

Effectiveness of a Strengths Intervention on Personal Growth Initiative in Students: The Moderating Role of Hope

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Abstract

The present study examined the effectiveness of an online strength-based intervention on students personal growth initiative (PGI). Previous research implies that the construct of PGI yields promising results for students career success and mental health raising the interest to better understand how it can be increased. Furthermore, this study examined whether the effects are moderated by individual levels of hope. For that matter, students ($N = 112$, $M_{\text{age}} = 20,9$, 76.8% female) participated in a 3-week strengths intervention, in which they were randomly assigned to either a signature strengths condition or an ideal strengths condition. Participants in the signature strengths condition work on their most pronounced strengths, whereas participants in the ideal strengths condition work on strengths they want to improve with the aim of reaching their ideal self. Results indicate that neither the signature nor the ideal self condition led to a significant change in PGI. Moreover, when comparing the two intervention conditions no significant moderation effect of hope could be found. Thus, the present online strength-based intervention did not increase PGI as intended and hope did not moderate the association of the strength-based intervention on PGI. Implications and limitations are discussed.

Each person has a unique character which is marked by having specific character strengths. Character strengths have been defined as a positive, trait-like capacity for behaving, thinking, or feeling in a way that allows optimal functioning and performance (Linley & Harrington, 2006). Moreover, the use of character strengths is strongly related to various indicators of well-being like self-esteem, and the absence of ill-being, such as depressive symptoms (Hausler et al., 2017; Martinez-Marti & Ruch, 2014; Seligman et al., 2005), as well as to indicators of physical health (Proyer et al., 2013). In addition, although character strengths are considered to be stable constructs, they have been shown to be receptive to change (Gander et al., 2019). In line with the malleability and the aforementioned benefits of character strengths, strength-based interventions bear the potential to improve well-being and generate other positive outcomes (Ghielen et al., 2018). The demand for research studying intervention effects beyond well-being and acknowledging potential moderators increases (Quinlan et al., 2012). The aim of the current study is to get a better understanding of how a strengths-based intervention affects personal growth initiative and how individual levels of hope potentially moderate this relationship. In the following sections we will elaborate on each point in more detail.

In 2004, Peterson and Seligman introduced the 24 Values-in-Action (VIA) character strengths, which are classified into six core virtues, namely wisdom, courage, humanity, justice, temperance, and transcendence (Dahlsgaard et al., 2005; Peterson & Seligman, 2004). To scientifically assess and provide an applied exploration of human strengths, Peterson and Seligman (2004) published the VIA inventory of strengths (VIA-IS), which is a psychological assessment measure to determine the character strengths profile of an individual. Since then, numerous strengths interventions were developed and utilized in various settings, like in the education system (Quinlan et al., 2012).

The majority of strengths interventions focus on an individual's most prominent strengths, also referred to as signature strengths. Signature strengths interventions help to foster already existing strengths within individuals (Dahlsgaard et al., 2005). In a meta-analysis by Schutte and Malouff (2018), who investigated the impact of signature strengths interventions, the authors stated that positive affect, happiness, life satisfaction, and levels of depression are improved by such an intervention. Furthermore, research indicates that working on signature strengths is naturally energizing, motivating and authentic and enhances personal confidence, future expectations, perseverance, and a better handling of difficulties (Govindji & Linley, 2007; Peterson & Seligman, 2004). Subsequently, working on your strengths is considered to promote personal growth (Ogunyemi & Mabekoje, 2007; Seligman & Csikszentmihalyi, 2000).

Other character strengths-based interventions focus on lower- or lowest-ranked strengths and look for ways to improve those. They are called deficiency strengths interventions. Correcting personal deficiencies can be a challenging matter, as it does not come as naturally as working on one's signature strengths. According to the goal setting theory by Locke and Latham (2002) specific and challenging tasks, like working on personal deficits, generate high task performance, indicating that deficiency strengths interventions are effective. However, Meyers et al. (2015) stated that stimulating the development of signature strengths or deficiencies elicits different motivational processes. An ordinary deficit approach is considered to be less enjoyable and intrinsically rewarding than focusing on signature strengths (Peterson & Seligman, 2004). A new deficit approach within strengths interventions is the ideal self. In this condition, participants are asked to choose and work on the strengths they want to enhance in order to reach their ideal self. Thus, participants in this condition exercise more personal goal setting, in which they can choose the strengths they want to improve upon. Therefore, it is reasonable to assume that such an ideal self condition might be superior to an

ordinary deficit approach, as people feel more motivated to develop and work on their ideal self than merely focusing on their lowest strengths. To our knowledge, there is no strength intervention focusing on the ideal self of an individual.

