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Self satisfaction scale (3S): Development and initial validation of a new measure of subjective well-being

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Abstract
The present study was designed to develop and describe the psychometric properties of the Self-satisfaction Scale (3S) among adults (including emerging adults) for the community sample. The research included three distinct studies. In Study 1, item pool generation and evaluation of content validity of the new scale by expert panel were carried out. In Study 2 ($n = 532$), the factor structure of 3S was examined with Exploratory Factor Analysis (EFA) and the internal consistency of the new scale was evaluated. In Study 3 ($n = 503$) Confirmatory Factor Analysis (CFA) was performed on the items determined by EFA in a different sample and the convergent validity of the new scale was assessed. EFA results displayed that 3S had seven factors accounting for 73.87% of the initial total variance and CFA results confirmed that these seven distinct but correlated factors were related to self-satisfaction on social, physical health, cognitive, emotional/psychological, physical appearance, sexual, and personality characteristics domains. The internal consistency (Cronbach's alpha and McDonald's omega) of the 3S was .96 and all subscales had high internal consistency. To assess the convergent validity, 3S was administered together with Life Satisfaction Scale (LSS; Diener), Rosenberg Self Esteem Scale (RSES), Positive and Negative Affect Scale (PANAS), and Beck Depression Inventory (BDI). The results revealed that 3S was positively correlated with the LSS, positive affect, and RSES while it was negatively correlated with negative affect and BDI. Test-retest reliability ($N = 64$) for total 3S was .89. Findings suggest that 3S is a psychometrically valid and reliable tool to assess self-satisfaction among adults and emerging adults.

Keywords Self-satisfaction · Scale development · Validity · Reliability · Subjective well being

Introduction

The discipline of positive psychology focuses on both individual and societal well-being (Seligman & Csikszentmihalyi, 2000) and tries to understand which factors contribute to them. Optimal psychological advancement follows the perception of wellness beyond the lack of signs of psychopathology (Greenspoon & Saklofske, 2001). Considerable research has attempted to comprehend the factors contributing to one's sense of a good life (Diener et al., 2003). There is a common agreement among researchers that subjective well-being involves two operationalizable and measurable components: the affective component and the cognitive component (Diener, 2000; Diener et al., 1985; Diener & Diener, 1995; Emmons & Diener, 1985; Schimmack, 2008). The affective component is composed of the existence of positive affect including good feelings or happiness and the nonexistence of negative affect like fear or anger (Lucas et al., 1996). The cognitive aspect of subjective well-being, namely life satisfaction, has been conceptualized as the cognitive evaluation stemming from a process of comparison with internally formed criteria of the positivity of an individual's life altogether or based on various particular domains like job, school, family, self, friends, social life, physical appearance, and environment(Andrews & Robinson, 1991; Diener, 1984; Huebner et al., 2006; Myers & Diener, 1995; Pavot & Diener, 1993). Affective and cognitive factors are crucial because they are related to various factors such as positive social relationships (Amati et al., 2018; Larsen & Eid, 2008; Whelan & Zelinski, 2012), personality characteristics (Costa & McCrae, 1980; DeNeve & Cooper, 1998; Jovanovic, 2011), income (Cummins, 2000; Diener & Seligman, 2004) and anticipate various outcomes such as health and longevity for the individuals (Diener & Chan, 2011). Accordingly, subjective well-being and its components can be viewed as an important psychological strength or resource that helps facilitate an

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individual's life (Diener & Chan, 2011; Lyubomirsky et al., 2005; Moore et al., 2018). Therefore, it is very important to investigate and clarify the contributing factors and explore their roles in subjective well-being.

Theoretical and empirical research has provided strong support for the multidimensionality of life satisfaction. Using factor analytic techniques, Alfonso et al. (1996) developed the Extended Satisfaction with Life Scale (ESWLS) for measuring life satisfaction in eight different dimensions (i.e., physical appearance, family, work, relationships, sexual life, school, social life, and self) including self among university students. The domain-specific items of the ESWLS are adapted from the statements in Diener and his colleagues' (Diener & Diener, 1995) General Life Satisfaction Scale. Using a construct validity approach, Huebner (1994) and Huebner and Gilman (2002) have reported empirical support for the five particular domains (i.e., school, friends, family, living environment, and self) for life satisfaction among adolescents and it has been confirmed in different cultures (Casas et al., 2014; Hatami et al., 2010) including Turkey (Çivitci, 2007; Irmak & Kuruüzüm, 2009). Another scale including the self domain is the Brief Multidimensional Students' Life Satisfaction Scale (BMSLSS) with 5 items validated by Zullig et al. (2005) relying upon the theoretical framework behind the 40-item longer Multidimensional Students' Life Satisfaction Scale (MSLSS; Huebner, 2001) that has been confirmed in terms of psychometrics among college students. Each dimension in the 5-item BMSLSS (school, friends, family, living environment, and self) is asked using one item demanding an evaluation of life satisfaction in the specific dimension. Psychometric properties of BMSLSS has been examined from elementary school students to college students (Seligson et al., 2005; Zullig et al., 2005). Zullig and colleagues (Zullig et al., 2009) expanded BMSLSS based on Alfonso's study adding three particular domains (e.g., physical appearance, job, and romantic relationship) that are especially important for college students. Based on the literature, results have shown that "self" has been confirmed as one of the specific domain of life satisfaction.

