Can “Acts of Kindness“ enhance mental well-being and flourishing in individuals from the general Dutch population?

University of Twente

01.10.2018

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Abstract

An intervention to enhance levels of well-being in individuals is the acts of kindness intervention. Research showed that well-being increases because of an increase in positive emotions and presumably positive relations. Moreover, performing kind acts to others (other-kindness) is expected to be more effective than performing kind acts for oneself (self-kindness). The present research examined whether other-kindness is more effective in enhancing well-being, flourishing, positive emotions and positive relations compared to self-kindness, while self-kindness leads to an increase in self-acceptance. 254 participants from the general Dutch population (89.4% female, *Mean age* = 48.7, *SD* = 9.84) were randomly assigned to an acts of kindness condition (n=85, other-kindness), an active control condition (n=85, self-kindness) or a waitlist control condition (n=84). Participants had to perform five kind acts per week for a period of six weeks. Levels of well-being, positive emotions, positive relations and self-acceptance were measured using self-reporting questionnaires at baseline, at post-test (six weeks after the baseline assessment) and at a follow-up measure (six weeks after post-test). ANCOVA's showed that other-kindness was even effective as self-kindness in enhancing levels of well-being at post-test. However, other-kindness was more effective in enhancing well-being up to six weeks compared to the waitlist control group. Compared to self-kindness, other-kindness was even effective in improving flourishing, levels of positive relations and positive emotions. Self-kindness was not more effective in enhancing self-acceptance compared to other-kindness. In sum, the present research demonstrated that kind acts improved well-being but just the same as self-kindness did. Implications for future research are given concerning the implementation of the acts of kindness intervention in the Dutch population and further exploration of possible working mechanisms and effects of self-kindness.

Introduction

Well-being and flourishing

The World Health Organization defines mental health as "[…] a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" (WHO, 2001, p.1). There are three forms of well-being: emotional, social and psychological well-being (Keyes, 2002). Emotional well-being is about the subjective evaluation on the own life satisfaction and positive feelings (Keyes, 2005). Social well-being is about effective functioning in a social context (Lambert, Passmore & Holder, 2015; Keyes, 1998). Psychological well-being has its focus on ideal personal functioning (Ryff, 1989). Keyes (2002) introduced the term "flourishing" for a state in which the three forms of well-being are at their optimum. Research showed that flourishing individuals show the fewest health limitations in everyday life, a high resilience and make lower use of healthcare services (Keyes, 2005, 2007). Additionally, flourishing protects against the incidence of mental illness like depression and anxiety (Schotanus-Dijkstra, ten Have, Lamers, de Graaf, & Bohlmeijer, 2016). If positive feelings and life satisfaction are absent and the psychological and social functioning of the individual is limited, Keyes (2002) uses the term "languishing". These individuals have low levels of well-being. Languishing causes emotional stress for individuals, restrictions in daily activities and lost working days (Keyes, 2002). Individuals who cannot be categorized as flourishers or languishers are called moderate mentally healthy (Keyes, 2002). Schotanus-Dijkstra, Pieterse, Drossaert, Westerhof, De Graaf, Ten Have, Walburg and Bohlmeijer (2016) found that 36,5% of the Dutch population are flourishing. Hence, the other 63,5% are non-flourishers. This fact makes clear that there are still many people in the Netherlands that do not benefit from the positive effects of high levels of well-being. Negative effects of low levels of well-being and the high proportion of Dutch people who are not benefitting from high well-being underpin the need to enhance mental well-being in individuals. The present study aimed at promoting mental well-being and flourishing within the general Dutch population.

Positive Psychology Interventions

A possibility to enhance well-being comes from the field of positive psychology. Positive psychology is interested in what can facilitate positive mental health (Sheldon & King, 2001; Fredrickson, 2001) and tries to promote happiness and well-being of humans (Kobau, Seligman, Peterson, Diener, Zack, Chapman & Thompson, 2011). Therefore, positive

psychology interventions are aimed at enhancing well-being and flourishing (Schotanus-Dijkstra et al., 2016b). The positive efficacy of interventions from positive psychology is shown in previous research (Sin & Lyubomirsky, 2009; Bolier, Havermann, Westerhof, Riper, Smit & Bohlmeijer, 2013b). Sin and Lyubomirsky (2009) found in their meta-analysis that positive psychology interventions are effective to raise well-being and reduce depressive symptoms. Also a meta-analysis on the same issue by Bolier and colleagues (2013b) showed that positive psychological interventions are able to reduce depressive symptoms and enhance subjective and psychological well-being, also on the long-term. Nevertheless, the found effects were small and therefore, they recommend that more Randomized controlled trials (RCT's) in different populations and countries are needed to support the findings (Bolier et al., 2013b). In the present study the effect of a positive psychology intervention on well-being and flourishing was examined in a RCT within the general Dutch population.

Acts of kindness

A common intervention in the field of positive psychology is to ask participants to perform acts of kindness. According to Ouweneel, Le Blanc and Schaufeli (2014) "acts of kindness" are friendly acts to others (e.g. helping someone). A review of different studies using this kind of intervention by Curry, Rowland, Zlotowitz, McAlaney, & Whitehouse (2016) showed that acts of kindness have positive effects on well-being. RCT's showed that participants who were asked to perform kind acts to others increased in their levels of well-being (Buchanan and Bardi, 2010; Layous, Nelson, Oberle, Schonert-Reichl & Lyubomirsky, 2012; Alden & Trew, 2013; Nelson, Layous, Cole & Lyubomirsky, 2016). Lyubomirsky, Sheldon and Schkade (2005) compared kindness interventions and found that performing five kind acts on one day is more effective than spreading the performance of the acts over a week. In the study of Nelson, Della Porta, Jacobs Bao, Lee, Choi and Lyubomirsky (2015) students performed five kind acts on one day in the week for a period of six weeks. Results showed that the participants increased in well-being compared to focusing on regularly work. In sum, much research has been done on the effect of acts of kindness on well-being. However, most studies made use of student samples and examined effects on subjective well-being. The effects of an acts of kindness intervention in a general population are yet unknown. Further, in the Netherlands the effect of this kind of intervention is not yet examined. Additionally, long-term effects of kind acts on well-being in general are not yet sufficiently examined. To fill in these gaps, the present study recruited participants from the general Dutch population. The effect of acts of kindness on mental well-being including emotional, social and psychological

well-being was examined to get a more differentiated impression of the effect. Moreover, the present study contained a follow-up assessment on the outcome variables to examine if the positive results last up until six weeks.

Research also compared acts of kindness to others, i.e. other-kindness, with kind acts for oneself, i.e. self-kindness. In the study of Nelson, Layous, Cole and Lyubomirsky (2016) participants had to perform three kind acts per week either to others or for themselves for a period of six weeks. Results showed that other-kindness significantly enhanced levels of well-being in the participants compared to self-kindness and neutral behavior. Self-kindness did not lead to significant levels of higher well-being compared to neutral behavior. Additionally, Dunn, Aknin and Norton (2008) gave participants an amount of money and asked them to use it either for themselves or spend it on another person. Results showed that other-kindness (spending money on another person) significantly increased levels of happiness compared to self-kindness (using the money for oneself). Therefore, the present study compared the effect of other-kindness on well-being also to self-kindness.

