

## Strengths Gym: The impact of a character strengths-based intervention on the life satisfaction and well-being of adolescents

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This preliminary research study examined the impact of Strengths Gym, a character strengths-based positive psychological intervention program, on adolescent life satisfaction. Using a quasi-experimental treatment-control condition design, the study compared student outcomes for life satisfaction, positive and negative affect, and self-esteem for 319 adolescent students aged 12–14 ( $M = 12.98$ ): 218 adolescent students who participated in character strengths-based exercises in the school curriculum, and 101 adolescent students who did not participate in character strengths-based exercises in the school curriculum. Results revealed that adolescents who participated in character strengths-based exercises experienced significantly increased life satisfaction compared to adolescents who did not participate in character strengths-based exercises. Overall, results provide encouraging preliminary support for the application of character strengths-based exercises in the school curriculum as a means of increasing life satisfaction and well-being among youths.

**Keywords:** character strengths; life satisfaction; well-being; intervention; adolescents; character education; strengths exercises; positive psychology

### Introduction

Recently researchers of positive psychology have asked: ‘should well-being be taught in school?’ (Seligman, Ernst, Gillham, Reivich, & Linkins, 2009, p. 294). According to Seligman et al. (2009), the answer is an overwhelming yes, primarily because ‘more well-being is synergistic with better learning’ (p. 294). More importantly still, is that increased happiness and well-being (in this article the term ‘well-being’ refers to positive subjective experience, Diener, 1984) are not only outcomes most people want for themselves, but also what they most want for their children.

Although most people (including young people) report that they are happy, it is not necessarily the case that they are flourishing (Diener & Diener, 1996; Huebner, Drane, & Valois, 2000; Myers & Diener, 1996). According to Keyes (2002) to be ‘flourishing’ is to be filled with positive emotion and to be functioning well psychologically and socially. Indeed, parents want more for their children than just the avoidance of negative behaviors (e.g., drug and alcohol abuse, violence, bullying, depression), they want their children to thrive in all domains of life (Moore & Lippman, 2005).

Unfortunately, however, many young people are unhappy. For example, Huebner et al. (2000) found that the overall satisfaction with life of 11% of 5544 American students surveyed fell below the neutral point with 7% indicating a ‘terrible’ or ‘unhappy’ existence. Because healthy psychological states, such as happiness, have been demonstrated to be both the cause and consequence of diverse positive personal, behavioral, psychological, and social outcomes (Lyubomirsky, King, & Diener, 2005) it is vital to understand how to lift those who are languishing and unhappy to a more optimal state of functioning (Sin & Lyubomirsky, 2009) while protecting those with positive levels from diminishing.

### School – the ideal place for initiatives

The ideal place for initiatives aimed at increasing the happiness and well-being of children is in school. The majority of children and adolescents spend most of their week-day in school and much of their day-to-day interactions experienced there will have an impact

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on their well-being (Seligman et al., 2009). Moreover, not only are educators beginning to recognize the benefits of looking at well-being from a positive perspective, but also many schools are already committed to 'character education' and address social and emotional aspects to learning within the curriculum with an aim to promoting positive behavior and effective learning. For example, Britain's national education strategy includes the Social and Emotional Aspects to Learning (SEAL) program (SEAL, 2010). Similarly, in the USA, many states have standards and policies related to social and emotional learning (e.g., CASEL, 2009); see Greenberg et al. (2003) for a discussion. Indeed, in line with Seligman et al. (2009), the focus is now on determining an efficacious positive psychological model of intervention to increase well-being within the school curriculum through fostering moral virtues (cf. Joseph & Wood, 2010). Unfortunately, despite nationwide efforts to promote well-being among young people through character education programs, concerns have been raised over their effectiveness and the lack of consensus over what values and virtues should be fostered (Peterson & Seligman, 2004). Moreover, many of these programs are prescriptive and focus only on informing students what to do and what not to do (Park & Peterson, 2009), instead of fostering good character through practicing and modeling moral behavior.

### Positive psychology interventions

A promising approach to increase well-being among adolescents is through positive psychology interventions – that is, intentional activities that aim to cultivate positive feelings, behaviors, or cognitions (Sin & Lyubomirsky, 2009). Recent research has demonstrated that performing positive psychological exercises, such as counting blessings and participating in self-guided daily gratitude exercises (Emmons & McCullough, 2003; Froh, Sefick, & Emmons, 2008) or counting one's own acts of kindness for 1 week (Otake, Shimai, Tanaka-Matsumi, Otsui, & Frederickson, 2006) are associated with higher levels of positive affect (PA) and life satisfaction. Indeed, Froh et al. (2008) found that adolescents who listed up to five things that they were grateful for daily for 2 weeks had increased well-being, life satisfaction, and decreased negative affect (NA) at follow-up. Similarly, Geraghty, Wood, and Hyland (2010b) have found that cultivating gratitude through daily gratitude diaries is as successful at reducing worry as standard cognitive techniques (cf. Geraghty, Wood, & Hyland, 2010a). Moreover, Seligman, Steen, Park, and Peterson (2005) have demonstrated that writing down three good things that went well each day, and using identified top strengths in a new way each day, for 1 week increases

happiness and decreases depressive symptoms for 6 months. Similarly, exploratory investigations into the teaching of well-being in school through the application of positive psychology interventions and theory has led to reliable improvements in students' well-being (see Seligman et al., 2009 for a review). For example, the Positive Psychology Program, which consisted of approximately 20–25 sessions delivered over 1 year and involved character strengths discussion sessions, in-class activities, real-world homework activities, and follow-up journal reflections, was demonstrated to increase enjoyment and engagement in school and improve social skills among adolescent students (Seligman et al., 2009).