Although some distinct life satisfaction domains such as health (Ngamaba et al., 2017; Wiesmann et al., 2008; Zullig et al., 2006) and school (Long et al., 2012; Opre et al., 2018) has received considerable attention in adolescents (Casas et al., 2014; Cummins, 1996; Huebner & Gilman, 2004; Seligson et al., 2003) and adults (Alfonso et al., 1996; Zullig et al., 2005; Zullig et al. 2009), little effort has been made to assess the concept of self-satisfaction. "Self" is a multidimensional construct whose domains interplay among each other (Buss, 2001; Harter, 1999; Marsh, 1986; Marsh et al., 2005; Marsh & Shavelson, 1985) and it has different dimensions such as physical appearance, physical health, social, cognitive, academic, and so forth. In this study based on the concept and structure of self, regarding key developmental areas (Santrock, 2017), the concept of "self-satisfaction" has been expanded with seven specific domains; namely, social, physical health, cognitive, emotional/psychological, physical appearance, sexual and personality characteristics. From a conceptual point of view, while determining these domains, an in-depth literature review was utilized on developmental psychology (e.g., life-span development, components of human development), self and its components, and life satisfaction. In the light of the literature, it has been theoretically assumed that life satisfaction indicators can be divided into two groups: 1) domains that belong to self that involve self-appearance, physical health, emotional/psychological domain, cognitive, sexual, and personality characteristics domains and 2) domains that belong to outside of the self such as school, job, romantic relationships, marriage, and environment. Mainly, this study focuses on self-satisfaction and its specific domains with a developmental perspective.

Parallel to life satisfaction, self-satisfaction refers to a cognitive process of evaluation. Self-satisfaction points to how one judges or assesses her/his features in different domains (e.g., cognitive, emotional, physical health) to determine how satisfied or pleased s/he is with those features. A person may have several features that other people want to have, but still can be dissatisfied with herself/himself because of her/his inner criteria. Measuring self-satisfaction in different specific developmental areas is important as it will allow determining an individual's satisfaction in specific domains as an indicator of life satisfaction and subjective well-being. Such separated evaluations are predicted to allow for more concentrated diagnostic, preventive, and intervention attempts (Huebner, 2001). For instance, a person reporting higher dissatisfaction with her/his physical appearance needs another way of intervention than a person reporting higher dissatisfaction with her/his physical health. A person with a high level of self-satisfaction will report a global sense of satisfaction with self alongside a greater level of positive affect, in contrast to a lower level of negative affect (Huebner et al., 2006; Pressman & Bowlin, 2014; Snyder, 2000; Yılmaz & Arslan, 2013). Research demonstrates that "self" as a subscale of life satisfaction is positively associated with general life satisfaction, physical appearance, health, social, sexual domains, self-esteem (Diener & Diener, 2009), and positive affect (Alfonso et al., 1996; Proctor et al., 2010; Zullig et al., 2005), and negatively associated with negative affect, depression, and anxiety (Muris et al., 1998). This study presents important data that lead to the conceptualization, measurement, and significance of self-satisfaction under the construct of life satisfaction and subjective well-being. The scale developed in this study is expected to help practitioners and researchers in ruling out needs and establishing, realizing, and assessing implementations. Although there are several self assessment scales related to "self" for assessing self domains (for example health, physical appearance, intellectual domains etc.), there is

no independent scale to assess self satisfaction containing social, physical health, cognitive, emotional/psychological, physical appearance, sexual and personality domains in the field of psychology. No previous study has examined the psychometric properties of the self-satisfaction scale and its specific domains. It is, therefore, important to investigate the factor structure of the 3S to measure as an indicator of life satisfaction and subjective well-being among adults. Besides, the investigation of the psychometric properties of 3S is expected to provide evidence for its theoretical and empirical validity and reliability of the constructs it is intended to measure.

The purpose of this study was to develop and describe the psychometric properties of 3S among adults including emerging adults for the community sample. This study was organized in three phases. Study 1 involved generating items to measure self-satisfaction among adults and to evaluate content validity. Study 2 aimed (1) to explore the items and factor structure (exploratory factor analysis) of 3S and (2) to evaluate internal consistency. Study 3 aimed (1) to confirm the factor structure determined in Study 2 and (2) to investigate the convergent validity of 3S. As mentioned above, empirical findings support a significant positive link between self-satisfaction and life satisfaction, social, physical appearance, and self-esteem whereas a negative significant link between self-satisfaction and depression, and negative affect. Thus, a positive correlation between global self-satisfaction and its domains and the measures for life satisfaction, self-esteem, and positive affect; and a negative correlation between the global self-satisfaction and its domains and the measures for depression and negative affect have been hypothesized.

Study 1: Generation of Item Pool and Content Validity

Method

The aim of Study 1 was to generate items to measure self-satisfaction among adults including emerging adults and to evaluate its content validity. While forming the item pool, the steps of scale development suggested by DeVellis (2003) and Lynn (1986) have been utilized. Initially, the construct to be assessed was operationalized and the scope of the construct was defined. The development of 3S involved two thorough literature review processes. The first one targeted at determining a theoretical basis for self-satisfaction and the second review aimed to determine components and items of the scale.

