



Título artículo / Títol article:

Psychometric properties of the General Self Efficacy-12 scale in Spanish: general and clinical population samples

Autores / Autors

R. Herrero, M. Espinoza, G. Molinari, E. Etchemendy, A. Garcia-Palacios, C. Botella, R.M. Baños

Revista:

Comprehensive psychiatry

Versión / Versió:

Preprint

Cita bibliográfica / Cita bibliogràfica (ISO 690):

HERRERO, R., et al. Psychometric properties of the General Self Efficacy-12 Scale in Spanish: General and clinical population samples. *Comprehensive psychiatry*, 2014, vol. 55, no 7, p. 1738-1743.

url Repositori UJI:

<http://hdl.handle.net/10234/132225>

**Psychometric properties of the General Self Efficacy-12 scale in Spanish: general and
clinical population samples**

R. Herrero^a, M. Espinoza^a, G. Molinari^a, E. Etchemendy^b, A. Garcia-Palacios^{a, b}, C. Botella^{a, b},
& R. M. Baños^{b, c}

^a Universitat Jaume I. Av. De Vicent Sos Baynat s/n, 12071, Castelló de la Plana, Spain.

^b Ciber Fisiopatología Obesidad y Nutrición (CB06/03) Instituto Salud Carlos III. C/ Monforte
de Lemos 3-5, 28029, Madrid, Spain.

^c Universidad de Valencia. Av. Blasco Ibáñez, 21, 46010, Valencia, Spain.

Corresponding author: Rocío Herrero.

Address: Vicent Sos Baynat s/n, Castellón, España.

e-mail: ro.herrero.09@gmail.com

telephone: +34 964 38 76 45

E-mail addresses:

M. Espinoza: macaespinoza@gmail.com

E. Etchemendy: ernestina@labpsitec.es

G. Molinari: guadalupemolinari@gmail.com

A. Garcia-Palacios: azucena@uji.es

C. Botella: botella@uji.es

R. M. Baños: banos@uv.es

Abstract

The General Self Efficacy Scale (GSES-12) is a short version of the Sherer's Self-Efficacy Scale, and evaluates a general dimension and three aspects of self-efficacy: initiative, persistence and effort. The aim of this study is to explore the factorial structure, reliability, and criterion validity of the Spanish adaptation of the GSES-12 in general and clinical populations. The sample was composed of 714 volunteers (332 from the clinical population). Results of the principal components analysis yielded a 3-factor structure that was later confirmed through Confirmatory Factor Analysis. Moreover, this study shows good internal consistency and test-retest values, and differences in self-efficacy scores between the clinical and non-clinical groups. The present study demonstrates that the Spanish version of the GSES-12 is a valid and reliable measure, and it adds relevant information to the debate about the dimensional structure of general self-efficacy.

Keywords: general self-efficacy, psychometric properties, reliability, validity.

1. Introduction

Self-efficacy expectations imply the belief that one is able to perform a specific behavior. These beliefs affect the decision to initiate an action, the amount of effort people will invest, and how long they will persist in this behavior when difficulties appear^{1,2} making a considerable contribution to motivation and performance³. Some authors have proposed a ‘general’ self-efficacy dimension, conceptualized as a generalized belief about one’s competence to perform across a variety of situations^{4,5}. It is important to notice that the construct of general self-efficacy have been questioned, based on the argument that could not differ from other self-evaluative constructs, like self-esteem^{5,6,7,8}. Nevertheless, results are mixed, considering the fact that there are data supporting the distinction between general self-efficacy and other related constructs^{4,6,9}. Therefore, the general self-efficacy beliefs predict behavioral differences between individuals, suggesting their relevance to understand psychotherapy outcomes, so having adequate instruments to measure them will be important.

One of the available measures to assess the general self-efficacy dimension is *Sherer’s Self-Efficacy Scale* (GSES)¹⁰. This self-report is composed of 30 items divided into 2 subscales: general and social self-efficacy. The scale has been translated into different languages^{11,12}. For example, López-Torrecillas, García, Cañadas, Ramírez and de la Fuente (2006)¹³ translated the scale into Spanish, and they also proposed a 2-factor model (‘general’ and ‘social’ self-efficacy). They detected significant differences between clinical and nonclinical samples, pointing out the usefulness of this scale in clinical contexts. Other authors have also offered some evidence of discriminant validity¹⁴ and of the relationship between self-efficacy and psychotherapy outcomes^{15,16}.

