Cadernos Brasileiros de Terapia Ocupacional
Brazilian Journal of Occupational Therapy

ISSN 2526-8910

Original Article

Psychometric properties of the Oxford Happiness Questionnaire-Short Form in Spanish Undergraduates[1,2]

Propriedades psicométricas do Oxford Happiness Questionnaire-Short Form em estudantes de graduação espanhóis

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How to cite: Rubio-Belmonte, C., & García-Alandete, J. (2025). Psychometric properties of the Oxford Happiness Questionnaire-Short Form in Spanish Undergraduates. *Cadernos Brasileiros de Terapia Ocupacional*, *33*, e3773. https://doi.org/10.1590/2526-8910.ctoAO390637732

Abstract

The Oxford Happiness Questionnaire-Short Form (OHQ-SF) is an 8-item scale that assesses happiness, and it has been adapted for use with Spanish individuals. However, no study has examined its structural validity and gender invariance in young adults. To check this, the psychometric properties of the OHQ-SF were analyzed in a sample of 625 Spanish undergraduates (175 men, 28%, and 450 women, 72%), with an age range between 18 and 29 years (M = 20.80, SD = 2.40). Spanish adaptations of the OHQ-SF, Purpose In Life Test-10 Items (PIL-10), Satisfaction With Life Scales (SWLS), and Seeking of Noetic Goals (SONG) were used. The OHQ-SF showed an internal consistency of .66, a composite reliability of .68, an average inter-item correlation of .21, and total-item correlations ranging from .27 to .52 (M = .36). Confirmatory procedures revealed an excellent fit for the OHQ-SF (SBχ2(20) = 22.387, p = .320, CFI = .996, TLI = .995, RMSEA = .014), and configural, metric, scalar, and strict invariance across gender groups. The difference between the women's mean (36.40, SD = 5.3) and the men's mean (36.27, SD = 5.09) in the OHQ-SF was not significant (t(623) = -.285, p = .776). Correlations between the OHQ-SF, the PIL-10, the SWLS, and the SONG-8 were strong and significant (ρ = .61, p < .001; ρ = .64, p < .001; and ρ = -.38, p < .001 respectively). These results confirm that the Spanish version of the OHQ-SF, used with Spanish undergraduates in the present study, is a reliable and valid scale.

Keywords: Happiness, Validation Study, Reproducibility of Results.

[1]Ethics approval and consent to participate: The authors obtained ethical approval from their institution to collect data for their project and informed consent was obtained from all participants. This project was approved by the Ethics Committee of the Catholic University of Valencia (code UCV/2022-2023/126). Ethical requirements for research involving human subjects according to the Helsinki Declaration were met.

[2]Availability of data and materials: The data that support the findings of this study are available from the corresponding author, CR-B, upon reasonable request.

Received on February 14, 2024; 1st Revision on August 23, 2024; Accepted on November 16, 2024.

Resumo

O Oxford Happiness Questionnaire-Short Form (OHQ-SF) é uma escala de 8 itens que avalia a felicidade e foi adaptada para uso com indivíduos espanhóis. No entanto, nenhum estudo examinou a sua validade estrutural e invariância de gênero em adultos jovens. Para verificar isso, as propriedades psicométricas do OHQ-SF foram analisadas em uma amostra de 625 universitários espanhóis (175 homens, 28%, e 450 mulheres, 72%), com faixa etária entre 18 e 29 anos (*M* = 20,80, *DP* = 2,40). Foram utilizadas adaptações espanholas do OHQ-SF, Purpose In Life Test-10 Items (PIL-10), Satisfaction With Life Scales (SWLS) e Seeking of Noetic Goals (SONG). O OHQ-SF apresentou consistência interna de 0,66, confiabilidade composta de 0,68, correlação média entre itens de 0,21 e correlações totais de itens variando de 0,27 a 0,52 (*M* = 0,36). Os procedimentos confirmatórios revelaram um ajuste excelente para o OHQ-SF (SBχ2(20) = 22,387, *p* = 0,320, CFI = 0,996, TLI = 0,995, RMSEA = 0,014) e invariância configural, métrica, escalar e estrita entre grupos de gênero. A diferença entre a média das mulheres (36,40, *DP* = 5,3) e a média dos homens (36,27, *DP* = 5,09) no OHQ-SF não foi significativa (t(623) = -0,285, *p* = 0,776). As correlações entre o OHQ-SF, o PIL-10, o SWLS e o SONG-8 foram fortes e significativas (ρ = 0,61, *p* < 0,001; ρ = 0,64, *p* < 0,001; e ρ = -. 38, *p* < 0,001 respectivamente). Estes resultados confirmam que a versão espanhola do OHQ-SF, utilizada com estudantes espanhóis no presente estudo, é uma escala confiável e válida.