The first and second literature reviews were led by the following research questions:

1. What theoretical base is most suitable for measuring Self-satisfaction?
2. What components of the theoretical base are the most crucial for forming the scale's dimensions?
3. What items are the most crucial for symbolizing/measuring the scale's dimensions?

During the literature review process, the definitions and models related to self-satisfaction, subjective well-being, life satisfaction including unidimensional and multidimensional life satisfaction, self (self theories, self concept, self esteem), developmental psychology, positive psychology, and its concepts were examined. As a result, it was concluded that self-satisfaction is a concept that is a part of life satisfaction. "Self" is a comprehensive formation with domains that interplay among each other (Buss, 2001; Harter, 1999; Tafarodi & Swann, 2001). In light of the literature, self-satisfaction was considered a multidimensional concept including social, physical health, cognitive, emotional, physical appearance, personality characteristics, and sexual satisfaction components, and the item pool was created considering these specific domains. The items in the item pool were initially checked by the researcher on the grounds of unclarity, redundancy, unintended resemblance to other items. In this process, each item was initially checked and if some items were too similar to each other and had almost the same content and structure, they were deleted. Then, the five-point Likert type response form (from 0 = strongly disagree to 4 = strongly agree) was decided on. Consequently, the item pool consisted of seven components with 77 items.

Procedure

Expert opinions were collected to assess whether the item covers the intended characteristics for checking the content validity of the scale. The first psychometric property to be assessed was content. The scale can measure the desired construct only if content validity is acceptable (Brod et al., 2009). For content validity, a round expert panel was employed to evaluate the appropriateness and clarity of the items as well as the importance and thoroughness of responses in the 3S. Experts in the expert panel were three faculty members studying positive psychology, two practitioners in the field of psychology and psychological counseling, and two faculty members in the field of measurement and assessment in education.

Results

Each item was assessed by scaling its appropriateness for the scale's purpose, its comprehensibility, clarity comprehensiveness and, meaningfulness. Expert opinion was evaluated relying on the technique proposed by Davis (1992). This technique necessitates that experts evaluate every item using an expert opinion form with four options (a = "appropriate", b = "item should be slightly revised", c = "item should be

seriously revised", d = "not appropriate") and experts are to provide recommendations, if applicable. Next, Content Validity Index (CVI) was calculated for individual items (i-CVI) and the whole scale (s-CVI) (Polit et al., 2007). The i-CVI was found by summing up the "a" and "b" evaluations of the item and dividing this number by the total expert number. Calculation of the s-CVI was done by averaging the values of i-CVI (Davis, 1992; Polit et al., 2007). The criterion value for CVI was .80 according to Davis (1992). Items with the i-CVI value of higher than or equal to .80 were accepted to 3S and lower than .80 removed from 3S. Thus, after six (6) items were excluded from the 3S, seventy-one (71) items were in the pool. Subsequently, the s-CVI of 3S was .95. The outcome of the expert panel led to version 2 of the scale.

Study 2: Construct Validity and Reliability

Methods

Participants Sample 1 consisted of 361 (67.9%) female and 171 (32.1%) male, a total of 532 adults. Seven cases were exluded from the data after the examination of infrequent responses to bogus (control) items such as *"Please respond to this item with 0="Strongly disagree"* (Kim et al., 2018) as well as univariate and multivariate outliers detection (Tabachnick & Fidell, 2013) and 2 cases were excluded because they did not meet the age criterion (>18 years old) of the present study.

The ages of participants ranged between 18 and 76 (M = 36.74 years; Med = 38 years; SD = 11.64). Regarding income levels, 23.5% of the participants had an amount of income between 0 and 2500 Turkish Liras ( ), 29.5% had 2500–5000 , 32.7% had 5000–7500 , and 14.3% had 7500+ . The participants' education levels included high school degree (6.2%), associate degree (4.1%), undergraduate studentship status (40.2%), university degree (27.1%), masters' degree (16.7%), and Ph.D. degree (5.6%).

Data were collected with a web-based survey (June to July 2020) in Turkey. Participants who participated in one of the studies did not participate in any of the other studies. For the study, approval from Muğla Sıtkı Koçman University Human Research Ethics Committee's was received. A link for the survey was sent to participants. The link included information about the study, what was expected of them, and informed consent. The participants chose to opt in for the study if they were voluntary. The following page included self-report questionnaires for each study and the final page involved expressing appreciation to the participants.

Measures

In addition to the second version of 3S, a socio-demographic form was implemented. Socio-demographic form included questions of personal information such as age, gender, education level, and income. Brackets of income ranges (0–2500 , 2500–5000 , 5000–7500 , 7500+) were created to measure participants' monthly income levels.

Self Satisfaction Scale (3S): 3S intends to measure the self-satisfaction among adults from community sample. The measure consists of 71 items on 5-point Likert scale; 0 = "Strongly disagree", 1 = "Somewhat agree", 2 = "Agree", 3 = "Mostly agree", 4 = "Strongly agree". Higher scores indicate higher levels of self-satisfaction.

