnaires received a book-store card worth of 500 yen (about 5\$) as compensation for participation. Informed consent was obtained from all participants in the study.

## 2.4 Content analysis

Participants were asked to briefly describe the activities they had done over the week. We conducted content analysis (Weber, 1990) on all qualitative data obtained (including data from participants who did not provide posttest responses) in order to gain deeper understanding of the types of activities performed by participants. First, the “text unit” (the body of material subjected to analysis) was defined as each participant’s happiness-increasing activity, in the



following manner: for the kindness group, the text unit was an example of kindness, for the gratitude group, the text unit was an example of gratitude expression, while for the memorable events group, it was an example of memorable event. The “recording unit” was defined as writing in one text box (there were three text boxes for three different activities each week). In cases where there was more than one activity described in one text box, responses were split into different units, and each recording unit was coded into one category.

Empirical content analysis categories were used to analyze the data. In the first phase of the content analysis, one researcher screened all the data in order to construct meaningful categories to be used in the coding process. Starting bottom-up, examples of similar activities were categorized under a single category (e.g. “I lent a movie to a friend” and “I lent a friend money to buy lunch” were categorized under the same category, which was labeled “lending things”). After all data had been categorized, the categories were reviewed several times, expanding or collapsing them to increase clarity. For example, initial categories with high frequency of occurrence, such as “giving things”, in which both lending and donating behaviors were included, were split into two different categories (“offering things” and “lending things”), in order to differentiate between the two. In the second phase of the analysis process, an independent research assistant coded each recording unit into one of the existing categories, and inter-rater reliability was assessed. Disagreements were solved through discussions. Finally, similar categories were grouped under an overarching general category (e.g. categories referring to offering concrete solutions to someone’s problems were grouped under the overarching category of “instrumental support”).

### 3. Results

#### 3.1 Word frequency analysis

Before content-analyzing the data, to get an overview of participants’ responses, a word cloud for the most frequent words used was created with the help of a free online word-cloud generator. The most frequently mentioned 20 words were represented in the word cloud (see Figures 1, 2, 3 below). In the kindness condition, because there were more words with the same frequency as the 20<sup>th</sup> most frequent word, 24 words were included in the final word cloud (Figure 1). In the kindness condition, the most frequent word used by participants was “friend” (114 times), followed by “give” (44 times). In the gratitude condition, the most frequent word was “give” (101 times), followed by “gratitude” (81 times). In the memorable events condition, the most frequently used word was “test” (19 times), followed by “friend” (18 times).

#### 3.2 Content analysis

##### 3.2.1 Kindness content analysis

In the kindness group, 167 examples of acts of kindness were content-analyzed. Twenty categories (which could be grouped into three overarching categories: instrumental support, emotional support, and informational support) were identified, and the interrater reliability was investigated by computing Cohen’s kappa index. The interrater reliability index was fair ( $\kappa = .65, z = 27.2, p < .001$ ). After resolving disagreements through discussions, all recording units were reliably coded into one subcategory (see Table 1). In the instrumental support category, we included the following subcategories: doing something in someone else’s place (12.6%), help with work or school (11.4%), offering things (10.2%), lending things (9.0%), accompanying (5.4%), holding someone’s things (4.2%), taking class handouts (3.6%), protecting someone’s safety (3.6%), giving a seat (3.0%), support for someone ill (3.0%), searching for someone’s lost

things (1.8%), housing (0.6%), and making change (0.6%). In the emotional support category, we included: counseling and encouragement (18.0%), holding a party for someone (1.2%), expressing gratitude (1.2%), responding politely (0.6%), and compromise (0.6%). In the informational support category we included: teaching (6.0%) and giving directions (3.6%).

**Figure 1. Word cloud representing the most frequently used words in the kindness condition**



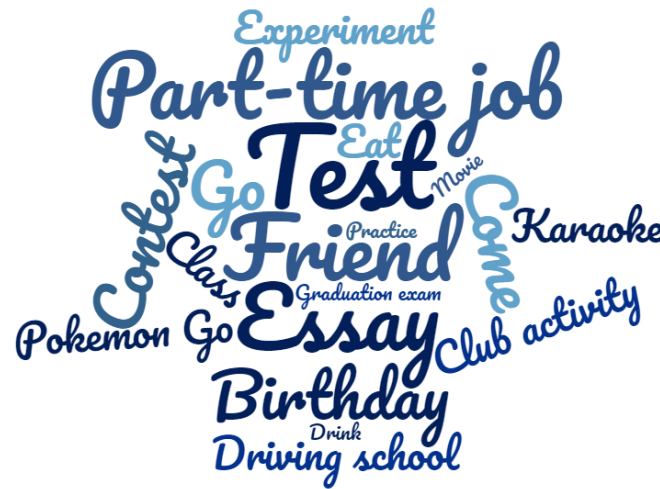
*Note.* Higher font size represents higher frequency of occurrence.

