Piloting the Development of a College Student's Life Satisfaction Scale

Zachary A. Vig

Department of Psychology and Neuroscience: The University of North Carolina at Chapel Hill

Abstract

We piloted the development of a scale measuring happiness, operationalized as life satisfaction, for the population of college students. We identified six key content areas: emotional health, physical health, social/interpersonal status, sense of identity, community support, and academic status. Using a collaborative, discussion-based, research-driven approach, an initial 16 items were developed and administered to a sample (n = 27), then analyzed using the R statistical programming language. Based on the comprehensive body of quantitative (item-total correlations, item-rest correlations, "alpha-if-dropped" statistics, response frequencies, and mean/stand deviation response scores) and qualitative (bias, ambiguity, double-barreled items, potential interpretative errors) evidence, we produced a 13-item scale with a plan for further review and validation.

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Happiness is difficult to define due to its wide and varied usage in language, both colloquially and clinically. It follows, then, that measuring happiness requires a comprehensive approach to defining it. Diener et. al. (2012) group the theories of happiness into three: need and goal satisfaction theories, process or activity theories, and genetic and personality predisposition theories. In the study at hand, we specifically sought to measure the subjective, reflective dimension of happiness. Therefore, we chose to focus on the first theory, operationalizing happiness as *life satisfaction*.

As an operationalization of happiness, life satisfaction has a broad range of meanings. This can raise doubts about the need to define it as a unique construct. However, Renshaw and Cohen (2014) found that when life satisfaction is framed in a "two-continua model" – i.e., life satisfaction as a dimension of positive well-being rather than merely the absence of distress – it has greater predictive power than one-continuum models. This is evidence that life satisfaction is, itself, a unique, predictively powerful construct, if a clear, interpretable definition is established.

A review of the literature shows two important components that together define life satisfaction as a construct and operationalize it in a way that can be used to develop a scale. First, life satisfaction is a cognitive, self-evaluative construct (Frisch et. al., 2005; Paolini et. al., 2006; Pavot & Diener, 2008; Pettay, 2008; Veenhoven, 1996; Weinstein & Laverghetta, 2009). In other words, it is the way in which one perceives and evaluates his or her own life, usually along a continuum of subjectively "positive" to subjectively "negative." This concept can be summarized as one's *quality of life* (Frisch et. al., 2005; Paolini et. al., 2006; Pavot & Diener, 2008; Pettay, 2008; Renshaw & Cohen, 2014; Veenhoven, 1996; Zullig et. al., 2005).

Importantly, this implies that when measuring life satisfaction, one should consider an individual's subjective experience and self-evaluation of his or her own life, rather than rely on objectively countable evidence, e.g., *number* of productive behaviors, *size* of social network, etc. (Frisch et. al., 2005).

Second, given the subjective, self-evaluative nature of life satisfaction, it is always perceived through an equally subjective lens, one shaped by an individual's environment, experience, and circumstances. Factors shown to influence life satisfaction include social progress (Veenhoven, 1996), coping style (Buser & Kearney, 2017; Mahmoud et. al., 2012), cultural norms (Pavot & Diener, 2008), mental health (Jovanović, 2022; Paolini et. al., 2006; Renshaw & Cohen, 2014; Weinstein & Laverghetta, 2009), interpersonal relationships (Bailey & Miller, 1998), living environment (Zullig et. al., 2005), physical health (Pilcher, 1998), age (Daly, 2022), sense of identity and self-esteem (Hatano et. al., 2022; Reitz et. al., 2022), and, generally, any criteria deemed important to one's life by the individual (Pettay, 2008).

Some criticism has been raised about the subjectivity of life satisfaction (Veehnoven, 1996). However, the study at hand aims to work *with* this idea and create a scale which considers subjectivity, cognitive experience, and personal lens. Therefore, for the purposes of this study, life satisfaction will be conceptualized as *one's cognitive evaluation of his or her quality of life, made through the lens of environment, culture, and identity*.