The conceptualization of general self-efficacy as a unitary construct and the multifactorial structure of the GSES has been a highly controversial issue⁶. Woodruff and Cashman¹⁷ found a factorial structure different from Sherer et al.'s original proposal¹⁰, but consistent with the conceptual framework. These authors obtained a 5-factor model, maintaining the 2 original areas ('general' and 'social' self-efficacy), but including 3 sub-areas for the former (magnitude, strength and competence) and 2 sub-areas for the latter (competence and strength).

Although the original version of the scale was composed by two different subscales, Sherer et al. pointed out that the general self-efficacy subscale appears to be more useful than the social self-efficacy subscale to assess self-efficacy expectations^{10, 18}. In this sense, several authors focused their studies only on the general self-efficacy subscale using its 17-items independently. Regarding this scale, Bosscher and Smit^{19, 20} offered a modified 12-item version (GSES-12) that was initially tested on elderly people. They excluded 5 items from the original subscale because they showed low item-test correlations and ambiguous wording. Items are answered on a 5-point Likert scale ranging from 1 ('*never happens to me*') to 5 ('*always happens to me*'), where high scores indicate high self-efficacy. The GSES-12 has been used in several studies with different samples (elderly people, depression, abused women, etc.)^{21, 22, 23} applied factor analytic techniques and confirmed the factor structure found by Woodruff and Cashman¹⁷. They suggested that the data best fit a model with 3 correlated factors (initiative, effort, persistence) and one higher-order factor (general self-efficacy)¹⁹.

Other scales have been developed to assess general self-efficacy, such as the *General Perceived Self-Efficacy Scale* (GPSES)²⁴ or the *New General Self-Efficacy Scale* (NGES)⁶. Although these scales were designed to improve the weaknesses associated with the original GSES, Scherbaum et al. (2006)⁵ considered that the three scales (GPSES, NGSE, and GSES)

offer comparable information and work better for individuals with average or below average levels of general self-efficacy. Scherbaum et al.⁵ also stated that all 3 scales fit a one-dimensional model better.

Therefore, taking into consideration that general self-efficacy is a concept associated with mental health, well-being and also an important mechanism of change in clinical outcomes, the aim of this study is to evaluate and disseminate the psychometric properties of the GSES-12²⁰ in a Spanish adult sample including general and clinical populations. Although, there is a Spanish validation of the GSES¹³ that evaluated the psychometric properties of the original scale, improved versions of this scale were not validated in Spanish population. Besides, López-Torrecillas et al.¹³ assessed the original factor structure, without analyzing other proposed models. For that reason, this paper seeks to present psychometric data of a new version of the GSES and contribute to the debate of its structure.

2. Material and methods

2.1 Participants

The sample was composed of 714 Spanish volunteers (554 women, 160 men), 382 participants (269 women, 113 men) from the general population, and 332 participants (285 women, 47 men) from the clinical population who were attending two clinical services (Psychological Support Service at Universitat Jaume I –SAP-, and Previ Clinical Psychology Center) (see Table 1 for demographic characteristics). Participants from the general population (GP) belonged to the university community (students and relatives). Participants from the clinical population (CP) were individuals seeking treatment for psychological disorders (total=179; anxiety disorders= 72; adjustment disorders= 39; personality disorders= 28; mood disorders= 21 and eating

disorders= 18) or emotional problems related to medical conditions (total=154; fibromyalgia= 123 and cancer=31).

Table 1 Demographic characteristics of general and clinical samples

2.2 Translation of the GSES-12

Permission to translate and use the GSES-12 was obtained from the original authors¹⁰. First, a native Spanish speaker who was aware of the objective of the GSES-12 translated it into Spanish. Then, a bilingual (Spanish-English) speaker who was not familiar with the GSES performed a back-translation. No discrepancies between the two versions were found.

2.3 Measures

*2.3.1 General Self Efficacy Scale-12 (GSES-12)*²⁰. This scale has 3 factors: *Initiative* (willingness to initiate behavior), *Effort* (willingness to make an effort to complete the behavior), and *Persistence* (persevering to complete the task in the face of adversity). Internal consistency of the original scale was 0.64 for initiative, 0.63 for effort, and 0.64 for persistence. The total scale obtained a Cronbach's α of 0.69.

