Satisfaction With Life Scale in American Sign Language: Validation and Normative Data

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Cover Page Footnote

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Abstract

The Satisfaction With Life Scale (SWLS) is a brief instrument that assesses a person's global life satisfaction. Using state-of-the-science techniques, the SWLS was translated into American Sign Language (ASL). A national sample of 350 deaf and hard of hearing individuals who preferentially use ASL completed the ASL version of the SWLS (SWLS-ASL) online. The individuals in this sample had a mean SWLS score of 23.4, well within the range of mean scores reported for samples from general populations of hearing individuals. No significant differences were identified in SWLS-ASL scores due to gender, cultural identification (identified as culturally Deaf or not), race, ethnicity, education, or employment status.

Keywords: life satisfaction, Satisfaction With Life Scale, deaf, American Sign Language

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Introduction

Life satisfaction is a conscious judgmental process in which people evaluate the quality of their lives based on self-selected criteria (Pavot & Diener, 1993, 2008). The specific criteria depend upon the individual and may include marital status, wealth, health, job satisfaction, academic performance, social connections, and/or the quality of romantic or family relationships. Because people have different standards about what is important in life and apply different weights to the domains deemed most important, Diener and his colleagues (1985) developed a global measure of life satisfaction called the Satisfaction With Life Scale (SWLS). The SWLS is a brief, five-item instrument that assesses a person's global judgment of life, rather than satisfaction, in specific domains. The SWLS items are global rather than specific in nature.

Each of the five items on the SWLS has seven possible responses on a Likert scale, from 1 (strongly disagree) to 7 (strongly agree). Scores can range from 5 to 35; scores from 5 to 9 are interpreted as extreme dissatisfaction with life, scores from 10 to 14 indicate dissatisfaction with life, and scores from 15 to 19 indicate slight dissatisfaction with life. However, scores from 21 to 25 are interpreted as slight satisfaction, scores from 26 to 30 indicate satisfaction, and scores from 31 to 35 indicate extreme satisfaction with life.

Pavot and Diener conducted a comprehensive review of the SWLS literature in 1993 and again 15 years later in 2008. In the dozens of studies they reviewed, most groups had mean SWLS scores in the range of 23–28, within the range of slightly satisfied to satisfied (Pavot & Diener, 1993, 2008). For example, large samples of American college students had mean SWLS scores of 23.0 to 25.2, although college students with disabilities reported mean SWLS scores of 20.8 to 24.3 (Pavot & Diener, 1993). American adults reported SWLS means from 23.3 to 24.4, whereas gifted American adults had a mean SWLS score of 20.2 (Pavot & Diener, 1993, 2008). The lowest SWLS scores were observed among sex workers ($M = 10.3$), veterans receiving inpatient treatment at Veterans Administration hospitals ($M = 11.8$), and men incarcerated in prisons ($M = 12.3$), indicating dissatisfaction with life (Pavot & Diener, 1993, 2008).

Mean SWLS scores have been reported for deaf populations[1] as well. Using a German version of the SWLS, Hintemair (2008) reported a mean SWLS score of 23.0 for German adults who were deaf. Leigh and colleagues used the original (Diener et al., 1985) English version of SWLS to measure life satisfaction among deaf high school students and reported no significant difference between deaf students with cochlear implants ($M = 28.2$) and deaf students without cochlear implants ($M = 26.1$) (Leigh et al., 2009). Thus, deaf individuals reported the same level of global satisfaction with life as hearing individuals — within the range of mean SWLS scores of 23-28.

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[1] We have elected to use deaf (lower case) in an all-encompassing manner to reflect the diversity within the deaf population. We follow the examples set by the National Association for the Deaf (https://www.nad.org/), and the National Deaf Center on Postsecondary Outcomes (NDC; https://www.nationaldeafcenter.org. In this paper, "deaf" refers to individuals who self-identify as deaf or hard of hearing. The use of Deaf (uppercase) refers to persons who self-identify as culturally Deaf.

Very few studies have been conducted using the SWLS to study life satisfaction in deaf populations, whereas dozens of papers on SWLS scores in hearing populations have been published. In addition to the two studies previously cited, only one other published paper reports use of the SWLS among the deaf population. Allahi, Mirabdi, & Mazaheri (2012) found that deaf students in Iran scored significantly higher on the SWLS than blind students. One reason for the dearth of studies using the SWLS in deaf individuals may be that a validated version of the instrument in American Sign Language (ASL) has yet to be developed.