### The Values-In-Action Strengths Classification

Growing interest in positive youth development and the empirical examination of well-being from a positive perspective, specifically the benefits of exercising good character, has resulted in the creation of a theoretical framework and classification system of virtues, the Values-In-Action – Inventory of Strengths (VIA-IS; Peterson, 2006; Peterson & Seligman, 2004). The VIA-IS is a comprehensive classification and measurement system of 24 ubiquitous character strengths (positive traits reflected in thoughts, feelings, and behaviors), organized under six broad virtues, each of which is morally valued in its own right (Park, Peterson, & Seligman, 2004). According to Peterson and Seligman (2004; see also Seligman, 2002), people possess five 'signature' or 'top five' strengths out of 24. These signature strengths are personal traits or characteristics that a person feels they own, celebrate, and frequently exercise. The hypothesis behind signature strengths is that the use of them is fulfilling and linked to an individual's sense of self, identity, and authenticity (Peterson & Seligman, 2004), and therefore arguably their well-being (Proctor, Maltby, & Linley, 2011).

The VIA-IS classification is a multidimensional approach to good character. As individual differences, strengths are not either present or absent, but exist in degrees (Park & Peterson, 2009). Youths aged 10–17 can identify their strengths by taking the VIA-IS-Youth (Peterson & Seligman, 2004). Scores on the VIA-Youth are rank ordered from 1 (top) to 24 (bottom) in order that signature strengths can be identified relative to an individual's other strengths, thereby creating an individual strengths profile. Research among adults has shown that identifying and using your signature strengths in a new way every day is an intervention that has been systematically tested and shown to have lasting effects on happiness (Seligman et al., 2005).

### Building strengths in young people

According to recent research among adults, there appears to be inherent benefits to exercising signature strengths in daily life (Seligman et al., 2005). Indeed, positive psychological interventions and activities (in general) have been shown to significantly enhance well-being and decrease depressive symptoms (Sin & Lyubomirsky, 2009). In line with these findings, Seligman (2002) has advocated the building of all (i.e., 24 VIA) strengths among youths: 'my first piece of advice about building strengths in kids is to reward all displays of any of the strengths. Eventually you will find your child drifting in the direction of a few of them. These are the seed crystals of her signature strengths...' (p. 245). Similarly, Peterson (2006) has noted that research to date has demonstrated that the consequences and correlates of character strengths are positive in nature and therefore 'the implication is that we should develop and use as many strengths of character as possible' (p. 157). Further, as it is not assumed that character strengths 'are fixed or necessarily grounded in immutable biogenetic characteristics' (Peterson, 2006, p. 139), it is reasonable to assume that, if not fostered, strengths may be lost over the course of development. Indeed, research has demonstrated that although there is a degree of convergence when comparing the relative prevalence, correlates, and consequences of all strengths among youth and adults, that there are notable differences (see Park & Peterson, 2009 for a review). Identified developmental differences in the acquisition of good character highlights the importance of fostering strengths in youth in order that they remain throughout development and into adulthood.

When considering the application of a positive psychology intervention within schools, such as a character development program, on a broad scale it is necessary to consider the pragmatics of providing individualized character education to students based on their unique signature strengths. Further, to require completion of the VIA-Youth in order to implement a character education program is likely impractical for most schools; the VIA-Youth is a 198-item measure and requires registration with an adult for those under the age of 13. Furthermore, meta-analytic research findings suggest that positive psychology interventions that involve a 'shotgun' approach in which individuals regularly practice multiple and different positive activities may be more effective than engaging in only one activity (e.g., Seligman et al., 2005), and therefore educators are likely to see the most benefit overall to students' well-being by adopting this shotgun approach (Sin & Lyubomirsky, 2009). Thus, there is a rationale for the development of a general character strengths-based intervention program, based on the entire VIA strengths classification, which enables

students to participate in multiple strengths exercises and explore and self-identify with their signature strengths.

Adopting this approach, self-identification with signature strengths seems appropriate given that children naturally possess strengths and therefore should easily identify with those they are strong in (Park & Peterson, 2009). That is, exploration of all 24 VIA strengths through positive psychological exercises enables young people to identify with strengths they already recognize as part of their subjective self-identity. Further, unlike other pedagogical focuses, identification, exploration, and exercising of strengths is intrinsically rewarding because all children have strengths regardless of how they may compare to others academically. Moreover, applying this type of positive psychology intervention in the curriculum, which inherently involves students working and learning together as part of the same class, has the added benefit of highlighting the individual differences nature of character strengths and their lack of generality (Peterson, 2006); i.e., students learn to recognize and appreciate that everyone has different strengths and weaknesses.