2.3.2 Beck Depression Inventory II (BDI-II)^{25, 26}. This inventory includes 21 items evaluating cognitive, behavioral, affective and somatic symptoms of depression. In the current sample, Cronbach's α was 0.89.

State and Trait Anxiety Inventory (STAI)^{27, 28}. It is a self-administered questionnaire containing 40 items divided into 2 subscales that evaluate anxiety as trait and state. In the current sample, Cronbach's α were 0.90 for state and 0.64 for trait.

2.3.3 *Rosenberg Self-esteem Scale (RSES)*^{29, 30}. This self-report instrument includes 10 items that evaluate self-esteem, self-worth, acceptability and confidence. Cronbach's α for this sample was 0.66.

2.3.4 *Positive And Negative Affect Schedule (PANAS)*^{31, 32}. This instrument includes 20 items that assess two dimensions of affect: positive and negative. Cronbach's α were 0.89 for positive affect and 0.82 for negative affect.

2.3.5 *Life Orientation Test-revised (LOT-R)*^{33, 34}. This instrument is used to assess generalized optimism, and it includes 10 items to be responded to on a 5-point scale. Cronbach's α was 0.56.

2.3.5 *Quality of Life Index (QLI-Sp)*³⁵. It consists of 10 items that evaluate perceived well-being in different areas (physical, psychological/emotional, occupational functioning, interpersonal functioning, among others). Cronbach's α was 0.89.

2.4 Procedure

The corresponding ethical committees approved the study and all participants provided voluntary and informed written consent. No specific inclusion and exclusion criteria were established, and no incentive was offered for participation.

Participants from the GP were recruited from the university community (students and relatives). The assessment protocol was applied collectively for students and individually for their relatives. Before the questionnaires were administered, demographic data were collected. Regarding participants from the CP, people seeking treatment at SAP and at Previ Center were invited to participate. They filled out all the instruments individually in an assessment session.

In order to evaluate test-retest reliability, the sample was contacted one month after the first administration of the GSES-12 and asked to complete it again, but only a total of 84 participants completed the retests.

2.5 Data analysis

The total sample (N= 714) was randomly divided into two independent samples using SPSS, one for exploratory factor analysis (EFA; n= 349) and one for confirmatory factor analysis (CFA; n= 365). No statistical differences were found in the demographic characteristics of the two samples.

EFA was performed with SPSS software, version 20 (SPSS Inc., Chicago, Illinois). The suitability of the data for EFA was assessed using the Kaiser–Meyer–Olkin (KMO) and Bartlett sphericity tests. Additionally, the kurtosis and skewness of the items were analyzed to verify their normal distribution. A principal components analysis with Oblimin rotation was performed. CFA was performed on the second subsample to test the model in the EFA, using the EQS program, version 6.1. The following recommended goodness-of-fit indices were used: a corrected Satorra–Bentler chi-square (S-B χ^2), the Robust Comparative Fit Index (RCFI), and the Root Mean Squared Error of Approximation (RMSEA) with its confidence interval (90% CI).

The descriptive statistics for the GSES-12 were calculated for the entire sample and for sample type (GP vs. CP), sex and age. Internal consistency and split half-reliability of the Spanish GSES-12 were assessed. In addition, the temporal stability of the data and the discriminant and convergent validity were also calculated, using correlation coefficients with measures of depression, anxiety, self-esteem, positive and negative affect, optimism, and quality of life.

3. Results

3.1 Exploratory Factor Analysis

Regarding the distribution of items in the GSES-12, it is worth mentioning that the univariate normality of data, determined by the asymmetry and kurtosis of the items, showed that asymmetry values ranged from -0.374 to 1.170 and kurtosis values from -0.997 to 1.731. Considering that the KMO index was 0.89 and Bartlett's test (χ^2 value) of sphericity was 1587.69 ($p < 0.00$), the data were suitable for an EFA conducted with the first randomly extracted subsample. A principal axis factor analysis of the GSES-12 items yielded 3 factors that were confirmed by a visual inspection of the scree-plot. Together, these factors accounted for 62.54% of the total variance. Inspection of the direct Oblimin rotation solution showed factors to be reasonable representations of the original GSES-12 subscales: Persistence (F1), Effort (F2) and Initiative (F3). As Table 2 shows, all the factor loadings were above 0.3, and no items cross-loaded into other factors. The three subscales had moderate positive correlations with each other (see Table 2). The structure was equivalent to the one proposed by Bosscher and Smit¹⁹, and it was submitted to a CFA.