**Figure 2. Word cloud representing the most frequently used words in the gratitude condition**



*Note.* Higher font size represents higher frequency of occurrence.

Figure 3. Word cloud representing the most frequently used words in the memorable events condition



Note. Higher font size represents higher frequency of occurrence.

Table 1. Content analysis of kindness examples

General category	Subcategory	No	(%)	Example
Instrumental support	Do something in someone else's place	21	12.6	"At the cafeteria, I cleared the dishes used by a friend from the table"
	Help someone with work or school activities	19	11.4	"At work, I helped a colleague who was busy"
	Offer things to someone	17	10.2	"I gave some bread to my younger sister"
	Lend or share things	15	9.0	"I lent an umbrella to a friend"
	Accompany someone	9	5.4	"I accompanied my friend to buy a present for their acquaintance"
	Hold things for someone	7	4.2	"My friend had a lot of heavy luggage so I helped"
	Take class handouts for someone	6	3.6	"I took class handouts for a friend who was absent"
	Protect someone's safety	6	3.6	"I got off my bike to allow a pedestrian to pass"
	Give a seat to someone	5	3.0	"I gave my seat in the train to a tired friend"
	Support for someone ill	5	3.0	"I took care of a friend who had caught a cold"
	Search for lost things together	3	1.8	"I helped my friend search for their lost key"
	Offer housing	1	0.6	"I housed a friend who lives with his parents and didn't have where to spend the night after finishing club activity"
	Make change (money)	1	0.6	"I made change for a friend who didn't have exact change to pay the bus fare"
Emotional support	Counseling and encouragement	30	18.0	"I encouraged a friend who was upset because they didn't do well on the test"
	Hold a party for someone	2	1.2	"I organized a birthday party for a friend"
	Express gratitude to someone	2	1.2	"I said 'thank you' to my girlfriend for having lunch with me"
	Give polite response	1	0.6	"I responded politely to an unimportant message"
	Make compromise	1	0.6	"I respected my friend's opinion when we disagreed"
Informational support	Teach something to someone	10	6.0	"I explained to my friend something that they hadn't understood"
	Give directions to someone	6	3.6	"My brother had something to do at school, so I showed him around"
Total		167	100	

Note. No = number of recording units categorized in each category.

### 3.2.2 Gratitude content analysis

In the gratitude group, we conducted content analysis on 143 examples of gratitude expression provided by participants. Three general categories (the same as in the kindness group), and 15 subcategories were identified. Interrater agreement was fair ( $\kappa = .65$ ,  $z = 21.3$ ,  $p < .001$ ). After resolving disagreements through discussions, all recording units were reliably coded into one



subcategory (see Table 2). In the instrumental support category, we included the following subcategories: receiving things (14.0%), receiving help with work or school (10.5%), being given a lift (2.1%), receiving help with holding or picking up things (2.1%), being offered accommodation (1.4%), being offered a seat (1.4%), receiving support when ill (1.4%), being returned change (0.7%), and gratitude for public service (0.7%). In the emotional support category, we included: gratitude for spending time together (17.5%), being counseled or encouraged (16.1%), being organized a party (2.8%), and gratitude for someone's existence (2.1%). In the informational support category we included examples referring to receiving information or being taught something (9.1%). In addition, examples in which the reason why gratitude was expressed was not specified (e.g. "I thanked a friend"), comprised 18.2% of the responses.

**Table 2. Content analysis of gratitude examples**

General category	Subcategory	No	(%)	Example
Instrumental support	Receive things	20	14.0	"I thanked a senior member of the club for offering me sweets"
	Receive help with work or school activities	15	10.5	"I smiled and said 'thank you' to my boyfriend for washing the dishes"
	Be given a lift	3	2.1	"I expressed gratitude to my mother for giving me a lift to school every morning"
	Receive help with holding or picking up things	3	2.1	"I thanked them for holding my backpack"
	Be offered accommodation	2	1.4	"I thanked a friend who housed me"
	Be offered a seat	2	1.4	"I thanked an old lady several times for giving me her seat"
	Receive support when ill	2	1.4	"I thanked a friend who brought me provisions when I was lying in bed with a cold"
	Being returned change	1	0.7	"I thanked a friend who made change for a 1000 yen bill"
	Receive public service	1	0.7	"I thanked the cashier at the supermarket"
	Emotional support	Spending time together	25	17.5
Being counseled or encouraged		23	16.1	"I sent a letter to express gratitude to a friend who always listens to my worries"
Being organized a party		4	2.8	"My friend baked a birthday cake for me, and I was so happy that I sent them a gratitude message"
Gratitude for someone's existence		3	2.1	"I thanked my boyfriend for being born"
Informational support	Being taught or offered information	13	9.1	"I thanked a friend who explained the course content that I hadn't understood"
Unspecified		26	18.2	"I thanked a friend"
Total		143	100	

Note. No = number of recording units categorized in each category.