### This study

Overall, research evidence to date indicates that character strengths are linked to well-being and flourishing among children and youth (Park & Peterson, 2009). Indeed, research has demonstrated that certain strengths of character are linked with increased life satisfaction, decreased psychopathology, fewer internalizing and externalizing behavior problems, and academic achievement (see Park & Peterson, 2009 for a review). Moreover, strengths can be clearly cultivated and strengthened through regular activity and application in life (e.g., Seligman et al., 2005). Therefore, development of positive psychological character strengths-based interventions that can be utilized as part of the school curriculum is a timely concern. The purpose of this preliminary research study was to test the outcomes of one such program, aptly called 'Strengths Gym',<sup>1</sup> on the life satisfaction and well-being of adolescent students. This positive psychology intervention program is based on the entire VIA classification of character strengths and involves students completing age appropriate strengths-based exercises through in-class activities, open discussion, and real-world home-work activities where they can apply the concepts and skills in their own lives. Students are provided with the opportunity to self-identify with their signature strengths at the beginning of each level of the course and to re-evaluate them before moving on to the next level.

### Indicators of well-being

For the purposes of this research, life satisfaction has been chosen to serve as the key outcome variable. Life satisfaction is the cognitive, global appraisal of life as a whole (Shin & Johnson, 1978), and one of the most well-established indicators of happiness, well-being, and positive functioning (Suldo, Riley, & Shaffer, 2006). Typically, scores on self-report measures of life satisfaction are used throughout the research literature to indicate subjective feelings of happiness or unhappiness (Proctor, Linley, & Maltby, 2009b). In general, positive evaluations of life satisfaction are linked with positive functioning, whereas negative evaluations of life satisfaction are associated with depression and negative functioning (see Proctor et al., 2009b for a review). Indeed, throughout the research literature adolescent life satisfaction is consistently positively associated with a vast array of personal, psychological, social, interpersonal, and intrapersonal outcomes. In fact, research has shown that youths displaying very high levels of life satisfaction (i.e., happiness) benefit from increased adaptive psychosocial functioning, intrapersonal, interpersonal, and social relationships, academic success, and decreased behavioral problems (Gilman & Huebner, 2006; Proctor, Linley, & Maltby, 2010; Suldo & Huebner, 2006). Furthermore, life satisfaction is positively associated with multiple school-related variables, including school satisfaction, teacher support, and perceived academic achievement, competence, and self-efficacy (see Suldo et al., 2006 for a review). Moreover, research indicates that increased life satisfaction buffers against the negative effects of stress and the development of psychological disorder (Suldo & Huebner, 2004). Therefore, evaluation of adolescent life satisfaction levels is essential in the assessment of educational interventions aimed at increasing well-being among youths.

Traditionally, 'happiness' research has been guided by two principle conceptions of 'wellness', the balance between PA and NA, and life satisfaction. Taken together, PA, NA, and life satisfaction make up the emotional and cognitive components of subjective well-being (Andrews & Withey, 1976; Diener, 1984). Therefore, measures of each of these aspects of well-being are included in this research study (i.e., life satisfaction, PA, NA). Moreover, a self-esteem measure is included here because, not only is self-esteem considered to be an important indicator of adolescent well-being among educators (see Twenge, 2006 for a review), it has also been consistently demonstrated to be positively associated with life satisfaction. For example, Diener and Diener (1995) explored the discriminant validity of self-esteem and life satisfaction among a large cross-national group of 13,118 college students and discovered a positive correlation, not only across the entire sample, but also in most nations.

Similarly, moderate positive correlations are consistently found between life satisfaction and self-esteem among children and adolescents (e.g., Dew & Huebner, 1994; Huebner, 1991a; Neto, 1993).

### Study hypotheses

It is hypothesized that participation in Strengths Gym, a positive psychological curriculum-based program, will be beneficial for adolescents. Specifically, it is hypothesized that adolescent life satisfaction will be significantly improved among adolescents who participate in character strengths-based exercises as part of the school curriculum when compared to adolescents who do not participate in character strengths-based exercises as part of the school curriculum. Moreover, it is anticipated that adolescents who participate in the program will have higher scores on PA and self-esteem, and lower scores on NA at post-test than a comparison condition of adolescents who did not participate in the program.

### Method

#### Participants

A convenience sample of 319 students (150 males; 169 females), adolescents from two secondary schools in Great Britain in Years 8 and 9 were recruited. The sample included 177 Year 8 and 142 Year 9 students aged 12–14 ( $M = 12.98$ ,  $SD = 0.50$ ). Data were not collected on ethnicity or socioeconomic status for individual students, however both school populations were comprised primarily of lower- to middle-income Caucasian students, one located in the Channel Islands and the other in Cheshire, England.

Ethical approval to collect data for this study was secured from the University of Leicester Psychology Research Ethics Committee. Upon approval, recruitment of participants began by meeting with the head teachers of two schools in Great Britain; schools in each of the two locations of the primary researchers were approached.

