RESEARCH PAPER

# Character Strengths Interventions: Building on What We Know for Improved Outcomes

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**Abstract** For this review strengths intervention studies were located using online sear-ches and collegial networks and included if they explicitly sought to teach or use a strengths classification to enhance well-being, and used pre- and post-intervention mea-sures and a comparison group. Eight studies met the criteria and have been summarised by this review. To date, the effect sizes achieved by character strengths interventions have been small to moderate. An understanding of *how* these interventions work may facilitate development of more effective interventions, while expanding the field of character strengths interventions to include a broader range of activities and approaches may also offer benefits. Research examining individual factors, such as strengths use, psychological need satisfaction, goal-setting and goal-striving provides promising leads to explain how strengths interventions work. However, the effect on intervention efficacy of relational or contextual factors, such as intervention environment or facilitator attitude to strengths, has not yet been explored. Implications for interventions in school settings are considered.

**Keywords** Character strengths · Schools · Positive interventions · Positive psychology

## 1 Introduction

The last decade has seen a growth in interest in the study of strengths as a holistic factor affecting well-being (Biswas-Diener et al. 2011; Hart and Sasso 2011; Seligman and Csikszentmihalyi 2000). Strengths-based approaches have grown in popularity in

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education (Jimerson et al. 2004), social welfare (Huang et al. 2005), and youth development (Catalano et al. 2004). Some disciplines have adopted open-ended approaches to identifying strengths (Scales and Leffert 1999), while others have created specific strengths classifications and tracked development of those strengths (Peterson and Seligman 2004; Rath 2007).

Strengths classifications include *StrengthsFinder* (Rath 2007), the Virtues Project (Popov 2000), the Values in Action (VIA) Inventory of Character Strengths (Peterson and Seligman 2004), and Realise 2 (Linley et al. 2009). They differ in their origins and objectives as well as their strengths definitions and nomenclature; these factors have influenced the intervention strategies and outcomes measures used with these classifications. The VIA *Inventory of Character Strengths* is based on a review of currently and historically universally valued character traits and defines psychological or character strengths as morally valued traits whose use contributes to fulfilment and happiness (Peterson and Seligman 2004). Interventions using this 24-strength classification have initially sought to measure development of these strengths and their influence on well-being (Rashid 2004; Seligman et al. 2005, 2009). In contrast, *StrengthsFinder* is based on empirical workplace studies of talents which can be developed into strengths and was designed to support workplace success and personal development. Both classifications share a definitional hypothesis that working on one's strengths rather than one's weaknesses produces greater benefits for the individual and they encourage identification of an individual's top five or 'signature strengths'(Clifton and Harter 2003; Peterson and Seligman 2004). This aspect of the strengths definition has guided intervention strategies to focus on use of top strengths (Rashid 2004; Rust et al. 2009). In contrast, the Virtues Project (Popov 2000) identifies 52 virtues and seeks to promote virtuous behaviour and well-being by encouraging use of all the virtues. A more recent classification, Realise2 (Linley 2009; Linley et al. 2009) identifies 60 strengths which it categorises for respondents into realised and unrealised strengths, learned behaviours and weaknesses. Built on workplace observations of high performance and used primarily in the workplace and in coaching, Realise2 emphasises performance ability, the energy an individual derives from strengths use, and how often the strength is used. Unlike the other classifications, respondents are informed as to their weaknesses and encouraged to consider where to best focus their development efforts, be that on developing strengths or weaknesses.

Definitions of strengths provided by researchers also shape the direction of research and continue to evolve, reflecting the field's focus shifting from measurement of strengths, to outcomes and mechanisms through which strengths have their effects. Psychological strengths have been broadly defined as ways of behaving, thinking or feeling that an individual has a natural capacity for, enjoys doing, and which allow the individual to achieve optimal functioning while they pursue valued outcomes (Govindji and Linley 2007; Linley and Harrington 2006). This broad definition permits inclusion of strengths not captured by a particular classification; it does not hypothesise as to the outcome of strengths use, but does stipulate that use of a strength is enjoyable. An even broader more recent definition describes 'personal strengths' as the characteristics of a person that allow them to perform well or at their personal best' (p. 15, Wood et al. 2011) thereby including 'personal, physical and psychological strengths'. This definition is agnostic as to the moral value of a strength or the outcomes of its use, and allows for measurement of non-specified strengths use.

However defined or classified, strengths, positive attributes or developmental assets are now understood to act as protective factors or buffers for youth (Park 2004; Scales 1999), and to support individual well-being (Govindji and Linley 2007). Hence, there has been

interest in determining if identifying and developing one's strengths can reliably increase well-being or other desirable outcomes.

Strengths interventions, whose goal, typically, is to increase well-being or personal achievement through the identification and development of strengths, have been in use for over 60 years (Forster 1991). Older interventions asked participants to self-identify and label their strengths (Forster 1991) but more recently, strengths classifications have been developed to assist with strengths identification (Linley et al. 2009; Peterson and Seligman 2004; Popov 2000; Rath 2007) and these now form the basis for a range of strengths interventions used across a range of vocational and educational settings.