### 3.2.3 Memorable events content analysis

Although the main purpose was to gain insight into how Japanese construe kindness and gratitude, qualitative analysis on the answers provided by the participants in the memorable events group was also performed in order to clarify what a "memorable event" means to participants. For this analysis, 195 examples were coded and four main categories (activities, personal issues, interpersonal events, and environment changes), with 16 subcategories were identified (see Table 3). Interrater agreement was good ( $\kappa = .71$ ,  $z = 27.2$ ,  $p < .001$ ). After resolving disagreements through discussion, all recording units were reliably coded into one subcategory. In the activities category, we included the following subcategories: leisure activities (26.7%), school activities (23.1%), university club activities (5.1%) and work activities (4.1%). In the personal issue category, we included: personal successes (5.6%), health and appearance issues (4.1%), and personal failures (4.1%). In the interpersonal events category, we included:

having fun with friends (5.6%), emotional support (2.6%), celebration (2.6%), meeting people (2.1%), receiving things (2.1%), negative interactions (1.0%), and making new friends (1.0%). In the environment changes category, we included: changes in environment (5.6%), and other people's events (4.6%).

**Table 3. Content analysis of memorable events**

General category	Subcategory	No	(%)	Example
Activities	Leisure	52	26.7	"I had a drinking party"
	School	45	23.1	"I wrote the paper"
	University club	10	5.1	"The gathering of the club members"
	Work	8	4.1	"The interaction at my part-time job"
Personal issues	Personal success	11	5.6	"I got my driver's license"
	Health and appearance	8	4.1	"Flu vaccine"
	Failures	8	4.1	"I failed when trying to make a dish"
Interpersonal issues	Fun with friends	11	5.6	"I had ramen with a friend"
	Emotional support	5	2.6	"I was told not to give up"
	Celebration	5	2.6	"My friend's birthday"
	Meet people	4	2.1	"My parents came to visit"
	Receive things	4	2.1	"I received a lot of bread from my parents"
	Negative interactions	2	1.0	"Argument with a friend"
	Make new friends	2	1.0	"I made a friend at the job"
Environment	Change in environment	11	5.6	"It started to rain all of a sudden"
	Other people's events	9	4.6	"My friend got a boyfriend"
Total		195	100	

Note. No = number of recording units categorized in each category.

### 3.3 Engagement in activities

Of the 58 participants whose data was analyzed, 38 (65.51%) completed all their assigned activities (practicing kindness/gratitude three times per week or writing three memorable events per week). In the kindness group, 12 of the 18 participants completed all activities, in the gratitude group, seven of the 18 participants completed all activities, and in the memorable events group, 19 of the 22 participants completed all assigned activities. Furthermore, of the 58 participants included in the final analysis, 47 (81%) reported they had kept their assigned activity a secret.

### 3.4 Manipulation check and differences between experimental conditions at pretest

We investigated whether there were any significant differences between participants who provided posttest responses and those who dropped out from the study. In all subsequent analyses, missing data was handled by listwise deletion. There were no differences in age ( $t(91) = 1.41, p = .159; d = .26, 95\% \text{ CI}[-.68, .15]$ ), gender ( $\chi^2(1) = 0.04, p = .841$ ), depression ( $t(94) = 0.20, p = .835; d = .04, 95\% \text{ CI}[-.34, .45]$ ), life satisfaction ( $t(94) = 1.24, p = .227; d = .25, 95\% \text{ CI}[-.66, .16]$ ), loneliness ( $t(93) = 1.62, p = .106; d = .31, 95\% \text{ CI}[-.09, .73]$ ) and negative affect ( $t(94) = 0.67, p = .499; d = .14, 95\% \text{ CI}[-.55, .27]$ ) between participants whose data was used in the analysis and those whose data was not. A significant difference appeared in pretest positive affect scores ( $t(94) = 2.10, p = .037; d = .43, 95\% \text{ CI}[-.85, -.02]$ ), participants whose data was analyzed having higher scores ( $M = 3.04, SD = 0.64$ ) than those who were eliminated ( $M = 2.75, SD = 0.70$ ). There was also

a significant difference between conditions in the number of participants who dropped out from the study ( $\chi^2(2) = 9.30, p = .009$ ), more participants dropping-out from the gratitude ( $n = 14$ ) and kindness conditions ( $n = 20$ ), compared to the memorable events condition ( $n = 4$ ), probably because the former two required more effort to complete.

Next, we investigated whether the experimental groups differed in their evaluation of the frequency they had expressed gratitude or performed acts of kindness during the intervention, as a manipulation check. Although differences did not achieve statistical significance (kindness frequency:  $F(2, 55) = 2.98, p = .058, \eta^2_p = .09$ ; gratitude frequency:  $F(2, 55) = 0.50, p = .605, \eta^2_p = .01$ ), the persons in the gratitude group declared expressing most gratitude during the three weeks of study (kindness group:  $M = 4.61, SD = 1.75$ ; gratitude group:  $M = 5.00, SD = 1.08$ ; events group:  $M = 4.55, SD = 1.57$ ), and participants in the kindness group declared performing most acts of kindness (kindness group:  $M = 4.50, SD = 1.58$ ; gratitude group:  $M = 3.44, SD = 1.25$ ; events group:  $M = 3.50, SD = 1.57$ ).