Importantly, this definition is flexible in that it can be narrowed to fit a specific population when (a) cognitive perception and (b) personal lens are considered. In the study at hand, we wished to specifically develop our scale for the population of college students. Critically, life satisfaction has been shown to be generally declining in adolescent populations

(Daly, 2022). Therefore, the cognitive perception and personal lens of college students were considered when formulating content areas to include in our measure.

Multiple studies have found strong correlations between life satisfaction and many forms of mental health. As previously stated, Renshaw and Cohen (2014) found life satisfaction to be powerfully predictive of an array of measures when framed as a dimension of psychological well-being. Many other studies have found similar results, with life satisfaction predicting mood states, such as depression and anxiety, (Jovanović, 2022; Pilcher, 1998), worry (Paolini et. al., 2006), and stress (Buser & Kearney, 2017; Mahmoud et. al., 2012; Weinstein & Laverghetta, 2009).

Importantly, Frisch et. al. (2005) emphasize that while life satisfaction is a strong *predictor* of these measures, there is discriminant validity evidence that it truly is a *separate construct* from affect, depression, or anxiety. Therefore, to generalize these findings, we deemed one of our content areas to be *emotional health*, defined as how an individual subjectively evaluates the state of his or her psychological and emotional well-being.

In addition to emotional health, studies have also shown correlations between life satisfaction and physical health (Pettay, 2008; Pilcher, 1998; Renshaw & Cohen, 2014; Zullig et. al., 2005). Pettay (2008) found BMI, exercise, fruit and vegetable consumption, and sleep to be strong predictors of life satisfaction. Zullig et. al. (2005) found correlations between life satisfaction and the CDC's Health Related Quality of Life Scale. Importantly, these were correlational studies which used objective measures of physical health. Therefore, to specify these findings to our measure and our original definition, we deemed one of our content areas to be *physical health*, defined as how an individual subjectively evaluates the state of his or her physical well-being.

Furthermore, the literature generally agrees that life satisfaction has a social, relational element to it (Veenhoven, 1996). Bailey and Miller (1998) found that fulfilling interpersonal relationships play a significant role in life satisfaction ratings. Renshaw and Cohen (2014) found life satisfaction to correlate positively with interpersonal connectedness. In addition, social psychology research has shown that perceived social support is very important to the well-being of college students in many areas of life (Rankin et. al., 2018; Watkins & Hills, 2018). Therefore, we deemed one of our content areas to be *social/interpersonal status*, specifically defined as how an individual subjectively evaluates the nature of his or her interpersonal relationships and the effect those relationships have on his or her life.

Given that the second part of our definition focuses on the *lens* through which one perceives his or her life, we decided to formulate two content areas covering the internal element of identity and the external element of identity. In terms of the internal element, the literature shows that life satisfaction is often shaped by how an individual views him or herself as a person. Weinstein and Laverghetta (2009) define life satisfaction in terms of a comparison between one's current life and one's ideal life. Pettay (2008) defines it as being tied to those criteria that the individual sees as important to his or her life. Hatano et. al. (2022) discuss how college students specifically may have more noticeable identity issues than other populations, with other literature finding correlations between life satisfaction and self-esteem (Buser & Kearney, 2017; Pavot & Diener, 2008; Reitz et. al., 2022). Therefore, we deemed *sense of identity* as one of our content areas, specifically defined as how an individual evaluates his or her life in terms of personal identity.

In terms of the external element of identity, studies show that environment plays a significant role in shaping life satisfaction. Pavot and Diener (2008) discuss the importance of

cultural norms, with their study involving cross-cultural sampling. Zullig et. al. (2005), in validating another measure of life satisfaction (the BMSLSS), describe the importance of family and living environment, both of which are external influences on identity. And again, drawing on research from social psychology, the transition from home to college brings with it significant, often difficult, changes in one's community (Rankin et. al., 2018). Therefore, we deemed *community support* to be one of our content areas, specifically defined as the way in which an individual evaluates the supportive nature of his or her cultural or otherwise defined community.

