Evaluation of Subjective Well-being: Analysis of the Satisfaction With Life Scale in Chilean Population*

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A B S T R A C T
The aim of this investigation is to evaluate the psychometric properties of the Satisfaction with Life Scale (SWLS), in the adult population from ages 18 to 65. In order to do this two studies were conducted. In the first one, we evaluated the internal consistency and construct validation of data from 330 people between 18 and 52 years of age; in the second study, we evaluated the confirmatory factor and validation of data indicators from 1157 people between 18 and 65 years of age. The results show suitable indicators of internal consistency (Cronbach's alpha = 0.82), the exploratory and confirmatory factor analysis finds a one factor’s solution. The correlation between the SWLS, the WHOQOL-BREF Quality of Life Questionnaire, and the Difficulties in Emotion Regulation Scale (DERS), display significant, consistent correlations in the expected direction. We conclude that the SWLS is a reliable and valid instrument to use for evaluating the cognitive sphere of subjective well-being in Chile’s adult population.

Key Words: Subjective well-being, Satisfaction with Life Scale, Self-reporting.


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Resumen
El objetivo de esta investigación fue evaluar las propiedades psicométricas del cuestionario de satisfacción con la vida (SWLS) en población adulta de 18 a 65 años. Para esto, se realizaron dos estudios. En el primero se evaluó la consistencia interna y la validez de constructo con datos de 330 personas entre 18 y 52 años. En el segundo estudio se evaluó la estructura factorial confirma- toria e indicadores de validez con datos de 1157 personas entre 18 y 65 años. Los resultados mostraron adecuados indicadores de consistencia interna (alfa de Cronbach = 0.82), en el análisis de estructura factorial exploratoria y confirmatoria se encontró una solución unifactorial. La correlación entre SWLS, Cuestionario de Calidad de Vida WHOQOL-BREF y Cuestionario de Dificultades en la Regulación Emocional, arrojó correlaciones significativas, congruentes y en la dirección esperada. Concluimos que el cuestionario SWLS es un instrumento confiable y válido para su utilización en la evaluación de la esfera cognitiva del bienestar subjetivo en población adulta en Chile.
Introduction

Subjective well-being has been studied indiscriminately as an overall construction of happiness (Marriero & Carballeira, 2011), i.e. an optimal state, as well as a factor of emotional content. The latter also distinguishes two subcomponents: Positive and Negative Affection (Lucas, Diener & Suh, 1996; Sandin, Chorot, Lostao, Joiner, Santed & Valiente, 1999), and another cognitive component, which has been called “Satisfaction with Life” (Andrews & Withey, 1976).

This cognitive component is defined as an overall evaluation that the person does of its own life (Pavot & Diener, 1993; Pavot, Diener, Colvin & Sandvik, 1991). The construct “Satisfaction with Life” has been widely studied in various areas, with a sudden increase in recent decades (Cuadra-Peralta, Veloso-Besio, Ibergaray & Rocha, 2010; Diener, 1984; Diener & Larsen, 1993; Pavez, Mena & Vera-Villarroel, 2012; Ryan & Dici, 2001; Urzúa, Pavlov, Cortés & Pino, 2011; Vera-Villarroel, Pavez & Silva, 2012; Vinaccia & Quiceno, 2011). The principal findings show that “Satisfaction with Life” is assuredly related with life expectancy (Xu & Roberts, 2010), health and longevity (Avey, Luhtans, Smith & Palmer, 2010; Jiménez, Martínez, Miró & Sánchez, 2008; Moyano-Díaz, Flores & Soromaa, 2011; Piqueras, Kuhne, Vera-Villarroel, Van Straten, & Cuijpers, 2011), satisfaction with marriage and friendships, (Rivera, Cruz, & Muñoz, 2011; Scorsolini-Comín & Santos, 2010; Vivaldi & Barra, 2012), income and work (Lyubomirsky, King & Diener, 2005; Vera-Villarroel, Celis-Atenas, Pavez, Lillo, Bello, Díaz & López, 2012), and is of advantage to hormonal balance and other physiological and immune system indicators (Barak, 2006; Jiménez et al., 2008; Marrero & Carballeira, 2006; Vera-Villarroel, Celis-Atenas, & Córdova-Rubio, 2011; Xu & Roberts, 2010).