Developed primarily for non-clinical populations, they have been used in the workplace and in education, as well as with individuals in the general population since 1998 (Austin 2005; Louis 2008; Seligman et al. 2005, 2009).

Although strengths interventions are being used widely in schools, most of the research has been conducted with the general population and University students. Less is known about the effect of strengths interventions on children, or the effectiveness or appropriateness of individually-focused adult interventions in a school setting. Although it is early days yet in this field, it may be useful to ask how strengths interventions are working, what they have taught us so far about strength development and well-being, and how those findings might inform design of future interventions for school settings.

The initial rationale for character strengths interventions was that use of one's strengths is engaging and fulfilling; therefore, development of an individual's top strengths should lead to increased engagement and achievement and so enhance well-being. This paper will explore whether this rationale is justified by the evidence, and ask whether the current focus of strengths interventions is proving effective in its aims or may benefit from revision or expansion. The strength interventions discussed in this paper are ones applied to non-clinical populations, and so are intended to be additive rather than remediate problems, and can be distinguished from the use of strengths-based approaches within therapeutic situations. In sum, this paper will examine (1) the validated strengths interventions available to date; (2) the effectiveness of these interventions; and (3) possible underlying mechanisms for their efficacy. How these factors might influence the design of strengths interventions in a school setting will be considered.

## 2 Validated Strengths Interventions

A strengths intervention is a process designed to identify and develop strengths in an individual or group. Interventions encourage the individual to develop and use their strengths, whatever they may be. Their goal is to promote well-being or other desirable outcomes (e.g. academic efficacy) through this process. Interventions tend to be based on a particular strengths classification with an accompanying inventory or questionnaire to identify strengths, although, as previously mentioned, alternatives exist which adopt an open-ended approach to strengths identification.

### 2.1 Literature Search

To locate English-language Strengths Intervention studies several search strategies were used. First, we searched the EBSCOhost, Web of Science and PsycINFO online databases using combinations of the following keywords: *strengths, intervention, activities, exercises, character strengths, well-being, life satisfaction, positive psychology, strengths*

*inventory* and *strengths classification.* References were also sought from colleagues in Australia, New Zealand, the UK, Canada and the USA.

Studies were included which explicitly sought to teach or use a strengths classification to enhance well-being. Studies which attempted to enhance well-being through the cultivation of a single strength (e.g. kindness or gratitude) were excluded. Initial criteria included that a study must have pre- and post-intervention measures, include a comparison group, and publish effect sizes. Only a small number of studies met these criteria, with most of those using the VIA. To highlight some of the findings from the field and to illustrate the range of domains in which strengths interventions are being used, the initial criteria were waived for three studies: one unpublished, without pre-intervention measures (Austin 2005) and two without control groups (Govindji and Linley 2008; Minhas 2010). Where this occurs these factors are noted.

## 2.2 Published Strengths Interventions

Although only a small number of strengths intervention studies have been conducted to date, these have found that the identification and development of one's character strengths has consistently produced small increases in individual well-being in adults and high school students (Mitchell et al. 2009; Proctor et al. 2011b; Rashid 2004; Rust et al. 2009; Seligman et al. 2005). Details of these studies are included in Table 1.

In an on-line study of self-selected participants (Seligman et al. 2005), participants who were asked to 'use one of your top five strengths in a new way each day for a week', showed significant improvements in happiness lasting 6 months, while those who merely noted their top five VIA strengths and used them 'more often' for a week received only transient benefits. The benefits of strengths appeared to come from their use rather than the process of identifying them, with greater effects found for those who continued the exercises beyond the required week. This was the first study using the VIA. Its focus on 'top 5 strengths' and asking participants to 'use their top strengths in a new way' appears to have influenced the direction of subsequent research.

'Using signature strengths in a new way' was compared to problem-solving in an internet-based intervention (Mitchell et al. 2009), where participants selected three of their top strengths to develop in daily life. The intervention group made significantly greater well-being gains than the control group on a measure which assessed subjective well-being across eight life domains including health, relationships, safety, community, and future security (the Personal Well-being Index-Adults scale (PWI-A) (IWG 2006), but not on measures of positive and negative affect or life satisfaction. Other interventions have chosen to compare the effects of developing top strengths and 'lesser' or lowest strengths.

One such intervention with university students (Rashid 2004) asked participants to use their top five (signature) strengths more often (but did not specify how) and to deliberately develop one of their 'lesser' five strengths. The intervention group reported significantly greater well-being gains than those of the control group, but only changes in top five strengths predicted changes in well-being, despite individual support and explicit development of the lesser strengths. However, other studies comparing the effects of developing strengths and weaknesses have found differing results.