Data Analysis

Data were checked and there were no missing data. Before Exploratory Factor Analysis (EFA), item analysis was applied to data in Study 2. Then, the principal axis extraction method with fixed number of factors to seven was implemented in order to figure out the latent factors or constructs explaining shared variance among items. Reise et al. (2000) and Osborne (2015) recommended choosing oblique rotation (Promax) over orthogonal rotation if (a) extracted factors are considered to be aspects of a higher-order factor, (b) if meeting a simple structure is intended (c) if factor replicability is intended, (d) if it cannot be assumed that variables are really uncorrelated, and (e) if an estimation of factor correlations is intended in order to provide more valuable information. Since the scale meets all of these criteria, oblique rotation (Promax) was chosen. In order to determine the initial factorial structure, the following points were considered: a) factor loadings above .50 and b) all factors with an eigenvalue higher than 1 were to be retained (Tabachnick & Fidell, 2013). Analyses were conducted using SPSS 20.0 for Windows and the significance level was determined as $p < .05$.

Results

Regarding normality, skewness (range: −0.67-1.32) and kurtosis (range: −0.61 to 3.14) values were found to be within critical values as Tabachnick and Fidell (2013) suggested. After calculating Mahalanobis distance (values of which range between 27.033–20.391 $p < .001$), seven participants were excluded from the data. The threshold value for the corrected item-total correlation was determined as a minimum of 0.40 (Tabachnick & Fidell, 2013). Items 10, 11, 36, 38, 41,42,45,57,58 and 62 were removed from the 71-item scale due to their corrected item-total correlations being below .40. Before conducting EFA, the appropriateness of factor analysis was confirmed by Bartlett's test of Sphericity (χ^2 (1830) = 25,761.70, $p < .001$), and Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy test (KMO = .96). These values imply that data were suitable for EFA (Field, 2005). The main criteria for determining the number of factors to be extracted were: (1) eigenvalue being greater than 1; and (2) containing

at least three items (Costello & Osborne, 2005). In the EFA procedure, the items that did not fit the following criteria were removed: (1) factor loading is lower than 0.50, (2) commonality is lower than 0.50, and (3) factor loading difference between two factors is lower than 0.20 (Tabachnick & Fidell, 2013). Following the EFA procedure, 30 items were extracted because they did not fit the aforementioned criteria and a 31-item measure with meaningfully interpretable seven factors was extracted. The scree plot test supported the presence of seven clear and distinct factors. All 31 items had commonalities range between .54–.80. The preliminary eigenvalues of the seven factors were 14.09, 2.06, 1.80, 1.58, 1.41, 1.04, and 1.00, respectively and cumulative total variance was 73.87%. The traces after rotation were 11.53, 8. 92, 9.67, 9.67, 6.52, 7.98 and 7.13, respectively. The distribution of the variance after promax rotation for seven factors explained a total of 61.4% of the variance, with 11.53% (personality characteristics), 8.92% (social domain), 9.68% (cognitive domain), 9.68% (emotional/psychological domain), 6.52% (physical health), 7.98% (sexual domain), and 7.13% (physical appearance) of the total variance explained by factor 1 to 7 respectively. The items' factor loadings range for social domain from .71 to .93, for physical health .67 to .96, for cognitive domain .60 to .85, for emotional/psychological domain .60 to .85, for physical appearance .69 to .72, for sexual domain .72 to .84 and for personal characteristics .60 to .85. Item properties and subscales can be seen in Table 1.

To examine the reliability of 3S and its subscales, Cronbach's alpha, McDonald's omega, and composite reliability were computed on the data which were collected from general (community) adult sample. Cronbach's alpha and McDonald's omega was found .96 and composite realibility was .99 for the whole scale. Reliability values of all subscales were acceptable (Table 2).

Study 3: Structural Validity with Confirmatory Factor Analysis and Criterion Validity

General practice in scale development studies is to examine the factorial structure obtained from EFA using confirmatory factor analysis (CFA) on a different sample (Cabrera-Nyugen, 2010; Matsunaga, 2010). Therefore, the goals of the Study 3 were; (1) to confirm the factorial structure identified in Study 2, and (2) to evaluate the convergent validity of 3S.

Methods

Participants Sample 3 consisted of 345 (68.5%) female, 158 (31.5%) male, after eliminating five cases due to the examination of infrequent responses to bogus (control) items such as *"Please respond to this item with 0="Strongly disagree"* (Kim et al., 2018) and being univariate and/or multivariate outliers (Tabachnick & Fidell, 2013), a total of 503 undergraduate (97%) and graduate (3%) students from Muğla Sıtkı Koçman University. The ages of participants ranged between 18 and 31 (M = 21.43 years; Med = 21 years; SD = 1.72). Regarding income levels, 34.4% of the participants had an amount of income between 0 and 2500 Turkish Liras ( ), 41.9% had 2500–5000 , 16.9% had 5000–7500 , and 6.8% had 7500+ . Convenience sampling was used in order to reach participants. Data were collected online from different faculties (e.g., Education Faculty, Health Science, Economics and Management Faculty, Humanities, and Arts) from July to September 2020. Graduate and undergraduate students were provided with a link including the survey website that contained information about the study, expectations from participants, and an informed consent form. The participants had to opt in to take part in the study if they were voluntary. On average, the questionnaire took about 15 min to complete.