Finally, to further specify our measure to the population of college students, we included the domain of academics. Bailey and Miller (1998) discuss the important effect that lifestyle has on life satisfaction ratings, e.g., active vs. non-active lifestyle. Renshaw and Cohen (2014) found that academic achievement positively correlates with life satisfaction. Furthermore, the validation of measures such as the Academic Life Satisfaction Scale show academics to be a significant factor in students' lives (Kumar & Dileep, 2006). Therefore, we deemed *academic status* to be one of our content areas, specifically defined as the way in which an individual evaluates his or her academic status as an important part of his or her life.

In the study at hand, our aim is to develop a valid and reliable scale to measure life satisfaction, specifically for the population of college students. Items will be generated under six content areas: emotional health, physical health, social/interpersonal status, sense of identity, community support, and academic status. Reliability and correlational analysis will be performed to identify useful items, and to flag or mark unhelpful items for removal. Finally, an adjusted scale will be presented in addition to a plan detailing the methods through which the scale should be further analyzed, and validity evidence should be gathered and tested.

Methods

Using a collaborative, discussion-based approach, and an in-depth review of the literature, six content areas were developed based on the reasoning presented above: emotional health, physical health, social/interpersonal status, sense of identity, community support, and academic status. The content areas were developed with the intended population of college students in mind.

Item stems were developed using a similar, collaborative approach. At least two items were developed per content area, with some overlap. A seven-point, Likert response scale was created for each stem (1 = Strongly Disagree, …, 7 = Strongly Agree). After the development of an initial set of items, a qualitative analysis was carried out in which items were critically examined by the researchers and potential biases were suggested. Following this analysis, some items were removed, and the new set underwent quantitative analysis.

The items were compiled and programmed into an online Qualtrics survey. The measure was administered over the internet to a sample of college students (n = 27) enrolled in an upper-level quantitative psychology course at a major research university as part of a battery of measures. Once the data were gathered, they were exported and analyzed using R, an open source, statistical analysis computer language.

Multiple analyses were completed. For the overall measure, raw coefficient α was generated to determine the overall reliability of the measure. For the individual items, "alpha-if-dropped" statistics were generated. This statistic indicates the coefficient α value of the overall measure if that item were removed from the scale. We determined that if an item is removed and the coefficient α value stays the same or is raised, this is evidence that the item is potentially

unnecessary to the measure. Conversely, we determined that if an item is removed and the coefficient α value is lowered, this is evidence that the item is necessary to the measure.

Furthermore, item-total and item-rest correlations were generated. The former indicates how strongly an item correlates with one's total score, *including* the item. The latter indicates how strongly an item correlates with one's total score, *excluding* the item. Both correlations indicate how strongly an individual item can discriminate between someone with high life satisfaction and someone with low satisfaction, i.e., the greater the correlation, the more likely a high score on the item accurately indicates a high score on the measure, and a low score on the item accurately indicates a low score on the measure. We determined that item-total and item-rest correlations in agreement are strong evidence to either accept or the reject the item in the final measure, based on if the correlations were high or low, respectively. We also determined that if the correlations were not in agreement than further analysis would be needed to reach a conclusion about the item.

Additionally, response frequency statistics were generated, i.e., response rates per response category, as well as mean response scores and standard deviations of response scores. These statistics were generated to identify any items in which there was very little variability in response. We determined that any such items are potentially unhelpful in discriminating between high and low scores. Therefore, any such items should be flagged for further review.

Finally, based on the collective body of quantitative (item-total correlations, item-rest correlations, "alpha-if-dropped" statistics, response frequencies, and mean/stand deviation response scores) and qualitative (bias, ambiguity, double-barreled items, potential interpretative errors) evidence, we determined which items should be kept, which ones should be discarded, and which ones should be flagged for further review, while also developing a plan for validation.

Results

Initially, a total of 17 items were generated during the collaborative, discussion-based

approach, falling under the six content areas: sense of identity (SI), emotional health (EH),

physical health (PH), social/interpersonal status (SS), community support (CS), and academic

status (AS). Following the first qualitative analysis, one item was removed due to vagueness ("I

am able to do things on my own without help.") leaving a total of 16 items for quantitative

analysis (see Table 1 in the Appendix). Example items include:

Content Area	Item Numbers	Example Item
SI	1, 2, 3, 5, 7*, 14	"I find myself wishing my life was like someone else's."
EH	10, 12	"I feel that I am content with my mental health."
PH	9, 13	"I feel that I am content with my physical health."
SS	4, 6*, 11	"I feel as if I have stable close relationships in my life."
CS	6*, 8	"I feel accepted by my community."
AS	7*, 15, 16	"I feel that my academics get in the way of my happiness."