The mechanisms by which acts of kindness enhance well-being are not yet sufficiently investigated. The study of Nelson and colleagues (2016) indicated that other-kindness led to more positive emotions and that these positive emotions caused higher levels of well-being. Additionally, they found that positive emotions play a predicting role within the relation between kind acts and flourishing. Acts of kindness to others lead to the experience of positive emotions and these lead to increases in well-being. Additionally, the study of Fredrickson and Joiner, (2002) showed that kind acts to others lead to increases in well-being as a result of an enhancement of positive emotions. Positive emotions help an individual to enlarge personal resources which support the individual in mastering hard times (Fredrickson, 2003). Moreover, Nelson and colleagues (2016) suggest that kind acts to others have a beneficial effect on positive emotions and flourishing because social relationships are improved. Nevertheless, they did not include social relations in their measures but assume that this variable could have a mediating role (Nelson et al., 2016). However, it is yet unknown whether acts of kindness can enhance positive relations. In sum, research has shown that other-kindness has a positive effect on well-being and positive emotions, but it is still unclear if other-kindness is more effective than self-kindness in improving positive emotions and positive relations. Furthermore, it is not yet examined if self-kindness enhances self-acceptance over and above other-kindness because one is doing something beneficial for oneself instead to others. Self-acceptance reflects if a person holds a positive attitude towards oneself and accepts varied aspects of his or her self (Keyes, 2005). According to Neff (2003)

the construct of self-compassion encompasses self-kindness that is having a kind attitude towards oneself. Neff (2003) states that self-compassion leads people to not rate or evaluate their self's worth, i.e. self-acceptance, and this way, promotes the development of a tolerant attitude towards uncertainties in life and limitations regarding the own person. Therefore, the present study additionally investigated the effect of self-kindness on self-acceptance compared to other-kindness.

Present Study

The aim of the present research was to examine whether the acts of kindness intervention (other-kindness) lead to significant higher levels of well-being and more flourishing in comparison to an active control group (self-kindness) and a waitlist control group. It was expected that the acts of kindness intervention leads to significant higher emotional, social, psychological and total well-being, as well as higher scores on positive emotions and positive relations, than both control groups, while the active control group and the waitlist control group do not differ significantly. It was also expected that the active control group scores significantly higher on self-acceptance compared to the acts of kindness intervention because participants in the active control group perform kind acts to themselves instead of kind acts to others. Finally, it was expected that the positive effects last up to six weeks.

Method

Study Design

The present research is part of a larger single blind randomized controlled trial (RCT) with five conditions about different interventions to enhance well-being. In the present study three conditions are of interest. An experimental group (acts of kindness for others) is compared to an active control group (acts of kindness for oneself) and a waitlist control group. Online questionnaires were administered at baseline (T0). At the end of the intervention (six weeks after the questionnaire at baseline) a post-test was obtained (T1). There was a follow-up measurement six weeks after the post-test (T2). A visualization of the design is shown in Figure 1.

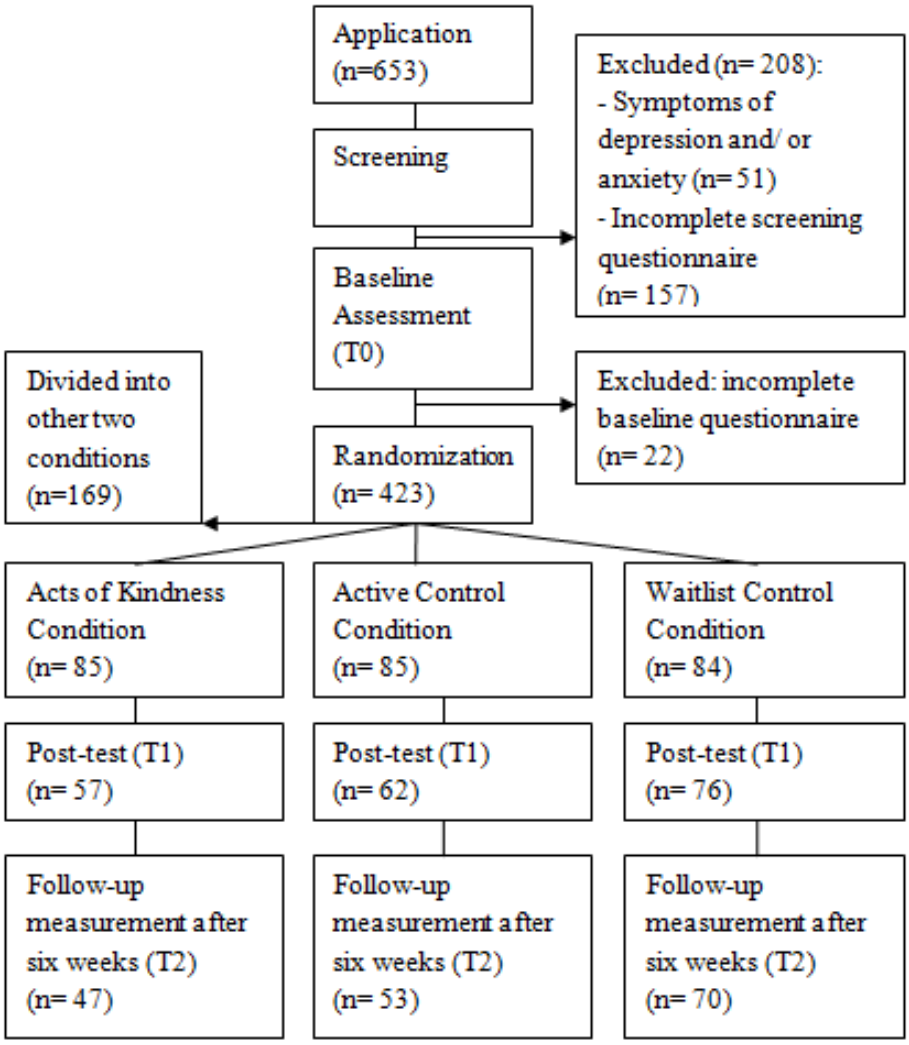

Figure 1. Flowchart of the design and participants

Participants and Procedure

Advertisements were placed in local newspapers and in the online newsletter from the "Psychologie Magazine". A website with information about the research was constructed. On this website interested people had the possibility to register for the research via an online form. Thereafter, they got a link to the informed consent.

After participants signed the informed consent screening questionnaires were sent to them. The screening questionnaire included questions about the age, gender, educational status, mental well-being, depressive symptoms and symptoms with regard to anxiety. Participants who wanted to take part had to be at least 18 years old. Further, they needed access to the internet and an email address. Participants had to agree to perform activities one day per week for a period of six weeks. Moreover, they had to be able to speak Dutch on a sufficient level. The last criterion was that the participants had to give their approval for the

participation. For this purpose an informed consent was used. Participants who experienced moderate or serious depressive symptoms or suffer from complaints with regard to anxiety were excluded. Participants who scored 34 or higher on the CES-D (Radloff, 1977; received from Bouma, Ranchor, Sanderman & van Sonderen, 2012) and/ or who scored 15 or higher on the GAD-7 (Spitzer, Kroenke, Williams & Löwe, 2006) were excluded. Participants who were excluded because of the second criterion were advised to contact a general practitioner. If a participant met the inclusion criteria he or she got an email with a link to the questionnaire at baseline (T0). The randomization over the three conditions took place at the University of Twente after there were enough participants who completed the questionnaire at baseline (T0). The randomization was a stratified procedure with regard to gender, educational status and flourishing because of the expectation that the sample includes more women and high educated participants (Bolier, Haverman, Kramer, Westerhof, Riper, Walburg & Bohlmeijer, 2013; Fledderus, Bohlmeijer, Pieterse & Schreurs, 2012; Schotanus-Dijkstra, Drossaert, Pieterse, Boon, Walburg & Bohlmeijer, 2017).

In total there were 653 potential participants. 157 of these potential participants did not complete the screening questionnaire or did not sign the informed consent. 51 potential participants had to be excluded because of depressive symptoms and/ or anxiety. Further, 22 potential participants had to be excluded because they did not fill in the first questionnaire (T0). Therefore, the remaining 423 participants were randomly divided over the conditions. This resulted in a total sample size of n= 254 for the present study: acts of kindness condition (n=85), active control condition (n=85) and waitlist condition (n=84). After the randomization procedure each participant got an email with the information about the respective condition. No information was given to the participants with regard to the different conditions and measurements beforehand. Figure 1 visualizes the recruitment process. Participants had the right to quit their participation at any time and without stating reasons. Further, they had the right to search for help at their general practitioner or elsewhere at any time.

