



Instructional support decreases desirability and initiation of a gratitude intervention



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ABSTRACT

Gratitude interventions tend to be effective at increasing well-being, yet they are not commonly initiated and completed. Prior experimental evidence suggests that provision of social support (i.e., supportive and encouraging statements) increases the effectiveness of positive psychological interventions. The type of support, however, may differentially impact motivation. In the current study, we hypothesized that instructional support (i.e., advice about how to best conduct the intervention) increases the desirability of a gratitude intervention and the probability of initiation. 274 participants received leaflets about a voluntary, web-based gratitude intervention. Half of the participants were randomly assigned to receive instructional support in which they read testimonials on how to best conduct the intervention. Next, participants were asked about utility beliefs, social norm beliefs, self-control beliefs, and intentions to participate in the intervention. Contrary to our hypothesis, provision of instructional support decreased desirability of the gratitude intervention, which indirectly hindered intentions to participate in the intervention. Thus, informing recipients about how to navigate an intervention had a paradoxical effect. It may be more effective to allow participants to recognize and handle intervention challenges on their own.

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1. Introduction

Gratitude interventions assist individuals in the pursuit of greater quality of life (Emmons & McCullough, 2003; Froh, Kashdan, Ozimkowski, & Miller, 2009; Seligman, Steen, Park, & Peterson, 2005). Yet, little is known about who initiates these self-help opportunities. This is important because individuals who self-initiate interventions report greater gains in well-being than those who do not self-initiate (Lyubomirsky, Dickerhoof, Boehm, & Sheldon, 2011; Sin & Lyubomirsky, 2009). Research has begun to identify personality characteristics (Kaczmarek, Kashdan, Kleiman, et al., 2013), and how they interact with motivational belief systems about the intervention (Kaczmarek, Kashdan, Drązkowski, Bujac, & Goodman, Manuscript under review), to predict self-initiation into a gratitude intervention. Less is known, however, about other contextual variables that influence belief systems and who will self-initiate these interventions.

In addition to personality characteristics and beliefs systems, whether or not participants receive external support for the intervention might predict the likelihood of self-initiation and completion. Researchers have considered how receiving social support, such as encouraging statements from former participants, influences gratitude intervention outcomes (Layous & Lyubomirsky, in press). Prior investigations, however, focused exclusively on how support provision increases the efficacy of the intervention (Della Porta, Jacobs Bao, Lee, Choi, & Lyubomirsky, 2013; Layous, Nelson, & Lyubomirsky, 2012). That is, to what extent does receiving support result in incremental gains in well-being? While this is important for the delivery of interventions, support provision is a multifaceted construct. Support can be delivered by multiple sources (e.g., experimenters, peers, former participants), at multiple time points (e.g., before, during, after an intervention) and in multiple forms (e.g., instructional support, autonomy support). No research to date has tested how support can influence the desire to self-initiate a gratitude intervention. We examined how providing participants with instructional support before a gratitude intervention affects motivation and intentions to self-initiate the intervention.

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1.1. Motivation to perform a gratitude intervention

The theory of planned behavior (TPB; Ajzen, 1991, 2011) posits that intentional behavior arises from three motivational belief systems about a given behavior: beliefs about the consequences of the behavior (utility beliefs), beliefs about others' expectations of the behavior (social norm beliefs), and beliefs about being able to cope with or handle challenges (self-control beliefs). These belief structures predict behavioral intentions that increase the likelihood of behavior.

Intentions to participate in a gratitude intervention have been strongly linked to self-initiation of the intervention (Kaczmarek, Kashdan, Drązkowski, et al., Manuscript under review). To be specific, individuals with high intentions to participate were 2.2 times more likely to self-initiate into a gratitude intervention than individuals with low intentions (Kaczmarek, Kashdan, Kleiman, et al., 2013). With regards to the TPB framework, favorable utility beliefs, social norm beliefs, and perceptions of high self-control predicted greater intentions to try out the intervention (Kaczmarek, Kashdan, Drązkowski, et al., Manuscript under review). These findings build upon studies that have used more basic measures of intrinsic and extrinsic motivation to predict the initiation into a positive psychological intervention (e.g., Nelson et al., Manuscript under review; Sheldon & Lyubomirsky, 2006). Taken together, researchers should target specific belief systems about an intervention to increase the likelihood of participation.