### Measures

#### *The Students' Life Satisfaction Scale*

The Students' Life Satisfaction Scale (SLSS; Huebner, 1991b, c) is a 7-item self-report scale which assesses global life satisfaction for students aged 8–18. Students are required to respond to each item (e.g., 'I have a good life') using a 6-point Likert scale (Strongly Disagree to Strongly Agree). Coefficient alphas have consistently been reported across all age groups for this scale in the 0.70–0.80 range, (Huebner, Suldo, & Valois, 2003) with 1–2-week test–retest reliability

being reported at 0.74 (Huebner, 1991c). Overall, the SLSS has been shown to be a reliable measure of life satisfaction for students in elementary (e.g., Terry & Huebner, 1995) ( $r=0.73$ ), middle (e.g., Huebner, 1991a) ( $r=0.82$ ), and high (e.g., Dew & Huebner, 1994) ( $r=0.86$ ) school (see Proctor, Linley, & Maltby, 2009a for a review). Evidence of the convergent and divergent validity of the SLSS has been provided through significant positive correlations with measures of self-esteem ( $r=0.65$ ) and extraversion ( $r=0.23$ ), and significant negative correlations with measures of anxiety ( $r=-0.51$ ), external locus of control (LOC) ( $r=-0.48$ ), neuroticism ( $r=-0.46$ ) (Huebner, 1991a), depression ( $r=-0.57$ ), loneliness ( $r=-0.38$ ), and teacher ratings of classroom behavior problems ( $r=-0.35$ ) (Huebner & Alderman, 1993). Overall, research supports the SLSS as a psychometrically sound brief measure of global life satisfaction for students aged 8–18. Observed reliabilities were good and are reported in Table 1.

#### The Positive and Negative Affects Schedule

The positive and negative affects schedule (PANAS) (Watson, Clark, & Tellegen, 1988) is a 20-item

self-report measure made up of two subscales each consisting of 10 items: 10 PAs (e.g., interested, excited) and 10 NAs (e.g., distressed, upset). Respondents use a 5-point Likert scale response format (Very Slightly or Not At All to Extremely) to indicate to what extent they have felt each way during the past week. Intercorrelations and internal consistency reliabilities are all acceptably high, ranging from 0.86 to 0.90 for PA and from 0.84 to 0.87 for NA, whereas the correlation between the PA and NA scales is invariably low, ranging from  $-0.12$  to  $-0.23$  (Watson et al., 1988). The PANAS has been demonstrated to compare favorably with other brief affect measures and to have good convergent correlations (0.76 to 0.92) and acceptable divergent correlations (under  $-0.20$ ) with the appropriate factors of these mood scales (Watson et al., 1988). Similarly, the PANAS has been demonstrated to have good external validity through its correlation with measures of related constructs (Watson et al., 1988). In general, the PANAS is seen as a reliable, valid, and efficient means of measuring PA and NA.

In accordance with Joiner, Catanzaro, and Laurent (1996), to make the scale more applicable to adolescents, three of the original items were amended and

Table 1. Descriptive statistics for study variables.

Measure	Baseline			Post-test		
	M	SD	$\alpha$	M	SD	$\alpha$
Experimental group						
SLSS	4.63	0.88	0.86	4.72	0.88	0.86
Males	4.73	0.90		4.75	0.97	
Females	4.55	0.86		4.69	0.80	
PA	3.34	0.72	0.83	3.39	0.74	0.85
Males	3.48	0.75		3.48	0.79	
Females	3.22	0.68		3.32	0.68	
NA	1.70	0.54	0.81	1.67	0.52	0.81
Males	1.66	0.58		1.65	0.53	
Females	1.73	0.51		1.69	0.52	
RSE	3.02	0.53	0.88	3.06	0.55	0.88
Males	3.13	0.53		3.12	0.61	
Females	2.92	0.52		3.00	0.49	
Comparison group						
SLSS	4.70	0.82	0.80	4.63	0.87	0.85
Males	4.84	0.74		4.83	0.73	
Females	4.57	0.88		4.44	0.95	
PA	3.28	0.77	0.86	3.23	0.75	0.86
Males	3.45	0.83		3.41	0.71	
Females	3.12	0.68		3.05	0.75	
NA	1.73	0.58	0.83	1.75	0.59	0.82
Males	1.59	0.54		1.58	0.57	
Females	1.86	0.58		1.90	0.58	
RSE	2.94	0.49	0.86	2.98	0.52	0.87
Males	3.12	0.44		3.12	0.48	
Females	2.78	0.53		2.83	0.53	

Notes: Experimental condition  $n=218$ , comparison condition  $n=101$ , experimental condition males  $n=101$ , experimental condition females  $n=117$ , comparison condition males  $n=49$ , comparison condition females  $n=52$ , SLSS, Students' Life Satisfaction Scale; PA, positive affect; NA, negative affect; RSE, Rosenberg self-esteem.

students were invited to ask the administrating teacher if they did not know the meaning of any words. The three amended items, with original items in parentheses, are: Strong – Emotionally (Strong); Grouchy (Irritable); and Edgy (Jittery). Internal consistency reliabilities of the amended scale are in keeping with those found among previous research, ranging from 0.84 to 0.86 for PA and from 0.80 to 0.84 for NA (Table 1). Moreover, these amendments were deemed more appropriate than using the PANAS-Children (Laurent et al., 1999), which was developed for use with young children. Observed reliabilities were good and are reported in Table 1.