In another character strengths intervention (Rust et al. 2009), university students worked on developing two top five strengths, or on one signature strength and one 'lesser strength' or weakness. Participants submitted weekly strengths logs to their supervising teacher who provided supportive written feedback comments. No significant differences were found between the two intervention groups which reported significantly greater well-being gains

**Table 1** Studies examining the effects of strengths interventions on well-being and performance

| Study details | Seligman et al. (2005) | Mitchell et al. (2009) | Austin (2005) | Rust, Diessner and Reade (2009) | Rashid (2004) | Proctor et al. (2011b) | Seligman et al. (2009) | Govindji and Linley (2008) |
|---|---|---|---|---|---|---|---|---|
| Participants | | | | | | | | |
| Population (mean age in years) | General adult population (64% 35–54) | General adult population (37) | High school Freshmen students | University students (25) | University students (24) | High school (13) | High school Y9 (est. 13) | Primary school |
| Gender: % female | 58% | 83% | 46% | 72% | 86% | 52% | N/A | N/A |
| Sample size | 577 | 160 | 527 | 131 | 65 | 258 | 347 | 5 Primary schools. |
| Health status | Non-clinical mildly depressed | Non-clinical | Non-clinical | Non-clinical | Non-clinical | Non-clinical | Non-clinical | Non-clinical |
| Measures | | | | | | | | |
| Well-being | SHI | PWI-A; SWLS; PANAS | – | SWLS | SWLS | SLSS; PANAS; RSE | Learning and engagement strengths; social skills; | Qualitative assessment |
| Academic performance | – | – | SPAA | – | GPA | – | GPA | – |
| Procedure | | | | | | | | |
| Selection | Self-selected. RA to condition | Self-selected. RA to condition | Universal selection. Class assignment | Self-selected. RA to condition | Self-selected. Class assignment | Universal selection. Class assignment | Universal selection. Class assignment | Universal selection. No control |
| Delivery medium | On-line | On-line | In person | In person | In person | In person | In person | In person |
| Group or individual setting | Individual | Individual | Group | Group | Group | Group | Group | Group |

**Table 1** continued

| Study details | Seligman et al. (2005) | Mitchell et al. (2009) | Austin (2005) | Rust, Diessner and Reade (2009) | Rashid (2004) | Proctor et al. (2011b) | Seligman et al. (2009) | Govindji and Linley (2008) |
|---|---|---|---|---|---|---|---|---|
| Inter-personal contact (High = personal contact and mentoring) | None | None | High | Medium | High | High | High | High |
| Intervention strategy | Use your top strengths in new ways | select 3 of top 10 strengths to further develop | Identify how strengths feature in past and future successes; use top 5 strengths in academic setting | Develop a strength and a weakness or two strengths, completing weekly strength logs and reflections | Use top strengths more often in life and explicitly plan to develop one weakness. | Build strengths, learn new ones, recognise strengths in others. | Identify strengths and use them in a new way, learn PP concepts e.g. gratitude, savouring, role of positive emotions, purpose and meaning in life | Whole school community building; use of strengths, story telling and school assemblies to support staff and student well-being |
| Contact time | 1 email | 3 online sessions (3–6 h) | Freshman Health seminar. Time not specified | Weekly written feedback on strengths logs. No actual class time | 2.5 h lectures weekly and assignments. Two individual meetings with teacher | 1 h health class per week for 6 months. Avg. 25% of time used for strengths | 20–25 sessions of 80 min | Included as part of classroom and school activities |
| Duration of intervention | 1 week | 3 weeks | 6 weeks | 12 weeks | 15 weeks | 6 months | Academic year (9 months) | Mean 2.5 years |
| Follow up period | 6 months | 3 months | None | None | 6 months | None | 2 years | N/A |

**Table 1** continued

| Study details | Seligman et al. (2005) | Mitchell et al. (2009) | Austin (2005) | Rust, Diessner and Reade (2009) | Rashid (2004) | Proctor et al. (2011b) | Seligman et al. (2009) | Govindji and Linley (2008) |
|---|---|---|---|---|---|---|---|---|
| **Results** | | | | | | | | |
| Well-being effect size (partial eta squared)* | Cohen's $d = 0.06$ SHI | 0.03 PWI-A | – | 0.07 | 0.15 | 0.02 SLSS | NS | N/A |
| BESD | N/A | 17% | – | 26% | 38% | 14% | N/A | N/A |
| Positive affect effect size (partial eta squared)* | – | – | – | – | – | 0.014 | – | – |
| Academic performance effect size (partial eta squared)* | – | – | .01 Expt; .05 Effic; .02 empwr | – | NS | – | N/A | N/A |
| Attrition rate | 29% | 83% ** | N/A | 17.6% (6.2% IG) | 26.5% (23% I G) | 30% | N/A | N/A |

\* Partial eta squared based on Cohen (1977); effect size range: small $= .01$; medium $= .09$ and large $= .25$

\*\* Strict adherence criteria meant that partial-completion excluded subjects from further participation

