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Life Satisfaction Scales: Comparative Reliability Practices

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Abstract

Emergence of positive psychology in recent years has shifted researches focused on aspects of psychological Wellness rather than psychopathology. Within the context of positive psychology, life satisfaction has emerged as a key variable of study in relation to adult and youth populations. An accurate measurement of life satisfaction and subsequent interpretation of results requires assessment devices to yield strong psychometric properties. In terms of consistent measurement, reliability estimates must be calculated with each administration, as changes in sample characteristics may alter the scale's ability to generate reliable scores. The present study was designed to address reliability reporting practices for three youth life satisfaction measures. Forty eight occasions of use were identified in the literature for the three scales examined in this study. Results suggest that greater than half of the life satisfaction studies calculated reliability coefficients from their own data. A discussion of reliability from classical test theory is provided, examples of correct reliability reporting practices are given, and implications for reporting reliability are discussed.

Keywords: *life-satisfaction, youth, positive psychology*

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Introduction

In first half of 20th century, psychologists who held behaviourists perspective were the major forces in American psychology. Apprehensive about what they considered the passive view of human functioning that behaviourism represented and dissatisfied with the focus on abnormality that characterised psychoanalytic interests, a third group of psychologists called for attention to inner experience, adaptive functioning, positive life influences, and self-constructs. The writings of those theorists caught the attention many a scholars and researchers, which gave birth to humanistic movement in 1950. Maslow (1943, 1954), was the one who proposed a dynamic theory of motivation in which internal and intrinsic motivating forces and affective processes lead to personal, social, and academic well-being. This was the most powerful voice in the movement, a view of academic functioning in which subjective experiences and positive attitudes play a prominent role.

Though it was well spread, the influence of humanistic psychology on education has been erratic. The emphasis on inner processes encouraged a personal and cultural self-absorption that diminished the importance of collective well-being (Seligman & Csikszentmihalyi, 2000b). Moreover, the gap from theory to practice proved difficult to breach, and many laudable but misguided efforts to nurture the self-esteem of children fell prey to excesses and, ultimately, ridicule (Purkey, 2000). The goal of focusing on and fostering positive self-perceptions became mired in controversies over the value of self-processes in education, controversies that still continue unabated (see Kohn, 1994). Because research efforts were unsystematic and results were

highly inconsistent, the perspectives of humanistic psychology did not develop an empirical base (Pajares & Schunk, in press; Seligman & Csikszentmihalyi, 2000b). As a consequence, the humanistic movement waned during the 1980s as psychologists shifted their interest to cognitive processes and information-processing views of human functioning. Recently, however, there has been another vigorous call within the discipline for a science of psychology grounded on positive experience (Bandura, 1998; Gilham & Seligman, 1999; Seligman & Csikszentmihalyi, 2000a; Vaillant, 2000). This positive psychology has been described as the study of human strengths and optimal functioning, and one of its key aims is to foster research on the positive personal traits and dispositions that are thought to contribute to subjective well-being and psychological health. Such research stands in contrast to the traditional study of people's dis tress, pathology, and maladaptive functioning that continues to characterise American psychology. Moreover, although positive psychology shares with the humanistic movement the aim of advancing human fulfilment, one of the key aims of positive psychology is that its methodology should be grounded firmly in systematic and scientific inquiry (Myers, 2001).

The American Psychological Association (APA) has embraced positive psychology's approach to the study of optimal human functioning by making its first 2000 edition of the American Psychologist a theme issue on positive psychology constructs (Seligman & Csikszentmihalyi, 2000a). In the area of education, researchers hope that insights available from investigations that emphasise a positive by psychology will alter the present focus of drawing inferences about adaptive functioning from students who are at risk or unmotivated to those who are resilient and resourceful(Bandura, 1998). For example, positive psychology is trying to shift the emphasis from research frequently conducted on concepts such as learned helplessness to the study of learned optimism and perseverance (Seligman & Csikszentmihali, 2000b). To these ends, the new researchers urge that positive psychology constructs be integrated with those of traditional and established bodies of educational literature and lines of inquiry.