In order to provide the field with an appropriate measure for use by deaf individuals who preferentially use ASL, our team, which included an expert panel of nationally recognized experts in ASL and psychological assessment, translated Diener et al.'s original (1985) SWLS into ASL. The goals in developing the ASL version of the SWLS (SWLS-ASL) were to produce an instrument that: a) was normed for deaf individuals who use ASL preferentially, b) could be administered without working with interpreters, c) did not require reading, d) did not require knowledge of English, and e) was accessible online to any deaf consumer, regardless of location. The online SWLS-ASL also includes English captions and voice-overs. This paper reports the results of field-testing of the online SWLS-ASL with a nationally representative sample of individuals who self-identified as deaf and used ASL preferentially.

Method

Participants

Participants who self-identified as deaf (i.e., deaf or hard of hearing) and preferentially used ASL were recruited through different avenues, including email lists with members who were vocational rehabilitation (VR) counselors, social workers, educators, counselors, and/or other professionals who worked with deaf consumers, national networks in the deaf community, and social media outlets hosted by deaf community leaders.   Altogether, 350 deaf individuals who preferentially used ASL and came from 44 states and the District of Columbia completed the SWLS-ASL online. Preference for ASL was determined by asking prospective participants, "What language do you understand the best?" The individuals who reported that they understood ASL best were included in the sample of participants; those who chose English were excluded. All participants were treated in accordance with the ethical standards of the American Psychological Association, and this research project was approved by the Institutional Review Board (IRB) of Wright State University. Each individual who completed the field test received a $25 gift card.

Development of the Satisfaction With Life Scale in ASL

The SWLS-ASL was developed using the most effective and appropriate scientific methods employed in developing, translating, and linguistically validating assessment instruments. The translation and validation procedures for the SWLS-ASL were modeled after the Substance Abuse Screener in ASL (SAS-ASL) and the ASL version of the Global Appraisal of Individual Needs–Short Screener (GAIN-SS) (Guthmann et al., 2012; Guthmann & Moore, 2007; Titus & Guthmann, 2010) as well as the Adult Quality of Life-DHH and the Youth Quality of Life-DHH instruments (Patrick et al., 2011). The translation and validation protocol involved five basic steps: forward translation, back translation, reconciliation between the original and back

translated instruments, cognitive debriefing, and field-testing (Guthmann et al., 2007, 2010; Titus & Guthmann, 2010).

Forward Translation

To conduct forward translation of the SWLS from English to ASL, a forward translation team consisting of four bilingual native and non-native ASL signers, including deaf individuals and children of deaf adults (CODAs), translated the instrument into ASL. They addressed language structures, idioms, technical terms, time frames, and other features requiring clarification as they translated each item, response options, and directions. After the forward translation team reached consensus on the translated instrument, the SWLS-ASL was filmed, employing a deaf individual to sign the instrument. Members of the forward translation team provided input during the filming of the ASL version of the instrument to ensure fidelity of the deaf individual's signing. The SWLS-ASL was posted on a dedicated website for the forward translation team to review. The team met via videoconference to critique and suggest revisions for any items that were unclear or inaccurate. After the initial ASL version was approved by the forward translation team, the SWLS-ASL video was posted online on the dedicated website for back translation.

Back Translation

Back translation required that a different group of bilingual native ASL users, who had no prior exposure to the English version of the SWLS, view the ASL version of the instrument and write in English their understanding of the items and response choices. Thirty bilingual individuals who were either deaf or CODAs were recruited nationwide for this task.

Reconciliation

The reconciliation process required a careful comparison between the language and meaning of the original English instrument and the back-translated English versions. The goal of the reconciliation was for the original English and the back-translated English to have the same meaning. The original and back-translated English versions did not need to be literally identical, as the focus was on consistency in meaning. The reconciliation was conducted by two bilingual, native English users who were expert panel members. After thorough comparison, items that varied in consistency of meaning between the two English versions were flagged and compiled into a summary report for further review by the forward translation team. Flagged items typically identified places in the translation where there was a misunderstanding, mistranslation, omission, and/or other irregularity.

The forward translation team then met to review the results from the reconciliation, view the ASL version of the flagged items, and make revisions. If an item needed to be revised, the back translation process and the back translation reconciliation were repeated. Any approved revisions were incorporated into a revised ASL version of the SWLS before moving to the next step of the translation process. This iterative process resulted in an ASL version of the instrument to use in the cognitive debriefing step.