1.2. Providing instructional support for a gratitude intervention

Providing participants with instructional support, defined as the provision of information and advice about the intervention, might modify TPB belief systems and subsequently increase the likelihood of self-initiating into the intervention. First, practical advice on how to best employ the intervention can help participants more accurately gauge the usefulness and benefits of the intervention (i.e., utility beliefs). This reduction in uncertainty might lead individuals to have more favorable beliefs about the utility of the intervention, which in turn can increase likelihood of self-initiating (Kaczmarek, Kashdan, Drązkowski, et al., Manuscript under review). Second, receiving instructions from peers or former intervention participants can alter social expectations or social pressures (i.e., social norm beliefs). For example, advice from former participants provides evidence that an intervention can be successfully completed. This might lead to more favorable social norm beliefs ("Others have tried this"), and as a result, increase the likelihood of self-initiating (Kaczmarek, Kashdan, Drązkowski, et al., Manuscript under review). Likewise, prior research found that participants who read peer testimonials benefited more from a positive writing intervention than those who did not (Layous et al., 2012). Layous and colleagues attributed this finding to increases in participants' beliefs about the utility of the intervention. It is equally likely, however, that reading peer testimonials affected participants' social norm beliefs about the intervention. Third, instructional support can reduce perceptions of the difficulty of an intervention (i.e., self-control beliefs). Directions and advice from participants can reduce the uncertainty of the novel intervention and accordingly increase participants' feelings of control. Higher perceptions of self-control have been associated with a higher likelihood of self-initiating into a gratitude intervention (Kaczmarek, Kashdan, Drązkowski, et al., Manuscript under review).

1.3. The present study

In the present study, we examined how the receipt of instructional support influenced motivational belief systems to predict the initiation into a gratitude intervention. We build on the theory

of planned behavior (Ajzen, 1991, 2011) and hypothesized that provision of instructional support would result in more favorable utility beliefs, social norm beliefs, and self-control beliefs about the intervention. We predicted that such modifications in beliefs would in turn lead to greater intentions to participate, and thus lead to self-initiation. As a secondary aim, we were interested in evaluating whether prior findings from a community sample are replicable and generalizable to additional populations (Kaczmarek, Kashdan, Drązkowski, et al., Manuscript under review). Robustness is necessary so that finite resources are devoted to reducing the potency of salient risk factors and increasing the potency of salient resiliency factors.

2. Method

2.1. Participants

Participants were 274 undergraduates (82.1% female) from a university in Poland between the ages 18 and 43 years ($M = 20.93$, $SD = 2.58$). Groups of students were approached before classes by experimenters. Volunteers remained anonymous and were not offered incentives. Listwise deletion was used to handle missing data (0.2%). Written informed consent was obtained from each participant.

2.2. Procedure

Participants received leaflets with a description of the gratitude intervention. Subsequently, participants reported their utility beliefs, social norm beliefs, and self-control beliefs regarding this intervention. They were informed that if they wanted to try out this intervention they should enter a dedicated website with instructions within the next seven days. Following that, behavioral intentions towards the intervention were measured.

2.3. Measures

We used four generic scales to measure utility, social norm, and self-control beliefs, as well as behavioral intentions. These scales were formulated according to guidelines provided by methods experts within the field of the TPB (Francis et al., 2004) and used in prior studies (Ajzen, Czasch, & Flood, 2009).

Utility beliefs, or attitudes about likely consequences of the gratitude intervention, were assessed with three 7-point bipolar evaluative adjective scales: "unpleasant–pleasant", "bad–good", and "useless–useful" ($\alpha = .82$).

Social norm beliefs, or beliefs about what others think about participating in the intervention, were assessed with three items about the expectations of important or valued others, e.g., "Most people who matter to me would approve my doing this intervention." Participants responded to items on a 7-point scale from 1 = "completely disagree" to 7 = "completely agree" ($\alpha = .69$).