One of positive psychology's key constructs is optimism, which is typically defined as holding a view of life events and situations that is characterised by positive thinking and maintaining a positive attitude toward the future (Peterson, 2000; Scheier & Carver, 1985, 1992; Seligman, 1991). Although optimism has received attention from both social and personality psychologists who reported that it exercises a positive influence on human functioning, researchers have made few connections between this construct and either educational psychology or academic motivation. There is scant mention of optimism in the field's most popular motivation texts (e.g., Alderman, 1999; Brophy, 1998; Pintrich & Schunk, 1997; Stipek, 1998). Optimism warrants only three paragraphs in the 1,000 plus pages of the Handbook of Educational Psychology (Berliner & Calfee, 1996). Despite the neglect, researchers have found that possessing an optimistic explanatory style is related to adaptive academic benefits, including academic achievement, positive goal orientation, and use of learning strategies, whereas a pessimistic explanatory style is associated with negative outcomes and with learned helplessness (Buchanan & Seligman, 1995; Peterson, 1990; Seligman, 1991). Another construct of a positive psychology that has received limited attention in motivation research centres on individuals' feelings of authenticity, the belief that one's achievements and attainments are deserved and that others

recognise these achievements as being merited. The flip side of this belief has been called the impostor syndrome, the impostor phenomenon, or perceived fraudulence, defined as "a psychological syndrome or pattern based upon intense, secret feelings of fraudulence in the face of achievement tasks and situations" (Harvey & Katz,1985, p. 3). Although perceived authenticity has special relevance to school settings, researchers have focused primarily on the areas of social and personality psychology (and especially business; see Fried-Buchalter, 1997). According to investigations conducted primarily with college students or adults, feelings of "inauthenticity" are often felt by high achieving individuals, especially high-achieving girls (Clance, 1985). As has pessimism, the illusion of incompetence has been found to be associated with depression and anxiety (Kolligian & Sternberg, 1991) and with interpersonal inflexibility (Hayes & Davis, 1993).

A third construct provided by positive psychology theorists is grounded in invitational theory. According to invitational theory, the messages that people send and receive play an important role in creating the beliefs that they develop, for it is these messages that often constitute the bridge on which perception, interpretation, and meaning travel (Vahante & Pajares, 1999). Theorists contend that people can intentionally send uplifting and empowering messages to themselves and others, and that they define the sending of invitations as a process by which people are summoned to realise their own potential and to enhance the potential of others (Purkey & Novak, 1996). Positive invitations convey the message that people are able, valuable, responsible, and forgiving; negative invitation indicate that people are not valued and that they are incapable of participating positively in their own development.

Various mainstream motivation theories posit connection between academic motivation and the potential bene fits that can accrue from optimistic beliefs, perceived authenticity, and invitations. One of the posited connections comes from a large body of research that has examined students' achievement goals, which are the reasons that stu dents provide for engaging in academic tasks and activities. Students with a task-goal orientation engage in their academic work to master the material and ideas and seek academic challenge. For those students, learning is an end in itself. Students who hold a performance-approach goal orientation want to do better than their classmates so they will be recognised as competent by their peers, teachers, and parents. Students who hold a performance-avoid goal orientation do their academic work primarily because they fear appearing incompetent.

Researchers report that having a task-goal orientation has motivational benefits, whereas having a performance-avoid goal orientation can be detrimental (Urdan, 1997). Task goals are related positively to attributions of success to effort and persistence in the face of difficulty (both are components of optimism). Performance goals have been shown to be related to lack of persistence and to attributions of failure to lack of ability (a pessimistic view).

Researchers have not established an empirical connection between achievement goals and positive psychology con structs. However, one can posit logically that students whose main reason for doing their academic work is grounded in fear of failure should be more likely to view their academic outcomes with pessimism and with a greater sense of inauthenticity. It also seems reasonable to posit that students who engage in academic work for intrinsic reasons should be more inviting and forgiving of themselves and of others than should students whose academic efforts are

based on the sought approval or fear of disapproval from others.