Interventions

Acts of kindness condition. The "acts of kindness" intervention was about consciously doing friendly acts to others. Examples are cooking for the family, going shopping for a sick person or holding the door open for another person. Every Sunday for a period of six weeks, the participants received an email with instructions. The instructions included doing five acts of kindness to others on one day in the following week. During the week the participants received one or two reminders to reinforce adherence. The day

following the kind acts, but no later than Saturday, participants had to complete an online diary with information about their acts. They were asked to describe how much activities they did, what for activities they did and for whom they performed these activities.

Active control condition. Participants in this condition received instructions to perform five acts of kindness to themselves on one day in the following week. Examples are to buy something nice for oneself like a luxurious coffee or a favorite magazine, taking an extra time-out to relax or doing a favorite activity. As in the acts of kindness condition the participants received the instructions via e-mail every Sunday for a period of six weeks. Further, they got one or two reminders during the week. One day after accomplishment (no later than Saturday) they had to write about these acts in an online diary. Participants were asked to record the number of acts they performed and to describe them.

Waitlist control condition. Participants in this condition got the information that their well-being had to be assessed before they could receive a happiness intervention. During the time of the study they filled in the questionnaires at the same time points as the other conditions. After the end of the study they could choose to start with one of the interventions.

Measures

Primary outcome measure.

Well-being. The level of well-being was measured with the Mental Health Continuum-Short Form (MHC-SF: Lamers, Westerhof, Bohlmeijer, ten Klooster, & Keyes, 2011), a short version of the Mental Health Continuum (Keyes, 2002). The scale was translated into Dutch and validated by Lamers, Westerhof, Bohlmeijer, ten Klooster and Keyes (2011). The MHC-SF contains 14 items which describe feelings to measure three forms of mental well-being: emotional (3 items), social (5 items) and psychological well-being (6 items). Participants have to indicate on a 6-point Likert-scale (0= never to 5= almost always) the frequency of their feelings in the last four weeks. Scores ranged from 0 to 5. Scores were averaged to calculate the total scores of each subscale and total well-being. A higher level of well-being is indicated by a higher score. Cronbach's Alpha of the scales was computed for all measurements. Therefore, for every scale the range of these values is reported. In the present study Cronbach's Alpha of the total well-being scale ranged from 0.90 to 0.92, and Cronbach's Alpha of the subscales ranged from 0.82 to 0.86 for emotional well-being, from 0.70 to 0.75 for social well-being and from 0.83 to 0.86 for psychological well-being. The Dutch version of the MHC-SF showed good psychometric qualities (Lamers, Westerhof, Bohlmeijer, ten Klooster and Keyes, 2011).

To determine flourishing the criteria of Keyes (2006) were used. Flourishers were participants who scored 4 or 5 on one or more items of the subscale emotional well-being and on six of the eleven items of both scales, psychological and social well-being (1). Languishers were participants who scored 0 or 1 on one or more items of the subscale emotional well-being and on six of the eleven items of the subscales psychological and social well-being. Participants who were neither flourishing, nor languishing were moderately mentally healthy. Languishers and moderately mentally healthy participants were defined as non-flourishers (0) (Keyes, Wissing, Potgieter, Temane & Van Rooy, 2008).

Secondary outcome measures.

Positive relations. The subscale "Positieve relaties met anderen" of the "Positieve Geestelijke Gezondheid Schaal" (PGGS: Van Dierendonck, 2011) measured positive relations. The subscale includes nine items with a 6-point Likert-scale (0= strongly disagree to 6= strongly agree). In the present study Cronbach's Alpha of the "Positieve relaties met anderen" subscale ranged from 0.81 to 0.85. Scores ranged from 9 to 54. Scores were added to determine the total score. A high score implicates that the individual has warm and fulfilling relations and is able to form relations with others by showing empathy, affection and intimacy. A low score implicates that the individual has little familiar relations with others and experiences bonding with others as difficult. The subscale showed good psychometric qualities (Van Dierendonck, 2011).

Positive emotions. Positive emotions were measured with the Dutch version of the modified Differential Emotions Scale (mDES: Schaefer, Nils, Sanchez, & Philippot, 2010). The scale includes eight items which measure positive emotions. Participants have to indicate the level of different positive emotions they felt at the moment (1=not at all to 7=very intense). Scores ranged from 8 to 56. Scores were added to calculate the total score. In the present study Cronbach's Alpha of the scale ranged from 0.64 to 0.69.

Self-acceptance. Self-acceptance was measured with the MHC-SF. The scale was described earlier. Self-acceptance is one item of the MHC-SF.

Data analysis

Statistical analyses were conducted using SPSS (version 22.0). A two-tailed alpha of .05 was used. Cronbach's Alpha was computed for each questionnaire and subscales to check the reliability. To detect differences at baseline between conditions with regard to demographic variables and outcome variables at baseline, chi-square tests and one-way ANOVAs were

computed. Drop-outs and completers were compared with regard to condition, demographics and outcome variables using chi-square tests and one-way ANOVAs. Drop out was defined as incomplete data on the MHC-SF at post-test or six week follow-up. Participants with incomplete data on post-test or six week follow-up were excluded from analyses regarding the respective time point. Next, the number of flourishers per condition and assessment was examined. To explore whether the three conditions differed at post-test and six week follow-up with regard to their scores on emotional, social, psychological and total well-being, positive relations, positive emotions and self-acceptance after the intervention, ANCOVAs, with the baseline assessment as a covariate, and Bonferroni post hoc tests were conducted for post-test and six week follow-up. After that, the Cohen's *d* effect sizes (Cohen, 1988) were computed to indicate the standardized differences between the means. This was done by subtracting the mean score on an outcome variable of one condition from the mean score on that outcome variable of a second condition and then dividing the result through the pooled standard deviation: $d=\frac{\bar{X}_1-\bar{X}_2}{s_p}$. The pooled standard deviation is computed as follows: $s_p=\sqrt{\frac{(n_1-1)s_1^2+(n_2-1)s_2^2}{n_1+n_2-2}}$. A Cohen's d of 0.2 indicates a small effect, d= 0.5 a medium effect and d= 0.8 a large effect (Cohen, 1988). For every possible comparison, a Cohen's *d* was computed (acts of kindness vs. active control condition; acts of kindness vs. waitlist condition; active control vs. waitlist condition). Furthermore, to explore whether there is a relation between the number of flourishers and the type of intervention at post-test and six week follow-up Pearson chi-square tests were computed.

Results

Baseline characteristics

Participants were recruited from the general Dutch population (n= 254, 27 male, 227 female). Participants' ages ranged from 18 to 69 (*Mean age* = 48.7, *SD* = 9.8). The sample included predominantly female (89.4%) and higher educated participants (79.1%). Table 1 shows the distribution of participants across conditions with regard to the demographics. Chi-square tests and ANOVA's showed no significant differences on any demographic and outcome variables at baseline between conditions except living situation. A chi-square test showed marginally significant differences between conditions at baseline with regard to living situation ($\chi^2(10)=17.85$, $p=.058$), indicating that most participants in the acts of kindness condition and active control condition tended to live with their partner and children, contrasting the waitlist control condition (15% vs. 9.4%). Most participants in the waitlist

control condition were prone to live with their partner only unlike participants in the acts of kindness and active control condition (11% vs. 4.7%).