Self-control beliefs, or beliefs about being able to effectively cope and handle the exercises, were measured with three items about the feasibility of the intervention and the effort it would require, e.g., "Performing this intervention would be very easy for me." Participants responded to items on 7-point scale from 1 = "completely disagree" to 7 = "completely agree" ($\alpha = .89$).

Behavioral intentions were assessed with three items about specific actions in the intervention. Preceded by the phrase "I intend to..." items included the following actions: "enter the intervention website", "read information from the website", "learn more about this positive intervention". Participants responded to items on 7-point scale from 1 = "completely disagree" to 7 = "completely agree" ($\alpha = .93$).

2.4. Gratitude intervention

Following the paradigm outlined by Seligman et al. (2005), participants were asked to write about three good things that had happened to them in the last three days. Participants were asked to do this a total of three times, with three days in between each entry. Participants completed this through a dedicated website that provided detailed instructions on how to submit entries. To produce the measure of behavior, a value of 1 (yes) was assigned to those participants who completed a daily entry, and a value of 0 (no) was assigned if no internet activity was observed.

A participant was classified as initiating the gratitude intervention if he or she completed at least the first daily entry. At baseline, participants received an invitation with individual codes to access the intervention website which allowed them to be anonymously tracked throughout the study. To increase commitment to the initiated behavior, participants were asked to indicate time and place of their next intervention visit at the end of each entry (Ajzen et al., 2009).

2.5. Experimental manipulation

Half of the participants were randomly assigned to an *instructional support* condition using randomization algorithms available at randomizer.org. Two sets of questionnaires, one with and one without instructional support about the intervention were randomly distributed to participants. For the instructional support condition, we used methods similar to prior work (Layout et al., 2012) in which participants read pre-scripted (bogus) testimonials about the intervention. To generate testimonials, we described the intervention to a separate group of participants, and then asked them to identify expected difficulties and inconveniences about the intervention. Two trained research assistants scrutinized these reports and chose the six most realistic and helpful testimonials for the current study (e.g., “If you do not feel like writing in a particular moment, you can come back to the task later” and “You do not have to write about the most important events. You can just spontaneously write about these good things that come to your mind.”). As a manipulation check, participants rated the extent to which they found these hints helpful on a scale from 1 = “completely disagree” to 7 = “completely agree” ($\alpha = .76$, $M = 5.36$, $SD = .96$).

2.6. Analytical strategy

We performed structural equation modeling with mPlus 7.12 (Muthén & Muthén, 2012) to test if behavior was predicted by intentions, intentions by TPB components, and TPB components by provided instructional support and sex. In line with the TPB (Ajzen, 2011) we expected a full mediation between background variables (instructional support and sex) and subsequent motivational and behavioral components. We also explored a potential partial mediation. The WLSMV estimator was used to evaluate fit of the model with binary outcomes (did the person self-initiate the gratitude intervention?) (Muthén & Muthén, 2012). The residual variance of TPB variables was freed to correlate amongst each other in line with the TPB theory (Ajzen, 1991) and previous SEM models with endogenous TPB variables (Hoyt, Rhodes, Hausenblas, & Giacobbi, 2009). To evaluate the fit of the model we calculated RMSEA (values $<.06$ indicating good fit) and CFI with values $>.90$ indicating acceptable models (Bentler, 1990). Bias-corrected bootstrapping with 10,000 bootstrap samples was used to test indirect effects. Bootstrapping produces point estimates and confidence intervals (CIs) for the indirect effects. Significant indirect effects are indicated by CI that do not include zero. The wider the CI that does not include zero, the higher the probability that the point estimate is non-zero, i.e. 95% CI is the equivalent for a p -value of .05

(Hayes, 2013). Unstandardized coefficients were used for testing indirect effects.

3. Results

Descriptive statistics and inter-correlations between study variables are presented in Table 1. Of the 274 participants, 60 (21.9%) self-initiated and 21 (7.7%) completed the gratitude intervention.