Palavras-chave: Felicidade, Estudo de Validação, Reprodutibilidade de Testes.

Introduction

Happiness has become one of the most widely researched constructs related to personal well-being, specifically to subjective well-being. There are many definitions of happiness, which reflects the difficulty of its definition, as well as the lack of consensus among experts. Thus, happiness has been defined, for example, as an affective balance between pleasure and displeasure (Bradburn, 1969), the ability to enjoy oneself and others, have fun, feel satisfied with one's life, and experience positive feelings (Bar-On, 2000), and a global appreciation of one's life, an assessment of the prevailing emotional state, and a judgement of the way one lives, compared to each person's criteria for happiness (Argyle, 2013). Diener et al. (1999) described the happy person as someone who has a positive temperament, pays attention to positive aspects of things, does not over-think negative events, lives in an economically developed society, has social confidants, and possesses the appropriate resources to progress towards their goals. Thus, happiness is based on a subjective evaluation, taking into account feelings and emotions, of one's own life.

One of the most accepted and widely used instruments to assess happiness is the Oxford Happiness Questionnaire (OHQ-29; Hills & Argyle, 2002), a 29-item Likert-type scale with 6 response options (1 = Strongly disagree; 6 = Strongly agree). The OHQ-29 has shown high internal consistency and good construct validity with measures of extraversion, neuroticism, self-esteem, satisfaction with life, life orientation, life regard, and depression/happiness (Hills & Argyle, 2002). Hills & Argyle (2002) conducted a discriminant analysis of the OHQ-29, obtaining a reduced 8-item model (OHQ-SF) which showed a high, significant correlation with the full version, *r* = .93, *p* < .001. These authors tested the factorial structure of both the

OHQ-29 and OHQ-SF with confirmatory procedures, obtaining a single higher-order factor that includes all the items on the scales, suggesting that the construct measured by these scales is unidimensional. Other studies have provided information about the psychometric properties and construct validity of the OHQ-SF model (see Table 1 for a summary of the main research findings). All these data increase the evidence about the psychometric validity of these scales and their temporal stability.

Both the OHQ-29 and the OHQ-SF have been adapted to Turkish (Dogan & Çotok, 2011; Dogan & Sapmaz, 2012), Chinese (Lung & Shu, 2020), Portuguese (Figueiredo-Braga et al., 2021), Greek (Grigoriadou et al., 2024), and Spanish (Tomás-Sábado et al., 2014) populations, among others.

Table 1. Studies that have analyzed the psychometric properties of the OHQ-SF.

Study	Sample (age range; *M*age; *SD*age)	Reliability	Construct validity	Factor analysis
Cruise et al. (2006)	55 Irish undergraduates (NE; *M* = 23.9; *SD* = 6.3)	α (T1)= 0.62 α (T2)= 0.58 Test-retest = 0.69	NR	None
Dogan & Çotok (2011)	532 Turkish undergraduates (18-30; *M* = 21.4; *SD* = 1.8)	α (T1) = 0.74 α (T2) = 0.85	*r* = 0.61 Life Satisfaction Scale *r* = 0.51 Life Orientation Test *r* = -0.48 Zung Depression Scale *r* (OHQ29-OHQ-SF) = 0.90	Discriminant analysis and CFA corroborated the unidimensionality of the OHQ-SF
Figueiredo-Braga et al. (2021)	421 Portuguese emerging adults (17-36; *M* = 19.42; *SD* = 2.50)	α = 0.70	*r* = -0.52 HADS-Depression Scale *r* = -0.44 HADS-Anxiety Scale *r* = -0.51 Perceived Stress Scale *r* = 0.63 Subjective Happiness Scale	EFA corroborated the unidimensionality of the OHQ-SF
Grigoriadou et al., 2024	88 Greek undergraduates (18-57; *M* = 21.58; *SD* = 7.54)	α = 0.75 ϖ = 0.76	*r* = 0.70 Life Orientation Test	CFA corroborated the unidimensionality of the OHQ-SF, with one item (16) deleted
Hills & Argyle (2002)	172 British people (13-68; *M* = 30.9; *SD* = 12.9)		*r* (OHQ29-OHQ-SF) = 0.90	Discriminant analysis corroborated the unidimensionality of the OHQ-SF
Lewis et al. (2005)	138 British people (17-39; NE; NE)	α = 0.74	*r* = 0.76 Subjective Happiness Scale Intrinsic orientation Positive Religious Coping	None
Lung & Shu (2020)	17,694 Chinese adolescents (12; NE; NE)	α = 0.63		EFA and CFA results in a bidimensional model (SAS and PWB) with one item (7) deleted

