



Positive psychopathology: Social anxiety via character strengths underuse and overuse



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ABSTRACT

Despite a number of theoretical propositions suggesting that character strengths are multidimensional and may have darker sides, to date strengths have been approached strictly as a positive entity. The current study sought to (a) define and measure these darker sides of character strengths in the form of underuse–overuse, as well as their traditionally positive counterpart—optimal use—and their associations with positive and negative outcomes, and (b) explain the role of specific strengths' underuse–overuse in social anxiety.

Based on an international sample of 238 adults, we found that general character strengths underuse and overuse were related to negative outcomes, while optimal use was related to positive outcomes. The overuse of social intelligence and humility, and underuse of zest, humor, self-regulation and social intelligence was associated with social anxiety. Using discriminant analysis, this combination successfully re-sorted 87.3% of the participants into those that do and do not have clinical levels of social anxiety. These findings suggest that strengths are in fact multifaceted, providing novel insight into the role that sub-optimal-use facets play in undesirable outcomes, providing a glimpse of psychopathology through the lens of positive psychology.

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1. Introduction

Positive psychology has set a mission to help people flourish and experience 'the full life' (Park, Peterson, & Seligman, 2004). Among the building blocks of positive psychology are character strengths (CSs), a set of 24 intrinsically fulfilling, ubiquitous traits, valued across cultures and nations, and viewed as central components of a fulfilling life (Peterson & Seligman, 2004). Examples of these character strengths include curiosity, kindness, fairness, perseverance, humility, and hope. Much like the DSM's outline of psychopathology criteria, the *Character Strengths and Virtues Handbook* (CSV; Peterson & Seligman, 2004) describes the roots, manifestations and benefits of CSs.

Notwithstanding their benefits, Peterson laid out a framework that describes the 'darker' sides of CSs, looking at psychopathology through the lens of positive psychology. In his alternate vision of human malfunction, Peterson viewed deviations from strengths—in their under, over, or opposite expression—as indicative of negative functioning and psychopathology (see Peterson, 2006). This theoretical proposal

has been further reworked into a user-friendly framework that is sensitive to context and offers a continuum from strengths overuse to underuse with optimal use in the center (Niemiec, 2014), suggesting that a balanced use of strengths represents the Aristotelian *golden-mean* (optimal use) between the underuse and overuse of each strength (See nomenclature in Table 1).

The current study is a preliminary attempt to provide empirical support for these theoretical propositions by examining how CS facets relate to both positive and negative outcomes, and by examining 'darker' sides of CSs in more detail and in tandem with an existing disorder.

CSs have traditionally been shown to be related to a host of desirable outcomes (e.g., Park et al., 2004), their deployment resulting in increased meaningfulness (Littman-Ovadia & Steger, 2010) and better daily mood (Lavy, Littman-Ovadia, & Bareli, 2014). However, it is now of interest to determine whether optimal strength use is associated with positive outcomes in the same way as do high monotonic expression of strengths.

H1. Optimal use of CSs will be positively correlated to (a) life satisfaction and (b) flourishing, and negatively correlated to (c) depression.

Since optimal use of strengths is predicted to be linked to desirable outcomes, it follows that strengths' under-overuse should be associated with negative outcomes.

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Table 1
Use distribution.