*RA* random assignment, *SHI* Steen happiness index, *PWI-A* personal well-being index—adult scale, *PANAS* positive and negative affect scale, *SPAA* self-perceptions of academic abilities instrument (subscales inc. academic expectancy, efficacy, and self-empowerment), *SLSS* students' satisfaction with life scale, *RSE* Rosenberg self-esteem scale, *GPA* grade point average, *BESD* binomial effect size display, *N/A* not available, *NS* not significant, *IG* intervention group

than a comparison group. However when gender was analysed as a factor it was found that males experienced significantly greater benefits from the 2-strengths condition than the 1-strength, 1-weakness condition. To date, most research on character strengths has found that despite some gender differences in the distribution of character strengths (Linley et al. 2007), there have been no interactions between gender and interventions. Rust et al.'s (2009) finding of gender and strength interaction requires further investigation but calls into question the notion that effects of character strengths interventions can be generalised to both men and women equally. Additionally, as participants were self-selected adults, one cannot assume that the findings will apply equally to other populations, including children in a school setting. Hence, specific research is required to evaluate the effectiveness of strengths interventions on children.

A limited number of strengths interventions have been conducted with school-age children. One such study of high school students which examined the effects of strength development on self-perceptions of academic abilities (Austin, 2005) found that students in the intervention group scored significantly higher than the control group on measures of self-perceptions of academic efficacy, academic expectancy and academic self-empowerment. However, as no pre-test measures were taken it cannot be definitively ascertained that the groups were similar at baseline. Nonetheless, it suggests that the strategy used of exploring the role of one's strengths in past and future successes, may be worthy of further exploration. Other novel strategies have been explored in strengths interventions with adults and children.

A small study (n = 18) using the Realise2 classification (Minhas, 2010), found that participants who developed strengths known to them and often used, showed increases in measures of psychological well-being and engagement but not life satisfaction, while those who worked on strengths not previously used (unrealised strengths), increased in life satisfaction and engagement but not psychological well-being. Although this study had a small sample and did not use a control group, it nonetheless suggests that there may be benefits in considering a wider range of strategies in a strengths intervention.

Building top strengths, learning new strengths and learning how to recognise strengths in others were strategies employed in another strengths intervention with high school students (Proctor et al. 2011b) which produced significant increases in life satisfaction, but not in positive affect or self-esteem. Schools were given 6 months to use strengths programme materials provided in health curriculum classes with teachers completing an average of 23% of the lessons over period. Other approaches to strengths identification and development may also help expand strengths development strategies beyond 'using your top five strengths in a new way', a strategy validated in a large-scale, self-selected, online adult intervention.

In a school-wide strengths approach integrated with everyday classroom teaching (Fox Eades, 2008), character strengths were taught to children through story-telling, school festivals and assemblies, and children were encouraged to identify times when they did or did not use each strength. An exploratory evaluation of this approach (Govindji and Linley 2008), found it led to improvements in students' self-confidence, motivation to achieve and behaviour; in teacher relationships and resilience; and in school climate. Although not a controlled trial, this qualitative assessment suggests that the well-being benefits of adopting of strengths interventions in schools might not be limited to students, but could include teachers and the broader school environment.

The goal of these interventions was predominantly to enhance well-being. Results were positive but modest in most cases, even where participants invested considerable time and effort. This raises questions such as; whether strengths interventions in isolation can

deliver well-being change; whether new strategies or designs may increase intervention effectiveness; and, is enhancing individual well-being the most appropriate focus for a strengths intervention? These interventions also provide insights and future research questions including; the nature of gender differences in strength interventions, and the potential of strength interventions to benefit teacher and group well-being. Although most studies specified interpersonal contact or strengths discussion, no studies assessed the effect this had on relationships.

The studies discussed so far were stand-alone strengths interventions. At present it is not known if interventions like these will be more or less effective when used in concert with other strategies or as part of a broader programme.

## 2.3 Strengths as Part of a Broader Programme

Strengths interventions have been incorporated into broader programmes aimed at enhancing well-being and achievement. A high school positive psychology curriculum, embedded in English class, included strengths identification and development, concepts such as gratitude, savouring, positive emotion and meaning and purpose in life (Reivich et al. 2003). Significant improvements were reported (Seligman et al. 2009), in students' academic scores, social skills and learning strengths, and reductions in disordered behaviour when compared to a control group at a two-year follow-up, but no group differences on measures of anxiety or depression. Preliminary results from the 3-year follow-up (Gillham 2011) indicate that overall the programme did not influence subjective well-being but did increase engagement and achievement. While the results of this research are encouraging, one cannot separate out the contribution made by the strengths component of the intervention.

The studies described above represent the beginnings of a body of scientific evidence for the effectiveness of character strengths interventions. While research is still in its early stages, findings from strength interventions research can provide useful information and directions for future research.

## 3 Effectiveness of Character Strengths Interventions

Viewed together, these interventions and other research on strengths and well-being highlight certain issues for future research; including, assessing the role of interpersonal contact as well as time duration of intervention on effectiveness; the need for further research on duration of effects; development of a broader range of intervention strategies; expanding the range of populations studied and circumscribing generalisation of results until that is achieved; the need for greater understanding of how strengths are acquired by children and developed by adults; and the need for some agreement on standards of 'clinical significance' for well-being changes in non-clinical populations.