Given the multidimensional nature of the variable, Diener, Emmons, Larsen & Griffin (1985), indicated the need to build a scale that graded “Satisfaction with Life” as a cognitive process of judgment, avoiding evaluation via a single item (as was frequently done until that time period.) Thus, giving a beginning of what is called the Satisfaction with Life Scale (SWLS) (Diener et al., 1985).

The SWLS has been widely used and translated into various languages (Gouveia, Milfont, Nunes da Fonseca & Pecanha de Miranda Coelho, 2009), and samples (Atienza, Balaguer & García-Merita, 2003; Atienza, Pons, Balaguer & García-Merita, 2000; Gilman & Huebner, 2001), including university students (Diener et al., 1985), adults (Arrindell, Heesink & Feij, 1999; McIntosh, 2001; Vittersø, Biswas-Diener, & Diener, 2005), seniors (Pavot et al., 1991), pregnant women (Cabañero-Martínez, Richart-Martínez, Cabrero-García, Orts-Cortés, Reig-Ferrer, & Tosal-Herrero, 2004), and others.

The structure factor, reliability and validity of the SWLS have been assessed in several investigations; the exploratory and confirmatory factor analyses have indicated that the five elements of this scale provide a one factors’ solution (Arrindell, Meeuwesen & Huyse, 1991; Atienza et al., 2000; Diener et al., 1985; Pavot et al., 1991). The test-retest reliability has changed from 0.83 (2 weeks) to 0.54 (4 years), and the alpha coefficients have changed from 0.79 and 0.89 (Pavot et al., 1991).

As expected, the SWLS has shown a negative correlation with depression, anxiety and general psychological disorders, and a positive correlation with other measures of well-being (Gouveia et al., 2009), self-esteem and optimism (Atienza et al., 2000; Vera-Villarroel, Córdova-Rubio & Celis-Atenas, 2009ab). These results therefore indicates that this scale is a reliable and valid measure of the cognitive component of judgments of subjective well-being.

Despite the properties of this scale, there are very few studies and validations with general population samples, because university population is preferred. Likewise, few studies have been conducted with
Latin American and/or Spanish samples (Atienza et al., 2000; Gouveia et al., 2009). To deal with these limitations, this study aimed to analyze the psychometric properties of the Spanish-language version of the SWLS in a sample of the general adult population in Chile, analyzing the scale’s factor structure and internal consistency.

**Method**

We conducted two studies. The goal of the first was the preliminary evaluation of reliability and exploratory factor structure of the SWLS. In the second study, we also analyzed reliability, and at the same time indicators of construct and divergent validity.

**Participants**

**Study I.**

We applied deliberate sampling, with the selection criterion being the minimum number of participants required per instrument development or validation (Anastasi & Urbina, 1998; Carretero-Dios & Pérez, 2007). The exclusion criterion was that the person had some diagnosed mental pathology. The participants were recruited from public and private spheres of the city of Santiago, Chile with a total of 330 people (211 women and 117 men), being evaluated, from ages between 18 and 52 years, with an average age of 21.10 (SD = 4.78).

**Study II.**

We applied a stratified deliberate sampling, trying to maintain a similar distribution by sex and age range. We collected data on 1190 people, 1157 of whom completed 100% of the questions on the scale. Of this total, 586 were women and 571 men, from ages between 18 and 65 years. The age average was 40.04 years (SD =13.99). All the participants lived in the city of Antofagasta, Chile. Being legal of age was the inclusion criterion, and presenting visible physical or mental pathologies that made the questionnaire difficult to understand was the exclusion criterion.