Character strengths interventions are often aimed at increasing well-being (Gander et al., 2019), but research should also examine potential outcome variables beyond well-being (Quinlan et al., 2012). As a consequence, the present study will investigate the effect of a strengths intervention on personal growth initiative (PGI) within a student population. PGI is the proactive attitude to personal growth that enables people to intentionally take steps towards change, which is also characterized by continued self-improvement (Meyers et al., 2015; Robitschek, 1998). PGI can play an important part in students' lives, as it positively affects psychological, social, and emotional well-being during their time at university (Robitschek & Keyes, 2009). Additionally, students with high PGI experience less difficulties when transitioning to the labour market, as such students are more aware of their role in life, career goals, and actions they need to take in order to achieve those goals (Robitschek & Cook, 1999; Stevic & Ward, 2008). Another benefit of PGI is that it helps to build resilience (Robitschek, 1998; Robitschek et al., 2012). This can be especially helpful in the times of the current Covid-19 pandemic, in which students were confronted with multiple challenges, such as studying online, restricted access to facilities and less contact with fellow students and teachers (Biwer et al., 2021).

Considering the beneficial personal, academic and protective factors that PGI entails for students it is important to have a better understanding of how students' PGI can be improved. A study by Meyers et al. (2015) investigated how an intervention, focusing on personal strengths or deficiencies enhances PGI. Their results pointed out that strengths interventions do increase PGI in a student sample. Furthermore, students working on personal strengths display greater beneficial effects on PGI than students focusing on their deficits. Their

results indicated that both intervention conditions show an increase in PGI over a 3-month period, but only when the intervention incorporates post training assignments that emphasize the ongoing development of strengths. Still, participants in the strengths intervention condition showed increased and longer lasting levels of PGI in comparison to the deficit intervention condition.

Until now, only some personal features have been recognized as moderators of strengths intervention effectiveness (Ghielen et al., 2018), such as the character strengths perseverance (Proyer et al., 2015) or extraversion (Senf & Liao, 2013). Despite these moderations, Literature is calling for further investigation of potential moderators. Ghielen et al. (2018) highlighted the need to look at more moderating effects of personal features within strength intervention studies. Similarly, Meyers et al. (2015) state that more research needs to investigate whether personal or context features moderate the effectiveness of strengths interventions. This is in line with the positive-activity model proposed by Lyubomirsky and Layous (2013), which states that personal features for example hope, influence the effectiveness of an activity, like a character strengths intervention. Also, Peterson and Seligman (2004) argue that hope is particularly relevant in transitional stages, in which personal valuable outcomes are promising and tangible. A strengths intervention can be considered as such a transition, since it is insightful and most likely new territory for the participants to deal with their signature strengths or ideal strengths as the intervention intends.

The character strength hope represents a positive cognitive, emotional, and motivational attitude towards the future, marked by optimism and future mindedness (Peterson & Seligman, 2004). According to Snyder (2002), hope is further characterized by agency, an action-oriented strength that, through persistence, enables people to think about pathways to achieve their goals. In general, hopeful people are more future-oriented and act accordingly (Peterson & Seligman, 2004). Thus, hope and PGI are two constructs that involve goal-directed

plans for the future and look for pathways to those goals (Shorey et al., 2007). Additionally, both constructs entail a cognitive agency to achieve those goals (Robitschek, 1998; Snyder et al., 1991). However, hope and PGI are similar, yet distinct constructs. While hope focuses on more global expectations to achieve goals, PGI is more specific, by focusing on achieving personal goals on an individual level (Shorey et al., 2007). PGI entails cognitive and behavioural components (Robitschek et al., 2012), whereas hope is an entirely cognitive construct that represents pathway thinking and cognitive determination to achieve certain goals (Snyder et al., 1996). Regarding the present study, improving your signature strengths or realizing your ideal self can be considered as future oriented activities that enhance PGI. By considering the global and positive expectations about the future that hope entails, it is of interest to assess whether hope moderates the effect of the two intervention conditions on PGI differently.