Indicates an item covering two content areas

The six SI items covered perceptions of life goals, comparison to others' lives, the future,

ability to make positive decisions, and life purpose. The two EH items covered mental health and

happiness. The two PH items covered general perception of physical health and meeting the

necessities to live. The three SS items covered stable relationships, social support, and general

relationship status. The two CS items covered general community support and acceptance. The

three AS items covered making positive decisions, which drew on research from the Academic

Life Satisfaction Scale (Kumar & Dileep, 2006), general perception of academic status, and

academic obstacles to well-being. Two items overlapped in content areas: Item 6 was categorized

as both SS and CS and Item 7 was categorized as both SI and AS.

For quantitative analysis, the measure was administered to a total of n = 27 college students, with a 100% response rate. Correlational analysis indicated that Items 3 ("I find myself wishing my life was like someone else's.") and 15 ("I feel that my academics get in the way of my happiness.") needed to be reverse coded, i.e., a low score on the item indicates a high score on the construct. Reliability analysis produced an overall raw coefficient α value of 0.84. If our scale is truly valid, this indicates that 84% of the variability in scores can be attributed to true life satisfaction scores, with 16% being due to random error.

In terms of individual items, "alpha-if-dropped" ($\hat{\alpha}$) statistics were generated (see Table 2 in the Appendix). When Item 1 was removed from the measure, the overall coefficient α value *increased* to 0.85. Furthermore, when items 3, 13, and 16 were removed from the measure, there was *no effect* in terms of the measure's reliability ($\hat{\alpha} = 0.84$). For the remaining items, removing them caused the reliability to *decrease* by 0.01 (Items 4, 6, 7, 11, 12, 15, $\hat{\alpha} = 0.83$), by 0.02 (Items 2, 5, 8, 14, $\hat{\alpha} = 0.82$), or by 0.03 (Items 9, 10, $\hat{\alpha} = 0.81$).

Additionally, item-total and item-rest statistics were generated (see Table 3 in the Appendix) with an average item-total correlation of 0.55 and an average item-rest correlation of 0.47. Items 9 ("I feel that I am content with my physical health.") and 10 ("I feel that I am content with my mental health.") showed the highest item-total correlations ($\rho_{total} = 0.76$) as well as the highest item-rest correlations ($\rho_{rest} = 0.69$).

Item 16 ("I am content with my academic status.") showed the lowest item-total correlation ($\rho_{total} = 0.27$), while items 16 and 13 ("I am able to meet the bare necessities to live.") showed the lowest item-rest correlations ($\rho_{rest} = 0.16$). Overall, there were six items with item-total correlations less than 0.50 (Items 1, 6, 7, 12, 13, 16), and nine items with item-rest correlations less than 0.50 (Items 1, 3, 4, 6, 7, 12, 13, 15, 16).

Response frequency analysis (see Table 4 in the Appendix) showed that only six items (Items 1, 2, 3, 5, 10, 15) had at least one endorsement of all seven response categories. Of the remaining items, an average of two response categories was missing a response. Item 6 showed the highest skew in response frequency, having no endorsements of categories 1, 2, 3, or 4. Item 11 was second highest in skew, having no endorsements of categories 1, 2, or 3. Items with the maximum response frequencies per response categories were as follows:

Response Category	Max. Response Frequency	Item(s)
1 = Strongly Disagree	0.11	3
2 = Disagree	0.33	3
3 = Somewhat Disagree	0.26	10
4 = Neither Agree nor Disagree	0.19	15
5 = Somewhat Agree	0.41	9, 10
6 = Agree	0.44	11
7 = Strongly Agree	0.56	13

Finally, response score analysis (see Table 3 in the Appendix) showed that the item with the highest mean response score (μ) was Item 13 ("I am able to meet the bare necessities to live."; $\mu = 0.6.3$) and the item with the lowest mean response score was Item 15 ("I feel that my academics get in the way of my happiness."; $\mu = 3.7$). It is important to note that Item 15 was reverse coded.