A second body of motivation research that posits connection to the positive psychology constructs has focused on the expectancy and value beliefs that students hold about their academic work. Expectancy beliefs are judgments of capability to attain designated types of performances. Those beliefs that have received the bulk of attention in academic motivation studies have been self-concept (Marsh, 1990; Skaalvik, 1997), self-efficacy (Pajares, 1996; Schunk, 1991), and confidence to use self-regulatory practices (Zimmerman, 1989; Zimmerman & Schunk, 1989). A student's academic self-concept represents a composite view of him or herself as a student, a view formed through experience and feedback from others. The construct of self-efficacy is drawn from Bandura's (1986) social cognitive theory, and academic self-efficacy beliefs are defined as judgments of capability to succeed in academic pursuits. The key difference between the two constructs is that academic self-concept beliefs focus primarily on the feelings of self-worth associated with being a student, whereas academic self-efficacy centres on the confidence that students have to succeed in school. Students also possess judgments of their capability to use various self-regulated learning strategies required to accomplish academic work. This self-efficacy for self regulated learning includes confidence judgments regarding how well students can motivate themselves to do school work, finish their homework on time, or remember information presented in class or in their school books. In studies of academic motivation, value is defined in terms of students' perceived importance of, interest in, and enjoyment of school or an academic domain (Eccles, 1983). Researchers with a self-concept or self-efficacy theoretical orientation would agree with invitational theorists that students' academic self-beliefs are created and developed, in part, by the messages, the invitations and "dis invitation ". Students send and receive (Bandura, 1997; Eccles, 1983; Marsh, 1990). As regards self-efficacy, Pajares and Zeldin (1999) investigated the relationship between invitational messages and the sources of the self-efficacy beliefs of women with careers in mathematics, science, or technology. They found that the invitations the women reported receiving were important in their initial choice to pursue nontraditional careers and also formed the self-beliefs that nurtured the effort, persistence, and resilience required to overcome personal, social, and academic obstacles. The invitations from others that the women received early in their development reemerged at later points in their lives as self-invitations. Pajares (1994) suggested that the tenets of self-efficacy theory, self-con cept theory, and invitational theory complement each other and he provided a model showing the hypothesised relationship between efficacy beliefs and invitations.

In addition theorist state that students who value a domain and hold positive expectancy beliefs about their own competence, feelings of self-worth, and confidence in their self-regulatory strategies engage academic tasks with greater optimism than do students who devalue academics or doubt their abilities (e.g., Bandura, 1997; Eccles, 1983). Positive psychology theorists also would assert that there is a clear connection between expectancy beliefs, the belief that competence is authentic, and the tendency to be self and other-inviting (Purkey, 2000; Seligman & Csikszentmihali, 2000).

Vacha-Haase, Kogan, & Thompson (2000) coined the term reliability induction (RI) referring to the practice of citing reliability estimates from previous studies or normative samples rather than estimating reliability from the data at hand. This practice is inappropriate,

given that the sample from which the reliability coefficient was originally reported is often very different with respect to sample composition and variability.

Previous researches suggests that this practice is very prevalent. For example, Meier and Davis (1990) found that the majority of measures described in the Journal of Counseling Psychology in three volumes (95%, 1967; 85%, 1977, and 60%, 1987) did not provide the reporting of psychometric properties. Similarly, Willson (1980) reported that only 37% of all studies from the American Educational Research Journal provided reliability coefficients for the data analysed in the studies. Meta-analytic studies involving a particular measurement scale have reported similar findings. Vacha-Haase (1998) found that only 13% of the 638 articles using the BEM Sex Role Inventory reported reliability for the data at hand. In examining the Spielberger State-Trait Anxiety Inventory, Barnes, Harp, and Jung (1998) found that of 816 articles using the measure, only 6% reported reliability estimates from their own data. In fact, 73% of these studies made no mention of reliability whatsoever.

It is therefore important for researchers to calculate reliability for the data at hand rather than inducing reliability from previous research. To date, limited research on reliability reporting practices have been conducted. Buhi (2005) examined the reporting practices of rape myth acceptance and discovered that only 38% of research reported reliability from their own study, showcasing the need for future research in this area. The present study was designed to investigate the reliability reporting practices of three measures of youth life satisfaction.

Measures

Students' life satisfaction scale (SLSS)

SLSS was developed by Huebner in 1991, it's a 7-item self-report measure that examines children's/adolescent's global life satisfaction. It has been used to measure students ranging in age from 8 to 18 years. The self reporting questionnaire has six options to choose from, 1 (strongly disagree) to 6 (strongly agree). These items are summed to obtain a total score for global life satisfaction. The internal consistency of the SLSS has been reported as 0.82 with test-retest reliability reported as 0.74 based on a 1- to 2-week interval (Dew & Huebner, 1994). Comparisons of alpha coefficients for African-American and Caucasian adolescents revealed cross-group comparability (Huebner & Dew, 1994). The SLSS has also been used effectively with a variety of student populations, including students with emotional disabilities, learning disabilities, and gifted students.