Strength	Use type	Mean	Std. Deviation
Creativity	Underuse (conformity)	18.56	20.03
	Optimal use	62.49	21.78
Curiosity	Overuse (eccentricity)	18.95	13.28
	Underuse (disinterest)	13.00	15.01
	Optimal use	71.95	20.06
Judgment	Overuse (nosiness)	15.05	15.85
	Underuse (unreflectiveness)	18.58	17.73
	Optimal use	63.25	21.62
Love of Learning	Overuse (cynicism)	18.17	14.59
	Underuse (complacency)	4.29	8.40
Perspective	Optimal use	74.04	22.05
	Overuse (know-it-all-ism)	21.67	20.90
	Underuse (shallowness)	12.63	12.23
Bravery	Optimal use	71.07	17.83
	Overuse (overbearing)	16.30	15.03
	Underuse (cowardice)	37.56	27.10
Perseverance	Optimal use	52.91	25.92
	Overuse (foolhardiness)	9.53	13.50
	Underuse (fragility)	15.56	18.96
Honesty	Optimal use	62.65	22.62
	Overuse (obsessiveness)	21.79	18.41
	Underuse (phoniness)	21.00	20.33
Zest	Optimal use	61.13	22.35
	Overuse (righteousness)	17.87	16.13
	Underuse (sedentary)	20.00	22.05
Love	Optimal use	66.67	23.56
	Overuse (hyperactivity)	13.33	15.70
	Underuse (emotional isolation)	10.28	15.65
Kindness	Optimal use	69.83	24.29
	Overuse (emotional promiscuity)	19.89	20.39
	Underuse (indifference)	9.74	13.25
Social Intelligence	Optimal use	78.15	17.22
	Overuse (intrusiveness)	12.11	13.07
	Underuse (cluelessness)	8.33	13.92
Teamwork	Optimal use	59.01	24.67
	Overuse (over-analysis)	32.66	23.43
	Underuse (selfishness)	35.55	30.77
Fairness	Optimal use	52.62	28.60
	Overuse (dependency)	11.83	15.39
	Underuse (partisanship)	22.10	19.77
Leadership	Optimal use	67.90	22.18
	Overuse (detachment)	10.00	14.27
	Underuse (compliance)	26.81	25.22
Forgiveness	Optimal use	67.17	25.93
	Overuse (despotism)	6.02	11.79
	Underuse (mercilessness)	20.01	22.03
Humility	Optimal use	65.87	26.01
	Overuse (permissiveness)	14.12	17.77
	Underuse (baseless self-esteem)	21.31	21.96
Prudence	Optimal use	68.70	23.57
	Overuse (self-deprecation)	9.99	13.61
	Underuse (sensation-seeking)	22.57	23.07
Self-Regulation	Optimal use	60.80	24.32
	Overuse (stiffness)	16.63	18.32
	Underuse (self-indulgence)	26.51	21.43
Appr. of Beauty/Excel.	Optimal use	63.85	23.52
	Overuse (inhibition)	9.64	12.17
	Underuse (oblivion)	6.32	11.50
Gratitude	Optimal use	63.50	26.29
	Overuse (perfectionism)	30.18	27.03
	Underuse (rugged individualism)	11.05	16.84
Hope	Optimal use	69.17	22.43
	Overuse (ingratiating)	19.78	20.78
	Underuse (negativism)	14.00	19.19
Humor	Optimal use	68.87	24.39
	Overuse (pollyanna-ism)	17.13	18.10
	Underuse (over-seriousness)	10.99	15.47
Spirituality	Optimal use	78.87	18.98
	Overuse (giddiness)	10.14	13.73
	Underuse (anomie)	13.20	25.88
	Optimal use	64.65	30.61
	Overuse (fanaticism)	22.15	27.14

Note: Strengths nomenclature adopted from Peterson and Seligman (2004), and under-overuse nomenclature from Niemiec (2014).

H2. Under-overuse of CSs will be positively correlated to (a) depression, and negatively correlated to: (b) life satisfaction and (c) flourishing.

To examine the possibility that under-overuse of CSs may be related to the absence of mental health, we deemed social anxiety disorder (SAD) as appropriate for investigation, being an easily screened (Modini, Abbott, & Hunt, 2015) and very common psychological disorder, with lifetime prevalence of 12.1% (Kessler et al., 2005).

2. Social anxiety disorder

In the DSM (American Psychiatric Association, 2013) an individual with SAD is regarded as “fearful or anxious about or avoidant of social interactions and situations that involve the possibility of being scrutinized... fearing that he or she will act in a way or show anxiety symptoms that will be negatively evaluated” (p. 202). Social anxiety runs on a continuum, with its lower levels reflecting phenomena such as shyness, up to its higher levels, characterizing SAD (Rapee & Heimberg, 1997).

The cognitive behavioral model of social anxiety posits that one of SAD's core processes is represented in the gap between the perceived high-social expectations of others and lowly perceived self-social-performance, both misinterpreting social settings and continually monitoring self and others (Rapee & Heimberg, 1997). The underuse of social intelligence (Peterson & Seligman, 2004) is characterized as cluelessness, being unaware of or misunderstanding others, while overuse is characterized by an over-analysis of one's own and others' emotions, nonverbal behavior, and social nuances (Niemiec, 2014). Therefore:

H3. Overusing and underusing social intelligence will be positively associated with social anxiety.