We also checked whether there were any differences in wellbeing at pretest between the three experimental conditions. Results showed no significant differences in any of the pretest wellbeing measures (depression:  $F(2, 55) = 0.18, p = .832, \eta^2_p = .01$ ; life satisfaction:  $F(2, 55) = 1.06, p = .353, \eta^2_p = .03$ ; loneliness:  $F(2, 55) = 0.75, p = .473, \eta^2_p = .02$ ; positive affect:  $F(2, 55) = 1.79, p = .175, \eta^2_p = .06$ ; negative affect:  $F(2, 55) = 1.32, p = .273, \eta^2_p = .04$ ).

Finally, because gender ratio was unbalanced, gender differences in pretest measures were investigated. As no significant differences were found (depression:  $t(56) = 1.69, p = .095; d = .46, 95\% CI[-1.01, .09]$ ; life satisfaction:  $t(56) = 0.61, p = .540; d = .16, 95\% CI[-.37, .71]$ ; loneliness:  $t(56) = 0.63, p = .525; d = .17, 95\% CI[-.72, .37]$ ; positive affect:  $t(56) = 0.64, p = .522; d = .17, 95\% CI[-.37, .72]$ ; negative affect:  $t(56) = 1.21, p = .227; d = .33, 95\% CI[-.88, .21]$ ), we did not include gender in subsequent analyses.<sup>1</sup>

### 3.5 Intervention effects

To explore the effect of interventions on wellbeing measures, a mixed-design analysis of variance was conducted. The within-subjects factor was time (pre- vs post- for general wellbeing, and pre- vs week 1 vs week 2 vs post- for affect), and the between-subjects factor was experimental condition (kindness vs gratitude vs memorable events).

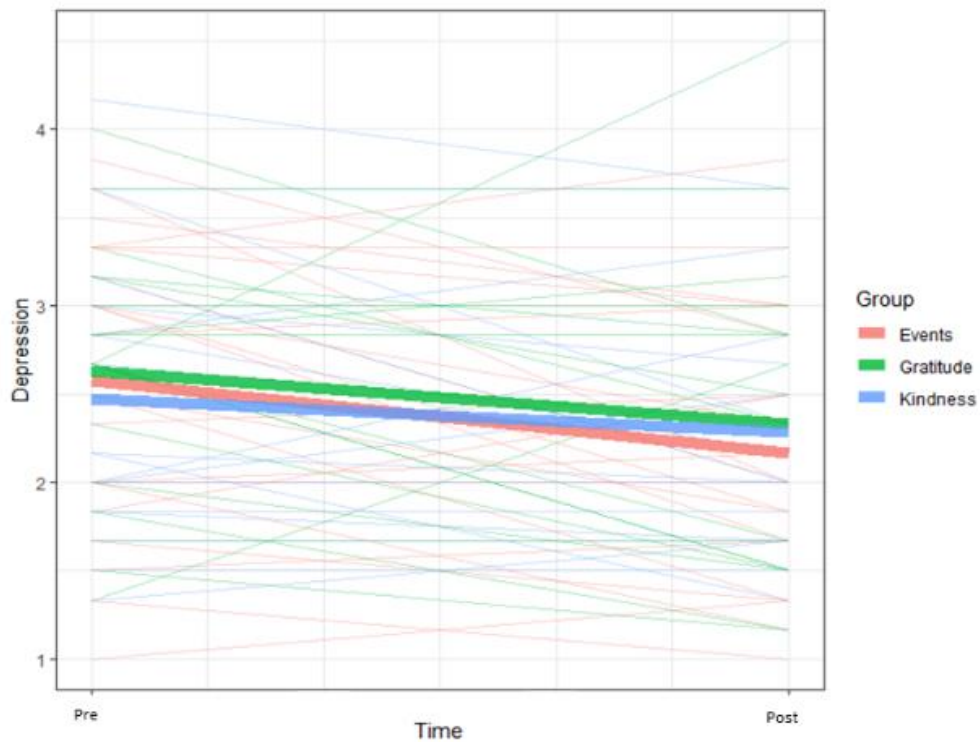
Time had a significant main effect on depression ( $F(1, 55) = 11.23, p = .001, \eta^2_p = .16$ ), but the interaction between experimental condition and time was nonsignificant ( $F(2, 55) = 0.52, p = .597, \eta^2_p = .01$ ). The results suggest a significant decline in depression from pre- to posttest for all participants, regardless of condition (kindness pretest  $M = 2.47, SD = 0.82$ , kindness posttest  $M = 2.29, SD = 0.71$ ; gratitude pretest  $M = 2.63, SD = 0.74$ , gratitude posttest  $M = 2.33, SD = 0.94$ ; events pretest  $M = 2.58, SD = 0.81$ , events posttest  $M = 2.17, SD = 0.76$ ; see Figure 4 below). In the case of life satisfaction and loneliness, time did not have a significant main effect (life satisfaction  $F(1, 55) = 0.42, p = .517, \eta^2_p = .01$ ; loneliness  $F(1, 55) = 0.42, p = .518, \eta^2_p = .01$ ). Furthermore, time did not