Table 2 Pearson Correlations between factors and with the total score

3.2 Confirmatory Factor Analysis

CFA was used to test the 3 competing models: a model with a unifactorial structure (model 1), a model containing 3 uncorrelated first-order factors (model 2), and a model containing 3 related first-order factors with one higher-order factor (model 3). This latter model agrees with our previous EFA analysis. As there was evidence of multivariate non-normality in the data

(Mardia= 40.1774), the Robust Maximum Likelihood estimation method was used. Research has proposed a two-index criterion for assessing the adequacy of model fit: RCFI and RMSEA³⁶.

Model 1 showed poor fit indices [$\chi^2 = 354.0782$; $df = 54$; ($p < 0.001$); RCFI = 0.703; RMSEA = 0.124; 90 % CI= .111-.136], while models 2 and 3 seemed to fit the data well. The χ^2 was significant in both models (model 2: $\chi^2 (df = 54) = 260.0832$, $p < 0.00$; model 3: $\chi^2 = 75.2713$; $df = 51$ ($p < 0.01$). The RMSEA showed a better fit for model 3 (RMSEA = .036 90% CI= .016-0.053) than for model 2 (RMSEA = .103; 90% CI= 0.090-0.115). The RCFI confirmed a better fit of model 3 (RCFI= 0.976) than model 2 (RCFI= 0.796). The fit was consistently better for the higher-order model than for the other two models tested.

Table 3 shows item-scale correlations for the EFA and CFA of the first validation study for the GSES-12 in the Spanish language.

Table 3 Mean and SD for items, sub-scales, total score and final factor solution of the Spanish GSES-12

3.3 Descriptive statistics

Table 3 shows the means and standard deviations of the Spanish GSES-12 items and factors obtained in the entire sample.

The means and standard deviation values of the GSES subscales obtained in the subsamples of population, sex and age are displayed in Tables 4 and 5. Significant differences in all self-efficacy scores were found between the GP and CP subsamples. GP showed more willingness to initiate, invest effort and use persistence in completing a task in the face of adversity than CP. Moreover, persistence and total score showed a medium-high effect size (see Table 4). No significant differences were found between men's and women's scores (Initiative: $t = 0.388$,

$p=0.698$; Effort: $t= 0.860$, $p=0.390$; Persistence: $t= 1.427$, $p=0.154$; and Total: $t= 1.190$, $p=0.234$)
or between age groups on the total score and on the different subscales (Initiative: $f= 0.751$,
 $p=0.522$; Effort: $f= 0.697$, $p=0.554$; Persistence: $f= 0.542$, $p=0.654$; and Total: $f= 0.728$,
 $p=0.536$).

Table 4 Descriptive statistics of the subscales and total score of the Spanish GSES-12 regarding population

Table 5 Descriptive statistics of the subscales and total score of the Spanish GSES-12 regarding sex and age

3.4 Reliability: Internal consistency and test-retest

The internal consistency coefficients for the subscales varied from excellent to good (Initiative= 0.83; Effort= 0.77; Persistence= 0.80; and Total= 0.86). The present data offer higher Cronbach's alpha coefficients for the three subscales than those from Bosscher and Smit's¹⁹ study. Additionally, split-half reliability was calculated. GSES-12 items were randomly divided into two, showing an acceptable coefficient (0.88). With regard to time stability, the results indicate good test-retest reliability over a 1-month period (Initiative= 0.67; Effort= 0.74; Persistence= 0.84; and Total= 0.84).

3.5 Correlation analyses

Correlation coefficients are summarized in Table 6. GSES-12 subscales were strongly associated with all the measurements, and negatively and significantly correlated with depression, anxiety (both state and trait) and negative affect. Positive and relevant correlations were found between the GSES-12 subscales and self-esteem, positive affect and quality of life. Optimism was only significantly correlated with Persistence.

Table 6 Correlation of Spanish GSES and measures of depression, anxiety, positive and negative affect, and quality of life.

4. Discussion

The purpose of the present study was to explore the psychometric properties and factorial structure of the GSES-12 in a Spanish adult sample that included clinical and general populations.