Measures

As summarized in the introduction, empirical findings support a significant positive link between self-satisfaction and life satisfaction, social domain, physical appearance, and self-esteem whereas a negative significant link between self-satisfaction and depression and negative affect. Thus, a positive correlation between global self-satisfaction and its domains and the measures for life satisfaction, self-esteem, and positive affect; and a negative correlation between the global self-satisfaction and its domains and the measures for depression and negative affect have been hypothesized.

Socio-Demographic Form: A questionnaire for gathering personal information such as age, gender, grade level, faculty, and department.

Self Satisfaction Scale (3S): Self-satisfaction was measured by 3S which has 31 items with seven domains (social, physical health, cognitive, emotional/psychological, physical appearance, sexual, and personality characteristics) identified in Study 2.

The Life Satisfaction Scale (LSS): LSS was designed by Diener et al. (1985) to measure perception of life satisfaction. The LSS consists of 5 items and it is rated on a 7-point scale. Higher scores indicate higher levels of satisfaction. The LSS was adapted to Turkish by Köker (1991). In the present study, the scale's Cronbach's alpha coefficient was 0.86.

Positive and Negative Affect Schedule (PANAS): Developed by Watson et al. (1988), the scale measures the way a person feels at a point in time, such as over the past week. It contains 20 self-report items to measure positive and negative affect. The items are rated on a 5-point Likert-scale (1="very slightly or not at all" to 5 = "extremely"). There are 10 items in each of the positive affect (PA) and negative affect (NA) scales. The scale was adapted to Turkish by Gencoz (2000). In the present study, the scale revealed an internal consistency reliability of .90 for the PA, .87 for the NA.

Table 1 Self Satisfaction Scale items, factor loadings, mean and standart deviation (N = 532)

	Questionnaire item	Factor loadings								
		1	2	3	4	5	6	7	X	SD
	Social domain									
5	I am pleased with myself in managing my relations	0.72							3.68	.94
7	I am satisfied with my social relations	0.93							3.70	.98
8	I am satisfied with my social side	0.85							3.65	1.03
9	There are people around who understand me	0.81							3.70	1.01
12	I am satisfied with the quality of my social relations	0.72							3.51	.91
	Physical health domain									
14	I am satisfied with my body regarding my health		0.67						3.52	1.15
15	I am satisfied with my body's ability to cope with the disease		0.97						3.67	1.12
17	I am generally satisfied with my immune system		0.81						3.78	1.08
	Cognitive domain									
19	I am satisfied with my mental capacity			0.84					3.96	0.83
20	I am satisfied with my reasoning power			0.96					4.03	0.86
25	I am satisfied with my ability of abstract thinking			0.56					3.81	0.91
30	I am satisfied with my ability to comprehend			0.76					3.88	0.85
34	I am a smart person			0.83					4.05	0.83
	Emotional/Psychological domain									
35	I am pleased with myself for managing my emotions				0.62				3.35	1.02
39	My emotional world is mostly balanced				0.60				3.16	1.03
40	I am satisfied with my ability to manage my negative emotions				0.85				3.17	1.00
54	I am a psychologically strong person				0.63				3.60	1.02
55	I am satisfied with my psychological health				0.66				3.60	0.99
	Physical appearance domain									
43	I am satisfied with my physical appearance					0.69			3.57	1.00
44	I am satisfied with my current weight					0.85			3.02	1.30
49	I am satisfied with the proportion of my body					0.72			3.43	1.15
	Sexual domain									
51	I am satisfied with my sexual attractiveness						0.72		3.47	1.12
52	I am satisfied with my flirting skills						0.82		3.19	1.26
53	I am satisfied with myself in the field of sexuality						0.84		3.39	1.15
	Personality characteristics domain									
59	I feel valuable as a person							0.70	3.81	1.02
60	I am a person at peace with myself							0.83	3.80	1.01
61	I am pleased with my personality characteristics							0.61	3.88	0.92
64	I am thankful for what I have							0.64	4.10	0.98
66	I am a person who enjoys life							0.71	3.73	1.01
68	I am an optimistic person							0.85	3.80	1.08
69	I am satisfied with the value I give myself							0.81	3.71	1.05
	Initial total variance explained			73.87%						
	After rotation total variance explained			61.4%						

Factor loadings below .50 are not visible

Table 2 Self Satisfaction total and subscales' reliability (N = 532)

Self Satisfaction subscales	Cronbach's Alpha	McDonald's Omega	Composite Reliability
1. Social domain	.90	.92	.93
2. Physical health	.87	.86	.91
3.Cognitive domain	.91	.91	.95
4. Emotional/Psyhological domain	.90	.87	.94
5. Physical appearance	.82	.84	.86
6.Sexual domain	.87	.88	.90
7. Personality charecteristics	.89	.91	.91
Total scale	.96	.96	.99

The Beck Depression Inventory (BDI): BDI was developed as a 21-item self-report scale to measure the behavioral, motivational, cognitive, and somatic symptoms of depression (Beck et al., 1979). BDI was adapted to Turkish by Tegin (1980) and Hisli (1988, 1989). Items are scored from 0 to 3, and the total score ranges from 0 to 63. Cronbach's alpha coefficient of the scale in the present study was 0.91.