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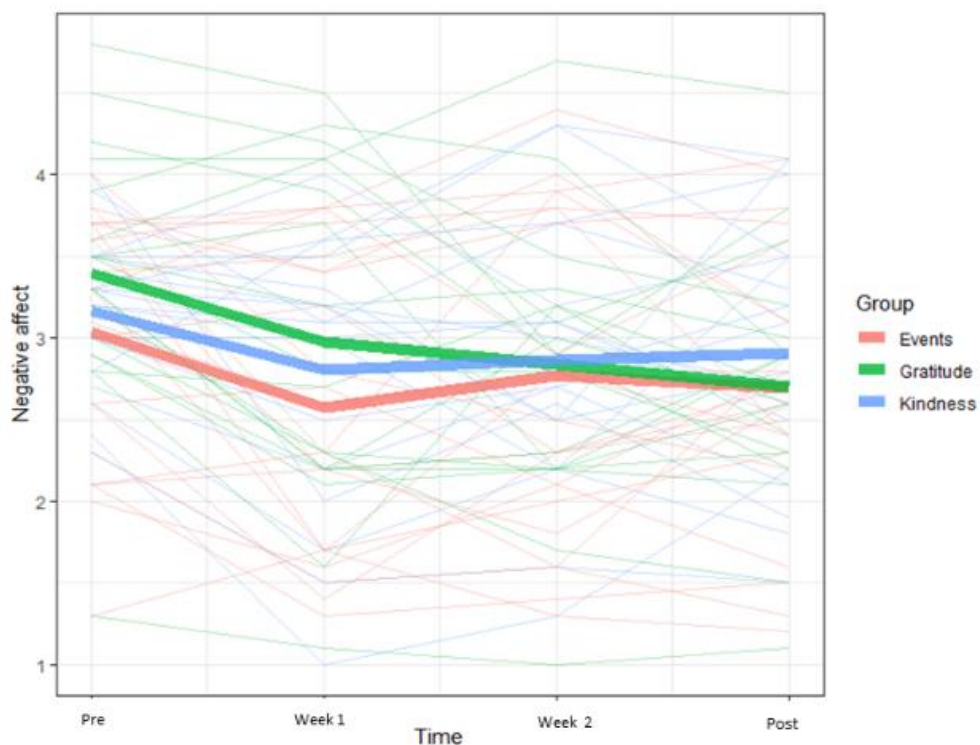
<sup>1</sup>As previous research suggests (Kashdan et al., 2009), the impact of the interventions may be different on males vs females. To explore possible gender differences in intervention effects, mixed model analyses of variance with two between-subjects factors (gender and experimental condition) and one within-subjects factor (time) were conducted. However, none of the three-way interactions between experimental condition, time, and gender were significant (depression:  $F(2, 52) = 0.49, p = .611, \eta^2_p = .01$ ; life satisfaction:  $F(2, 52) = 0.95, p = .391, \eta^2_p = .03$ ; loneliness:  $F(2, 52) = 0.32, p = .724, \eta^2_p = .01$ ; positive affect:  $F(6, 153) = 0.76, p = .602, \eta^2_p = .02$ ; negative affect:  $F(6, 153) = 1.04, p = .402, \eta^2_p = .03$ ). Therefore, the effectiveness of the interventions did not differ depending on participants' gender.

interact significantly with experimental condition on neither life satisfaction ( $F(2, 55) = 0.68, p = .509, \eta^2_p = .02$ ), nor loneliness ( $F(2, 55) = 0.21, p = .808, \eta^2_p = .01$ ).