Table 1

Demografic variables of participants

	Acts of kindness (n=85)	Active control (n=85)	Waitlist (n=84)	Total (n=254)	p^a
Age, *M* (*SD*)	48.5 (10.6)	47.9 (9.5)	49.7 (9.3)	48.7 (9.8)	
Gender, n (%)					
male	9 (3.5)	9 (3.5)	9 (3.5)	27 (10.6)	
female	76 (29.9)	76 (29.9)	75 (29.5)	227 (89.4)	
Educational status, n (%)					
low	1 (0.4)	3 (1.2)	4 (1.6)	8 (3.1)	
middle	17 (6.7)	14 (5.5)	14 (5.5)	45 (17.7)	
high	67 (26.4)	68 (26.8)	66 (26.0)	201 (79.1)	
Marital status, n (%)					.750
married	46 (18.1)	40 (15.7)	46 (18.1)	132 (52.0)	
divorced	17 (6.7)	16 (6.3)	16 (6.3)	49 (19.3)	
widowed	5 (2.0)	3 (1.2)	3 (1.2)	11 (4.3)	
single	17 (6.7)	26 (10.2)	19 (7.5)	62 (24.2)	
Living situation, n (%)					.058
alone	20(7.9)	24 (9.4)	21 (8.3)	65 (25.6)	
alone with children	10 (3.9)	9 (3.5)	9 (3.5)	28 (11.0)	
with partner	12 (4.7)	12 (4.7)	28 (11.0)	52 (20.5)	
with partner and children	40 (15.7)	38 (15.0)	24 (9.4)	102 (40.2)	
at parents	0 (0.0)	0 (0.0)	1 (0.4)	1 (0.4)	
with others	3 (1.2)	2 (0.8)	1 (0.4)	6 (2.4)	
Etnicity, n (%)					.230
Dutch	80 (31.5)	77 (30.3)	81 (31.9)	238 (93.7)	
Moroccan	1 (0.4)	0 (0.0)	0 (0.0)	1 (0.4)	
Turkish	0 (0.0)	0 (0.0)	1 (0.4)	1 (0.4)	
other	4 (1.6)	8 (3.1)	2 (0.8)	14 (5.5)	
Work situation, n (%)					.700
paid	48 (18.9)	44 (17.3)	48 (18.9)	140 (55.1)	
self-employed	11 (4.3)	24 (9.4)	40 (5.5)	49 (19.3)	
unpaid	4 (1.6)	1 (0.4)	4 (1.6)	9 (3. 5)	
jobless	7 (2.8)	4 (1.6)	5 (2.0)	16 (6.3)	
unemployable	5 (2.0)	6 (2.4)	8 (3.1)	19 (7.5)	
retired	2 (0.8)	1 (0.4)	1 (0.4)	4 (1.6)	
homemaker	3 (1.2)	1 (0.4)	2 (0.8)	6 (2.4)	
student	2 (0.8)	1 (0.4)	1 (0.4)	4 (1.6)	
other	3 (1.2)	3 (1.2)	1 (0.4)	7 (2.8)	

Note. n= sample size

[a] Differences between conditions were tested with χ^2- tests

Drop out

In total, there were 254 participants who completed the baseline assessment, 195 (76.8%) who completed the post-test assessment and 170 (66.9%) who completed the six week follow-up assessment. A chi-square test showed that there were significantly more drop outs in the acts of kindness condition (16.5%) and active control condition (13%) compared to the waitlist control condition (6.3%), $\chi^2(2)=17.44$, $p<.001$. Compared to completers, drop-outs did not significantly differ on demographics and outcome measures at baseline (ps>.05).

Effects at post-test

Table 2 shows the mean scores, standard deviations and results of the ANCOVA's for the measured constructs per condition and time point. Results of the ANCOVA's showed that when controlling for levels of well-being at baseline, there was a significant effect of condition on levels of well-being at post-test, F(2,191)=3.68, p=.027. Bonferroni post hoc tests showed no significant difference between the acts of kindness condition and active control condition. However, significantly higher levels of well-being in the acts of kindness condition compared to the waitlist control condition (p =.048, d =0.47) and a positive trend towards higher levels of well-being for the active control condition compared to the waitlist control condition were found (p =.097, d =0.28). Effect sizes were small to medium in size. These findings indicate that other-kindness was as effective as self-kindness, but more effective than the waitlist control condition, in enhancing levels of well-being at post-test. Figure 1 visualizes the mean scores on total well-being for every condition per measurement time point. Regarding the subscales of well-being, Bonferroni post hoc tests revealed significantly higher levels of emotional well-being in the acts of kindness condition compared to the waitlist control condition at post-test (p =.033, d =0.39) and marginally significant higher levels of psychological well-being in the acts of kindness condition compared to the waitlist control condition at post-test (p =.058, d =0.41). Found effects were medium in size. No differences in social well-being between the conditions were found at post-test.

Regarding secondary outcomes, ANCOVA's showed marginally significant differences between conditions on positive relations at post-test, F(2, 188)=2.79, p=.064, indicating a trend towards higher levels of positive relations in the acts of kindness condition compared to the waitlist control condition (p=.080, d=0.34). The found effect was medium in size. ANCOVA's revealed no significant differences between conditions regarding positive emotions and self-acceptance at post-test.

Table 3 shows the frequency of flourishing across conditions for each measurement time point. At post-test there were higher proportions of flourishers within the acts of kindness and active control condition (around 9 to 10%) compared to the waitlist control condition (7.2%). A chi-square test showed marginally significant differences between conditions at post-test, indicating a trend towards more flourishers in the acts of kindness condition and active control condition compared to the waitlist control condition at post-test, $\chi^2(2)=4.89$, $p=.087$.

Table 2

Mean scores for measurements and conditions

	Acts of kindness		Active control		Waitlist		F	*p*
	n	*Mean (SD)*	n	*Mean (SD)*	n	*Mean (SD)*		
Well-being								
Baseline (T0)	85	2.88 (.61)	85	2.77 (.69)	84	2.79 (.66)	.66	.519
Post-test (T1)	57	3.15 (.67)	62	3.05 (.80)	76	2.84 (.70)	3.68	.027
Six week follow-up (T2)	47	3.14 (.62)	53	2.99 (.72)	70	2.85 (.67)	3.14	.046
Emotional well-being								
Baseline (T0)	85	2.99 (.72)	85	2.91 (.78)	84	2.95 (.84)	.19	.825
Post-test (T1)	57	3.33 (.78)	62	3.21 (.89)	76	3.01 (.85)	3.66	.028
Six week follow-up (T2)	47	3.23 (.74)	53	3.08 (.79)	70	2.96 (.87)	1.28	.281
Social well-being								
Baseline (T0)	85	2.72 (.69)	85	2.57 (.73)	84	2.56 (.72)	1.38	.253
Post-test (T1)	57	2.86 (.73)	62	2.82 (.79)	76	2.58 (.72)	1.97	.142
Six week follow-up (T2)	47	2.91 (.72)	53	2.76 (.77)	70	2.67 (.67)	1.33	.268
Psychological well-being								
Baseline (T0)	85	2.96 (.66)	85	2.86 (.78)	84	2.91 (.73)	.35	.705
Post-test (T1)	57	3.29 (.74)	62	3.17 (.91)	75	2.98 (.78)	3.02	.051
Six week follow-up (T2)	47	3.29 (.72)	53	3.13 (.76)	70	2.95 (.74)	4.36	.014
Self-acceptance								
Baseline (T0)	85	3.07 (.87)	85	2.99 (1.03)	84	3.01 (.94)	.17	.841
Post-test (T1)	57	3.14 (1.03)	62	3.13 (.91)	75	3.05 (.91)	.15	.860
Six week follow-up (T2)	47	3.28 (.83)	53	3.13 (.86)	70	3.01 (.84)	2.06	.131
Positive relations								
Baseline (T0)	85	38.21 (6.30)	85	38.41 (7.41)	84	37.64 (6.40)	.30	.743
Post-test (T1)	57	41.04 (6.79)	61	41.28 (6.87)	74	38.73 (6.79)	2.79	.064
Six week follow-up (T2)	47	40.15 (6.84)	53	40.09 (7.45)	69	38.90 (6.39)	.57	.567
Positive emotions								
Baseline (T0)	85	29.41 (6.46)	85	30.15 (7.01)	84	29.31 (5.82)	.43	.650
Post-test (T1)	57	33.97 (8.26)	61	34.03 (8.69)	74	32.11 (8.17)	1.45	.237
Six week follow-up (T2)	47	34.81 (8.74)	53	33.70 (7.57)	69	32.83 (9.29)	.91	.406