#### *Rosenberg Self-Esteem Scale*

Rosenberg Self-Esteem Scale (RSE) Rosenberg, (1965) is a 10-item self-report measure of self-esteem developed for use among adolescents. Respondents are required to respond to each item (e.g., 'On the whole I am satisfied with myself') using a 4-point Likert scale (Strongly Disagree to Strongly Agree); higher scores reflect higher self-esteem. Internal coefficient alphas ranging from 0.80 to 0.92 have been reported for the scale (e.g., Fleming & Courtney, 1984; Reynolds, 1988; Rosenberg, 1979; Sam, 2000), with a test-retest correlation for the total score having been reported at 0.82 (Fleming & Courtney, 1984). Convergent validity for the scale has been demonstrated through negative correlations with psychological constructs associated with low self-regard, such as anxiety ( $r = -0.64$ ) and depression ( $r = -0.59$ ) (Fleming & Courtney, 1984). Discriminant validity has been demonstrated through correlations between the RSE and grade point average ( $r = 0.10$ ), LOC ( $r = 0.04$ ), and vocabulary ( $r = -0.06$ ) (Reynolds, 1988). Overall, the RSE is a psychometrically sound brief measure of global self-esteem. Observed reliabilities were good and are reported in Table 1.

#### *Procedure*

Two secondary schools in Great Britain agreed to participate and undertook to implement the Strengths Gym program in the curriculum. Individual class teachers administered measures to students during class time. Students were informed that the school was trialing a new program and student materials and that the survey data would be used to assess whether or not the program and materials would form a permanent addition to the curriculum. As implementation and evaluation of the program as part of the curriculum fell under the discretion of the head teachers, parental consent for individual participants was not provided. However, all students were informed that their responses would remain confidential and that completion of the survey was completely voluntary.

Students took a paper-and-pencil survey which included: (1) student assent; (2) basic demographics; (3) the SLSS; (4) the PANAS; and (5) the RSE ( $t_0$ : baseline scores). The experimental condition consisted of 136 Year 8 and 82 Year 9 students (101 males; 117 females). The comparison condition consisted of 41 Year 8 and 60 Year 9 (49 males; 52 females) students. Students in the experimental condition were each provided with a Year 8 or Year 9 work booklet according to which year they were in.

In total, 487 paper-and-pencil surveys were administered at baseline. In the Channel Islands, due to the small size of the school, for convenience the experimental condition consisted of Year 8 students (four classes; 89 students) and the comparison condition consisted of Year 9 students (three classes; 63 students). In Cheshire, due to limited curricular space, the participating school assigned individual classes in Year 8 (seven classes; 172 students) and Year 9 (six classes; 163 students) to the experimental (four Year 8 classes, 98 students; four Year 9 classes, 110 students) and comparison (three Year 8 classes, 74 students; two Year 9 classes, 53 students) conditions based on convenience.

Of these 487 surveys, 146 were not completed at post-test. In the Channel Islands, half of one Year 8 (15 students) and one Year 9 (32 students) class did not complete the post-test measures due to the teachers failing to distribute the surveys; a further nine Year 8 and one Year 9 were not completed by the students. In Cheshire, one Year 8 (27 students) class did not complete the post-test measures due to the teacher failing to distribute the surveys; a further 17 Year 8 and 45 Year 9 were not completed by the students. No explanation for the uncompleted surveys was provided by either of the participating schools. Therefore, a total of 341 surveys were returned for data analysis; overall return rate of 70%.<sup>2</sup>

#### *The intervention program*

The Strengths Gym program was specifically created to test the hypotheses of this preliminary research study. The aim of the program is to encourage students to build their strengths, learn new strengths, and to recognize strengths in others. The included activities for students are called Strengths Builders and Strengths Challenges. For each lesson, there is a definition of the character strength being focused on and two Strengths Builders exercises for students to choose from and a Strengths Challenge as follow-up activity. The course has three levels for implementation in the British school curriculum: Year 7, Year 8, and Year 9. The exercises in each level are unique, but designed to be equivalent and age appropriate.

The first Strengths Builder option in each lesson is consistent at each level. For example, the first Strengths Builder option in the Year 8 booklet is to tell a 'Strengths in Action Story' for each strength, whereas the first Strengths Builder option in the Year 9 booklet is to 'Create your own Strengths in Action Story' for each strength. The second Strengths Builder options and Strength Challenge exercises provided in each lesson throughout and across the three booklet levels are unique to each strength and designed to encourage students to further develop their use and knowledge of the strength. These Strengths Builder and Strength Challenge exercises are comparable to those suggested by Peterson (2006), but have been adapted and created for adolescents. As noted by Peterson (2006), these types of character strengths interventions have been systematically tested (among adults) and demonstrated to have long-term positive effects on happiness.