Socially anxious individuals suffer from the paradox of attempting to stringently control themselves prior to and during social interaction, but ultimately failing to exercise control in social encounters (Kashdan, Weeks, & Savostyanova, 2011). The strength of *self-regulation* represents the individual's ability to regulate and control one's emotions, thoughts, impulses, and behaviors (Peterson & Seligman, 2004). Despite their efforts at self-regulation, anxious individuals will ultimately underuse this strength.

H4. Underusing self-regulation will be positively associated with social anxiety.

SAD individuals more readily accept negative experiences and have fewer positive experiences (Kashdan et al., 2011) and less life satisfaction (Jazaieri, Goldin, & Gross, 2016). The strength of *zest*, on the other hand, reflects the excitement and vitality in human functioning (Peterson & Seligman, 2004) and has been robustly associated with life satisfaction (Proctor, Maltby, & Linley, 2011), suggesting the following hypothesis:

H5. Underusing zest will be positively associated with social anxiety.

A central feature of social anxiety is the negative interpretation of social information (Rapee & Heimberg, 1997). Phenomena such as laughter have also been found to be more negatively interpreted as levels of social anxiety rise (Ritter, Brück, Jacob, Wildgruber, & Kreifelts, 2015). Peterson and Seligman (2004) defined the humorous individual as one who easily laughs, gently teases, sees the light side of a situation and makes jokes. The negative interpretation characteristic of SAD subjects, as well as the interpersonal channels often used to convey humor, suggest the following hypothesis:

H6. Underusing humor will be positively associated with social anxiety.

Over-sensitivity to external evaluation is one of the hallmarks of SAD, with behavioral symptoms often responsible for avoiding or controlling external evaluation (Hofmann, 2007), including positive feedback (Weeks, Jakatdar, & Heimberg, 2010). *Humility* represents the

ability to let one's accomplishments stand for themselves, without seeking the spotlight for undue or due acts (Peterson & Seligman, 2004). Socially anxious individuals' avoidance of negative as well as positive evaluation may suggest that they may be *too* humble or modest, actively seeking to avoid praise:

H7. Overusing humility will be positively associated with social anxiety.

3. Method

3.1. Participants and procedure

A total of 238 participants (51 men, 187 women) aged 19–80 ($M_{\text{age}} = 46.87$; $SD_{\text{age}} = 12.77$) from the general population fully responded to the study, as posted on international positive psychology related websites (73% of the respondents were from English speaking countries). Data were collected online over a two-month period.

Questionnaires were designed using the Qualtrics (<http://www.qualtrics.com>) platform. To promote recruitment, participants were entered in a drawing for a positive psychology course. Participants were requested to confirm that they were over 18 years of age and consent to participate.

3.2. Measures

Strengths optimal use, underuse, and overuse were examined by a questionnaire developed for the current study. Optimal use was assessed similarly to Littman-Ovadia and Steger (2010) approach, in providing participants with monotonic strengths descriptions (based on Harzer & Ruch, 2013), and requesting that they indicate the extent to which they use, or deploy, each strength. A sample item included, 'Forgive others when they've upset or hurt you,' reflecting the strength of *forgiveness*. For this multi-faceted examination of strengths a graphic presentation was used, with existing optimal use items centered, and relevant underuse and overuse facets presented on either side of each optimal use. For example, to the left of the description of forgiveness, the underuse item reads, 'Can't forgive, hold a grudge, or even seek revenge,' representing *mercilessness*, while, 'Don't hold others responsible for hurting me; allow everything,' appears to the right, representing *permissiveness*. In considering the contextual approach (Niemiec, 2014), participants are asked to allocate 100% of their use across the three facets of each strength. The items were developed in conjunction with the CSV (Peterson & Seligman, 2004), Peterson (2006) and Niemiec's (2014) conceptualizations.

A pilot study of 57 participants from the general population demonstrated that the optimal-use factor achieved a Cronbach alpha of 0.91, while the under-overuse factors had alphas of 0.86 and 0.83, respectively. The final sample's ($N = 238$) alphas were 0.84 for underuse, 0.89 for optimal use and 0.75 for overuse.