**Instruments**

“Satisfaction with Life Scale” (SWLS; Diener et al., 1985).

The instrument developed to measure the cognitive component of subjective well-being is known as an overall evaluation of the person’s life. Five closed questions on a 7-item Likert scale were defined from 1 (unsatisfied), to 7 (satisfied). The reliability estimate (Cronbach’s alpha) in various studies range between 0.79 and 0.89 and a one factors’ structure (Gouveia et al., 2009; Pavot & Diener, 1993).

WHOQOL-BREF Quality of Life Questionnaire, WHOQoL Group, 1998; Skevington, Lotfy & O’Conell, 2004).

Proposed by the World Health Organization consists of 26 questions grouped into four domains: Physical health, psychological health, social relations and environment. Answers are placed on a Likert scale with scores from 1 to 5, the sum of which by domain indicates that the higher the score the better the quality of life. The scores obtained focus on the general evaluation of quality of life as does the scores obtained in each domain.

The WHOQOL-BREF scale has been validated in various studies around the world, and the most recent studies that have used this instrument and where published stand out (Cruz, Polanczyk, Camey, Hoffmann & Fleck, 2011; Nedjat, Naieni, Mohammad, Majdzadeh & Montazeri, 2011).

Difficulties in Emotion Regulation Scale.

The variable emotion regulation was measured via the Spanish-language adaptation of the Difficulty of Emotion Regulation Scale (DERS; Gratz & Roemer, 2004), which consists of 36 items in its original version; the scale adapted and used for this study corresponds to the one applied by Herrás & Jódar (2008), which contains 28 items divided into 5 subscales: lack of control, rejection, emotional interference, emotional neglect and emotional confusion. The instrument format is a graduated
Likert scale from 1 to 5: the higher the score, the greater the difficulty of emotion regulation.

**Procedures**

Both studies were part of wider research projects financed by the National Research Fund, having the approval of the ethics committee of the given institution as well as for three independent universities. In both studies, the participants signed an informed consent form when they voluntarily accepted to participate in the investigation.

We applied the questionnaires in groups and individually. In study 1, we applied the instrument in both public and private spheres. For study 2, we selected the participants deliberately to fill the sample stratification quotas (age, gender), in places like shopping malls, churches, public and private institutions, etc.

Once both studies application's where finished, we entered the data in a database created using the statistical program SPSS version 17.

In study 1, to estimate the reliability, we analyzed the internal consistency by means of Cronbach’s alpha and the item – total correlation. We performed an exploratory analysis of the factor structure by extracting the main components.

In study 2, we analyzed the construct validity by means of factor’s confirmatory analysis using the program EQS 6.1. In order to assess the discriminator validity, the correlations between the values obtained in the SWLS and the Difficulties in Emotion Regulation Scale were analyzed. To evaluate the convergent validity, the correlations between the values obtained from the SWLS and the Quality of Life domains included on the WHO-QOL-Bref Scale of the World Health Organization were analyzed.

**Results**

**Study I.**

**Reliability**

The correlations obtained between the total of the “Satisfaction with Life” Scale (SWLS), and its items were all highly significant, and varied between 0.42 and 0.77 (see Table 1); the internal consistency evaluated through Cronbach’s alpha obtained a value of 0.82.

**Construct validity**

We evaluated the exploratory factor structure, finding that the Kaiser-Meyer-Olkin statistic (KMO = 0.818), and Bartlett’s Test of Sphericity (609.525; gl = 10; p < 0.001) showed an adequate fit of the correlation matrix needed to carry out this analysis. The exploratory factor structure shows a one factors’ solution that explains 59.31% of the variation with the items presenting a saturation of this factor between 0.56 and 0.88.