Each booklet begins with the title 'Spotting Your Strengths'. Strengths are defined here as 'your best qualities'. Students are asked: 'Which strengths do you think describe you best?' and invited to pick five strengths from the list of 24 (VIA) strengths and their descriptions listed on the next three pages. Once they have chosen their five strengths they are asked to write them down in the space provided on p. 1. The introductory text before the first lesson reads:

Over the course of the next few months we are going to be exercising our strengths, like muscles! You will build your favourite strengths and learn to use others even more. You will become expert 'strengths spotters' – spotting strengths in your classmates AND your teachers. (Proctor & Fox Eades, 2009, p. 1)

The first lesson in each booklet is 'Love of Beauty' and the description of the strengths is again provided: 'Love of Beauty means: You notice and love beautiful things, in nature, art, music, or people'. In the Year 8 booklet, for example, the following exercises then follow:

#### Strengths Builders:

- (1) Strengths in action story – Can you remember a time when you or somebody you know truly showed their Love of Beauty? Write or draw or tell a story of Love of Beauty in action.
- (2) Animal beauty contest – Which animals do you consider beautiful? Why? Work with some friends to collect different examples of beautiful animals and then see if you can put them in order of beauty. Which is the most beautiful, which one comes next? Compare your list with another Group.

#### Strengths Challenge:

Look for beauty on your way to school. Tell a friend or family member what you noticed. (Proctor & Fox Eades, 2009, p. 5)

Each booklet level completes by providing students with the opportunity to list any strengths they found difficult but persisted to learn, space to write about things they are proud of accomplishing, and an opportunity to re-evaluate their top five strengths now that they have had a chance to learn about all 24 character strengths.

Participating schools were supplied with the student materials at the beginning of the January 2009 term and provided with a 6-month period in which to use the materials. In the Channel Islands, the program was incorporated into class time during weekly Personal, Social, and Health Education (PSHE) classes. In Cheshire, the program was implemented during weekly morning tutor period. Teachers of both schools were provided with copies of the appropriate Year 8 or Year 9 student booklet for their class and a handout containing information on character strengths, the principles behind the program, using the program, and the aims of the Strengths Builder and Strengths Challenge components of the student booklets; teachers received no further training or coaching beyond the written materials. The program was designed to be flexible in order to enable teachers to suit the needs of their individual classes. Strengths Builder and Strengths Challenge exercises can be completed solitarily or collaboratively and may vary in how long they take to complete; some may take only minutes while others may be turned into an hour-long lesson, depending on the motivation and interest of the students. Therefore teachers were instructed to use the program as it had been designed and combine teacher-led lessons, open discussion, and independent student or small group work when completing the exercises contained within the student booklets. Given the length of the program and the varying nature of the exercises, it was anticipated that teacher's would complete approximately 50% of the 24 included lessons. Moreover, anticipating this level of completion was in keeping with the amount of sessions delivered by other similar programs (e.g., Seligman et al., 2009). All participants completed the survey battery again ( $t_1$ : post-test scores) at the end of term (i.e., July 2009). Participating teachers completed on average 23.25% ( $M = 5.58$  lessons, range 3–12 lessons [12.50%–50%],  $SD = 3.51$  lessons [14.63%]) of the 24 lessons included in the program.

In both participating schools, students attending classes assigned to the comparison condition were not required to participate in an additional activity during PSHE or morning tutor period, but attended their scheduled class as normal. Thus, in the Channel Islands, the Year 9 comparison condition attended their scheduled weekly PSHE lessons, and in Cheshire, two Year 8 and two Year 9 classes attended their scheduled morning tutor period without the inclusion of the Strengths Gym activities.

### Overview of data analysis

Of the 341 returned surveys, 7 contained identifiable response patterns (e.g., selection of all 1s or 2s), 4 contained inconsistent responding (i.e., no variability), and 11 were later confirmed as outliers. As recommended by Birnbaum (2004), these 22 individuals were removed before analysis. Therefore, a total of 319 students were retained for data analysis. Among these 319 retained surveys, the midpoint between any items in which two responses were indicated was taken as the scored response. For missing items, the scale total score was summed and divided by the number of items completed; reverse-scored items were reversed before calculation. All participants had scores for life satisfaction, but three (<1%) participants were missing scores for PA, three (<1%) for NA, and 49 (15%) for self-esteem. These participants were omitted from their respective analyses. Missing ages were assigned based on the majority of the year condition (i.e., 13 for Year 8 and 14 for Year 9) and checked against baseline and post-test indications of age where available; in the Channel Islands seven students failed to indicate their age at post-test; in Cheshire, six students failed to indicate their age at baseline, six at post-test, and two at both baseline and post-test.

In line with previous research, examination of the scoring distribution of all measures was conducted in order to assess for outliers and to test for multivariate normality. All scores were first transformed into  $z$  scores. As recommended by Tabachnick and Fidell (2001), all  $z$  scores in excess of the  $\pm 3.29$  range were removed. This resulted in 11 individuals being excluded from the data. Skewness and kurtosis were all within acceptable limits with the value of each variable ranging from  $-0.786$  to  $0.961$  for skewness and  $-0.526$  to  $0.575$  for kurtosis.