Note. n= sample size; SD= standard deviation

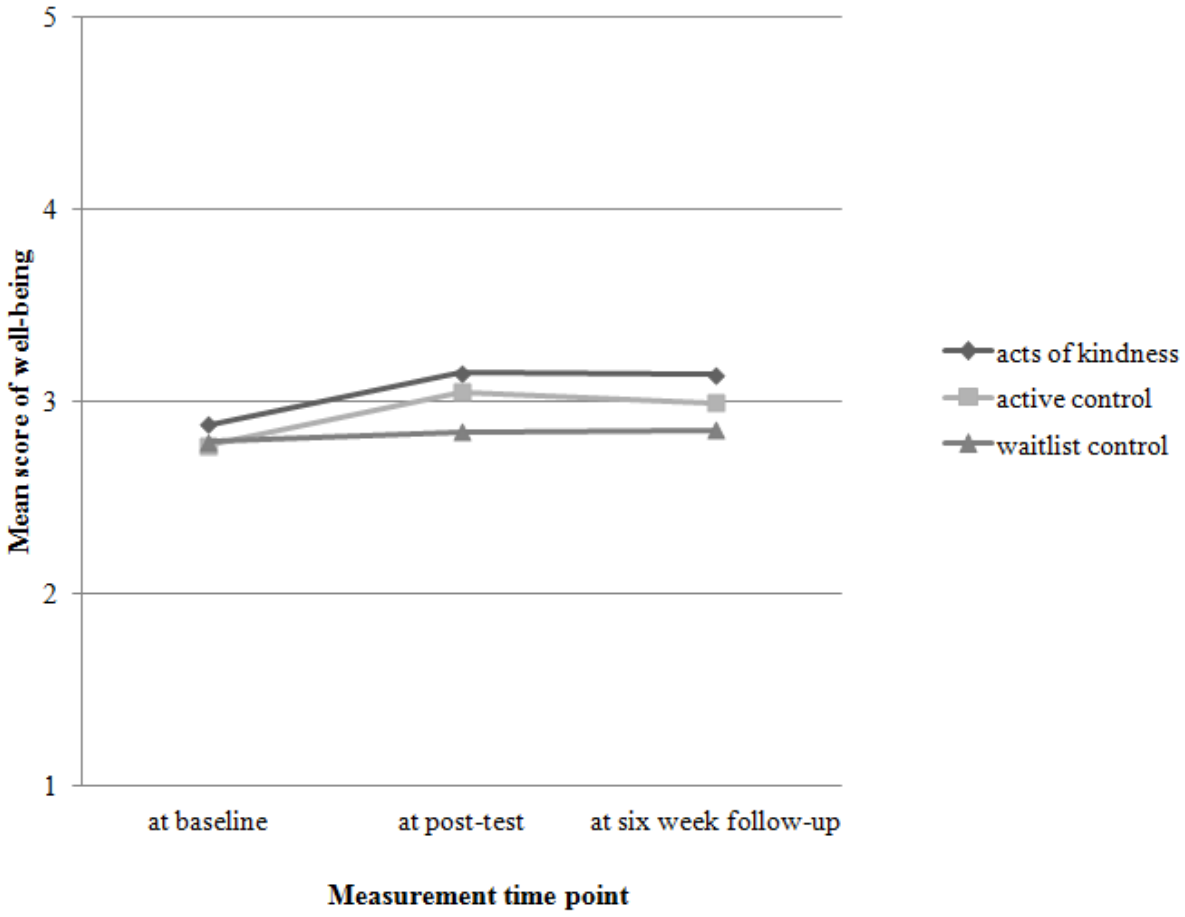

Figure 1. Mean scores of total well-being per condition and measurement

Table 3

Frequency of flourishers for measurements and conditions

	Acts of kindness	Active control	Waitlist	Total
	n *(%)*	n *(%)*	n *(%)*	n *(%)*
Baseline (T0, n= 254)	13 (5.1)	12 (4.7)	13 (5.1)	38 (15.0)
Post-test (T1, n= 195)	20 (10.3)	18 (9.2)	14 (7.2)	52 (26.7)
Six week follow-up (T2, n= 170)	14 (8.2)	13 (7.6)	17 (10.0)	44 (25.9)

Note. n= sample size

Effects at six week follow-up

ANCOVA's showed that when controlling for levels of well-being at baseline, there was a significant effect of condition on levels of well-being at six week follow-up, $F(2,166)=3.14$, $p=.046$. Bonferroni post hoc tests revealed no significant difference between the acts of kindness condition and active control condition at six week follow-up. However, the acts of

kindness condition reached significantly higher scores on well-being compared to the waitlist control condition (p=.040, d=0.45), indicating that other-kindness was more effective in enhancing levels of well-being up to six weeks compared to the waitlist control condition but not compared to self-kindness. For psychological well-being an ANCOVA showed a significant difference between conditions at six week follow-up, $F(2,166)=4.36$, p=.014, with significant higher scores in the acts of kindness condition compared to the waitlist condition (p=.012, d=0.47). No significant differences were found between the acts of kindness condition and active control condition, suggesting that other-kindness is more effective in enhancing psychological well-being compared to the waitlist control condition but not compared to self-kindness. No significant effect of condition on emotional and social well-being as well as positive relations, positive emotions and self-acceptance at six week follow-up was found, indicating that other-kindness, self-kindness and the waitlist control condition were even effective in enhancing these variables.

A striking result is that there is an increase in flourishing within all conditions (see Table 3). The waitlist control condition increased from 5% flourishing at baseline to nearly 10% at six week follow-up compared to the acts of kindness and active control condition (increase from 5% at baseline to 8% at six week follow-up). Nevertheless, these findings were not significant. A chi-square test did not revealed significantly more flourishers in the acts of kindness condition compared to the active control condition and waitlist condition at six week follow-up, $\chi^2(2)=5.17$, p=.772, indicating that neither other-kindness nor self-kindness were more effective in enhancing flourishing compared to the waitlist control condition. Probably, due to the increase in flourishing within the waitlist control condition no significant differences in flourishing between conditions were found.

Discussion

The present study examined whether an acts of kindness intervention leads to significant higher well-being and more flourishing in comparison to an active control condition and a waitlist control condition. The results revealed that other-kindness and self-kindness were even effective in enhancing levels of well-being in participants from the general Dutch population. However, as it was expected other-kindness was more effective in promoting well-being compared to the waitlist control condition and no statistically significant difference in effectiveness was found between self-kindness and the waitlist control condition. Results showed a trend towards a difference in increase in flourishing and positive relations between the acts of kindness condition compared to the waitlist control condition but this difference

was not statistically significant. Contrary to expectations, other-kindness did not lead to higher levels of positive emotions when comparing to the control conditions and self-kindness did not lead to an enhanced self-acceptance compared to other-kindness. In sum, mainly significant differences were found between the acts of kindness and waitlist control condition, indicating that other-kindness is not more effective in enhancing well-being and secondary outcomes compared to self-kindness.

The finding of the present study that other-kindness is effective in enhancing total well-being on post-test and at follow-up measure was also found in previous research that investigated the effects of acts of kindness (Layous, Nelson, Oberle, Schonert-Reichl & Lyubomirsky, 2012; Nelson et al., 2015; Nelson et al., 2016). Findings of the present study that other-kindness is more effective in enhancing levels of psychological well-being but not social well-being compared to the waitlist control condition coincide with previous research (Nelson et al., 2016). Nevertheless, a higher increase in emotional well-being was found for other-kindness compared to the waitlist control condition contradicting the result of the study by Nelson and colleagues (2016) which showed no difference between other-kindness and self-kindness in promoting emotional well-being. Also, in contrast to the finding of the present research that other-kindness and self-kindness are even effective in enhancing total well-being, previous research found that other-kindness increases well-being more compared to self-kindness (Nelson et al., 2016). Possible explanations for the contrary results are differences with regard to the duration of the study and the recruited sample. In the study of Nelson and colleagues (2016) participants had to perform three kind acts per week for a period of four weeks. In the present study participants had to perform five kind acts per week for a period of six weeks. Possibly, the duration of six weeks and an amount of five kind acts per week resulted in too high requirements for the participants. In other studies the duration of the interventions was about one to four weeks (Otake, Shimai, Tonaka-Matsumi, Otsui and Fredrickson, 2006; Nelson et al., 2016) and the participants had to perform three kind acts per week (Nelson et al., 2016; Layous et al., 2012). Moreover, in the present study the mean age of the participants was 48,7 years and there were 10,6% male participants included. In the study of Nelson and colleagues (2016) the mean age of the sample was 29,9 years and their sample included 40% male participants. Concluding, that the sample in the present study included more older people and more women. Furthermore, Nelson and colleagues (2016) did not exclude participants who suffered from depressive symptoms or anxiety. It is possible that the two samples reacted in a different way on the intervention due to differences in demographics. In future research the influence of demographics on the effect of this kind of