**Table 1**

*Total Item correlation of the Satisfaction with Life Scale*

<table>
<thead>
<tr>
<th>Item</th>
<th>$r_{it}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>In most ways my life is close to my ideal.</td>
<td>0.65**</td>
</tr>
<tr>
<td>My life conditions are excellent.</td>
<td>0.60**</td>
</tr>
<tr>
<td>I am satisfied with my life.</td>
<td>0.77**</td>
</tr>
<tr>
<td>So far, I have gotten the important things I wanted in life.</td>
<td>0.69**</td>
</tr>
<tr>
<td>If I could live my life over, I would change almost nothing.</td>
<td>0.42**</td>
</tr>
</tbody>
</table>

**p < 0.01**

Source: own Work.

**Table 2**

*Means on the Satisfaction with Life according to gender and age range*

<table>
<thead>
<tr>
<th>Age range</th>
<th>$N$</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total sample</td>
<td>1157</td>
<td>5.28</td>
<td>1.03</td>
</tr>
<tr>
<td>Men</td>
<td>571</td>
<td>5.29</td>
<td>1.04</td>
</tr>
<tr>
<td>Women</td>
<td>586</td>
<td>5.28</td>
<td>1.02</td>
</tr>
<tr>
<td>18 to 25 years</td>
<td>239</td>
<td>5.23</td>
<td>1.02</td>
</tr>
<tr>
<td>26 to 35 years</td>
<td>225</td>
<td>5.32</td>
<td>1.08</td>
</tr>
<tr>
<td>36 to 45 years</td>
<td>234</td>
<td>5.28</td>
<td>1.08</td>
</tr>
<tr>
<td>46 to 55 years</td>
<td>233</td>
<td>5.24</td>
<td>0.98</td>
</tr>
<tr>
<td>56 to 65 years</td>
<td>226</td>
<td>5.36</td>
<td>0.98</td>
</tr>
</tbody>
</table>

Source: own Work.
Study II.

Table 2 shows the mean obtained on the scale according to gender and age range. Statistically no significant differences were observed between the means of men and women, or between those of the different age ranges (See Table 2).

Construct validity

Table 3 shows the goodness-of-fit statistics, where it can be seen that although the $\chi^2$/degrees of freedom ratio is not found in the value expected for a good fit (must be less than 3), the other indicators were. The value of the RMRS indicator is next to zero, the value of the RMSEA, is less than the expected value of 0.08, and the fitness indicators IFC, NFI, GFI, and AGFI are higher than 0.95, indicating that the data fitted completely to the one factors’ model proposed by Diener (See Table 3).

Discriminant Validity

As illustrated in Table 4, the SWLS correlates inversely with the values obtained from the emotion regulation scale (See Table 4).

Convergent Validity

The correlation between the SWLS, and overall quality of life and the different domains valued are direct and significant in all of them (See Table 5).

Discussion

This study aimed to analyze the psychometric properties of the Spanish-language version of the SWLS in a sample of the general adult population in Chile, analyzing the scale’s factor structure, and internal consistency.

| Table 3 |
| Indicators of Fit One Factors’ Model of the SWLS. |

<table>
<thead>
<tr>
<th></th>
<th>$\chi^2$</th>
<th>gl</th>
<th>$\chi^2$/gl</th>
<th>NFI</th>
<th>CFI</th>
<th>GFI</th>
<th>AGFI</th>
<th>RMRS</th>
<th>RMSEA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>34.943</td>
<td>5</td>
<td>34.943/5 = 6.98</td>
<td>0.985</td>
<td>0.987</td>
<td>0.988</td>
<td>0.964</td>
<td>0.019</td>
<td>0.072 (0.051-0.095)</td>
</tr>
</tbody>
</table>

CFI = Comparative Fit Index; NFI = Normed Fit Index; GFI = Goodness of Fit Index; AGFI = Adjusted Goodness of Fit Index; RMRS = Standardized Root Mean Square Residual; RMSEA = Root Mean Square Error of Approximation

Source: own Work.