The item with the highest response score standard deviation (σ) was Item 3 ("I find myself wishing my life was like someone else's."; $\sigma = 2.11$) and the item with lowest response score standard deviation was Item 6 ("I feel as if I have people I can go to for support."; $\sigma = 0.85$). It is important to note that Item 3 was reverse coded.

Discussion

The goal of this study was to pilot the development of a reliable and valid self-report scale to measure happiness, operationalized as *life satisfaction* and intended to be used for the population of college students. Life satisfaction was defined as one's cognitive evaluation of his or her quality of life, made through the lens of environment, culture, and identity. Based on this definition, the study aimed to create a scale that accounts for an individual's subjective experience and self-reflection, rather than more objective measures. Finally, the study sought to analyze the scale quantitatively and qualitatively, reach conclusions on which items should be kept and discarded, and present a plan for further analysis and validation.

Generally, our results provide good evidence in terms of reliability. Quantitative analysis showed our scale to have good overall reliability, and 75% of the items analyzed showed no effect on reliability when removed from the scale. In addition, response frequency and item descriptive statistics showed that our sample produced a 100% response rate, and that, on average, only one or two response categories had no endorsements per item. Therefore, there are no serious concerns in terms of response variability, which could influence the quality of our data.

Importantly, our quantitative and qualitative analyses provide evidence for keeping and removing items. First, in terms of items to keep, Item 9 ("I feel that I am content with my physical health.") and Item 10 ("I feel that I am content with my mental health.") provided the strongest evidence for being kept in the measure. Qualitatively, both items use straightforward language and directly reference their respective content areas. Quantitatively, both items showed the highest item-total *and* item-rest correlations, as well as the largest decreases in reliability when removed. The former indicates both items to be strong in discriminating between

individuals with high and low life satisfaction, and the latter indicates that removing these items decreases the reliability of the overall measure. In all, this evidence makes a strong case for keeping the items in the measure.

Furthermore, five items showed good evidence for remaining in the measure: Items 2, 5, 8, 11, and 14. All five items had item-total correlations greater than .60 and item-rest correlations greater than .55, both indicative of strong discriminatory power. Additionally, "alpha-if-dropped" statistics showed a decrease in reliability when these items were removed, supporting the conclusion that they all contribute to the overall reliability of the scale. Qualitatively, the items are straightforward in their wording and reference important criteria related to college students (e.g., future, acceptance, social support). In all, this evidence makes a strong case for keeping these items in the measure.

Additionally, there were four items which underperformed the previous items, but given the quantitative and qualitative evidence, we hypothesize that they will benefit from further review, including an analysis using a larger sample size. These included Items 4, 7, 12, and 15 which showed, on average, moderate to low item-total correlations ($\bar{x}_\rho \approx 0.51$) and item-rest correlations ($\bar{x}_\rho \approx 0.43$). Despite these correlations, all four items showed a decrease in reliability when dropped, indicating that the items are potentially necessary to the measure. Qualitatively, the items may be vague, e.g., the word "happy" in Item 12 ("I have time to do things that make me happy.") could be taken as a stable, general feeling, or a fluid, object-oriented feeling. Item 4 ("I feel as if I have stable close relationships in my life.") could potentially be double-barreled if "stable" and "close" are perceived as distinct. Therefore, these items should be monitored in further review, though we predict that they will improve in performance.

Interestingly, there are two items which produced inconclusive results: Items 3 and 6. Item 3 showed no change in reliability when dropped, as well as a low item-rest correlation. Item 6 was the most skewed in response rate, having no data for four of the response categories, as well as having the lowest standard deviation – both raising concerns about the quality of data, due to low variability. Therefore, this evidence indicates that these items should be flagged for further review, given that there simply is not enough information to make conclusions.