Life satisfaction was assessed by the Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985), examining general life satisfaction on five items, rated on a 7-point Likert-type scale, including, 'In most ways, my life is close to ideal' (Diener et al., 1985). The present sample's alpha was 0.89.

Flourishing was assessed by The Flourishing Scale (FS; Diener et al., 2010), developed to measure self-perception of functioning, based on the summation of positive relationships, feelings of competence, and a meaningful life. The scale comprised eight items rated on a 7-point Likert-type scale, including, 'My social relationships are supportive and rewarding.' The present sample had an alpha of 0.86.

Depression was assessed by the Patient Health Questionnaire-9 (PHQ-9; Kroenke, Spitzer, & Williams, 2001), developed to measure severity of depression by examining the presence of nine symptoms during the previous two weeks. This 4-point Likert-type scale, ranging

from, 'Not at all,' to, 'Nearly every day,' included items such as, 'Feeling down, depressed or hopeless.' In comparing the PHQ-9 with the most prevalent depression assessment, the Beck Depression Inventory-II, it was suggested that, while the two scales are essentially interchangeable, the PHQ-9 has the advantages of being shorter and free to use (Kung et al., 2013). The present sample's alpha was 0.85.

Social anxiety was measured by the Social Interaction Anxiety Scale (SIAS; Mattick & Clarke, 1998), recently demonstrated to be one of the best and most widely used tools in SAD assessment (Modini et al., 2015). The scale comprised twenty items rated on a 5-point Likert-type scale, including, 'I get nervous if I have to speak with someone in authority (teacher, boss, etc.).' Subjects diagnosed with SAD have obtained scores of 34 and higher (Mattick & Clarke, 1998). The present sample's alpha was 0.93.

3.3. Data analysis

Data were examined using descriptive statistics, Pearson correlations, a simultaneous linear regression and discriminant analysis.

4. Results

4.1. Preliminary analyses

The distributions of under-overuse and optimal use in each strength are presented in Table 1. Generally, strength use was normally distributed between the three types of uses in each strength.

Means and standard deviations of the dependent variables are shown in Table 2. The sample was generally not depressed and relatively high in flourishing and life satisfaction, as indicated by item means.

4.2. Hypotheses testing

H1 and H2 were examined by zero-order correlations. Table 2 also presents the inter-correlations between the outcome variables: depression, life satisfaction and flourishing, and overall under-overuse and optimal use of all strengths. H1 was supported as optimal use was positively and significantly correlated ($p < 0.001$) at $r = 0.49$ with life satisfaction and at $r = 0.61$ with flourishing. H2 was also supported as underuse was significantly ($p < 0.001$) associated with depression ($r = 0.43$), and overuse was significantly ($p < 0.001$) correlated to depression ($r = 0.34$). Using Steiger's (1980) Z, it was determined that underuse was correlated significantly higher, compared to overuse, with flourishing and life satisfaction ($z = 5.63$, $p < 0.001$ and $z = 3.46$, $p < 0.001$, respectively). The differences between the two types of use and depression was not significant, ($z = 1.25$, $p = 0.11$).

H3 through H7 were first examined by zero-order correlations between specific zones of specific strengths and social anxiety. All hypotheses were supported as underuse of zest ($r = 0.57$), humor ($r = 0.18$), social intelligence ($r = 0.29$), self-regulation ($r = 0.42$) and overuse of modesty ($r = 0.29$) and social intelligence ($r = 0.27$) were all significantly related to social anxiety, $M = 22.46$, $SD = 13.60$, $p < 0.001$.

In order to examine whether the combination of the hypothesized under-overuses predict social anxiety and differentiate between SAD and non-SAD participants, two analyses were conducted.

First, a simultaneous regression, examining the profile's ability to predict levels of social anxiety, was conducted. The overuse of modesty

Table 2
Correlations.

	Underuse	Optimal Use	Overuse	Mean	SD.	Range
Depression	0.43**	-0.50**	0.34**	5.80	4.87	0–27
Flourishing	-0.64**	0.61**	-0.27**	5.84	0.88	1–7
Satisfaction with Life	-0.49**	0.49**	-0.24**	4.87	1.02	1–7

** Correlation is significant at the 0.01 level (2-tailed).

Table 3
Standardized canonical coefficients and structure weights from discriminant function model.