Cognitive Debriefing

Cognitive interviews were conducted after the forward translation team approved the revised SWLS-ASL video. The purpose of the cognitive interview was to obtain consumer feedback on the understandability of individual items and the ease with which the instrument could be navigated. Twenty deaf community members were recruited to participate in this phase. They were asked to complete the online SWLS-ASL and then were interviewed using a structured protocol to elicit user feedback on the clarity and understandability of each item. Participants viewed the ASL video clips of each item, paraphrased each item, and then provided feedback on the clarity of the signing and the participant's understanding of the meaning. The cognitive interview protocol included the following prompts: "Are there any signs you are not sure of? (If so, which ones?) Was the signing clear? What does the item mean? Do you understand what the item means? How would you change the item to make it better/clearer/easier to understand?" Feedback from the structured interviews was summarized for the reconciliation team. Upon review, the reconciliation team compiled suggested revisions for the forward translation team's review. Upon the forward translation team's approval, revisions were completed and videotaped. The back translation, reconciliation, and cognitive interviewing processes were repeated. This iterative process resulted in the final version of the instrument that was used in the field test.

Field-Testing The SWLS-ASL was field-tested using two samples of deaf populations: current VR consumers and individuals who were not currently receiving VR services.

Procedure

Field-testing of the SWLS-ASL was conducted online using Lime Survey, which participants could access on all browsers and mobile devices. Responses were scored automatically and results were stored securely on a HIPAA-compliant server. Participants with low vision could scale the online instrument to a larger size, and all text was screen-reader- compatible, in keeping with web content accessibility guidelines as recommended by the United Nation Convention on the Rights of Persons with Disabilities.

The SWLS-ASL scale was administered with several other instruments in ASL that were also being field-tested, including the Global Appraisal of Individual Needs–Short Screener, the Rosenberg Self Esteem Scale, the Alcohol Use Disorders Identification Test, and the Drug Abuse Screening Test. Participants were required to give online consent in response to an informed consent document presented in ASL before completing the SWLS-ASL and other instruments. Before the SWLS-ASL was completed, demographic information was collected regarding gender, race, ethnicity, age, educational level, preferred language, cultural identification, and employment status (including whether the participant was currently a VR consumer). The SWLS-ASL instrument was presented in ASL with English text below the video. No information revealing participant identification was stored with the field-test data.

Results

A total of 350 deaf individuals from 44 states and the District of Columbia completed the SWLS-ASL online. Their ages ranged from 19 to 75 years, with most (64.4%) falling between the ages

of 25 to 34. The remaining participants fell within the following age ranges: 19-24 years (13.0%), 35-44 years (15.8%), 45-64 years (5.9%), and 65-75 years (0.8%). Of the 350 participants, 178 (50.9%) were male and 172 (49.1%) were female. In addition, 295 (84.3%) of the participants reported being White/Caucasian, 42 (12.0%) reported being Black/African American, and the remainder ($n = 13$, or 3.7%) indicated other or multiple racial identities. Forty-five participants (12.9%) identified as Latinx In terms of education, 9 (2.5%) reported having an eighth-grade education or less, 31 (9.0%) completed some high school, 102 (29.1%) had earned a high school diploma, 95 (27.1%) completed some college or university, 76 (21.8%) had earned a college or university degree, 14 (4.0%) had completed some post-baccalaureate education, and 23 (6.5%) had earned a post-baccalaureate degree. Over 65% of the participants were employed, and of that, over 50% were employed full-time. A total of 14.1% were students. Nearly 50% ($n=172$) reported that they were currently VR consumers.

As in the original scale development study (Diener et al., 1985), the responses to the five questions were summed to form an overall SWLS score. The mean SWLS-ASL score for all deaf participants was 23.4, with a standard deviation of 4.9. Of this sample, 153 (43.7%) described themselves as "culturally Deaf," defined in the set of demographics questions as "deaf community member, go to all-deaf events, have used ASL since you were young, and have a strong deaf identity." A *t*-test comparison of mean SWLS-ASL scores between culturally Deaf participants ($M = 23.6$, SD = 4.4) and other deaf participants ($M = 23.2$, SD = 5.3) revealed no statistically significant differences $t(348) = -0.74$, n.s.

Mean SWLS-ASL scores between Caucasians ($M = 23.3$) and African Americans ($M = 23.8$) did not differ significantly, $t(348) = -0.59$, n.s. Likewise, SWLS-ASL scores between Hispanic/Latino ($M = 23.0$) and non-Hispanic/Latino samples ($M = 23.4$) were not significantly different, $t(348) = 0.62$, n.s.