**Figure 4. Changes in depression from pre- to posttest**



**Figure 5. Changes in negative affect from pre- to posttest**



In the case of positive affect, time did not have a significant main effect ( $F(3, 162) = 0.04, p = .988, \eta^2_p = .01$ ), and did not interact significantly with experimental condition ( $F(6, 162) = 1.12, p = .348,$

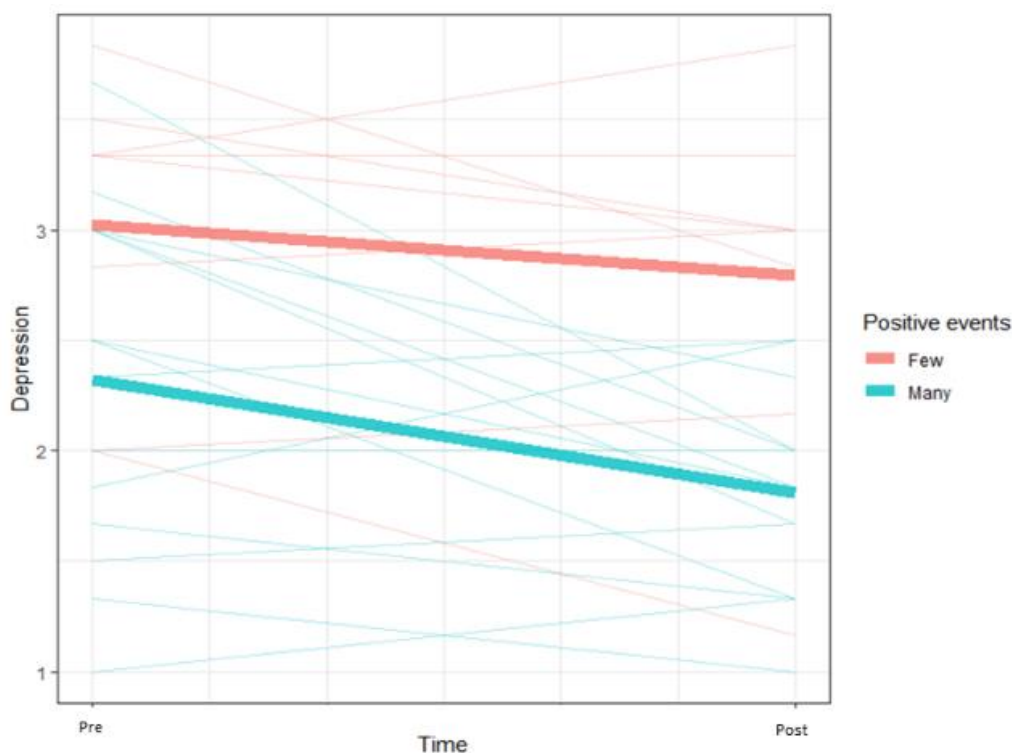
$\eta^2_p = .04$ ). However, in the case of negative affect, the main effect of time ( $F(3, 162) = 10.86, p < .001, \eta^2_p = .16$ ) was significant, but the interaction with experimental condition was not ( $F(6, 162) = 1.12, p = .349, \eta^2_p = .04$ ). All participants tended to show decreases in negative affect from pre- to posttest (kindness pretest:  $M = 3.16, SD = 0.47$ ; week 1:  $M = 2.81, SD = 0.82$ ; week 2:  $M = 2.86, SD = 0.81$ ; posttest:  $M = 2.91, SD = 0.81$ ; gratitude pretest:  $M = 3.39, SD = 0.78$ ; week 1:  $M = 2.97, SD = 1.04$ ; week 2:  $M = 2.84, SD = 0.88$ ; posttest:  $M = 2.70, SD = 0.80$ ; events pretest:  $M = 3.04, SD = 0.77$ ; week 1:  $M = 2.57, SD = 0.88$ ; week 2:  $M = 2.77, SD = 0.97$ ; posttest:  $M = 2.69, SD = 0.83$ ; see Figure 5 above).

### 3.6 Reasons for the wellbeing change in the memorable events group

As we did not expect to find significant changes in wellbeing in the memorable events group, we suspected that the reason why this group experienced wellbeing improvement was the fact that they had recalled many positive events. To explore this possibility, we conducted additional qualitative analyses and categorized the events mentioned by participants into positive (e.g. getting one's drivers' license), negative (e.g. catching a cold) or neutral (e.g. the election of the Tokyo governor). Then, we calculated a positive events score representing the number of positive events reported by each participant. Interrater agreement was good (positive events kappa = .73,  $z = 10.3, p < .011$ ; negative events kappa = .87,  $z = 12.3, p < .001$ ) and disagreements were resolved through discussions. The number of positive events reported by participants in the memorable events group varied between none and five ( $M = 2.32, SD = 1.39, \text{median} = 2$ ).