intervention on well-being should be investigated to gain certainty about these considerations. Another possible explanation for the contrasting findings comes from the concept of self-compassion. According to Neff (2003) self-compassion is about having a kind attitude towards oneself, i.e. self-kindness. Thus, self-kindness is defined more as an attitude when it is derived from self-compassion. Participants in the present study and in the study by Nelson et al. (2016) had to perform kind acts to themselves, that is behavior. This means that there is a difference between self-kindness, defined as kind acts for oneself, and self-kindness, defined as an attitude. Possibly, participants in the present study had a kind attitude towards oneself compared to the participants in the study of Nelson et al. (2016). Only performing kind acts for oneself is maybe not enough to increase well-being because the attitude of the person matters. However, only future research on this issue can give more insights into the effects of self-kindness on well-being. Future research should focus on the different definitions of self-compassion (i.e. self-kindness) and examine if there is a difference between having a kind attitude towards oneself and performing kind behavior towards oneself regarding effects on well-being. An additional possible explanation why other-kindness is found as even effective in enhancing well-being as self-kindness addresses self-compassion as well. Nelson et al. (2016) suggested that practicing self-kindness promotes well-being. This suggestion is supported by a study of Neff and Germer (2013), showing that participants trained in self-compassion (comprising self-kindness) increased in well-being compared to a no-treatment control condition. Asking individuals to act kindly towards themselves could have worked as training because participants had to consistently perform kind acts. Possibly, well-being in the self-kindness condition enhanced because of this training in self-kindness. Concluding, that there was an increase in well-being for other-kindness as well as self-kindness, why no difference between the two conditions with regard to improvements in well-being could be found. In sum, the results underpin the positive effect of other-kindness on well-being but also support the need to further investigate the effect of self-kindness on well-being and by which mechanisms it works.

The present study demonstrated a trend towards higher proportions of flourishing in the acts of kindness condition compared to the waitlist control condition at post-test. Nevertheless, all three conditions showed higher proportions of flourishing after the intervention, but the differences between conditions were not statistically significant. Possibly, the use of an active control condition caused the statistically non-significant result at post-test because there was a higher difference only between proportions of flourishing in the acts of kindness condition and the waitlist control condition. Moreover, the finding can

possibly be explained by looking at another non-significant result. Previous research showed that kind acts to others lead to increases in well-being as a result of an enhancement of positive emotions (Fredrickson & Joiner, 2002; Nelson et al., 2016). Also, the emergence of flourishing is facilitated by positive emotions (Catalino & Fredrickson, 2011). Contrary to expectations, the present study demonstrated that participants who performed kind acts to others did not significantly improved with regard to positive emotions compared to participants in the control conditions. Possibly, no higher improvements of flourishing in the acts of kindness condition are found because positive emotions did not increase, and therefore, did not facilitate well-being and the emergence of flourishing. However, the present study was the first examining the effect of an acts of kindness intervention on flourishing using cut-off values to determine flourishing. Further research is needed to investigate the effect of kind acts on flourishing using cut-off values according to the criteria of Keyes (2006). Why no difference between conditions regarding an increase in positive emotions is found in the present study contradicting the study of Nelson and colleagues (2016) can possibly be explained by looking at differences between the setup of the two studies. These differences and possible explanations for the mismatch of results were discussed earlier in this paragraph.

Alongside an increase in positive emotions, an increase in positive relations in the acts of kindness condition was expected, based on the assumption that kind acts to others have a beneficial effect on positive emotions and well-being because social relationships were improved (Nelson et al., 2016). However, results of the present study demonstrated only a trend towards higher scores on positive relations in the acts of kindness condition compared to the waitlist control condition. The present study was the first to examine the effect of kind acts on positive relations. To gain certainty about the effect of kind acts on positive relations future studies should further examine the effect of kind acts on positive relations. A possibility would be to investigate whether positive relations have a mediating role in the process of enhancing well-being through acts of kindness. Furthermore, it is important to examine if and in which way positive relations and positive emotions are related to each other within the process of enhancing well-being by kind acts.

Findings of the present study revealed that contrary to expectations, self-kindness was not more effective in enhancing self-acceptance compared to other-kindness. In both, the acts of kindness and active control condition, self-acceptance increased after the intervention, but only in the acts of kindness condition there was also an increase in self-acceptance up to six weeks. However, these differences between conditions were not significant. According to

Ryff (1989), self-acceptance is an important ingredient of mental health and positive psychological functioning, i.e. well-being. That self-acceptance is related to well-being can possibly explain why both, other-kindness and self-kindness, lead to increases in self-acceptance. Tkach (2006) examined the effect of acts of kindness on well-being using a battery of well-being indicators to measure the concept. He demonstrated that kind acts to others led to an increase in self-acceptance, which was one of the well-being indicators. This means, that self-acceptance was possibly also enhanced by other-kindness because it is part of well-being, what actually increased through other-kindness. However, the present research was the first to examine the effect of self-kindness on self-acceptance compared to other-kindness. Thus, further research is needed to produce more results to compare with. Also, future research is needed to get certainty if self-kindness is as effective as other-kindness in enhancing self-acceptance. Future research should also explore possible working mechanisms of the two concepts that play a role in the increase of self-acceptance to get more insight into possible reasons for the unexpected result.

Strengths and Limitations

A strength of the present study is that it was the first conducting an acts of kindness intervention within the general Dutch population and the first using a cut-off value to determine flourishing in research exploring effects of acts of kindness. Furthermore, the present study was one of the first which measured the effect of kind acts on positive relations and self-acceptance. Another strength of the present study is that the acts of kindness intervention was not only compared to self-kindness but also to a waitlist control condition.

Nevertheless, the results of the study have to be interpreted with caution because there were also some limitations. One limitation was that the self-selected sample included many higher educated women. Concluding, the received sample does not represent the general Dutch population. Research already showed that in similar studies self-selected samples also included a majority of higher educated women (Bolier et al., 2013a; Fledderus et al., 2012; Schotanus-Dijkstra et al., 2017). To deal with this known problem the present study made use of stratified randomization with regard to educational status, gender and age to get three comparable conditions. However, the fact that the limitation was also subject to previous research supports the need for more men and participants with different educational status within the participant sample of positive psychology interventions. For future research the challenge is how to reach this people by adapting the recruitment strategy. Possibilities would be to not only use local newspapers and psychology magazines as in the present research but

also to do notices in supermarkets, doctor's offices, bus stations, cinemas and other public places to reach a greater variety of people with regard to age, gender and educational status.

Another limitation was that there was a loss of participants in all conditions due to drop-out. Maybe, the amount of kind acts to perform was too high and the duration of the study was too long. Compared to other studies participants in the present study had to perform two more kind acts per week and this for two to three more weeks (Otake et al., 2006; Layous et al., 2012; Nelson et al., 2016). However, in the present study participants had to perform five kind acts on one day during the week following the recommendation by Lyubomirsky and colleagues (2005). Additionally, a study by Nelson and colleagues (2015) showed that performing five kind acts on one day per week effectively enhanced levels of well-being (following Lyubomirsky et al., 2005). Possibly, for the Dutch population in the present study another approach with a different amount of acts per week would be more beneficial compared to the American population in the studies of Lyubomirsky and colleagues (2005) and Nelson and colleagues (2015). Future research could examine if there are differences between the populations with regard to the effectiveness of a specific amount of kind acts in promoting well-being. This way, the used approach could eventually be adapted in future research regarding the performance of kind acts in the Netherlands.