Comparisons of SWLS-ASL scores between men ($M = 23.5$) and women ($M = 23.3$) revealed no significant differences on total SWLS-ASL scores, $t(348) = 0.38$, n.s., or on any of the individual SWLS-ASL questions. An analysis of variance (ANOVA) comparing total SWLS-ASL scores of individuals with different levels of educational attainment resulted in no significant differences between the groups, $F(7,342) = 0.94$, n.s. Mean SWLS-ASL scores ranged from 21.3 for individuals who had finished less than eighth grade to 24.2 for individuals who finished some post-graduate education. Those with a high school diploma only had a mean SWLS-ASL of 23.7, those with a college degree had a mean score of 24.0, and those who finished a post-graduate degree had a mean SWLS-ASL score of 22.7. ANOVA comparisons of SWLS-ASL scores among the five age groups (18-24 years, 25- 34 years, 35- 44 years, 45-64 years, and 65-75 years) showed no significant differences, $F(4,345) = 0.18$, n.s.

Additional analyses were conducted comparing SWLS-ASL scores based on employment status. No significant differences in SWLS-ASL score were found between the 205 participants working full time ($M = 23.3$), the 40 working part time ($M = 23.9$), and the 105 who were unemployed ($M = 23.3$), $F(2,247) = 0.27$, n.s. Likewise, no difference was found between the 49 participants who were enrolled as students ($M = 23.6$) and the 301 who were not students ($M = 23.3$), $t(348) = 0.35$, n.s. SWLS-ASL scores for VR consumers ($M = 23.4$) were not different from SWLS-

ASL scores for non-VR consumers (M = 23.4), $t(348)$ = 0.01, n.s. For all these comparisons, variances were equal for all groups being compared.

Psychometric analyses

Cronbach's alpha for the ASL version of the SWLS was .720, which indicated sufficient internal consistency and construct reliability. Following van Beuningen's (2012) method, a Principal Components Analysis (PCA) was conducted after extreme responses were removed. The PCA revealed that responses to the five SWLS-ASL questions combined into one factor, which accounted for 49.25% of the variance. Table 1 shows the results of the factor analysis.

Table 1

Results of Principal Components Analysis

SWLS Question	Factor Loading	Communality
Q1: close to ideal	.786	.618
Q2: conditions excellent	.742	.551
Q3: satisfied	.676	.458
Q4: important things	.639	.409
Q5: change nothing	.653	.426

Discussion

Analysis of the field test of the SWLS-ASL with a nationally representative sample of 350 self-identified deaf persons revealed a mean SWLS-ASL score of 23.4, which corresponds to a "slight satisfaction" with life. This mean score was well within the range of mean scores reported for samples from populations of hearing individuals, which have been reported to range from 23.3 to 24.4 (Pavot & Diener, 1993, 2008).   In this study, there were no differences found among subpopulations, including gender, cultural identification, race, ethnicity, education, or employment status.   The sample size provided sufficient power to detect significant differences among subgroups if any existed.

Szarkowski and Brice (2018) have argued for a more positive paradigm in the study of deaf individuals and their communities, rather than highlighting the difficulties and challenges faced by deaf individuals, which is the traditional focus of research on deaf individuals. This new paradigm supports research on deaf strengths as well as on how deaf individuals and deaf communities define life satisfaction. To date, life satisfaction among deaf individuals has been measured using instruments in English or other spoken languages that are normed for hearing

persons. The SWLS-ALS, translated from English to ASL by our team, can facilitate research in this area. This instrument, as well as eight other behavioral and career interest instruments in ASL that have been normed for deaf individuals, is available at the SARDI website (https://www.sardiprogram.com/ASLStar/) for use by counselors and other professionals who work with individuals who prefer ASL.

Measures of life satisfaction are valuable in treatment planning and outcome measurement, providing a window into subjective well-being (Frisch et al., 1992; Pavot & Diener, 2009; Salsman et al., 2014). Scores on the SWLS-ASL reflected the clients' perceived quality of life. Counselors and other behavioral health professionals will find the SWLS-ASL to be useful at the beginning of treatment because it provides a holistic overview of clients' perceived life satisfaction. The SWLS-ASL may also be used on a routine clinical basis as a measure of positive outcome from the client's perspective. More research, however, is needed to assess the efficacy of the SWLS-ASL for use with deaf clients. Future research should also focus on developing norms for the SWLS-ASL for homogenous clinical samples, such as deaf individuals diagnosed with major depression or chronic schizophrenia.

Limitations

This is the first field test of its kind with a national sample of the deaf individuals. Testing online allows for widespread assessment, but it also has limitations. Online testing is available to individuals who can afford Internet access and have basic technical literacy to participate. Every effort was made to ensure that access was possible through all major platforms and browsers (including mobile devices), but this method still requires Internet access. The participants self-selected by responding to email invitations to complete the field-testing for a $25 gift card. Enrollment in the study was cut off when 450 people completed the field test. Thus, the participants tended to be individuals who were actively online and responded quickly to email.

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