A structural model involving utility beliefs and social norm beliefs as antecedents of intention is presented in Fig. 1. This model fit the empirical data well, $\chi^2(59) = 110.82$, $p < .01$, $\chi^2/df = 1.88$, RMSEA = .05, 90% CI [.04,.07], CFI = .93 (see Fig. 1). Self-control beliefs were excluded as they did not relate to intentions, $b = -.13$, $p > .05$. Instructional support had no effect on social norm beliefs, $b = -.05$, $p > .05$. Inclusion of this path had no effect on the model fit, $\Delta\chi^2(1) = 1.51$, $p > .05$, thus it was discarded in line with the rule of model parsimony. Intention significantly predicted the initial behavior. Noteworthy, utility beliefs decreased the odds of intervention completion (last visit) after controlling for the initial behavioral effort (first visit). Provided instructional support decreased perceived utility of the intervention, and had no significant direct effect on intention, $b = -.09$, $p > .05$, initiation of the behavior, $b = .08$, $p > .05$, nor its completion, $b = -.01$, $p > .05$. Women had more favorable attitude towards the intervention and felt more encouraged by social norm beliefs. There was no direct effect of sex on intention, $b = .05$, $p > .05$, initiation, $b = -.07$, $p > .05$, and completion of the intervention, $b = -.03$, $p > .05$.

Instructional support inhibited the initiation of the intervention as indicated by a negative indirect effect through utility beliefs and intention, $b = -0.050$, 95% CI [-0.164,-0.001]. For the completion of the intervention, two significant but opposing indirect effects occurred. One effect was inhibiting and the other was facilitating. As for the inhibiting effect, instructional support undermined completion of the intervention due to decreased utility beliefs, weaker intention, and lower odds of the initial involvement, $b = -0.040$, 95% CI [-0.127,-0.002]. As for the facilitating effect, instructional support enabled the completion of the intervention via utility beliefs, $b = 0.085$, 95% CI [0.001,0.271]. These two counterbalancing motives canceled each other out and produced a null effect of instructional support on intervention completion, $b = -0.050$, 95% CI [-0.028,0.207].

Women were more likely to self-initiate the intervention due to more favorable utility beliefs and higher intentions, $b = 0.113$, 99% CI [0.005,0.746], and marginally due to social norms beliefs and intentions, $b = 0.068$, 90% CI [0.009,0.190]. These effects produced a significant total effect of gender on the initiation of the gratitude intervention, $b = 0.181$, 99% CI [0.041,0.424]. A non-significant (due to counterbalancing) total indirect effect of gender on completion

Table 1
Descriptive statistics and inter-correlations among study variables.

	1	2	3	4	5
1. Utility beliefs					
2. Social norm beliefs	.43**				
3. Self-control beliefs	.25*	-.08			
4. Intention	.41**	.35**	-.01		
5. Age	-.03	-.01	-.08	.04	
6. Sex	.20*	.19**	-.05	.17**	-.10
7. Instructional support	-.10*	-.02	.02	-.13*	-.02
8. Behavior – first visit	.11*	.09	-.06	.31**	.01
9. Behavior – last visit	-.05	-.08	.05	.14*	.05
<i>M</i>	17.32	14.62	13.86	16.09	20.93
<i>SD</i>	3.46	3.42	3.96	4.28	2.58

Note: Sex coded as 0 = men, 1 = women.

† $p < .10$.

* $p < .05$.

** $p < .01$.

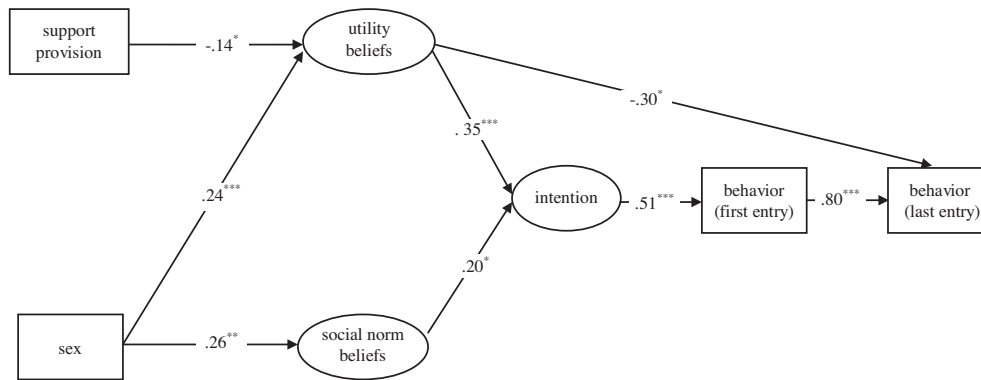


Fig. 1. The influence of support provision on motivation and the performance of a gratitude intervention. *Notes:* Standardized parameters. Instructional support coded as 0 = no provision, 1 = provided. Sex coded as 0 = men, 1 = women. Behavior coded as 0 = no, 1 = yes. * $p < .05$, ** $p < .01$, *** $p < .001$.