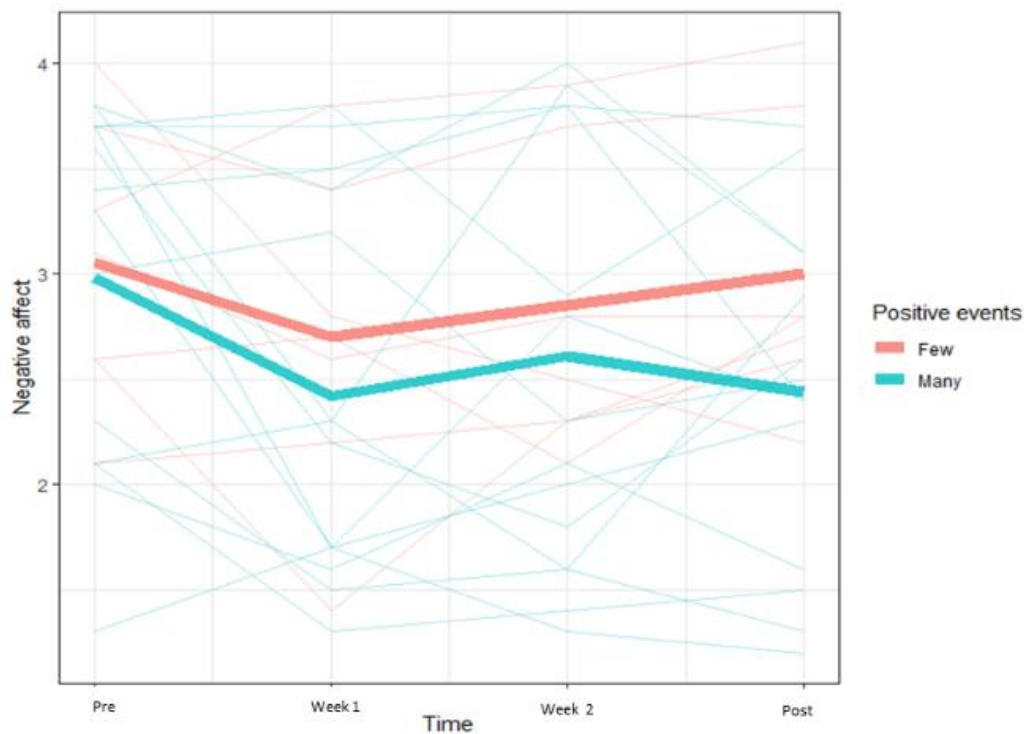
To explore the influence of recalling positive events, we plotted the change in depression and negative affect for participants who had reported less than two positive events (few positive events group,  $n = 8$ ) and for those who reported more than two positive events (many positive events group,  $n = 14$ ; see Figures 6 and 7).

**Figure 6. Changes in depression from pre- to posttest for participants in the control group who had reported few (<2) versus many (>2) positive events during the intervention**





**Figure 7. Changes in negative affect from pre- to posttest for participants in the control group who had reported few (<2) versus many (>2) positive events during the intervention**



A trend was observed for participants who reported more positive events to show a steeper reduction in depression and negative affect. However, considering the sample size, these results should be interpreted with caution.

#### 4. Discussion

The purpose of our study was to explore Japanese undergraduates' definitions of kindness and gratitude, aiming to identify the most common or typical examples of kindness and gratitude, and investigate whether kindness and gratitude involve similar support-giving behaviors. Second, we aimed to explore the wellbeing enhancing effect of intentionally practicing kindness and gratitude on a Japanese youth sample.

First, looking at the results of the exploratory content analysis, one can observe the diversity of acts of kindness and expressions of gratitude reported by participants. In both groups, participants described various forms of social support, including instrumental support (offering objects or expressing gratitude for receiving some), emotional support (counseling or expressing gratitude for being listened to), and informational support (teaching or expressing gratitude for being given information). Overall, we found examples of kindness and gratitude that are similar to those given by Western participants in previous research (e.g. Binfet, 2020). Examples of giving and receiving instrumental support were most frequent, and the concrete descriptions of support were very similar in the two experimental groups (kindness and gratitude). Tangible support, such as offering things or helping someone with a task, is not only the most common type of support given or received in our sample, but might also be the easiest to enact for Japanese. Past research (Chen, Kim, Mojaverian, & Morling, 2012) shows that Japanese tend to offer more problem-focused support than emotional support (while the opposite pattern is true for Americans). Therefore, although offering emotional support is also conceptualized as kindness by Japanese, kindness in the form of instrumental support could be more natural. Instrumental

support, in the form of physical or academic help, was also the most frequent example of kindness provided by Canadian youth in previous research (Binfet & Passmore, 2019; Binfet & Whitehead, 2019). However, some other examples of kindness identified in previous research employing Western samples, such as honesty, forgiveness, and inclusion (Binfet & Passmore, 2019; Cotney & Banerjee, 2019), were not found among Japanese participants' answers. The reason for this may be age differences, as previous research has focused on children and adolescents' definitions, and children may more readily equate kindness with honesty and inclusion compared to university students (our sample). Older participants may be less preoccupied with social inclusion and may also differentiate between honesty and kindness, understanding that being honest is not always the same as being kind.

In addition to analyzing participants' examples of kindness and gratitude separately, a comparison between the two was also attempted. As a thought-provoking difference, while in the gratitude group many participants mentioned feeling thankful for spending quality time with another person, nobody in the kindness group mentioned spending time or having fun with someone as examples of kindness, probably because what is in the interest of both social actors is difficult to frame as kindness. Therefore, companionship might not be conceptualized as kind behavior by Japanese, although it is worthy of gratitude expression.