Findings support the original 3-factor structure with one higher-order factor. The three-factor model obtained here suggests that ‘initiative’, ‘effort’ and ‘persistence’ are valid indicators of beliefs about one’s competence. Results support the model proposed by Bosscher and Smit¹⁹ and the idea of an underlying construct of general self-efficacy, but they diverge from Scherbaum et al.⁵, who found that the three general self-efficacy scales (GPSES, NGSE, and GSES) have a unidimensional model. However, it is important to note that the sample in that study was composed only of university students, and they filled out the original version of the scale (17 items).

We would like to highlight that the label of ‘persistence’ could require further revision, and we propose renaming it as ‘competence’, since the content of this subscale seems to be more related to beliefs about the perception of one’s own ability, and this term could describe the content of the items better.

Regarding the internal consistency, the values obtained were higher than those reported in the original version. The scale also showed moderate to high time stability indexes. This is the first study to analyze the test-retest reliability of the GSES-12, and the data support general self-efficacy as a stable construct.

When exploring differences according to sample type (GP vs. CP), sex, and age, there were only significant differences for groups. CP scored significantly lower than GP on the total score and the three subscales, and persistence was the scale with the biggest effect size. These results are quite relevant for the clinical use of the scale, as they support the idea that self-efficacy could be a key component in psychopathology and possibly in treatment response.

Regarding criterion validity, significant correlations were found between the GSES-12 subscales and measures of depression, anxiety, self-esteem, positive and negative affect, optimism, and quality of life. These results are in line with previous studies that assessed the relationship between general self-efficacy, anxiety, depression, and self-esteem^{13, 22}.

The only dimension that did not correlate with all the GSES-12 subscales was optimism, which only correlated with Persistence, and this correlation was moderate. This finding supports the multidimensionality of the self-efficacy concept, suggested also by Bosscher and Smit¹⁹, and adds evidence to previous studies about the relationship between optimism and behavioral aspects such as persistence and coping^{38, 39}. However, prior literature has also shown a positive and significant correlation between optimism and general self-efficacy (using the GSES)⁴⁰, and Schweizer and Koch⁴¹ proposed that general self-efficacy could be a component of general optimism. According to the present results, optimism is only related to a facet of self-efficacy, but it has been highlighted that LOT-R obtained a low internal consistency value (0.56) in our study. Therefore, more studies are needed in order to corroborate this finding.

This study presents limitations that should be taken into account. The first is the heterogeneous composition of the CP, as participants with different psychological disorders were included, and the different psychopathologies and severity levels were not considered. The second limitation is

that the GP included mainly university students. Further research should examine whether our results could be generalized to other samples.

Moreover, taking into account the good psychometric properties of Chen's scale (NGSES)⁶ and the good results obtained in the present study with the GSES-12, it would be interesting for future studies to compare these two scales in general and clinical populations. Given that they have different factor structures, a comparison could help to specify the differential usefulness of each.

5. Conclusions

In conclusion, the present study demonstrates that the Spanish version of the GSES-12 is a valid and reliable measure for assessing general self-efficacy in general and clinical populations. Furthermore, it adds relevant information to the debate about the dimensional structure of general self-efficacy. Our results confirm the three dimensional structure of the GSES-12 proposed by Bosscher and Smit¹⁹. Findings showed that there is sufficient evidence to support the construct validity of the scale. Furthermore, internal consistency and test-retest correlation were good, supporting the reliability of the Spanish version of the scale and its use in clinical and general Spanish populations.

Acknowledgements

This study was funded in part by the Spanish Ministry of Education, Culture and Sport, Projects ACTIOBE (PSI2011-25767), Excellence in Research Program PROMETEO II (Generalitat Valenciana. Conselleria de Educaci3n, 2013/003) and 'CIBER of Physiopathology of Obesity Nutrition, an initiative of ISCIII (ISC III CB06 03/0052).