## 3.1 Duration of Intervention and Inter-Personal Contact Time

The aforementioned interventions differed widely in the time participants spent on the intervention and the level of inter-personal contact and individual attention involved. Consistent with the findings of a meta-analysis of a range of Positive Psychology Interventions (Sin and Lyubomirsky 2009), interventions of longer duration had greater effect sizes. The group interventions were the most time intensive; most provided 12–30 h of

class time with additional assignments and reading. They also provided individual written or face-to-face feedback and support. Although no direct class time was provided in their intervention, Rust et al. (2009) noted that supervising teachers wrote positive comments on student strength logs, while Austin (2005) stated that teachers in the experimental groups were hand-picked based on their 'caring nature' and ability to create positive rapport with students. It is difficult to disentangle the effect of intervention time duration from the effect of supportive contact and discussion with teachers and peers. Human contact may have been a factor even in one of the internet interventions; Mitchell et al. (2009) instructed participants to share their strengths learning with another person between internet sessions. While researchers have specified inter-personal contact as a part of their interventions, they have not directly assessed the impact of these relationships on end results or the impact of the intervention specifically on the quality of the relationships. Future research might want to assess how these factors contribute to the effectiveness of strengths interventions.

### 3.2 Duration of Effects, Effect Sizes, and Measures Used

The results achieved by the stand-alone strengths interventions discussed were obtained for follow-up periods which ranged from immediate post-test (Rust et al. 2009), through 3 months (Austin 2005; Mitchell et al. 2009; Proctor et al. 2011b) to 6 months at longest (Rashid 2004; Seligman et al. 2005). These results cannot provide any indication of whether the benefits achieved might rapidly diminish, or even develop over a longer period of time. Interventions which introduce new concepts and skills have shown 'sleeper effects', where effects do not become apparent until 6 months after training when participants have internalised the skills and had opportunities to use them (Jaycox et al. 1994). Mitchell et al. (2009) found that well-being benefits increased from the 1-month to 3-month follow-up, a pattern also observed in one of the conditions tested in Seligman et al. (2005) (remembering *three good things* from that day*) but not in the *using signature strengths in a new way* condition, while Rashid (2004) found well-being benefits increased from post-test to 6-month follow up. Three-year follow-up results from the US high school positive psychology curriculum study (Gillham 2011) found that effects on social skills and learning strengths were largest for the first two years and dropped in the third year. This 9-month intervention had no follow-up teaching or whole-school support. While these are preliminary findings they suggest that a 'once-off' strengths intervention may have a limited duration of effect. Further research over longer time periods will be necessary to determine if strengths interventions are more durable or effective when adopted as an enduring classroom or whole school approach.

The strengths interventions discussed reported statistically significant results for well-being improvements, or academic self-efficacy in the case of Austin (2005). Although these effects have been small to medium sized, according to Cohen's categorisation of effect sizes (1988) they have shown that strengths interventions can consistently produce effects. The Rust et al. (2009) and Rashid (2004) group interventions had the longest duration and the largest effect sizes of the stand-alone strengths interventions reviewed. Rust et al. (2009) found a small well-being effect size, $\eta^2 = 0.07$, directly post-test with no further follow-up assessment, while Rashid (2004) found the post-test effect size, $\eta^2 = 0.07$ increased to $\eta^2 = 0.15$ at the 6-month follow-up. Further research is required to determine if effect size is related to duration of intervention or level of personal contact.

Given the common hypothesis in strengths-related research that developing and using one's strengths is fulfilling it is natural that well-being has been the primary outcome variable in most strengths research. Well-being has been predominantly measured using

life satisfaction measures such as the Satisfaction With Life Scale (SWLS) (Diener et al. 1985), and the Student Life Satisfaction Scale (SLSS) (Huebner 1991); other well-being measures used include the Steen Happiness Index (SHI) (Seligman et al. 2005), the PANAS (Watson et al. 1988) and the PWI-A (IWG 2006). Measures of self-esteem (Rosenberg 1965), strengths use (Wood et al. 2011), and self-perceptions of academic abilities (Austin 2005) have also been used in addition to achievement measures such as Grade Point Average (GPA) (Seligman et al. 2009; Rashid 2004). Given that the range of effects and mechanisms at work in a strengths intervention has not yet been clearly defined, and that some interventions have influenced other desirable outcomes such as engagement and achievement but not well-being (Gillham 2011), a broader approach to measurement may prove useful in the future.

### 3.3 Intervention Strategies

A number of interventions have involved participants identifying their strengths and then choosing a number of top strengths to explicitly develop, including 'use your strengths in a new way' (Mitchell et al. 2009; Seligman et al. 2005). Other interventions targeted 'top strengths' and 'lesser strengths' or weaknesses (Austin 2005; Rust et al. 2009). While using one's top strengths has been shown to enhance well-being (Seligman et al. 2005), more recent research (Rust et al. 2009) suggests that concurrently working on one's weaknesses may provide equivalent benefits for many but not all people. Research has not yet compared which process is more enjoyable for participants or has higher retention rates.