Although the main purpose of the qualitative analysis was to clarify how Japanese define kindness and gratitude, we also examined the responses of participants in the memorable events group. The analysis showed that the most memorable experiences of Japanese students are related to leisure and university life, and that many of them are positive, which offers a possible explanation for the fact that participants in the memorable events group also showed an improvement in depression and negative affect at the end of the intervention.

Moving on to the effects of the interventions, in line with previous research supporting the positive effect of kindness and gratitude expression (Emmons & McCullough, 2003; Nelson et al., 2015), we expected that practicing these character strengths would enhance wellbeing, relative to the memorable events condition. We identified a significant decrease from pretest to posttest in depression symptoms and negative affect for all participants, regardless of the experimental condition. There were no significant changes in life satisfaction, loneliness, or positive affect. As we had not expected significant changes in wellbeing to occur in the memorable events (control) group, Hypothesis 1, which presumed that kindness and gratitude would improve wellbeing relative to the memorable events condition, was not supported. Furthermore, because there were no significant differences in wellbeing changes between groups, Hypothesis 2, which presumed that kindness would have a stronger positive effect on wellbeing compared to gratitude, was also not supported.

One possible reason for the significant improvement in depression and negative affect in the memorable events condition is the fact that all participants were informed of the purpose of the experiment (which was promoting psychological health). The change observed may be a placebo effect, as participants in the memorable events condition might have expected to feel better after engaging in the activity, and their expectations influenced how they actually felt. Another possibility is related to the content of the activity. While other positive interventions used listing what participants have recently done as control activity (e.g. Boehm et al. 2011; Lyubomirsky et al. 2011), we asked participants to recall the most *memorable* events of the week. For some participants, the most memorable events could have been very special and positive events, and recalling them might have contributed to wellbeing enhancement. For them, the activity might have had the same positive effect as the "three good things" intervention (e.g. Seligman, Steen, Park, & Peterson, 2005).

However, all the above findings must be interpreted with caution, as our sample size was small. Power-analysis revealed that given our sample size, we had sufficient power to detect a medium-size interaction effect, but it was not enough to detect smaller effects. Here, we would like to highlight the difficulty of conducting a happiness-increasing intervention with repeated measures, as only about half of the participants who accepted to complete the pretest measures provided data at all time points. Although the response rate at posttest is comparable to the average attrition rate (42%) of longitudinal studies (Roberts & DeVecchio, 2000), it reflects the amount of effort required from participants, giving a hint on the difficulty of motivating participants to complete the study. Gathering enough data to detect significant changes may require considerable resources (access to a large pool of participants, motivating rewards).

Keeping in mind the small size of the sample, there are other possible reasons why our hypotheses were not supported. It is possible that sample characteristics, or features of the present intervention might explain the non-significant findings. Past research has shown that positive interventions have bigger effects on wellbeing in Western cultures, compared to East-Asian ones (Aikawa et al., 2013; Boehm et al., 2011; Layous et al., 2013). A dialectic view of emotions (Suh, 2000) and conceptions of happiness as undesirable (Joshani et al., 2014) might explain why East-Asians do not gain much benefit from engaging in happiness-increasing activities. Also, considering the self-improvement orientation of Japanese (Heine et al., 2001), failure in offering kindness or expressing gratitude might have a bigger effect on their wellbeing than success in doing so. Therefore, while expressing kindness and gratitude might not boost their wellbeing, failure to do so could have an important negative impact.

Moving from cultural, to individual aspects, it is possible that the participants who volunteered for the study were not strongly motivated, an explanation suggested by the high drop-out rate, too. Past research shows that only individuals who are motivated to increase their own happiness level, actively pursuing activities which have this effect, show wellbeing enhancement after participating in a happiness-increasing intervention (Lyubomirsky et al., 2011). Finally, features of the intervention could have been the reason for the non-significant effects observed, such as the short period of time (three weeks), the retrospective method used to measure affect (not immediately after completing the activity, but at the end of the week), or the inconsistencies in the instructions used for the posttest wellbeing measures (we asked participants to evaluate experienced positive and negative affect during the last week, loneliness and depression during the last 2-3 days). Future research should aim to develop longer interventions and measure wellbeing not only at the end of the week/intervention, but also immediately after participants engage in the activity. In the end, considering all the events of a week that could affect a university student's mood, it is obvious how small a change practicing gratitude or kindness can make. Surely, gratitude and kindness may impact momentary affect, or influence cognitive patterns, which in time, might improve psychological health.

The small sample size in our study is the first problem that should be addressed in future research. Better control over the target of gratitude or kindness expression is also desirable, as it could shed light on the role played by the relationship between participant and target. Future research should clarify when and if kindness and gratitude can be used as positive-interventions for participants from Asian cultures.

### **Ethical approval**

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

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## Conflict of interest statement

The authors report no conflicts of interest.

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