of the intervention, $b = -0.047$, 95% CI $[-0.303, 0.143]$, comprised a significant inhibiting indirect effect through utility beliefs, $b = -0.192$, 95% CI $[-0.475, -0.021]$, a significant facilitating indirect effect through utility beliefs, intention, and initial behavioral, $b = -0.047$, 99% CI $[0.007, 0.677]$, and marginal facilitating indirect effect through social norm beliefs, intention, and initial behavior, $b = 0.054$, 95% CI $[0.009, 0.146]$.

4. Discussion

The present study examined the effects of providing instructional support on intentions and behavior towards an online gratitude intervention. Building on models of behavior change (Ajzen, 2011; Fishbein & Ajzen, 1975) we examined specific motivational pathways through which this effect was transmitted. Contrary to our hypotheses, we found that providing participants with instructional support decreased utility beliefs about the intervention, and consequently, participants formed less favorable intentions and were less likely to self-initiate participation in the intervention. Instructional support had no effect on social norm beliefs or self-control beliefs. We also replicated and extended prior work (Kaczmarek, Kashdan, Drązkowski, et al., Manuscript under review), with results suggesting that high utility beliefs increased the odds of starting the intervention.

Compared to individuals who did not receive instructional support, those who received instructional support expected lower utility (less enjoyment or practical benefits) from the intervention, and this subsequently inhibited self-initiation. Several arguments can explain these findings. First, receiving instructional support may decrease feelings of autonomy. Reading tips about how to best conduct the intervention might have undermined the voluntary nature of participation and decreased feelings of autonomy. Having a sense of choice and personal preference of daily behavior is a fundamental human need (Deci & Ryan, 2000). This fits with recent findings that participants who received autonomy support during a positive psychological intervention experienced greater gains in well-being than those who did not receive autonomy support (Nelson et al., Manuscript under review). Second, instructional support might have increased awareness of potential difficulties of the intervention. Expected difficulties, even those easy to resolve, can interfere with enjoyment of the intervention. Receiving instructions prior to a task can also increase distress (Bolger & Amarel, 2007), especially if the individual believes the support is being imposed upon them (Deelstra et al., 2003). Focusing attention on problems may decrease expected enjoyment, and in turn decrease perceived usefulness of the intervention. Third, previous studies indicated that curiosity promotes self-initiation of gratitude interventions (Kaczmarek, Kashdan, Kleiman, et al., 2013).

In the present procedure, instructional support might demystify the entire process, reduce curiosity, and thus reduce approach motivation for the intervention. For this reason, future studies might test how state-curiosity and instructional support interact.

For the effect of instructional support on completion of the intervention, the results were more complex, as two paths emerged. The first path is straightforward—individuals who received instructional support were less likely to complete the intervention because they were less likely to self-initiate the intervention in the first place. In a second pathway, provision of instructional support undermined utility beliefs, and as a result indirectly promoted completion of the intervention. In other words, individuals who did not form high expectations about the intervention were more likely to continue participating. Taking these two paths together, provision of instructional support reduces the probability of self-initiation, but it may have little effect on completion of the intervention. These results highlight meaningful differences between the initiation and completion of an intervention, and correspond with literature that distinguishes adoption from maintenance of a healthy behavioral change (Schwarzer, 2008). Future studies of positive psychological interventions would benefit from studying self-initiation and continued participation as related but distinct constructs.