The present study

The aim of the present study is to understand how different strengths intervention conditions (signature strengths and ideal self condition) affect personal growth initiative and whether hope moderates the change in PGI from pre-, post-, to the follow-up measurement, more specifically to see whether the moderation effect is different for the two strengths intervention conditions.

Based on the finding by Meyers et al. (2015), showing that a strengths intervention and a deficiency intervention will increase levels of PGI, we hypothesize the following.

Hypothesis 1: Participating in a signature strengths intervention will lead to an increase in PGI from pre-measurement to post-measurement and follow-up measurement.

Hypothesis 2: Participating in an ideal self condition will lead to an increase in PGI from pre-measurement to post-measurement and follow-up measurement.

Since the ideal self condition is a new and promising deficiency approach, we do not know which strengths intervention condition will be more effective. Therefore, we leave open whether the signature strengths intervention or the ideal self intervention will display a greater increase in PGI.

As hope consists of global, positive expectations about the future, which entails agency and pathway thinking (Shorey et al., 2007) it is reasonable to assume that hopeful people will display greater levels of PGI after a strengths intervention. Based on this assumption, the last hypothesis is the following.

Hypothesis 3: Higher levels of hope improve the effect a strengths intervention has on PGI.

Furthermore, we will investigate whether the moderating effect of hope is different in the two intervention conditions.

Considering the previously mentioned benefits of PGI for students, it is important to better understand how strengths interventions enhance levels of PGI. Furthermore, the present strengths interventions are conducted exclusively online, which is advantageous in times of the current COVID-19 pandemic, as students can participate in the intervention from home. By looking at the moderation of hope, the present study contributes to the research gap of personal features that moderate strengths interventions.

Method

Participants

Participants consisted of undergraduate students who were enrolled in the Psychology degree of Tilburg University. The student sample ($N = 112$) of the present study consisted of 76.8% females and 23.2% males with a mean age of 20.9. High school was the highest completed level of education for 88.4% of the participants, followed by a Bachelor's Degree with 5.4% and Other with 6.2%. Undergraduate students were compensated for their participation in the form of student credits within the research participation system SONA.

Materials

Personal growth initiative. To assess the personal growth initiative within participants, the 16 item *Personal Growth Initiative Scale – II* (PGI II) developed by Robitschek et al. (2012) was used. A sample item is “I take every opportunity to grow as it comes up.” Items were answered on a 6-point Likert scale ranging from 0 (*disagree strongly*) to 5 (*agree strongly*). Regarding the psychometrics properties, Robitschek et al. (2012) indicated exploratory and confirmatory evidence for the multidimensional measure, including readiness for change, planfulness, using resources, and intentional behavior (4-factor structure). Internal consistency was measured with Cronbach's alpha in the present study, and indicated a high internal consistency of .91 between the items.

Hope. To assess character strengths, including hope, a shortened version of the *Values in action-Inventory of Strengths* (VIA-IS) was used, namely the *VIA Inventory of Strengths-P* (VIA-IS-P). The VIA-IS-P (“Positive”) consists of four positively keyed items for each subscale. A sample item for hope is “Despite challenges, I always remain hopeful about the future.” Internal consistency was measured with Cronbach's alpha in the present study, and indicated a high internal consistency of .78 between the items.

Design

In the present exploratory research, the intervention conditions (signature strengths or ideal self) represent the categorical independent variable. PGI is the quantitative dependent variable in the analysis. This between-subjects design will investigate whether the strengths intervention will lead to a change in the mean PGI of participants from the pre-measurement to the post-measurement and follow-up measurement.