| Table 4 |
| Pearson’s Correlation Values between Satisfaction with Life and Difficulties in Emotion Regulation. |

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of control</td>
<td>1078</td>
<td>-0.222**</td>
</tr>
<tr>
<td>Rejection</td>
<td>1076</td>
<td>-0.259**</td>
</tr>
<tr>
<td>Emotional interference</td>
<td>1110</td>
<td>-0.233**</td>
</tr>
<tr>
<td>Emotional neglect</td>
<td>1113</td>
<td>-0.270**</td>
</tr>
<tr>
<td>Emotional confusion</td>
<td>1102</td>
<td>-0.274**</td>
</tr>
</tbody>
</table>

** p < 0.01

Source: own Work.

| Table 5 |
| Pearson’s Correlation Values between Satisfaction with Life and Overall Quality of Life and by domain. |

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Quality of Life</td>
<td>1178</td>
<td>0.491**</td>
</tr>
<tr>
<td>Physical Domain</td>
<td>1103</td>
<td>0.48**</td>
</tr>
<tr>
<td>Psychological Domain</td>
<td>1088</td>
<td>0.607**</td>
</tr>
<tr>
<td>Social Domain</td>
<td>1099</td>
<td>0.496**</td>
</tr>
<tr>
<td>Environmental Domain</td>
<td>1080</td>
<td>0.577**</td>
</tr>
</tbody>
</table>

** p < 0.01

Source: own Work.
The analysis of the metric properties of the SWLS for Chile shows the adjustment of the questionnaire for its use in the evaluation of the cognitive sphere of well-being. In the first study, high saturations were observed between the items and the dimension obtained (> 0.56), total item correlations (> 0.42), and adapted levels of internal consistency (Cronbach’s alpha = 0.82).

It should be mentioned, as in previous studies (Gouveia et al., 2009; Pavot & Diener, 1993), that item 5 of the SWLS (“If I could live my life all over, I would change almost nothing”), has a lower factor load and total item correlation. Pavot & Diener (1993) wanted this item to aim at a dimension in the past, whereas the rest of the items evaluate satisfaction in the present. This might show that the SWLS is more of a temporal evaluation of satisfaction oriented towards the present (Pavot et al., 1998).

As far as the evaluation of the construct validity is concerned, an adequate fit of the theoretical model was obtained in both the exploratory and confirmatory analyses; in both analyses a one factors’ model was achieved, and which had been founded in previous studies (Arrindell et al., 1991; Atienza et al., 2000; Diener et al., 1985; Gouveia et al., 2009; Pavot et al., 1991).

The correlation of the SWLS with the DERS indicates that the “Satisfaction with Life” is negatively related to the Emotion Regulation, which is consistent with what was found in other studies (Limonero, Tomás-Sábado, Fernández-Castro, Gómez-Romero & Ardilla-Herrero, 2012). Likewise, the correlation with the WHOQOL-Bref Quality of Life Questionnaire shows highly significant proper associations, indicating that the SWLS is related positively to the Quality of Life; this has also been shown by other investigations (Urzúa, 2008; Urzúa & Caqueo-Urzáiz, 2012; Veenhoven, 2000).

The present findings support the SWLS as a valid and reliable measure of the cognitive component of subjective well-being. This is relevant if it is considered that in Chile and Latin America a system of overall evaluation of subjective well-being is needed and that should take into account the emotional and cognitive component. It is therefore considered that the Latin American the scale’s version to measure “Satisfaction with Life” is a reliable means for the cognitive measurement of subjective well-being in Chilean samples.

It is suggested that future investigations should consider assessing the temporal stability of this instrument, as well as studying the transverse quality in relation to the behavior of the scale throughout a person’s life.

Given that the SWLS has been used on various samples and in different languages, there are different normative data (Atienza et al., 2000). Therefore, conducting transcultural studies is of particular importance, mostly in all Latin America, where a scarcity of these data is noted.

References