Brief multidimensional students' life satisfaction scale (BMSLSS)

Originally developed for the inclusion in the 1997 CDC's Youth Risk Behavior Survey, the BMSLSS is a five-item self-report questionnaire developed to assess children and adolescents' satisfaction with respect to the areas of life most important during youth development (Huebner et al., 2003). The five items represented on this scale correspond with the five variables of family life, friendship, school experiences, self, and living environment to be reported on a 7-point scale ranging from 1(terrible) to 7 (delighted). The subject's mean response is then used as a continuous variable in data analyses. Reported reliability for total score on the BMSLSS has been reported with alpha levels of 0.75 for middle school students and 0.81 for high school students (Seligson, Huebner, & Valois, 2003; Zullig, Valois, Huebner, Oelt mann, & Drane, 2001).

Multidimensional students' life satisfaction scale (MSLSS)

The MSLSS is a 40-item self-report scale that examines the domain specificity of life satisfaction while retaining a general life

satisfaction rating (Huebner, 1994). Items are responded to on a 6-point scale ranging from 1 (strongly disagree) to 6 (strongly agree). Coefficient alphas have ranged from 0.82 to 0.85 for domain scores and 0.92 for the total score. Test-retest reliability based on a 4-week interval has been reported at 0.82 for total scores. Validity of the MSLSS has been demonstrated by high correlations between almost every subscale and its targeted self-report criterion measure (Greenspoon & Saklofske, 1997).

Study Selection

The literature survey was performed using the Academic Search Elite, Sage, PsychlNFO, PsychARTICLES, ERIC, Humanities Abstracts, Google Scholar, and Medline databases. The search terms used in this study included: "Students Life Satisfaction Scale," "SLSS," "Multidimensional Student Life Satisfaction Scale" and "MSLSS." Journal articles reporting other versions of the MSLSS, SLSS, or BMSLSS were also excluded from analysis. A total of 48 journal articles were taken for the final sample. These articles yielded 73 occasions in which these scales were used. Articles were next classified on the basis of four categories: (1) articles reporting reliability for the data at hand; (2) articles inducing reliability by citing specific estimates from previous studies (including the normative sample); (3) articles mentioning reliability with no reference to specific estimates; and (4) articles making no mention of reliability.

Results

Forty-eight studies examining youth life satisfaction were retained for analysis. Many of these studies used more than one life satisfaction measure or reported data from multiple samples, yielding a total of 73 occasions where the three scales in question were used. For the life satisfaction scales combined, 52% (n = 38) of the time, reliability was calculated and presented from the data at hand. Twenty-eight percent (n = 21) of the time, reliability was induced from either a previous study or from a normative sample. Four percent (n = 3) of the time, authors stated that the measure was reliable but did not provide specific reliability coefficients. Two percent (n = 2) of the time, no mention of reliability was made. Twenty-seven of the studies located used the MSLSS as a measure of life satisfaction, yielding 41 occasions where the scale was used. Of the 41 occasions, 68% (n = 28) reported reliability for the data at hand, 24% (n = 10) induced reliability from a previous study, and 7% (n = 3) cited the MSLSS as reliable with no mention of specific estimates. None of the studies using the MSLSS excluded mentioning reliability altogether.

Four studies used the BMSLSS as a life satisfaction measure. From these studies, six occasions were found where the instrument was used. Four of these occasions (66%) reported reliability for the data at hand, one (16%) induced reliability coefficients from a previous study, and on one occasion (16%), the authors made no mention of reliability. None of the studies using the BMSLSS simply cited the measure as reliable.

The SLSS was the final measure examined for reliability reporting practices. Seventeen studies were located using this scale as a measure of life satisfaction among youth, yielding a total of 24 occasions where the instrument was used. Of the 24 occasions, 54% (n = 13) calculated reliability for the data at hand, 41% (n = 10) induced reliability, and 4% (n = 1) made no mention of reliability. None of the studies noted the SLSS as a reliable measure while failing to cite specific estimates of reliability.