Another limitation is that participants in the present study were instructed to perform kind acts to others. So they were not self-motivated to do so. Research showed that other-kindness is more effective if participants perform kind acts autonomously (Nelson et al., 2015). Found effects of other-kindness on well-being in the present study were medium in size, indicating that other-kindness has no very strong effect on well-being. Possibly, effects were larger if participants had performed kind acts autonomously. However, a similar study in which participants were also instructed to perform other-kindness found medium effect sizes as well (Nelson et al., 2016). Therefore, in future research self-motivated kind acts to others and their effect on well-being should be investigated. Self-motivated kind acts should also be compared to instructed kind acts regarding their effect on well-being.

Furthermore, the use of repeated measurements could have limited the results because participants were repeatedly asked to fill in similar questionnaires. This could have led to bias. Possibly, participants reported a higher level of well-being after the intervention, because they knew that the intervention was aimed to enhance it. Nevertheless, the use of three measurement time points (at baseline, at post-test and at six week follow-up) offered the opportunity to examine whether the effects are lasting up after the intervention.

Implications for further research

The results of the present study contribute to the existing literature by providing further relevant insights for the practical use of the acts of kindness intervention and the effect of kind acts on promoting well-being and flourishing in the Dutch population. The present study showed that the acts of kindness intervention is able to support well-being. The intervention is easy to conduct and does not need many instructions. Furthermore, the intervention can be conducted by the participants themselves without the need of support by a researcher or therapist. Therefore, it might be beneficial to use with other interventions in combination or as an extra support additional to therapy. A first implication is to improve the recruitment strategy so that a more representative sample of the general Dutch population, including more men and lower educated participants, can be collected in future research. This could give more insight into the effects of acts of kindness on well-being in the general Dutch population. A possible adaption to the current recruitment strategy would be to not only use local newspapers and psychology magazines as in the present research but also to do notices in supermarkets, doctor's offices, bus stations, cinemas and other public places. Further, future research should replicate positive results and adapt the approach with regard to discussed limitations to support the usefulness and effectiveness of the acts of kindness intervention for the general Dutch population. An additional implication for future research is to investigate the effect of kind acts on well-being by focusing on the influence of demographics and the setup of the intervention for the Dutch population. The most effective amount of acts per week and the optimal duration for execution have to be determined by future research. Moreover, self-motivated kind acts to others and their effect on well-being have to be explored. Future research should compare those acts to instructed kind acts. Another important issue is that future research should use cut-off values to determine flourishing according to the criteria of Keyes (2006) when exploring effects of kind acts on flourishing. Findings demonstrated that acts of kindness were not more effective in enhancing wellbeing than self-kindness. This finding was surprising and possible explanations were discussed. However, only future research can offer certainty in whether other-kindness and self-kindness are even effective in improving well-being by exploring the working mechanisms behind their effects on well-being. Working mechanisms like positive emotions and positive relations of the acts of kindness intervention are still not fully examined. Contrary to expectations, the present study showed only a trend towards higher scores on positive relations and no enhancement of positive emotions. Future studies should further investigate the role of positive relations within the process of enhancing well-being. A

mediation analysis would be the next step to examine whether positive relations have a mediating role as assumed by Nelson and colleagues (2016). Future studies could also examine whether there are other unknown working mechanisms that influence the effect of kind acts on well-being, e.g. self-acceptance. Regarding self-kindness, an implication for future research is to examine if there is a difference in effects on well-being between having a kind attitude towards oneself and performing kind behavior towards oneself. Moreover, future research should replicate results that self-kindness is even effective in enhancing self-acceptance than other-kindness and explore possible working mechanisms of the two concepts by which they increase self-acceptance.

There have still adaptations to be made but acts of kindness seem to be a useful intervention to enhance well-being of the general Dutch population. Possibly, self-kindness is even effective to increase well-being. Literature showed that high levels of well-being, i.e. flourishing, have beneficial effects on individuals (Keyes, 2005, 2007; Schotanus-Dijkstra et al., 2016b). However, most individuals of the general Dutch population are currently not flourishing and therefore, do not benefit from its positive effects (Schotanus-Dijkstra et al, 2016a). For this reason, future research should investigate how to optimal implement the acts of kindness intervention in the general Dutch population and whether self-kindness is as effective as other-kindness in enhancing well-being. Till all these recommendations are implemented one should keep in mind that only little kind acts can already enhance well-being. In doing so, perhaps it does not matter if these are directed towards others or oneself.

References

Alden, L. E., & Trew, J. L. (2013). If it makes you happy: Engaging in kind acts increases positive affect in socially anxious individuals. *Emotion*, *13*(1), 64. doi: 10.1037/a0027761

Bolier, L., Haverman, M., Kramer, J., Westerhof, G. J., Riper, H., Walburg, J. A., & Bohlmeijer, E. (2013a). An Internet-based intervention to promote mental fitness for mildly depressed adults: randomized controlled trial. *Journal of Medical Internet Research, 15*(9), e200. doi:10.2196/jmir.2603

Bolier, L., Haverman, M., Westerhof, G. J., Riper, H., Smit, F., & Bohlmeijer, E. (2013b). Positive psychology interventions: a meta-analysis of randomized controlled studies. *BMC public health, 13*(1), 119. doi:10.1186/1471-2458-13-119

Buchanan, K. E., & Bardi, A. (2010). Acts of kindness and acts of novelty affect life satisfaction. *The Journal of social psychology, 150*(3), 235-237. doi:10.1080/00224540903365554

Caprariello, P. A., & Reis, H. T. (2013). To do, to have, or to share? Valuing experiences over material possessions depends on the involvement of others. *Journal of personality and social psychology*, *104*(2), 199. Retrieved from http://www.acrwebsite.org/volumes/v38/acr_v38_16298.pdf

Catalino, L.I., & Fredrickson, B.L. (2011). A Tuesday in the life of a flourisher: The role of positive emotional reactivity in optimal mental health. *Emotion*, *11*(4), 938-950. doi:10.1037/a0024889.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd). Retrieved from https://6666957a-a-62cb3a1a-s-sites.googlegroups.com/site/ff07edownloadbooks/ff07/statistical-power-analysis-for-the-behavioral-sciences-2nd.pdf?attachauth=ANoY7cqVuJ9mDe-Goqgk_V8snPfyPocg6RGk-z9m0YQpluZV9xN-pm-MfoD0FwKsSknhRoxgK3bj3QFUsxe_aKmx_6Zmy3IjrzyvBJMbFESHcQXnv0kU-v3vHWCRxuwf7qIpa6Ul2fUwSzMxdESNR8-QyPaSJfi3TXCWwpgaaP_KW55b9JzVfSs-gzWOdBXoiDLP0v88KtdGdSIPVWTVajslaODWtWc0aW5zRfH7qugtbMQI--7T6TsovtAQUxqvUS7rxaBi8oT5M6FjeptMmiwb_wL_FqrnQ92CM38zIqGylBQIW6BbLgI%3D&attredirects=0

Curry, O. S., Rowland, L. A., Van Lissa, C. J., Zlotowitz, S., McAlaney, J., & Whitehouse, H. (2018). Happy to Help? A systematic review and meta-analysis of the effects of performing acts of kindness on the well-being of the actor. *Journal of Experimental Social Psychology*, *76*, 320-329. doi: https://doi.org/10.1016/j.jesp.2018.02.014

Dunn, E. W., Aknin, L. B., & Norton, M. I. (2008). Spending money on others promotes Happiness. *Science* , *319* , 1687–1688. doi: 10.1126/science.1150952

Fledderus, M., Bohlmeijer, E. T., Pieterse, M. E., & Schreurs, K. M. (2012). Acceptance and commitment therapy as guided self-help for psychological distress and positive mental health: a randomized controlled trial. *Psychological Medicine, 42*(3), 485-495. doi:10.1017/S0033291711001206

Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden and-build theory of positive emotions. *American Psychologist, 56*(3), 218-226. doi:10.1037/0003-066X.56.3.218.