	Standardized coefficients	Structure weights
Zest underuse	0.60	0.77
Self-regulation underuse	0.41	0.63
Humor underuse	0.31	0.35
Social intelligence overuse	0.22	0.34
Humility overuse	0.20	0.31
Social intelligence underuse	0.12	0.29

and social intelligence, along with the underuse of social intelligence, zest, self-regulation and humor were entered as independent variables in a simultaneous regression, with social anxiety as dependent. The model, comprising all the above variables, except the underuse of humor, accounted for over half the variance in social anxiety ($R^2 = 0.51$, $F(6205) = 35.81$, $p < 0.001$).

Second, a discriminant analysis (DA), examining the profile's ability to predict SAD, was conducted. Prior to conducting DA, to get a clearer differentiation between SAD and depression, participants with moderate to high depression levels (as determined by the PHQ-9 score > 9) were excluded from the analysis, such that the test sample for this procedure comprised 212 participants. DA was performed to examine the profile's ability to accurately sort participants into one of the two groups: subjects with SAD (as determined by the SIAS score > 34) and those without SAD. The overall Chi-square test was significant (Wilks $\lambda = 0.62$, Chi-square = 99.88, $df = 6$, Canonical correlation = 0.62, $p < .001$); the function accounted for nearly 40% of the variance in SAD. Table 3 presents the standardized discriminant function coefficients and structure weights, showing that the underuse of zest was most influential in this function.

As groups were not of uniform size, prior probabilities were computed from group sizes. A profile is considered successful when its accuracy is 25% higher than would be achieved by chance (Burns & Burns, 2008), and in this case there was 77.3% to be sorted into the 'normal' group by chance, and 22.6% chance to be sorted into the SAD group. The proposed combination achieved accuracy rates of 95.1% and 60.4%, respectively. Reclassification of cases based on the new canonical variables was highly successful: 87.3% of the cases were correctly reclassified into their original categories. The classification results are presented in Table 4.

To further support the profile's sorting capability, group sizes were equated by randomly reducing the larger group to a similar size as the SAD group ($N_{SAD} = 48$; $N_{random_normal} = 50$), such that the probability of being assigned into one of the two groups by chance was roughly 50%. As group sizes were equal, conditions had almost equal and opposite values at the centroids (centroid difference of 1.9). In this case, 78.6% of original cases were accurately reassigned. The overall

Table 4
SAD vs. Non-SAD groups classification results^{a,b}.

		Predicted group membership			Total
		SAD group	0.00	1.00	
Original	Count	0.00	156	8	164
		1.00	19	29	48
	%	0.00	95.1	4.9	100.0
		1.00	39.6	60.4	100.0
Cross-validated ^c	Count	0.00	156	8	164
		1.00	21	27	48
	%	0.00	95.1	4.9	100.0
		1.00	43.8	56.3	100.0

^a 87.3% of original grouped cases correctly classified.

^b 86.3% of cross-validated grouped cases correctly classified.

^c Cross validation is done only for those cases in the analysis. In cross validation, each case is classified by the functions derived from all other cases.

Chi-square test was significant, explaining more variance than with unequal groups (Wilks $\lambda = 0.53$, Chi-square = 58.73, $df = 6$, Canonical correlation = 0.68, $p < .001$).

5. Discussion

The current study examined whether CSs can be optimally, over and underused, as well as their relationships to positive and negative outcomes. Further, this study attempted to demonstrate that the overuse of modesty and social intelligence, along with the underuse of social intelligence, zest, self-regulation and humor are related to and play a significant and unique role in SAD.

The first two hypotheses were confirmed. The finding that individuals that primarily use their CSs optimally also flourish and are more satisfied suggests that strengths can in fact be optimally used, leading to positive outcomes. The finding that individuals that primarily underuse or overuse their CSs are more depressive provides the first indication of its kind that strengths can be used 'incorrectly,' thereby impairing mental health. While CS deployment, herein defined as optimal use, had been previously shown to bring a variety of positive outcomes (Littman-Ovadia & Steger, 2010), no studies have previously examined CS under-overuse or the association of general strengths use with depression, though decreased strengths use has been associated with lower vitality and higher stress, constructs related to depression (Wood, Linley, Maltby, Kashdan, & Hurling, 2011).