Next, we replicated findings that utility beliefs and social norm beliefs predicted intention to participate. Contrary to previous findings, self-control beliefs did not predict participation. Because self-control beliefs tend to be less relevant for easy tasks (Madden, Ellen, & Ajzen, 1992), self-control beliefs may not matter much for the simple gratitude intervention. Additionally, we replicated previous findings that women are more likely to self-initiate gratitude interventions (Kaczmarek, Kashdan, Kleiman, et al., 2013), and that this effect is mediated by utility beliefs and social norm beliefs (Kaczmarek, Kashdan, Drązkowski, Manuscript under review). Extending this model, we provided evidence that women are more likely than men to self-initiate and complete a gratitude exercise.

We also found evidence of divergent paths from utility beliefs to intervention initiation versus completion. Individuals who expected greater benefits had greater initial participation in the intervention. Of those who started the intervention, about 35% completed the final stage. This dropout was explained by pre-intervention utility beliefs, such that individuals who expected more benefits were more likely to resign after the first trial. This “first to start, first to stop” effect has multiple explanations. It might indicate that overly high expectations about the intervention led to disappointment and disengagement after an initial behavioral effort. A similar pattern has been observed for exercise programs, where inexperienced participants with overly optimistic expectations were more prone to disappointment and attrition (Jones, Harris, Waller, & Coggins, 2005). Conversely, it might be

that individuals who were highly motivated to try the intervention were able to quickly capitalize on benefits and felt that they obtained maximum gains from the intervention. Prior research showed that individuals who self-selected into a happiness intervention reported greater initial boosts in happiness immediately after the intervention than participants who did not self-select in (Lyubomirsky et al., 2011). It is possible that individuals felt they acquired sufficient knowledge about gratitude to quit early; an idea that runs counter to empirical evidence that longer participation in an intervention predicts greater gains in well-being (Sin & Lyubomirsky, 2009). Future studies could test these competing explanations by expanding the present model to include measures of intervention outcomes. Third, previous studies indicated that curiosity promotes self-initiation of gratitude interventions (Kaczmarek, Kashdan, Kleiman, et al., 2013). In the present procedure, instructional support might demystify the entire process, reduce curiosity, and thus reduce approach motivation for the intervention. For this reason, future studies might test how state-curiosity and instructional support interact.

Our results have practical implications for the promotion of gratitude. Because simple gratitude interventions can appear easy to handle, self-control beliefs may already be sufficient. As a result, receiving instructional support may have no effect on self-control beliefs, and instead decrease expected utility and benefits from the intervention. Instructional support may also make participants aware of intervention hassles that they had not previously considered. For simple gratitude interventions, participants may be better off taking the liberty of discovering and solving obstacles on their own. Rather than instructional support, different types support, such as autonomy support, may better assist voluntary participants of positive psychological interventions.

Several study limitations require consideration. Participants had no opportunity to accept or reject the support. Some people prefer to master challenges alone without help from others, while others have a stronger need for assistance (Schwarzer, Knoll, & Rieckmann, 2004). In natural settings, individuals have more freedom to decide whether they want or need additional information about an intervention. Additionally, the population we sampled (students of social sciences) was mostly women as reflected by the ratio of men to women. In our model, we addressed sex by assuming a significant direct effect for utility beliefs and social norm beliefs and a null effect for remaining variables. Future studies can test if the same model holds for populations with a greater ratio of men. Finally, this study did not measure intervention outcomes, such as levels of gratefulness and well-being. There is strong evidence to suggest that positive psychological interventions are generally effective and that self-selection makes them even more viable (Sin & Lyubomirsky, 2009). Future studies should incorporate measures of both self-selection determinants and relevant psychosocial outcomes.

The primary strength of this study is our use of experimental evidence to model complex motivational processes to predict beliefs about, intentions towards, self-initiation into, and completion of a gratitude intervention. We identified specific paths that inhibit or promote participation in gratitude interventions. This multidimensional perspective provides insight into the “how” and “why” of positive intervention outcomes, and accordingly contributes to the scientific pursuit of efficient dissemination of gratitude interventions. Arguably, the greatest current challenge for those designing interventions is to increase levels of participation and adherence in a way that optimizes well-being gains. This endeavor requires more evidence-based guidelines on how to attract and motivate individuals in the most efficient and effective ways. Approaches that examine personality characteristics in tandem with interpersonal variables can address these challenges.

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