Procedure

Before the initial start of the study, the Ethics Review board had to approve the project. Following the approval of the board the recruitment period started, in which participants were inducted via information sessions in lectures and through the student research participation system SONA. After the recruitment period, participants received an email including the information letter of the study, a first explanation of what character strengths are and also received a link to download Ethica and a link to the pre-measurement via the web-based survey software Qualtrics pre-measurement questionnaire. Participants were asked to download Ethica, an end-to-end research platform in which participants received their Ethica-Id, which was needed to access the pre-measurement questionnaires within Qualtrics. Additionally, participants had to confirm within Ethica that they had read the informed consent form and were informed about the confidential treatment of their data as well as the voluntary nature of participation. By ticking a box participants indicated they acknowledged the informed consent form and wished to proceed. The pre-measurement took place within the first week of the study via Qualtrics. Participants received a reminder email for completing the pre-measurements to assure a high compliance rate. The pre-measurement period consisted of several questionnaires, among others, the PGI II and the VIA-IS-P in order to assess hope and the signature strengths of individuals. Subsequently, participants received an overview with a description of the 24 character strengths and were asked to pick six strengths they want to improve in order to reach their ideal self. By running a random selection in Excel three of the six strengths were picked for the ideal strengths condition. In case that one of the ideal strengths overlaps with one of the participants signature strengths, we were able to replace it with another remaining ideal strengths, again by random selection.

After the pre-measurement period, participants were stratified by gender and assigned to either the signature strengths condition or the ideal strengths condition by using the random number generator function in SPSS. In the second and third week of the study the experience

sampling method (ESM) baseline period started within Ethica, in which subjective experiences of participants were assessed on a daily basis, which took approximately five minutes to complete. ESM data were continued to be collected in the subsequent intervention period, resulting in a total of 5-weeks ESM data. It is noteworthy that the present study is part of a greater project and did not make use of the obtained ESM data. In week four the 3-week strengths intervention started. During the intervention, participants in the signature strengths condition worked on their top three character strengths, whereas participants in the ideal strengths condition worked on three out of the six initial ideal strengths which they wanted to improve upon to reach their ideal self. The intervention was designed in a way that participants would focus on one signature or ideal strength (depending on the condition) per week. Participants were informed via email the weekend before on which strength they should work on in the upcoming week.

The intervention consisted of four exercise steps for each strength, the content of the intervention exercises were the same for both conditions. On the first day of the intervention participants were asked to complete the first two exercise steps, namely practicing strengths awareness (Step 1) by means of the definition of their strength and an accompanied webinar. Furthermore, participants were asked to reflect about the personal meaning of the assigned strength (Step 2). On the second day, participants should reflect on the personal benefit of the particular strength to promote strength appreciation (step 3). From the second day onwards, participants were asked to think about new ways to apply the specific strength in their daily life for the rest of the week (Step 4). This weekly procedure was repeated for each of the three strengths the participant had to focus on. After the intervention period, participants had to complete the post-measurement questionnaires, which was measured at the end of the intervention, followed by a 1-month follow-up measurement. Both measurement points were completed in Qualtrics and included the PGI II questionnaire in order to obtain post- and

follow-up measurement data of hope. Participants with a compliance rate of over 80% received the full amount of ten SONA credits, one Sona credit represents one hour of study participation. Lower compliance rates resulted in proportional less SONA credits.

Data analysis

Prior to the actual analyses we checked for individual time of completion and skewed responses by administering a flagging system. It was checked which participants answered questionnaires noticeable slow or fast. Additional, skewed responses to either direction were checked. Participants received flags for deviation of the norm with regard to response time and skewness of responses

Subsequently, to determine whether PGI changes as a consequence of the strengths interventions, the mean scores of PGI in the pre-, post-, and follow-up measurements were computed for each participant in using 27th version of the IBM SPSS Statistics. Also, the mean scores of the four items within the VIA the -IS-P which measured the construct of hope were assessed for each participant. In order to detect any changes in PGI over time and to investigate whether a potential moderation effect of hope on PGI is different between the signature strengths and the ideal self condition, we conducted a repeated measures ANOVA in SPSS. In the analysis the within-subjects factor PGI consisted of three levels, pre-, post-, and follow-up and the between-subjects factors were conditions and hope.