Data Analysis

Regarding normality, skewness (range: −0.045-0.27) and kurtosis (range: −1.18 to 0.09) values were found to be within critical values as Tabachnick and Fidell (2013) suggested. Two main analyses were conducted in Study 3. Initially, confirmatory factor analysis (CFA) was performed on the 31-item 3S with Mplus 7.0 (Muthén & Muthén, 2012). For the assessment of model fit, the following indicators were checked: (1) Comparative fit index (CFI) ≥ .90, (2) Tucker Lews Index index (TLI) ≥ .90, (3) Root mean square error of approximation (RMSEA) < .08 (Kline, 1998). CFA was based on the covariance matrix and employed the weighted least square mean and variance (WLSMV) estimation, and it was carried out with Mplus 7.0 to confirm the hypothesized factor structure determined through EFA (Fig. 1). WLSMV estimation is specifically designed for ordinal data and WLSMV is less biased and more accurate than robust ML (Li, 2016). For the first step, first order seven factor CFA (Model 1) was conducted. The Comparative Fit Index (CFI) (Bentler, 1990) and the Tucker & Lewis Index (TLI) (Tucker & Lewis, 1973) are two of the most widely used incremental fit indices in SEM (Byrne, 2012). Values for CFI and TLI range from zero to 1.00, where values close to 1.00 indicate a well-fitting model. Initially, a value >.90 was accepted as an indication of a well-fitting model; however, recently, a new cutoff value close to .95 has recommended (Byrne, 2012; Hu & Bentler, 1999). RMSEA values lower than .05 points to a good fit, and values up to .08 indicate acceptable errors of approximation in the population (Browne & Cudeck, 1992; Byrne, 2012). In the literature, not relying on one particular model is recommended. Instead, different models should be tested to find the best fitting model with data (Cabrera-Nyugen, 2010; Kline, 1998). Thus, a competing model of one second order with seven first order construct was tested. Secondly, convergent validity was investigated with correlation analyses with SPSS 20.0 package program.

Results

Confirmatory Factor Analysis (CFA)

On the obtained data, Model 1 competed against Model 2. In the first model, a first-order model with seven factors was tested and in the second model, one-second order construct with seven first-order factors was tested. Although the goodness of fit statistics indicated that both models (Model 1: a first-order model with seven factors; $\chi^2 = 1073.928$; df = 413; CFI = .97; TLI = .968; RMSEA = 0.056 (90%CI = .052–.061); Model 2: a 7 first-order factors and one second-order construct; $\chi^2 = 1232.518$; df = 427; CFI = .962., TLI = .958, RMSEA = 0.061 (90%CI = .057–.065) represented well fit to data (see Table 3), chi-square DIFFTEST indicated that ($\chi^2 = 118{,}66$; df = 14; $p > .001$) second model improved the model fit. Thus, Model 2 was accepted. The findings from CFAs supported the construct validity of the 3S subscales with seven clear content factors regarding social, physical health, cognitive, emotional/psychological, physical appearance, sexual, personality characteristics domains.

Standardized factor loadings for the second-order model range was .74 to .89 for social domain, .78 to .95 for physical health, .73 to .88 for cognitive domain, .73 to .92 for emotional domain, .68 to .96 for physical appearance, .84 to .92 for sexual domain and .62 to .87 for personal characteristics. All subscale factor loadings were higher than .50.

Intercorrelations between Subscales and Convergent and Divergent Validity

The convergent validity of the 3S and its subscales were examined using Spearman's rho correlations with measures of life satisfaction, positive and negative affect, self-esteem, and depression (Table 4).