Of the studies examined, there were many acceptable statements for reliability reporting. For example, while discussing the MSLSS, Huebner (1994) stated, "Next, internal

consistency reliability estimates were computed for the total score and each subscale. The coefficient alpha was .92 for the total score, .82 for the Family items, .85 for the School items, .85 for the Friends items, .82 for the Self items, and .83 for the Living Environment items. These data indicated adequate reliability for the total score and all five sub-scales" (p. 151). Similarly, Dew and Huebner (Dew & Heubner, 1994, p. 191) stated that "the internal consistency of the SLSS was also investigated. A Chronbach's alpha of .86 was obtained, indicating acceptable internal consistency reliability with an adolescent sample." Table 1 characterizes the range of reliability estimates found for the BMSLSS and SLSS. Table 2 presents reliability estimates for each sub-scale of the MSLSS. Each study presented calculated reliability for the data at hand. Reliability coefficients for the three scales are generally adequate but tend to vary from initial estimates during the validation process.

Discussion

Across measures of youth life satisfaction, reliability was reported for the data at hand in the majority of the studies reviewed. Since the unit of measure in this study was occasions rather than studies, it is inappropriate to make direct comparisons to other studies examining the reliability reporting practices of other scales. It is sufficient to say that a deficiency in correct reliability reporting exists across measures.

Tables 1 Sample internal consistency estimates in selected studies of BMSLSS and SLSS

Article,year	Scale	Journal	Composite reliability
Funk, et.al (2006)	BMSLSS	Journal of happiness studies	0.75
Seligson et.al (2003)	BMSLSS	Social indicator research	0.75
Zullig et.al (2005)	BMSLSS	American journal of health behaviour	0.78
Gross (2004)	SLSS	Applied developmental psychology	0.88
Park (2005)	SLSS	School psychology international	0.77

Table 2 Simple internal consistency estimates reported in selected studies of MLSS

Article	Journal	Family	Friends	School	Living	Self
Edward (2004h	Hispanic journal of behavioural sciences	0.84	0.82	0.84	0.78	0.77
Gilman et.al (2005)	Personality and individual differences	0.87	0.88	0.82	0.72	0.70
Heubner (1994)	Psychological assessment	0.82	0.85	0.85	0.83	0.82

Most studies examining the reporting practices of other scales have noted low per centages of reliability estimates reported for their own data. For example, Buhi (2005) for example, found that only 38% of published research calculated reliability for the data at hand for the Burt Rape Myth Acceptance Scale. Similarly, Caruso and Edwards (2001) found that only 6.2% of studies using the Eysenck Personality Questionnaire reporting reliability from their own data. Finding have been demonstrated across a variety of psychological measures. It is possible that these low percentages are a function of the scale's popularity. If this is the case, researchers may belief that since a particular scale is popular in terms of widespread usage, that it must be valid and reliable. It stands to reason that researchers may be less likely to calculate and report reliability in this case.

While the results from the present study are encouraging, there remain a large number of studies omitting reliability reporting for the data at hand. This being the case, it is necessary for researchers to not only gain a proper understanding with regard to reliability, but also to make the calculation and reporting of reliability coefficients a prerequisite for conducting research.

The importance of reporting reliability from the data at hand has been widely discussed (Henson & Thompson, 2002). Standards 2.1 and 2.2 of the American Educational Research Association (AERA), the American Psychological Association(APA), and the National Council on Measurement in Education (NCME) underscore the importance of test score reliability rather than test reliability (AERA, 1999). APA Task Force on Statistical Inference state that authors are to "provide reliability coefficients of the scores for the data being analysed even when the focus of their research is not psychometric" (Wilkinson, 2002, p. 596). Such a statement reflects the overall importance in reporting reliability estimates whenever research is conducted. One reason for the reporting of reliability coefficients involves the proper interpretation of effect sizes.

Reliability is critical in detecting effects in substantive research. For example, if a dependent variable is measured such that the scores are perfectly unreliable, the effect size in the study will unavoidably be zero, and the results will not be statistically significant at any sample size, including an incredibly large one.

Future research regarding the reliability reporting practices of other measurement scales relative to positive psychology is warranted. As variations in tests or sample characteristics lead to variability in reliability estimates, identifying these sources of variation is needed. Reliability generalisation (RG) studies provide a meta-analytic means of examining various study characteristics to account for variability in reliability coefficients. Unfortunately, RG studies are only possible in cases where researchers calculate reliability estimates from their own data. Nevertheless, RG studies are useful in aiding researchers to understand which variables to control in subsequent analysis using the same measurement scale. The addition of RG studies to the positive psychology assessment literature would be welcomed.

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