Conversely, three items produced strong quantitative and qualitative evidence for being removed from the measure: Items 1, 13, and 16. Item 1 ("I have reached the goals I've wanted to achieve in my life so far.") is most likely unapplicable to college students, given that many are actively achieving their goals (e.g., earning a degree, finding a job, etc.). Also, this item may suffer from bias given that individuals from different backgrounds and groups have unequal means of achieving their goals. The way in which inequality is perceived (e.g., as a personal fault versus a societal one), if at all, might strongly influence one's responses. Quantitatively, Item 1 showed low item-total and item-rest correlations and was the only item to *raise* the reliability of the measure when dropped. Comprehensively, this is strong evidence that the item is unhelpful and should be removed.

Item 13 ("I am able to meet the bare necessities to live.") is ambiguous in its language, especially with the phrase "bare necessities to live." While it is true that many college students struggle with meeting basic needs (Reppond, 2019), an individual who *can* meet basic needs will most likely score very high on the item, leaving little room for variability in the data. This is evidenced by the fact that Item 13 showed the highest response mean score as well as the highest response rate in response category 7 ("Strongly Agree"). Finally, Item 13 had no effect on

reliability when removed and had the lowest item-rest correlation of any item. Comprehensively, this is strong evidence that the item is unhelpful and should be removed.

Item 16 ("I am content with my academic status.") is trivial to our definition of life satisfaction, given that "academic status" is vague and is highly vulnerable to temporary influences. For example, a student may have received a low grade that day and is therefore "discontent" with his or her "academic status," but this event likely has little bearing on the student's overall life satisfaction. Quantitatively, the item does not affect reliability when dropped and produced the lowest item-total *and* item-rest correlations. Comprehensively, this is strong evidence that the item is unhelpful and should be removed.

Based on our results, a 13-item measure was produced (see Table 5 in the Appendix), with six items being marked in need of further review. We predict that with further study, seven items will continue to perform well, and four will improve in performance. The remaining two items produced inconclusive results, so we are refraining from making any conclusions at this time.

Further study will continue to test our measure's reliability and validity. In terms of criterion-related validity evidence, we propose that an individual's score on our measure be analyzed with scores on other criteria measures. A review of the literature suggests possible additional measures: mental health measures, such as depression and anxiety symptoms (Jovanović, 2022; Pilcher, 1998; Renshaw & Cohen, 2014), physical health measures (Pettay, 2008; Pilcher, 1998; Renshaw & Cohen, 2014; Zullig et. al., 2005), and social support measures (Bailey & Miller, 1998; Renshaw & Cohen, 2014). If our measure is valid, we expect scores on our measure to consistently predict scores on these additional measures, with life satisfaction

being positively correlated with psychological well-being, good health, and high social support,

and negatively correlated with depression, anxiety, and isolation.

These methods would also verify that our scale is truly measuring the construct of

happiness, operationalized as life satisfaction, providing construct validity evidence. If our

measure highly correlates with another, this *could* be potential evidence that our scale is

measuring a construct other than life satisfaction. Therefore, our measure could be compared to

other scales of happiness (convergent validity) and contrasted with scales of mood and affect

(divergent validity).

Finally, in terms of content related validity, our results support the development of five of

our six content areas, but raise questions about *academic status* (AS). Originally, three items (7,

15, and 16) were categorized as AS. However, our results led us to conclude that Item 16 should

be removed and Item 15 needs further review. Additionally, Item 7 ("I am able to make positive

decisions in life.") was double coded as AS/SI, but the item makes no direct reference to

academics. Therefore, if Item 15 continues to underperform other items in further study, a

reexamination of the AS content area will be critical. Perhaps academic status is only *indirectly*

related life satisfaction, e.g., as it relates to one's emotional health.

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Appendix

Table 1

Items for Quantitative Analysis, Corresponding Content Areas, and Response Scale

Item No.	Content Area(s)	Stem
1	SI	I have reached the goals I've wanted to achieve in my life so far.
2	SI	I am content with my life as it is currently.
3*	SI	I find myself wishing my life was like someone else's.
4	SS	I feel as if I have stable close relationships in my life.
5	SI	I feel as if I will have the future I want for myself.
6	SS/CS	I feel as if I have people I can go to for support.
7	SI/AS	I am able to make positive decisions in life.
8	CS	I feel accepted by my community.
9	PH	I feel that I am content with my physical health.
10	EH	I feel that I am content with my mental health.
11	SS	I have good social relationships with my colleagues and other people around me.
12	EH	I have time to do things that make me happy.
13	PH	I am able to meet the bare necessities to live.
14	SI	I feel that I have a purpose in life.
15*	AS	I feel that my academics get in the way of my happiness.
16	AS	I am content with my academic status.