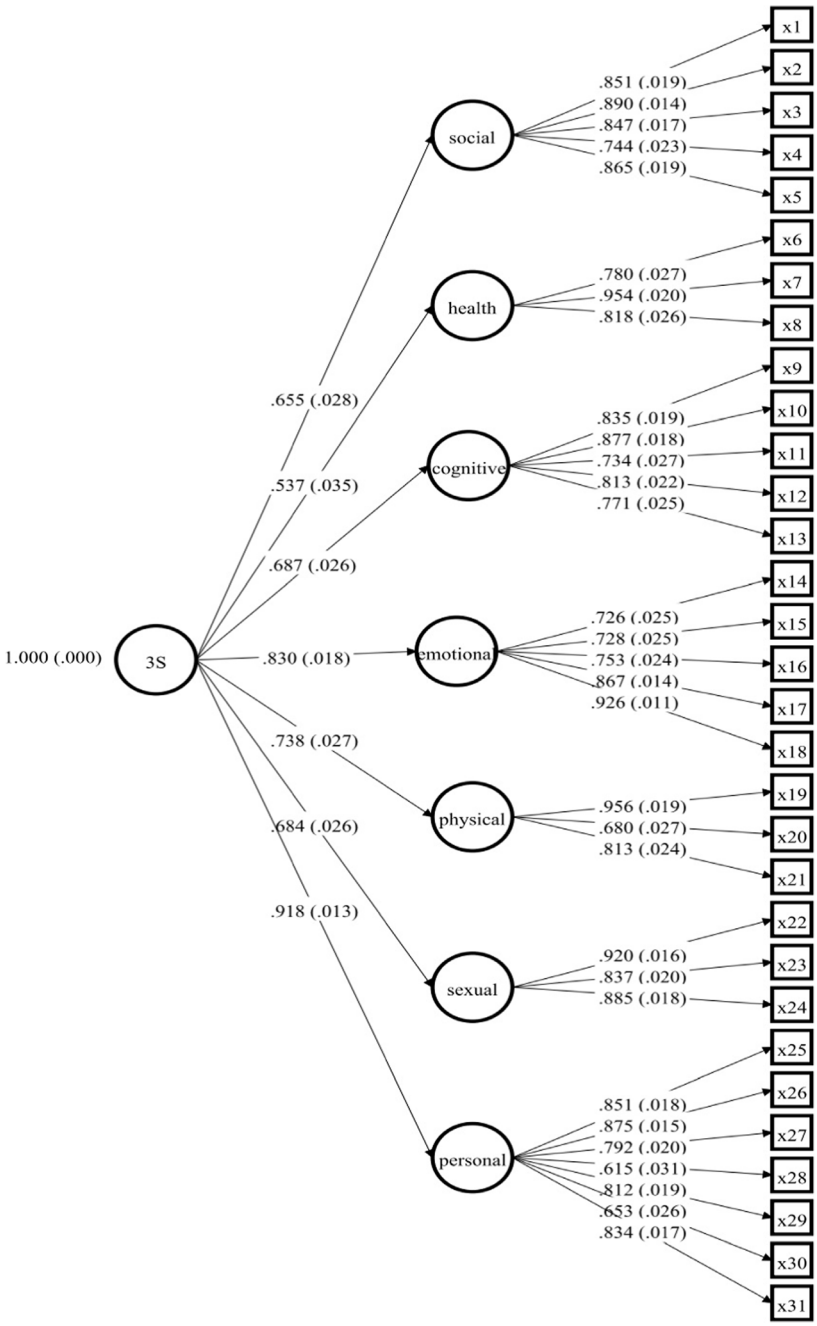

Fig. 1 Self Satisfaction Scale confirmatory factor analysis results (N = 503)

Intercorrelations between 3S total score and its subdomains were relatively high and significant ($p < .001$) as expected. The highest correlations were between total self-satisfaction scores and personality characteristics ($p < .001$). Besides this, 3S total score and all sub-domains were expected to correlate positively with life satisfaction, positive affect, self-esteem and negatively correlate with negative affect and depression from a theoretical perspective. As can be seen in Table 4, the total score of 3S and its subscales have significant positive moderate correlations between life satisfaction, positive affect, self-esteem, and significant negative correlations between negative affect and depression scores.

Test-Retest Reliability

Test-retest reliability for 3-week interval was assessed using a sample of 44 (68%) female, 20 (32%) undergraduate and graduate students ($N = 64$). Test-retest reliability of 3S sub-scales were .70 for social, .75 for physical health, .81 for cognitive, .88 for emotional/psychological, .85 for physical

appearance, .88 for sexual and .91 for personality subscales and .89 for 3S total score.

Discussion

The goal of this three-stage study was to examine the reliability and validity of the self-satisfaction scale (3S) developed for adults and emerging adults to present a multidimensional profile of their self-satisfaction evaluations. Such separated evaluations may allow for more concentrated diagnostic, preventive, and intervention attempts. The first research question was about determining the 3S factor structure (construct validity) among adults including emerging adults. For determining the factorial structure of the 3S, an EFA was conducted and a seven-factor structure accounting for initial 73.87% and after promax rotation 61.4% of the total variance emerged. Results of EFAs have determined the dimensionality of the 3S. Next, a CFA with the data from a second study group (emerging adults) was conducted to confirm the 3S structure identified in study one. A model using 31 items with seven first-order factors and one-second order construct has shown excellent fit statistics and was conceptually coherent. The results of the CFAs supported the construct validity of the 3S subscales with seven clear content factors regarding social, physical health, cognitive, emotional/psychological, physical appearance, sexual, and personality characteristics domains. Furthermore, the sum of the seven domains correlated strongly with the overall self-satisfaction measure, suggesting that these domains are crucial components of global self-satisfaction. Thus, the theoretical assumption was supported that self-satisfaction is a higher-order construct and it has seven distinct factors (Kline, 1998). Factor loadings were all .50 and higher. Intercorrelations of the seven factors provide support that social, physical health, cognitive, emotional/psychological, physical appearance, sexual, and personality characteristics have a mutual core but still are relatively separate constructs.