References

1. Bandura A. Self-efficacy: Toward a Unifying Theory of Behavioral Change. *Psychol Rev* 1977; **84(2)**:191-215.
2. Bandura A. Self-Efficacy Mechanism in Human Agency. *Am Psychol* 1982; **37(2)**:122-147.
3. Bandura A, Locke E. Negative Self-Efficacy and Goal Effects Revisited. *J Appl Psychol* 2003; **88(1)**:87-99.
4. Judge T, Erez A, Bono J. The power of being positive: the relation between positive self-concept and job performance. *Hum Perform* 1998; **11(2/3)**:167-187.
5. Scherbaum C, Cohen-Charash Y, Kern M. Measuring General Self-Efficacy: A Comparison of Three Measures Using Item Response Theory. *Educ Psychol Meas* 2006; **66(6)**:1047-1063.
6. Chen G, Gully S, Eden D. Validation of a New General Self-Efficacy Scale. *Organ Res Meth* 2001; **4(1)**:62-83.
7. Judge T, Erez A, Bono J, Thoresen C. Are Measures of Self-Esteem, Neuroticism, Locus of Control, and Generalized Self-Efficacy Indicators of a Common Core Construct? *J Pers Soc Psychol* 2002; **83(3)**:693-710.
8. Stanley K, Murphy M. A comparison of general self-efficacy with self-esteem. *Genet Soc Gen Psychol Monogr* 1997; **123(1)**:79-99.
9. Chen G, Gully S, Eden D. General self-efficacy and self-esteem: toward theoretical and empirical distinction between correlated self-evaluations. *J Organ Behav* 2004; **25(3)**:375-395.
10. Sherer M, Maddux J, Mercandante B, Prentice-Dunn S, Jacobs B, Rogers R. The Self-Efficacy Scale: Construction and Validation. *Psychol Rep* 1982; **51**:663-671.

11. Matto SK, Malhotra R. Self-efficacy Scale: Hindi translation and factor structure. *Indian J Clin Psychol* 1998; **25**:154-158.
12. Yildirim F, Ilhan IO. The validity and reliability of the General Self-Efficacy scale Turkish form. *Turk Psikiyatri Derg* 2010; **21(4)**:301-308.
13. López-Torrecillas F, García J, Cañadas G, Ramírez I, De la Fuente E. Validity of Self-Efficacy Scale Scores for a Spanish Sample. *Psychol Rep* 2006; **98(2)**:437-450.
14. Laserna J, Castillo A, Peláez E, Navío L, Torres C, Rueda S, ... Pérez M. Alteraciones emocionales y variables moduladoras en familiares-cuidadores de enfermos de Alzheimer. *Psicol Conductual* 1997; **5(3)**:365-375.
15. Eden D, Aviram A. Self-Efficacy Training to Speed Reemployment: Helping People to Help Themselves. *J Appl Psychol* 1993; **78(3)**:352-360.
16. Sadowski C, Long C, Jenkins L. Does Substance Abuse Treatment Have Self-Schematic Effects? *J Psychol* 1993; **127(3)**:323-327.
17. Woodruff S, Cashman J. Task, Domain, and General Efficacy: A Reexamination of the Self-Efficacy Scale. *Psychol Rep* 1993; **72(2)**:423-432.
18. Sherer M, Adams C. Construct Validation of the Self-Efficacy Scale. *Psychol Rep* 1983; **53(3)**:899-902.
19. Bosscher R, Smit J. Confirmatory factor analysis of the General Self-Efficacy Scale. *Behav Res Ther* 1998; **36(3)**:339-343.
20. Bosscher R, Smit J, Kempen G. Algemene competentieverwachtingen bij ouderen: Een onderzoek naar de psychometrische kenmerken van de algemene competentieschaal. *Ned Tijdschr Psychol* 1997; **52(6)**:239-248.

21. Galenkamp H, Huisman M, Braam A, Deeg D. Estimates of prospective change in self-rated health in older people were biased owing to potential recalibration response shift. *J Clin Epidemiol* 2012; **65(9)**:978-988.
22. Jonker I, Sijbrandij M, Wolf J. Toward Needs Profiles of Shelter-Based Abused Women: Latent Class Approach. *Psychol Women Q* 2012; **36(1)**:38-53.
23. Steunenbergh B, Beekman A, Deeg D, Kerkhof A. Personality predicts recurrence of late-life depression. *J Affect Disord* 2010; **123(1)**:164–172.
24. Schwarzer R, Jerusalem M. Generalized Self-Efficacy scale. In Weinman J, Wright S, Johnston M, editors. *Measures in health psychology: A user's portfolio. Causal and control beliefs*. Windsor, UK: NFER-NELSON; 1995.
25. Beck AT, Steer RA, Brown GK. *Manual for the beck depression inventory*. The Psychological Corporation. San Antonio, TX; 1996.
26. Sanz J, Navarro ME, Vázquez C. Adaptación española del Inventario para la depresión de Beck-II (BDI-II): Propiedades psicométricas en estudiantes universitarios. *Anal modif conducta* 2003; **29(124)**:239-288.
27. Spielberger CD, Gorsuch R, Lushene RE *Manual for the state-trait inventory*. Consulting Psychologists, Palo Alto, California; 1970.
28. Seisdedos N. *Cuestionario de ansiedad estado-rasgo*. Adaptación española. Madrid: TEA; 1988.
29. Baños RM, Guillén V. Psychometric characteristics in normal and social phobic samples for a Spanish version of the Rosenberg self-esteem scale. *Psychol Rep* 2000; **87(1)**:269-274.