In one strengths intervention participants were encouraged to develop their top strengths, learn new strengths and learn to recognise strengths in others (Proctor et al. 2011b) while another approach focused on noticing and developing all 24 character strengths (Fox Eades 2008; Govindji and Linley 2008). The former study utilised a combination of strategies but did not assess the contribution to well-being made by 'noticing strengths in others' either to the individual doing the noticing, or those whose strengths were noticed by their peers. This is something that future research could also address.

A common thread through all of the interventions was that they required participants to plan or envision their strengths use in the future: either by using their strengths in new ways; identifying how strengths will feature in future successes; or planning to develop a particular strength or weakness. In this way, each of these interventions required the participant to plan, to visualise a different future, and implicitly or explicitly, to set goals. Future research could directly assess the contribution of goal-setting to a strengths intervention's success.

### 3.4 Research Populations: Gender, Selection and Age

Internet-based convenience samples and psychology undergraduate programmes have been the source of participants for most character strengths interventions to date. Both sources provide samples that are heavily skewed towards the female population. If, as suggested by recent findings (Rust et al. 2009), gender differences interact with strength development and well-being, future research must address this issue or adopt a cautious stance towards generalising results to both sexes.

The adult strength interventions were also largely self-selected with random assignment to a particular intervention condition (Rashid 2004; Mitchell et al. 2009; Seligman et al. 2005; Rust et al. 2009). Participants chose to participate in the internet studies (Mitchell

et al. 2009; Seligman et al. 2005) or to take a positive psychology course at university rather than an alternative psychology paper (Rashid 2004; Rust et al. 2009). As such they do not provide information about the effectiveness of strengths interventions where participants have not expressed at least some interest in the area or intervention. The school-based interventions, in contrast, were universal interventions with the proviso of parental consent being given. School-based strengths interventions provide some evidence that strength interventions are effective overall, for individuals of a certain age, who have not chosen explicitly to receive them.

If generalising research findings across the adult population is contentious, it is even more problematic to apply adult strengths research findings to child populations. There is evidence that the distribution and effects of character strengths differ somewhat for children and adults. Children tend to be higher in hope, teamwork and zest, with adults higher in appreciation of beauty, authenticity, leadership and open-mindedness (Park and Peterson 2006a). Character strengths such as gratitude and curiosity are not correlated with well-being until children reach 8–10 years of age and adulthood respectively (Park and Peterson 2006b), and in the case of gratitude, the effects of this strength on well-being may vary with gender, prior levels of positive affect, and age (Froh et al. 2009). As yet, there is a dearth of research on the processes through which strengths are acquired and developed by children. Nor can we assume that the strategies used to develop strengths in adults will be appropriate or effective for children. Goal-setting skills and motivation to use strengths cannot be assumed to be the same for children as adult populations and these and other developmental changes, must be taken into consideration when applying research strategies from adult populations. This suggests that it will be important to continue to develop strengths research across age groups, including longitudinal assessment of strengths development from childhood to adulthood, and until that time, to restrict the extent to which findings from one population are generalised to another.

### 3.5 What is 'Clinical Significance' in Positive Psychology?

Statistical significance indicates that the results of the interventions described above were not produced by chance, but does not provide information as to the likely real life effects of these results, and whether one should regard them as worthwhile or justifying implementation to a wider audience. An approach adopted by a number of researchers (Rashid 2004; Rust et al. 2009) has been to describe results in terms of a general purpose effect size, the Binomial Effect Size Display (BESD) (Rosenthal and Rubin 1982). The BESD presents results as the difference in improvement rates for experimental and control groups (Randolph and Edmondson 2005), and is based on calculation of the variance attributable to the intervention. While a $\eta^2 = 0.02$ effect size may not seem worth considering, when translated into a life satisfaction improvement for an additional 14% of school students participating in a low-cost intervention, that outcome may seem both desirable and worthwhile if it translates into real-life changes.

To date positive psychology interventions in general, and character strengths interventions in particular, have tended to focus on demonstrating that an intervention produces an effect. At some point, agreement will be needed on how clinical significance can be measured; issues relating to assessment of positive functioning have already been raised within clinical psychology (Joseph and Wood 2010). It is a complex issue (for example, interventions with 'sub-clinical' effects could contribute effectively to a broader program; what enables flourishing may vary across individuals and cultures); but if the goal of strengths interventions is well-being enhancement that makes a difference to an

individual's life, then that enhancement and the observed differences to living need to be quantified.

Expanding the range of populations and interventions studied will enable design of more effective interventions; so too will identifying the mechanisms through which interventions work.