The second research question in this study was whether the internal consistency of the 3S was satisfactory. The overall scale's Cronbach alpha, McDonalds's omega and composite reliability ranges were between .96 to .99 and 3S subscales'ranges were .82 to .95. Internal consistency of 3S revealed a high level of reliability for the whole scale and its subscales. The third research question was whether the convergent validity of the 3S was satisfactory. In line with the theoretical expectation, the 3S total scores and all subdomains were, relatively moderate to high, positively associated with life satisfaction, positive affect and, self-esteem; and were negatively related to negative affect and depression scores. All these results provided evidence of for the validity of 3S. The pattern of correlations suggests that 3S and life satisfaction are related, but distinguishable constructs. Specifically, the stronger relationships between personality, emotional/psychological items relative to the physical appearance or physical health items provided support for the discriminant validity of 3S. The 3S total scores and all subdomains were relatively strong and positively associated with life satisfaction, positive affect, and, self-esteem theoretically as expected directions. This result was consistent with previous research indicating that self (as a subscale of life satisfaction) was positively related to self-esteem, social domain, physical appearance, and sexual domains (Alfonso et al., 1996). A study conducted by Zullig et al. (2009) and Zullig et al. (2005) results are in line with the results of the present study that physical appearance, global life satisfaction, and self domains positively correlated among college students. The highest correlations were between total self-satisfaction scores and personality characteristics and emotional domains. Cummins' (2000) study findings support these results that personality and optimism and other personal characteristics play an important role in subjective well-being (Cummins, 2000). Furthermore, in a meta analysis study, DeNeve and Cooper (1998) reported that emotional stability as a part of personality traits was the strongest variable of adult life satisfaction, which is supported by the results of the present study. According to Tabachnick and Fidell (2013) the results of test-retest relability assessment are indicative of high temporal stability for 3S and its subscales. The scale developed in this study can help practitioners and researchers in ruling out needs and establishing, realizing, and assessing implementations.

Taken together, all the validity and reliability results of 3S have shown that it has satisfactory psychometric properties to measure self satisfaction among emerging adults and adults.

Table 3 Summary of fit indices for each model (N = 503)

Model	X^2	*df*	*p*	CFI	TLI	RMSEA	C.I 90%
Model 1	1073.928	413	.000	0.971	0.968	0.056	0.052–0.061
Model 2	1232.518	427	.000	0.962	0.958	0.061	0.057–0.065

CFI , Comparative Fit Index; *TLI*, Tucker Lewis Index; *RMSEA*, Root Mean Square Error of Approximation

Limitations

There are certain limitations of the present study and future directions are needed to be addressed. Even though the preliminary psychometric results of the 3S are promising and encouraging, additional research is needed to evaluate thoroughly and refine further the 3S as with any new scale. For instance, examinations of predictive validity and further criterion-related validity studies are necessary to clarify the meaningfulness of scores, as well as checking the possible moderating effect of gender and age on some of the explored

Table 4 Intercorrelations of the 3S and its subscales and measures of life satisfaction, positive and negative affect, self-esteem and depression (N = 503)

Scales and subscales	X	SD	1	2	3	4	5	6	7	8	9	10	11	12
1.Social domain	12.13	4.28	–											
2.Physical health	7.69	2.99	.27*	–										
3.Cognitive domain	14.18	3.51	.41*	.33*	–									
4. Emotional/Psych domain	10.27	4.49	.47*	.37*	.46*	–								
5. Physical appearance	6.46	3.03	.36*	.41*	.40*	.41*	–							
6.Sexual domain	6.41	3.45	.36*	.28*	.42*	.42*	.55*	–						
7. Personality charecteristics	18.18	5.80	.52*	.40*	.51*	.71*	.49*	.48*	–					
8. Life Satisfaction	23.02	6.31	.48*	.27*	.26*	.49*	.34*	.32*	.51*	–				
9. Positive Affect	24.68	7.95	.28*	.27*	.27*	.40*	.29*	.25*	.43*	.48*	–			
10. Negative Affect	22.63	7.81	−.27*	−.26*	−.22*	−.45*	−.23*	−.14*	−.40*	−.46*	−.43*	–		
11. Self-esteem	30.26	5.73	.49*	.31*	.47*	.57*	.41*	.42*	.68*	.50*	. 46*	−.51*	–	
12. Beck Depression Scale	12.82	9.81	−.39*	−.32*	−.26*	−.50*	−.31*	−.19*	−.48*	−.57*	−.54*	.74*	−.63*	–
13. Total Score (MSSS)	75.36	20.19	.69*	.57*	.68*	.80*	.68*	.67*	.81*	.55*	.45*	−.41*	.69*	−.51*

*$p < .001$

domains. The results of this study are limited to Turkish emerging adults and adults from the community sample. Translation of the scale to different languages will improve our understanding of the meaning and measurement of self-satisfaction. The use of a web-based data collection tool is another limitation of the research. Future research can focus on examining the validity and reliability of the 3S across other ages, different populations, time, genders, and different data collection methods (face to face, qualitative). Finally, examining the validity of the scale within clinical populations would allow for the evaluation of the efficacy of the scale for psychological interventions.

As a conclusion, these results provide preliminary evidence that 3S is theoretically and empirically sound and appropriate for use among adults and emerging adults in the community samples. In this regard, 3S is believed to contribute to future subjective well-being and positive psychology studies.

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Code Availability Syntax for the present study will be provided upon reasonable request.

Data Availability Dataset for the present study can be accessed at the following link: https://osf.io/wrc4k/?view_only=985b9988b2fb4950a7d7f0ddc446a263

Declarations

Conflicts of Interest/Competing Interests The author states that there is no conflict or competing interest for this study.

Ethics Approval This study was approved by Muğla Sıtkı Koçman University Human Research Ethical Board.

Informed Consent Informed consent has been obtained from all participants in this study.

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