As students were nested within classrooms and classrooms were assigned to condition, we used hierarchical linear modeling (HLM) to assess condition differences. Baseline levels of the outcome, sex, and age were treated as covariates at Level 1 (the student level) and School and year were treated as covariates at Level 2 (the classroom level). An alpha level of 0.05 was used for all statistical tests.

### Results

Internal consistency reliabilities and descriptive statistics for the study variables are presented in Table 1. The results of our main analyses are presented in Table 2.

Compared to adolescents who did not participate in character strengths-based exercises as part of the school curriculum, adolescents who participated had higher levels of life satisfaction when controlling for baseline life satisfaction, sex, age, school, and year

(difference = 0.18,  $t(14) = 2.20$ ,  $p = 0.045$ ,  $r_{\text{effect}}^3 = 0.51$ ). Similar models found a marginally significant effect of condition on PA (difference = 0.16,  $t(14) = 1.86$ ,  $p = 0.084$ ,  $r_{\text{effect}} = 0.45$ ), but no effect on NA (difference =  $-0.10$ ,  $t(14) = -1.69$ ,  $p = 0.11$ ,  $r_{\text{effect}} = 0.41$ ) or self-esteem (difference = 0.07,  $t(14) = 1.28$ ,  $p = 0.22$ ,  $r_{\text{effect}} = 0.32$ ). All of these effects are at least marginally significant using robust standard errors (Table 2), but 'Use of these robust standard errors is most appropriate when the number of highest-level units is large' (Raudenbush & Bryk, 2002, p. 276).

In order to test for between-condition differences at baseline, we used HLMs with condition as a Level 2 predictor of the Level 1 covariates (in separate models). For the classroom level predictors (school and year), we conducted chi-square tests with classroom as the level of analysis. There were no significant differences at baseline,  $p$ 's  $\geq 0.12$ .

We also examined baseline by condition interactions in order to test whether the effects of the intervention differed for students with different levels of the outcome at baseline. None of the baseline by condition interactions – life satisfaction ( $p = 0.15$ ), PA ( $p = 0.57$ ), NA ( $p = 0.57$ ), and self-esteem ( $p = 1.00$ ) – were significant.

### Discussion

Students who participated in character strengths-based exercises had higher life satisfaction than students who did not participate in the exercises, controlling for baseline life satisfaction, age, gender, school, and year. Because controlling for prior levels of the outcome changes the interpretation of the outcome into a measure of change (Fleeson, 2007), the results suggest that the intervention increased life satisfaction.

Positive psychological interventions in general, and character strengths-based activities specifically, have been demonstrated to lead to increased happiness and well-being among both adults and youth (Seligman et al., 2005, 2009; Sin & Lyubomirsky, 2009). The purpose of this preliminary research study was to test the application of a general positive psychology intervention in the school curriculum, which involves exploration of the 24 VIA strengths through character strengths-based exercises, on the life satisfaction and well-being of adolescent students.

Similar to the findings reported by Seligman et al. (2005) among adults, this study suggests that character strengths-based exercises have a beneficial effect on adolescent happiness (i.e., life satisfaction). In general, results of this study show that regular participation in character strengths-based exercises has a positive impact on life satisfaction among adolescents. Specifically, results of this study supported the hypothesis that adolescent life satisfaction would be

Table 2. HLM results for the effect of condition in separate models for each outcome.

Outcome	Estimate	SE	<i>T</i>	df	<i>p</i>	<i>p</i> <sub>RSE</sub>	<i>r</i> <sub>effect</sub>	<i>n</i>
SLSS	0.18	0.08	2.20	14	0.045	0.001	0.51	319
PA	0.16	0.08	1.86	14	0.084	0.054	0.45	316
NA	-0.10	0.06	-1.69	14	0.113	0.004	0.41	316
RSE	0.07	0.06	1.28	14	0.222	0.076	0.32	270

Notes: Baseline measures of the outcome, age, gender, school, and year were used as covariates. *p*<sub>RSE</sub>, *p*-value with robust standard errors; *r*<sub>effect</sub>, effect-size correlation.

significantly improved among adolescents who participated in a character strengths-based program as part of the school curriculum, when compared to adolescents who did not participate in a character strengths-based program as part of the school curriculum. Indeed, statistical analysis indicated that change in life satisfaction from baseline to post-test was significantly higher among the experimental condition than that of the comparison condition. Moreover, results supported the hypothesis that adolescents who participated in the program would have higher scores on PA and self-esteem, and lower scores on NA at post-test than a comparison condition of adolescents who did not participate in the program.<sup>4</sup> Considering the relationship between these variables and life satisfaction, it is reasonable to suggest that implementation over a longer period of time may also lead to significant outcomes among these variables, however further research is required in order to confirm this.

The magnitude of the relationship between condition and post-test life satisfaction is notable, with an effect-size correlation of  $r = 0.51$  after controlling for baseline life satisfaction, school, year, age, and gender. Although extant research confirms that the majority of adolescents report average levels of life satisfaction (as evidenced by the baseline SLSS scores of the participants of this research) the importance of increasing low life satisfaction to normative levels and maintaining and increasing positive levels of life satisfaction among those reporting average levels of life satisfaction cannot be overemphasized (Park, 2004; Seligman et al., 2009). Implementing well-being interventions and programs in the school curriculum not only increases subjective feelings of happiness among students, but also protects them against the negative effects of stress and the development of psychopathological problems (Park, 2004; Seligman et al., 2009).