30. Rosenberg, M. *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press; 1965.
31. Watson D, Clark LA, Tellegen A. Development and validation of brief measures of positive and negative affect: the PANAS scales. *J Pers Soc Psychol* 1988; **54(6)**:1063.
32. Sandin B, Chorot P, Lostao L, Joiner TE, Santed MA, Valiente RM. Escalas PANAS de afecto positivo y negativo: Validación factorial y convergencia transcultural. *Psicothema* 1999; **11(9)**:37-51.
33. Perczek R, Carver CS, Price AA, Pozo-Kaderman C. Coping, mood, and aspects of personality in Spanish translation and evidence of convergence with English versions. *J Pers Assess* 2000; **74(1)**:63-87.
34. Scheier MF, Carver CS, Bridges MW. Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): a reevaluation of the Life Orientation Test. *J Pers Soc Psychol* 1994; **67(6)**:1063.
35. Mezzich JE, Ruipérez MA, Pérez C, Yoon G, Liu J, & Mahmud S. The Spanish version of the quality of life index: presentation and validation. *J Nerv Ment Dis* 2000; **188(5)**: 301-305.
36. Hu LT, Bentler PM. Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Struct Equ Modeling* 1999; **6(1)**:1-55.
37. Cohen, J. (1988) *Statistical power analysis for the behavioral sciences*, 2nd ed. Hillsdale, NJ: Lawrence Earlbaum Associates.
38. Scheier MF, Carver CS. Optimism, coping, and health: assessment and implications of generalized outcome expectancies. *Health psychol* 1985; **4(3)**:219.

39. Solberg Nes L, Segerstrom SC. Dispositional optimism and coping: A meta-analytical review. *Pers Soc Psychol Rev* 2006; **10(3)**:235–251
40. Luszczynska A, Gutiérrez-Doña B, Schwarzer R. General self-efficacy in various domains of human functioning: Evidence from five countries. *Int J Psychol* 2005; **40(2)**:80–89.
41. Schweizer K, Koch W. The assessment of components of optimism by POSO-E. *Pers Individ Dif* 2001; **31(5)**:563–574

Table 1 Demographic characteristics of general and clinical samples

		CP	GP	TS
<i>Age</i>		37.86 (SD 12.73)	27.05 (SD 9.55)	31.92 (SD 12.33)
<i>Sex</i>	Male	47 (14.2%)	113 (29.6%)	160 (22.4%)
	Female	285 (85.8%)	269 (70.4%)	554 (77.6%)
<i>Educational Level</i>	Elementary	95 (28.6%)	30 (7.9%)	125 (17.5%)
	High school	121 (36.4%)	111 (29%)	232 (32.5%)
	University degree	116 (35%)	241 (63%)	357 (50%)
<i>Marital Status</i>	Single	139 (41.9%)	251 (65.7%)	390 (54.6%)
	Married/ Living with partner	146 (44%)	88 (23%)	234 (32.7%)
	Separated	39 (11.7%)	41 (10.7%)	80 (11.2%)
	Widow	8	2	10

(2.4%)

(0.5%)

(1.4%)

Note. CP=clinical population; GP= general population; TS= total sample; SD= standard deviation.