## 4 Possible Mechanisms Underlying Strengths Interventions

The focus of strengths intervention research thus far has been to demonstrate that strengths interventions can have a reliable, positive effect on participant well-being, academic self-efficacy or achievement.

Although research has not yet identified the 'active ingredients' and mechanisms through which strengths interventions enhance well-being, initial research has identified a number of promising factors (Linley et al. 2010). These include strengths use, psychological need satisfaction and goal-setting. Research from the field of Self-Determination Theory (SDT) and goal-setting also provide evidence which may assist understanding of how strengths interventions work.

### 4.1 Individual Factors: Strengths Use, Psychological Need Satisfaction and Goal-Setting

An early pointer to underlying mechanisms came from Seligman et al. (2005), who concluded that the benefit of character strengths lies in their use and development, not merely in their identification. The role that strengths use plays in a strengths intervention has been studied by Govindji and Linley (2007) who developed scales to assess strengths knowledge and strengths use; they found that strengths knowledge did not predict subjective well-being but strengths use did. Later studies have found that strengths use was associated with goal progress, which was associated with both need satisfaction and well-being (Linley et al. 2010) and that strengths use predicted subjective well-being (Proctor et al. 2011a).

While the association between strengths use, goal-progress and psychological needs satisfaction was first investigated by Linley et al. (2010), the influence of both goal-progress and psychological need satisfaction on well-being has been demonstrated in numerous studies conducted under the rubric of SDT (Reis et al. 2000; Sheldon et al. 1996). Theories of self-determination (Ryan and Deci 2000) and goal-setting (Sheldon and Elliot 1998, 1999) offer explanations of how individual motivation, relationships and choice of goals can influence well-being. They may assist in understanding how strengths interventions work, or suggest approaches which can increase the effectiveness of those interventions.

Self-determination theorists (e.g., Deci and Ryan 2000) have established that individuals have fundamental psychological needs for autonomy, competence and relatedness. Satisfaction of these needs facilitates intrinsic motivation, promotes well-being (Deci and Ryan 2000; Reis et al. 2000; Sheldon et al. 1996), and enhances engagement and effort (Ryan and Deci 2000; Sheldon et al. 1996) in adults and in children as young as third grade (age 8–9 years) (Veronneau et al. 2005).

Using strengths, like knowing about one's strengths or being asked to 'use them more', does not require the construction of specific goals or plans. Goal theory suggests that setting and planning clear and specific goals makes an individual more likely to follow through on their goals (Latham and Locke 1991; Locke and Latham 2002). Developing

strengths through deliberate use in new ways requires 'purposeful thought and action' (i.e. goal-setting and goal-pursuit). Goals which are genuinely valued and freely chosen (self-concordant) are associated with greater goal-striving and goal-attainment (Sheldon and Elliot 1998, 1999; Sheldon and Houser-Marko 2001), and are also associated with greater well-being after attainment. It is likely therefore that self-concordant goal-setting can provide a structure or framework which may promote strengths use. Self-concordant goal-effort and goal-attainment may directly enhance well-being as well as providing opportunities for strengths use.

Strengths interventions, it appears, are like medicines; they work only when you take them. It appears that strengths use is essential, if an individual is to benefit from a strengths intervention. What is less clear however, is which of the possible active 'ingredients' will occur first and how it might trigger others to increase the effectiveness of an intervention. Once begun, valued goal-setting will likely encourage strengths use, which may in turn engender feelings of competence, autonomy or relatedness, and a virtuous cycle is initiated. Greater understanding of the interplay of these factors will assist the design of effective interventions.

Strengths interventions research has so far focused on individuals enhancing their well-being through their own efforts and actions. Research has not yet explored how interpersonal or group cultural factors may constitute mechanisms or may moderate the effectiveness of strengths interventions.

### 4.2 Contextual Factors: Relationship and Group Setting

While using strengths is hypothesised to be fulfilling and engaging for an individual (Seligman 2002), few people exercise their strengths in isolation; overwhelmingly, people live in groups, where strengths can be noticed, remarked upon and rewarded, or not. Park and Peterson (2008, p. 86) have commented that "The most general contribution of the VIA project is to provide a vocabulary for psychologically informed discussion of the personal qualities of individuals that make them worthy of moral praise". Although the impact of the 'moral praising' of an individual's strengths-related behaviours' by others has not been explored, there is evidence to suggest strength-related feedback may influence well-being by increasing effort and perseverance (Dweck 1986; Kamins and Dweck 1999), increasing relationship satisfaction (Gable et al. 2004), and overcoming hedonic adaptation to strengths knowledge and use (Diener et al. 2006). The effect of strengths on well-being may occur 'between us' as well as 'within us'; some of the mechanisms through which strengths influence well-being may be social rather than individual.

Strengths interventions and group environment may work together to influence well-being or may constitute opposing forces. Strengths interventions may enhance an individual's relationships and wider group environment *or* relationships and culture may moderate the ability of a strengths intervention to enhance an individual's well-being.