Interestingly, underuse had stronger relationships with negative outcomes than did overuse. Underuse may represent a dormant or mindless state in which languishing—a void, hollow, empty state (Keyes, 2002)—is likely, while with overuse the individual still brings their best qualities forward, despite negative outcomes.

The confirmation of the third through the seventh hypotheses suggests that a few specific CS under-overuses are related to and can characterize SAD.

Both overuse and underuse of social intelligence were found to be associated with social anxiety, representing socially anxious individuals' over-awareness and unawareness, their attempting to analyze and monitor social situations with the simultaneous feeling of ineptness (Rapee & Heimberg, 1997). Research indicates that SAD represents weaker social skills (Schneider & Turk, 2014), and social intelligence may, therefore, be underused or overused.

Underuse of self-regulation was found to be associated with social anxiety, supporting Hofmann's (2007) suggestion that low perceived emotional control is part of the core processes maintaining social anxiety, corresponding to the inverted association found between perceived control and social anxiety in a recent empirical study (Korte, Unruh, Oglesby, & Schmidt, 2015).

The direct association found between underuse of zest and social anxiety is novel. The notion that socially anxious individuals underuse the strength that speaks of excitement for life may provide new insight into the debilitating nature of SAD. This finding, together with the known negative associations between anxiety and positive outcomes, may suggest a novel mechanism for explaining diminished positive outcomes in SAD. The underuse of zest may also underpin the avoidance behaviors characteristic to SAD subjects (Hofmann, 2007).

The only study examining the direct relationship between humor and social anxiety (Kuiper, Comeau, Klein, & Maiolino, 2014) showed that lower affiliative humor use predicted social anxiety, beyond classic cognitive mechanisms. Humor may play a lesser role in the repertoire of the socially anxious, as SAD individuals may more readily process negative cues (Gilboa-Schechtman, Franklin, & Foa, 2000) and have more difficulty processing positive experiences (Kashdan & Steger, 2006).

The finding that individuals with social anxiety overuse humility, the avoidance of seeking of positive evaluation, is consistent with the notion that they tend to shun both negative and positive external evaluation (Weeks, Heimberg, Rodebaugh, & Norton, 2008).

This study lays a cornerstone in CSs research, demonstrating that optimal use, underuse and overuse of CSs exist and can be measured. In this first empirical examination, our findings suggest that specific CS under-overuses could underlie pathology, such as SAD. A fresh outlook on psychopathology is offered – through the lens of positive qualities or their absence, providing further insight into psychopathology and its mechanisms. As such, this was a first entry into a potentially comprehensive taxonomy of CSs under-overuse profiles characterizing various pathologies. The added benefit of such a conceptualization is the built-in description of the normal, or beneficial and therefore optimal use of each strength. In this manner, the selection of under-overuses would indicate which CSs need to be tuned in order to strengthen the character.

Such a taxonomy could comprise a response to Peterson's (2006) call to improve on the complex and vague diagnostic system of the DSM (American Psychiatric Association, 2013). Future research should seek a deeper understanding of under-overuse and optimal use itself, as well as their role in various characters. Focusing on enhancing (or diminishing) specific CSs, in addition and in tandem with traditional elimination of negative symptoms, will facilitate more comprehensive interventions. In addition, clinicians' focus on specific CS deviations will contribute to avoiding the need to label clients' conditions.

Future avenues include examining and developing novel interventions targeting specific CSs, or aiming interventions to expand individuals' signature strengths to affect under-overused CSs. From a preventative perspective, interventions targeting signature CSs may promote individual resources (Di Fabio & Saklofske, 2014). An additional avenue is applying existing therapies to discrete strength deviations (as opposed to entire DSM disorders), such as applying systematic desensitization to cowardice, the underuse of bravery (Seligman, 2015). Another intriguing direction is combining positive strength-treatments with existing pathology symptom alleviation, introducing novel positive psychology perspectives to existing approaches. For example, Kuiper et al.' (2014) findings suggest that adding a recently developed humor exercise (Maiolino & Kuiper, 2016) to existing CBT methods could be beneficial.

There are limitations, such as the use of online self-report measures, which may be prone to point-in-time biases or skewed retrospective recall (Stone, Shiffman, Atienza, & Nebeling, 2007). In addition, the employed CSs under-overuse assessment tool, although comprehensive, as it examined each strength zone, may be time-consuming and complex when administered as part of a series of questionnaires.

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