Results

The initial sample consisted of 112 participants. Between the pre-, and post-measurement period 13 (14.56%) participants dropped out of the study. Between the post-measurement and follow-up measurement 5 participants (5.6%) dropped out of the study. 4 other students (4.48%) were excluded, as they displayed incomplete dataset as they missed responses on either the PGI or hope measurement over the course of the study. In the baseline measurement, people having 8 or more flags were excluded from the further analysis, which

applies to two participants being excluded. In the post measurement 4 flags were the maximum, all 5 participants having 4 flags were excluded from the analysis. In the follow-up measurement 2 participants were excluded by having 5 flags, which was the maximum of possible flags. Thus, 9 participants (10.8%) were excluded by this flagging system, which results in an overall attrition rate of 35.44% of the initial sample. For the remaining 81 participants the descriptive statistics of the different measurement points and strengths conditions are illustrated in Table 1.

Table 1

Means and Standard deviations of PGI and hope for the across measurement points

Measurement point	Variable	Signature Strengths Intervention (N = 38)		Ideal self Intervention (N = 43)	
		M	SD	M	SD
Pre-measurement	PGI	4.31	.79	4.11	.73
	Hope	3.61	.88	3.45	.78
Post-measurement	PGI	4.35	.97	4.23	.83
Follow-up measurement	PGI	4.34	1.02	4.30	.87

Note. PGI = personal growth initiative; t0 = pre-intervention; t1 = post-intervention; t2 = 1-month follow-up

A correlation analysis showed that hope correlates with the PGI pre-measurement ($r = .41$), the post-measurement ($r = .44$) and follow-up measurement ($r = .37$). Which indicates a moderate correlation between the constructs. An independent samples t-test revealed that there was no significant difference in the scores for the signature strengths condition ($M = 4.31$, $SD = .79$) and the ideal self condition ($M = 4.11$, $SD = .73$) in PGI at the pre-measurement moment; $t(79) = 1.18$, $p = .241$.

Subsequently, a repeated measures ANOVA was conducted to determine whether levels of PGI change over the course of the 3-week character strengths intervention and to see a possible moderation effect of hope. Mauchly's test of sphericity, $\chi^2(2) = 3.21$, $p = .20$ did not indicate any violation of sphericity, therefore sphericity was assumed.

The main effect for time was $F(2, 105.993) = .29, p = .750$, thus there are no significant changes in PGI overall. The time*condition interaction was not significant $F(2, 105.993) = 1.91, p = .154$, indicating that there is no significant difference between the effects of the two intervention conditions over time. Also, the time*hope interaction was not significant, $F(24, 105.993) = .94, p = .553$, which implies that hope did not moderate the change in PGI from pre-, post-, to follow-up for the entire sample. Additionally, by looking at the 3-way interaction time*condition*hope it became evident that the moderating effect of hope did not differ significantly between the two intervention conditions $F(22, 105.993) = .96, p = .520$.

Discussion

The present study investigated if a strengths-based intervention affected students' levels of PGI and whether the variable hope influenced the strength of the relationship. It was hypothesized that the signature strengths as well as the ideal strengths condition will lead to an increase of PGI and that hope is, what moderates this relationship. However, the results indicated that the signature strengths and the ideal strengths condition did not affect PGI. Furthermore, the character strength of hope does not seem to influence the relationship of the strengths intervention and PGI. Comparing the moderating effect of hope in the two intervention conditions revealed no significant difference, either. Regarding the research question, these findings imply that neither the signature nor the ideal strengths intervention have impacted students PGI. Additionally, individual levels of hope did not strengthen the relationship of the strengths intervention on PGI.

The findings of the strengths intervention on PGI are in contradiction to the previous research. Scientific literature states that working on strengths increases confidence levels, enhances optimistic expectations about the future, increases perseverance and offers a better coping with setbacks (Govindji & Linley, 2007), which in turn drives a proactive stance towards change, resulting in higher level of PGI (Robitschek & Cook, 1999). As the present intervention did not change PGI over time, it is of interest to understand to what extent the