### 4.3 Strengths-Orientation

Perhaps not surprisingly, the attitudes of those providing a strengths-based intervention have been shown to influence participant outcomes. A study of the effectiveness of treatment for emotionally disturbed children found that the therapist's knowledge of and attitude to strengths-based practices was a significant moderator of patient outcomes (Cox 2006). The strengths-based approach produced successful outcomes for patients (reduction in total scores for behavioural, emotional, and social problems and for internalising and

externalising problem behaviours) only when the therapist endorsed and practised the approach.

The effectiveness of a school-based character strengths intervention could likewise depend on how much a student's teachers, parents and peers endorse and practice a strengths-orientation. A similar pattern has been observed with attitudes to autonomy support in workplace interventions (Page and Vella-Brodrick 2010). Office workers trained in job re-crafting to enable greater use of personal character strengths at work (Page and Vella-Brodrick 2010), made few workplace changes, citing lack of workplace/supervisor support as the main reason. They indicated however, that they had implemented the re-crafting process in their home lives where they had greater autonomy to do so.

## 4.4 Considerations for Future Research Design

Research has only recently begun to address questions of how strengths interventions work; however, existing research on psychological need satisfaction, goal-setting, and research from social and clinical psychology has much to offer. Despite the theory that using one's strengths is engaging and fulfilling, a strengths intervention remains, at its core, a behavioural change intervention. As such, successful behavioural change models (e.g., the Transtheoretical Model of Health Behaviour Change, Prochaska and Velicer 1997), may also offer design insights. Utilising and building on this research should enable the design of strengths interventions that participants are motivated to use; that engage them in relevant and meaningful goals; and which use a range of methods, both internal and external to the individual, to support and encourage ongoing strengths use. The ways in which strengths interventions could be used to benefit relationships and improve group morale/work environments has not yet been explored. Nor have the ways in which relationships and significant others can help augment, or diminish, the effectiveness of strength interventions.

## 5 Conclusion

Although all strengths interventions target strength development, strength classifications differ in their origins and objectives; accordingly, interventions based on certain classifications may be more or less suited to different environments and goals. It may not be possible to identify a 'best strengths classification', but rather to consider which strength classification is most appropriate in a given situation.

Initial studies, primarily of character strengths interventions, demonstrate small but consistent well-being effects for development of an individual's top strengths, although concurrently working on weaknesses may be as effective for women as working on strengths. This finding suggests that different strategies may be required for different groups and that one size will not fit all. The importance of goal-setting within strengths interventions have not been fully explored, although planned future use of strengths is common to most interventions.

Among the few published studies, longer strengths interventions were more effective than shorter ones, but even these time-intensive interventions produced only moderate results. One of the challenges facing the field is the lack of an agreed standard of 'clinical significance' against which to judge results. Criticising these studies for producing 'only moderate results' may prove unduly harsh; the real life or long-term implications of a moderate increase in well-being have not been quantified. If small changes in well-being

include an increase in positive emotions, then the broaden and build theory of positive emotions (Fredrickson 1998) and subsequent research (Fredrickson and Joiner 2002) would suggest that these small changes may initiate upward spirals of positive change. In this case, small positive changes could become self-sustaining or lead to even greater change over a longer period.

Character strengths interventions have for the most part focused on individual well-being with little involvement from significant others at work, home or school. This approach, characterised by one researcher as 'self-contained individualism' (Hart and Sasso 2011), begs the question: If other people really matter, why has their impact on strengths interventions not been assessed or utilised? These relationships could potentially be enlisted to increase the effectiveness of strengths interventions, or interventions could target improving relationships and group morale rather than individual well-being and achievement. Exploratory analysis of broader interventions which provide for common use of a shared strengths vocabulary is promising, and requires further research (Govindji and Linley 2008).

Strengths interventions promote strengths knowledge but not all of them successfully translate into increased strengths use and well-being. A better understanding of the 'tasks' and stages of a successful strengths intervention and the mechanisms through which it works will assist in designing more effective interventions. These mechanisms may include relational and contextual factors as well as individual factors such as strengths use, psychological needs satisfaction and valued goal-striving. Perhaps because using one's strengths is theorised to be engaging and fulfilling it was expected that participants in strengths intervention would have high motivation and compliance and experience great benefits. To succeed, strengths interventions may need to be as carefully designed as any behavioural change intervention; that is, they should provide a compelling rationale for participation; provide activities which are engaging, relevant and meaningful; and build support through people, habits and rituals which encourage and sustain ongoing strengths use.

Understanding of character strengths is at the beginning of its journey rather than its conclusion. It is appropriate, therefore, that we continue to cast the net widely, exploring new and different ways of developing strengths, measuring a broader range of outcome variables, and assessing the impact of contextual factors on their effectiveness. Strengths classifications provide a lexicon of human valuing; some, such as the VIA, include strengths which have been universally valued over time. We have not yet explored the potential of these classifications to enhance relationships and belonging through use of a common language for valuing self and others. Given how pivotal these are to our long-term well-being, this seems an area worth pursuing.

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