Fredrickson, B. L. (2003). The value of positive emotions: The emerging science of positive psychology is coming to understand why it's good to feel good. *American scientist*, *91*(4), 330-335. Retrieved from http://docencia.med.uchile.cl/evolucion/textos/fredrickson2003.pdf

Fredrickson, B.L., & Joiner, T. (2002). POSITIVE EMOTIONS TRIGGER UPWARD SPIRALS TOWARD EMOTIONAL WELL-BEING. *Psychological Science, 30*(2), 172-175. Retrieved from https://www.semanticscholar.org/paper/Positive-emotions-trigger-upward-spirals-toward-Fredrickson-Joiner/d81f67e6bba38c9a5e6c6ada8b7623465b5de36c

Keyes, C. L. M. (1998). Social well-being. *Social Psychology Quarterly*, *61*(2), 121-140. doi: 10.2307/2787065

Keyes, C.L.M. (2002). The mental health continuum: From languishing to flourishing in life. *Journal of health and social behavior*, 207-222. doi: 10.2307/3090197

Keyes, C.L.M. (2005). Mental illness and/or mental health? Investigating axioms of the complete state model of health. *Journal of Consulting and Clinical Psychology, 73,* 539-548. doi: 10.1037/0022-006X.73.3.539

Keyes, C.L.M. (2006). Mental health in adolescence: is America's youth flourishing? Am. J. Orthop. 76, 395–402. doi: 10.1037/0002-9432.76.3.395

Keyes, C.L.M., Wissing, M., Potgieter, J.P., Temane, M., Kruger, A., van Rooy, S. (2008). Evaluation of the mental health continuum-short form (MHC-SF) in setswanaspeaking South Africans. *Clin. Psychol. Psychother. 15*, 181–192. doi: 10.1002/cpp.572

Kobau, R., Seligman, M. E., Peterson, C., Diener, E., Zack, M. M., Chapman, D., & Thompson, W. (2011). Mental health promotion in public health: perspectives and strategies from positive psychology. *American Journal of Public Health, 101*(8), e1-9. doi:10.2105/AJPH.2010.300083

Lambert, L., Passmore, H-A., & Holder, M.D. (2015). Foundational Frameworks of Positive Psychology: Mapping Well-Being Orientations. *Canadian Psychological Association, 56,* 311-321. doi: 10.1037/cap0000033

Lamers, S., Westerhof, G. J., Bohlmeijer, E. T., ten Klooster, P. M., & Keyes, C. L. (2011). Evaluating the psychometric properties of the mental health continuum-short form (MHC-SF). *Journal of clinical psychology, 67*(1), 99-110. doi:10.1002/jclp.20741

Layous K., Nelson, S. K., Oberle, E., Schonert-Reichl, K. A., Lyubomirsky, S. (2012). Kindness Counts: Prompting Prosocial Behavior in Preadolescents Boosts Peer Acceptance and Well-Being. *PLoS ONE, 7* (12). doi: 10.1371/journal.pone.0051380

Lyubomirsky, S., Sheldon, K. M., & Schkade, D. (2005). Pursuing happiness: The architecture of sustainable change. *Review of General Psychology, 9* (2), 111-131. doi:10.1037/1089-2680.9.2.111

Neff, K. D. (2003). Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and Identity*, *2*, 85–102. doi: 10.1080/15298860390129863.

Neff, K. D., & Germer, C. K. (2013). A pilot study and randomized controlled trial of the mindful self-compassion program. *Journal of clinical psychology*, *69*(1), 28-44. doi: 10.1002/jclp.21923

Nelson, S. K., Della Porta, M. D., Jacobs Bao, K., Lee, H. C., Choi, I., & Lyubomirsky, S. (2015). 'It's up to you': Experimentally manipulated autonomy support for prosocial behavior improves well-being in two cultures over six weeks. *The Journal of Positive Psychology*, *10*(5), 463-476. doi: 10.1080/17439760.2014.983959

Nelson, S. K., Layous, K., Cole, S. W., & Lyubomirsky, S. (2016). Do unto others or treat yourself? The effects of prosocial and self-focused behavior on psychological flourishing. *Emotion, 16*(6), 850-861. doi:10.1037/emo0000178

Otake, K., Shimai, S., Tanaka-Matsumi, J., Otsui, K., & Fredrickson, B. L. (2006). Happy people become happier through kindness: A counting kindnesses intervention. *Journal of happiness studies* , *7* (3), 361-375. doi: 10.1007/s10902-005-3650-z

Ouweneel, E., Le Blanc, P. M., & Schaufeli, W. B. (2014). On being grateful and kind: Results of two randomized controlled trials on study-related emotions and academic

engagement. *The Journal of psychology, 148*(1), 37-60. doi:10.1080/00223980.2012.742854

Radloff, L.S. (1977). The CES-D Scale: A Self-Report Depression Scale for Research in the General Population. *Applied Psychological Measurement, 1*(3), 385-401. Retrieved from https://conservancy.umn.edu/bitstream/handle/11299/98561/v01n3p385.pdf%3Bjsessionid%3DBEB13FFA6F3163D7056A9D2C59B02538?sequence%3D1

Ryff, C.D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well- being. *Journal of Personality and Social Psychology, 57,* 1069-1081. doi: 10.1037/0022 3514.57.6.1069

Schaefer, A., Nils, F., Sanchez, X., & Philippot, P. (2010). Assessing the effectiveness of a large database of emotion-eliciting films: A new tool for emotion researchers. *Cognition and Emotion, 24* (7), 1153-1172. doi: 10.1080/02699930903274322

Schotanus-Dijkstra, M., Pieterse, M.E., Drossaert, C.H.C, Westerhof, G.J., de Graaf, R., ten Have, M., Walburg, J.A., Bohlmeijer, E.T. (2016a). What factors are associated with flourishing? Results from a large representative national sample. *Journal of Happiness Studies, 17*(4), 1351-1370. doi:10.1007/s10902-015-9647-3

Schotanus-Dijkstra, M., ten Have, M., Lamers, S. M., de Graaf, R., & Bohlmeijer, E. T. (2016b). The longitudinal relationship between flourishing mental health and incident mood, anxiety and substance use disorders. The European Journal of Public Health, ckw202. doi: 10.1093/eurpub/ckw202

Schotanus-Dijkstra, M., Drossaert, C. H. C., Pieterse, M. E., Boon, B., Walburg, J. A., & Bohlmeijer, E. T. (2017). An early intervention to promote well-being and flourishing and reduce anxiety and depression: A randomized controlled trial. *Internet interventions*, *9*, 15-24. doi: 10.1093/eurpub/ckw202

Sheldon, K. M., & King, L. (2001). Why positive psychology is necessary. *American Psychologist, 56*(3), 216-217. doi: 10.1037//0003-066x.56.3.216

Sin, N.L., & Lyubomirsky, S. (2009). Enhancing Well-Being and Alleviating Depressive Symptoms With Positive Psychology Interventions: A Practice-Friendly Meta-Analysis. *Journal of Clinical Psychology, 65* (5), 467-487. doi: 10.1002/jclp.20593

Spitzer, R.L., Kroenke, K., Williams, J.B.W. & Löwe B. (2006). A Brief Measure for Assessing Generalized Anxiety Disorder *The GAD-7*. *Arch Intern Med, 166,* 1092-1097. Retrieved from

https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/410326?alert=1&alert=1

Tkach, C. T. (2006). Unlocking the treasury of human kindness: Enduring improvements in mood, happiness, and self-evaluations. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 67* (1-B), 603. Retrieved from: http://psycnet.apa.org/record/2006-99014-307

van Dierendonck, D. (2011). Handleiding positieve geestelijke gezondheids schaal (PGGS) versie 05. *Amsterdam: University of Amsterdam*.

WHO (2001). *Strengthening mental health promotion*. World Health Organization: Geneva.