* Indicates that the item was reverse coded

Response Scale	Content Areas Key
1 = Strongly Disagree	EH = Emotional Health
2 = Disagree	PH = Physical Health
3 = Somewhat Disagree	SS = Social/Interpersonal Status
4 = Neither Agree nor Disagree	SI = Sense of Identity
5 = Somewhat Agree	CS = Community Support
6 = Agree	AS = Academic Status
7 = Strongly Agree	

Table 2

Reliability if Item is Dropped

Item	$\widehat{\alpha}$	Item	$\widehat{\alpha}$
1	0.85	9	0.81
2	0.82	10	0.81
3	0.84	11	0.83
4	0.83	12	0.83
5	0.82	13	0.84
6	0.83	14	0.82
7	0.83	15	0.83
8	0.82	16	0.84

Table 3

Item Statistics

Item	n	Item-Total ρ	Item-Rest ρ	Mean Response Score	Std. Dev. Response Score
1	27	0.31	0.18	4.7	1.64
2	27	0.73	0.66	4.7	1.54
3	27	0.51	0.37	4.2	2.11
4	27	0.54	0.48	5.8	1.01
5	27	0.71	0.64	5.3	1.58
6	27	0.41	0.35	6.2	0.85
7	27	0.48	0.40	5.9	1.23
8	27	0.69	0.64	5.4	1.09
9	27	0.76	0.69	4.9	1.71
10	27	0.76	0.69	4.4	1.60
11	27	0.62	0.57	5.7	0.86
12	27	0.46	0.37	5.0	1.32
13	27	0.24	0.16	6.3	1.00
14	27	0.70	0.64	5.8	1.27
15	27	0.57	0.46	3.7	1.83
16	27	0.27	0.16	5.5	1.34

Table 4

Response Frequency for Each Item

Item	1	2	3	4	5	6	7
1	0.07	0.07	0.07	0.04	0.37	0.33	0.04
2	0.04	0.07	0.11	0.11	0.33	0.26	0.07
3	0.11	0.33	0.04	0.07	0.19	0.11	0.15
4	--	--	0.04	0.04	0.30	0.37	0.26
5	0.04	0.04	0.07	0.11	0.15	0.41	0.19
6	--	--	--	--	0.26	0.26	0.48
7	--	0.04	--	0.07	0.22	0.30	0.37
8	--	--	0.07	0.07	0.33	0.37	0.15
9	0.07	--	0.15	0.04	0.41	0.11	0.22
10	0.04	0.07	0.26	0.04	0.41	0.07	0.11
11	--	--	--	0.07	0.30	0.44	0.19
12	--	0.07	0.07	0.11	0.37	0.30	0.07
13	--	--	0.04	0.04	0.04	0.33	0.56
14	--	0.04	0.04	--	0.30	0.26	0.37
15	0.04	0.22	0.07	0.19	0.22	0.11	0.15
16	--	0.07	--	0.07	0.26	0.37	0.22

Table 5

Final Items for Further Review

Item No.	Stem
2	I am content with my life as it is currently.
3*	I find myself wishing my life was like someone else's.
4†	I feel as if I have stable close relationships in my life.
5	I feel as if I will have the future I want for myself.
6*	I feel as if I have people I can go to for support.
7†	I am able to make positive decisions in life.
8	I feel accepted by my community.
9	I feel that I am content with my physical health.
10	I feel that I am content with my mental health.
11	I have good social relationships with my colleagues and other people around me.
12†	I have time to do things that make me happy.
14	I feel that I have a purpose in life.
15†	I feel that my academics get in the way of my happiness.

* Indicates that this item has been flagged for inconclusive results in quantitative analysis

†Indicates that item is predicted to benefit from further review