Overall, this preliminary research study revealed several noteworthy limitations of the research that need to be addressed prior to a future larger study being conducted. Firstly, because classrooms were assigned to condition, our effective degrees of freedom were based on the number of classrooms rather than the number of participants in the study.

Consequently, although the estimated effect sizes of the program on PA, NA, and self-esteem were large, they were not statistically significant. Future studies should examine the effects of the program on a larger scale across more schools and classrooms.

Secondly, future studies examining the impact of this program on adolescent life satisfaction should take place over the entire school year in order to insure that teachers have enough time to build all the 24 lessons into the school curriculum and for the program to have a greater impact. Indeed, meta-analytic research findings have shown that longer interventions are more likely to produce greater gains in well-being as participants have more time to turn the positive activities in to habits (Sin & Lyubomirsky, 2009). Moreover, as a teacher's manual for this program has been developed since this preliminary research study was undertaken, future research should assess the outcomes of the program (i.e., student materials) when used in conjunction with individual lesson plans designed for the teaching of positive psychological theory in general and character strengths specifically (i.e., as presented in the teacher's manual). Further, future research may look to compare the outcome of using the teacher's manual and student booklets alone versus including a teacher training condition. Moreover, in this study participating classroom teachers administered the student surveys at baseline and post-test; future studies should have individuals not delivering the program administer the surveys.

Thirdly, as the participants were assigned to either the experimental or comparison conditions by the participating schools based on convenience, an analysis of potential differences in effectiveness of the three levels of the program could not be conducted across the three school year groups it was designed for (i.e., Years 7, 8, and 9) and generalizability of the results was not possible. Future research is required in which randomly assigned classes from separate year groups participate in each one of the three levels of the program in order to determine the relative effectiveness of each level. Moreover, in order to measure the integrity of the program, future studies should insure the specific duration and intensity of the implementation of the program. Further, longitudinal studies

conducted over a 3-year period are required in order to determine any incremental effect on well-being by progressing through all three levels of the program. In addition, future research may look to examine the differential effect on adolescent well-being of focusing on signature strengths as determined by the VIA-Youth compared to focusing broadly on all 24 VIA strengths. Finally, this study relied entirely on self-report measures to assess outcome, future research should include the addition of objective measures of success, such as grade point average.

Preliminary findings of this research suggest that participation in character strengths-based exercises in the school curriculum, even over a short period of time, resulted in significantly increased life satisfaction and slightly increased PA and self-esteem. In line with Fredrickson's (2001) broaden-and-build theory of positive emotions, these findings suggest that the positive emotions experienced from building and exercising character strengths, and the increased life satisfaction that results from it, will serve to form enduring personal resources enabling youths to flourish in many areas of life. Therefore, additional research examining the impact of this intervention will be valuable to future consumers wishing to implement such programs in the school curriculum.

### Conclusion

In general, findings of this study support the hypothesis that implementation of positive psychological theory in the school curriculum through the application of student materials specifically designed to exercise and build strengths will positively impact life satisfaction among adolescents. Overall, findings reported here are very encouraging and provide support for conducting a larger longitudinal study of the application of character strengths-based exercises in the school curriculum.

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### Notes

1. This article includes a term (Strengths Gym) that is or is asserted to be a proprietary term or trade mark. Its inclusion does not imply that it has acquired for legal purposes a non-proprietary or general significance, nor is any other judgment implied concerning its legal status.
2. There was no differential attrition by condition (i.e., experimental vs. comparison),  $p = 0.14$ . Because students were nested within classrooms, we estimated

hierarchical linear models for our attrition analyses. Attrition was treated as a binary outcome, and experimental condition was a classroom-level predictor. We also conducted analyses to examine whether students who had post-test data differed from those who did not, and whether this pattern differed by condition. Although attrition was associated with baseline life satisfaction ( $p = 0.036$ ; participants had higher life satisfaction), this association was not moderated by condition ( $p = 0.32$ ). Similarly, attrition was marginally associated with baseline NA ( $p = 0.057$ ; participants had lower NA), self-esteem ( $p = 0.06$ ; participants had higher self-esteem), and gender ( $p = 0.063$ ; participants were more likely to be male), but their interactions with condition were non-significant ( $p$ 's  $> 0.43$ ). Baseline PA ( $p = 0.25$ ), age ( $p = 0.55$ ), school ( $p = 0.62$ ), and year ( $p = 0.76$ ) were not related to attrition, and their interactions with condition were also not significant ( $p$ 's  $> 0.72$ ).

3. Following Duckworth, Tsukayama, and May (2010), we computed the effect size correlation as the square root of  $[t^2/(t^2 + df)]$  (Rosenthal & Rosnow, 1991, p. 441).
4. Although these effects were not statistically significant, the point estimates were in the predicted direction, and the large effect sizes suggest that these results were not significant because of the small effective sample size (based on the number of classrooms).

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