Table 2 Pearson Correlations between factors and with the total score

	Initiative	Effort	Persistence	Total
<i>Initiative</i>	1			
<i>Effort</i>	0.447**	1		
<i>Persistence</i>	0.595**	0.400**	1	
<i>Total</i>	0.795**	0.804**	0.817**	1

Note. ** $p < .01$

Table 3 Mean and SD for items, sub-scales, total score and final factor solution of the Spanish GSES-12

Items	Mean (SD)	EFA			CFA
		Initiative F3	Effort F2	Persistence F1	
<i>Item 1</i>	3.98(.90)	.780	-.230	.280	.750
<i>Item 2</i>	4.05(.95)	.844	-.140	.149	.792
<i>Item 3</i>	4.00(.93)	.713	-.194	.341	.824
<i>Item 4</i>	3.37(1.05)	.035	.676	-.313	.475
<i>Item 5</i>	3.51(1.08)	-.300	.669	-.290	.694
<i>Item 6</i>	3.12(1.15)	-.294	.716	.001	.671
<i>Item 7</i>	3.26(1.14)	-.054	.736	-.117	.575
<i>Item 8</i>	2.81(1.22)	-.386	.645	-.148	.668
<i>Item 9</i>	3.89(.96)	.084	-.075	.777	.514
<i>Item 10</i>	4.00(1.06)	.295	-.184	.747	.782
<i>Item 11</i>	3.64(1.04)	.206	-.196	.687	.771
<i>Item 12</i>	3.61(1.18)	.370	-.262	.611	.782
<i>Initiative</i>	12.01(2.39)				
<i>Effort</i>	16.10(4.08)				
<i>Persistence</i>	15.14(3.34)				
<i>Total</i>	43.23(7.96)				

Note. SD= standard deviation.

Table 4 Descriptive statistics of the subscales and total score of the Spanish GSES-12 regarding population

Population	<i>GP</i> <i>Mean(SD)</i>	<i>CP</i> <i>Mean(SD)</i>	<i>t</i>	<i>Cohen`s d</i>
<i>Initiative</i>	12.32 (1.89)	11.65 (2.82)	3.803**	-0.279
<i>Effort</i>	16.94 (3.66)	15.11(4.32)	6.104**	-0.457
<i>Persistence</i>	16.10 (2.55)	14.04 (3.76)	8.639**	-0.641
<i>Total</i>	45.37 (6.55)	40.80 (8.77)	8.001**	-0.595

Note. *SD*= standard deviation; Cohen (1988) defined *d* = 0.2 as a 'small' effect size, *d* = 0.5 as 'medium,' and *d* = 0.8 as 'large';** *P*<.01(bilateral)

Table 5 Descriptive statistics of the subscales and total score of the Spanish GSES-12 regarding sex and age

	Initiative	Effort	Persistence	Total
	Mean(SD)	Mean(SD)	Mean(SD)	Mean(SD)
Sex				
<i>Male</i>	12.10 (2.14)	16.38(3.88)	15.50 (3.07)	43.98 (7.36)
<i>Female</i>	12.02 (2.40)	16.06 (4.09)	15.06 (3.37)	43.12 (8.00)
Age				
16-25	11.98(2.24)	15.99(3.95)	15.22(3.16)	43.19(7.75)
25-35	12.02(2.25)	16.17(4.05)	15.04 (3.46)	43.24(8.16)
35-50	12.23 (2.52)	16.70 (4.03)	15.31(3.33)	44.18 (7.91)
50-65	11.90(2.75)	15.63(4.48)	14.80(3.57)	42.34 (7.96)

Note. SD= standard deviation.

Table 6 Correlation of Spanish GSES and measures of depression, anxiety, positive and negative affect, and quality of life.

<i>Spanish GSES</i>	BDI	STAI-T	STAI-S	RSES	PANAS PA	PANAS NA	LOT-R	QLI-Sp
<i>Initiative</i>	-.364**	-.485**	-.348**	.411**	.354**	-.316**	.117	.354**
<i>Effort</i>	-.197**	-.385**	-.304**	.643**	.502**	-.308**	.058	.287**
<i>Persistence</i>	-.502**	-.539**	-.493**	.547**	.547**	-.514**	.239**	.489**
<i>Total</i>	-.437**	-.558**	-.476**	.656**	.589**	-.460**	.163	.470**

Note. BDI= Beck depression inventory; STAI-S/T, state trait anxiety inventory; RSES Rosenberg self-esteem scale; PANAS, positive and negative affect scale; LOT-R, list of optimism-revised; QLI-Sp, quality of life-Spanish; ** $P < .01$; * $P < .05$ (bilateral).