construct of PGI is transformable. Previous research by Robitschek et al. (2012) stated that PGI is malleable to some degree and can be altered through interventions, which is in line with previous research that reported increased levels of PGI after a character strengths intervention. For example, Meyers et al. (2015) conducted two experiments that examined the effect of a strengths and a deficiency intervention on PGI in students. In the first experiment, participants in the strengths intervention condition displayed a short term increase in PGI, whereas the deficiency intervention had no effect on PGI. These results prompted Meyers and colleagues to refine their interventions by adding post training assignments. In their second experiment, the researchers included two post training assignments to assure that participants were continuously engaged in the intervention and were actively engaged in working on their strengths or improving their deficiencies. In these post training assignments of written nature, participants had to write and submit a reflection report and several journal entries. Resulting in an increase of PGI in both conditions, yet the increase was larger and longer lasting for the strengths intervention condition. By adding the post training assignments participants were continuously engaged in growth activities, which was a crucial factor for the effectiveness of the intervention according to Meyers et al. (2015). Such active writing exercises were not included in the present strengths interventions. Furthermore, the present 3-week interventions took place solely online, which could be an additional disruptive factor inhibiting the active involvement of participants and consequently complicating the transfer of training. According to Grossman and Salas (2011) a good climate including feedback, support by supervisors and peers, the opportunity to apply and refresh learned knowledge are fundamental environmental cues which foster a positive transfer of training. The cues for a positive transfer of training were limited in the present online intervention, since the interventions exercises did not entail written assignments that needed to be submitted or interpersonal exchanges which could enhance the opportunity to apply and refresh learned

knowledge. Thus, it is questionable whether participants were properly engaged in the intervention exercises.

Furthermore, the present study looked at the moderation of hope on the relationship of the strengths interventions and PGI and thereby followed the request of previous literature to investigate potential moderators, as Ghielen et al. (2018) highlighted the need to look at more moderating effects of personal features within strength intervention studies. The present findings indicated that the cognitive-motivational construct of hope by Snyder (2000) did not moderate the relationship of the strengths intervention on PGI. Which is surprising as literature emphasizes that hope helps students to reach their developmental goals by pathway thinking and motivates them to reach these goals (Siu et al., 2013) but PGI can be considered as such a developmental goal. However, it is also noteworthy that the definition of hope is controversial. The present study adhered to the popular definition of Snyder (2000), who states that hope consists of agency and pathway thinking. Nonetheless, this definition was criticised as it does not represent the layperson's definition of hope. Tong et al. (2010) reassessed the constructs of hope by conducting four studies using different measurements for agency thinking and pathway thinking and their results showed that the layperson associated hope with agency, but not with pathway thinking (Tong et al., 2010). In other words, thinking of different ways to achieve a goal is not an inherent part of the laypeople definition of hope. For example, hoping that the sun will shine tomorrow, does not include pathway thinking to reach the desired goal. By referring to the finding of Tong et al. (2010) it is reasonable to also look for other definitions of hope that are more related to a layperson.

Despite the findings of the present study, it is essential to investigate further how PGI can be increased by means of an online strength-based intervention. Offering strengths interventions online is a crucial aspect in the face of the current COVID-19 pandemic, as this crisis caused an increase in depression and anxiety rates within the student population (van

der Velden et al., 2020). Furthermore, students report increased loneliness and discouragement during the pandemic (Caring Universities, 2020). This trend is alarming and highlights the societal relevance to find ways to counteract the deterioration of mental health associated with the pandemic. Subsequent strengths interventions should focus on these matters and further look into the concept of PGI, as it fosters resilience (Robitschek, 1998; Robitschek et al., 2012), which offers better coping with COVID-19 related stressors.

Regarding the limitations, the present study did neither include a placebo nor a control group. Additionally, the study was only offered in English, we suggest that future online strengths intervention should be offered in the native language of participants. We encourage the future research to explore in more depth how strengths interventions function and thereby following the demand of Quinlan et al. (2012), which stated that the understanding of the ways strengths-based interventions operate is still limited. Also, we suggest that future research should focus on more active engagement in online strengths interventions, by adding writing exercises or interpersonal exchange. Moreover, it is of interest to investigate whether Snyder's (2002) definition of hope accurately represents the layperson understanding of hope.

Concluding, the present study contributed to the research of character strengths interventions and introduced a new ideal strengths condition and a new online character strengths intervention. Additionally, we emphasized the importance to further investigate the construct of PGI, as it yields promising results for students in times of the current COVID-19 pandemic. The present study also contributed to the lack of personal features which moderates strengths intervention by assessing how hope influences the strengths intervention effect on PGI.

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