Table 1. Continued...

Study	Sample (age range; *M*age; *SD*age)	Reliability	Construct validity	Factor analysis
Maltby et al. (2005)	224 British undergraduates (18-56; *M* = 22.45; *SD* = 6.8)	α = 0.73	*r* = 0.76 Depression Happiness Scale	None
Morley (2014)	82 Irish people (17-68, *M* = 25.94; *SD* = 11.68)	α = 0.69	*r* = 0.72 Life Satisfaction Scale *r* = 0.61 Optimism	None
Tomás-Sábado et al. (2014)	319 Spanish undergraduates (17-50; *M* = 22.53, *SD* = 5.49)	α = 0.73 Test-retest = .71	*r*(OHQ-OHQ-SF) = 0.90 *r* = -0.63 Depression *r* = -0.46 Anxiety *r* = 0.38 Resilience *r* = 0.57 Perceived competence *r* = 0.68 Self-esteem *r* = 0.61 Optimism	None

Note. NE = Not specified; NR = Not reported; CFA = Confirmatory Factor Analysis; EFA = Exploratory Factor Analysis; T1 = Time 1; T2 = Time 2; SAS = Social Adaptation Status; PWB = Psychological Well-Being.

In a study with 319 Spanish undergraduates, Tomás-Sábado et al. (2014) reported results for the OHQ-SF related to reliability coefficients (α and test-retest coefficient) and construct validity with several variables related to personal well-being (optimism, self-esteem, perceived competence, resilience, anxiety, and depression) (Table 1). The study by Tomás-Sábado et al. (2014) is the only one that has analyzed the psychometric properties of the OHQ-SF in the Spanish population, although it did not examine its structural validity. Likewise, no study has analyzed the structural validity of the OHQ-SF in a Spanish population using confirmatory procedures. In addition, no psychometric study has analyzed the invariance across gender of the OHQ-SF.

Regarding gender-related differences in happiness, results of previous studies using the OHQ are not conclusive and there are hardly any studies that report such differences using the OHQ-SF. As with the 29-item version, the results with the OHQ-SF are mixed and the evidence is unclear regarding gender differences related to happiness: some studies have not found gender-related differences (e.g., Figueiredo-Braga et al., 2021; Yaprak et al., 2018) whereas other studies have found significant differences across gender (e.g., Tan et al., 2020). Results obtained in studies that have used other measures of happiness other than the OHQ and analyses of review studies also show that differences in happiness between men and women are unclear (e.g., Blanchflower & Bryson, 2024; Brakus et al., 2022).

The present study

The aim of the present study was to analyze the psychometric properties of the OHQ-SF, assessing gender invariance, gender-related differences, and its concurrent validity in a sample of Spanish individuals. The hypotheses were the following: (1) the OHQ-SF would show good internal consistency, (2) the OHQ-SF would show a unidimensional structure, (3) the OHQ-SF would demonstrate invariance across

gender, and (4) the OHQ-SF would show good concurrent validity based on its correlations with the SWLS, PIL-10, and SONG-8.

Method

Participants

This study employed a cross-sectional, quantitative and non-experimental design with 625 Spanish undergraduates (175 men, 28%; 450 women, 72%), with ages ranging from 18 to 29 years, (M = 20.80, SD = 2.40). A convenience sampling was used. Informed consent was obtained from all the participants, who collaborated voluntarily and anonymously and did not receive any compensation for their participation.

Instruments

Oxford Happiness Questionnaire-SF (OHQ-SF; Hills & Argyle, 2002). The Spanish adaptation of the OHQ-SF by Tomás-Sábado et al. (2014) was used. The total score ranges from 8 to 48: The higher the score, the greater the happiness. In the present study, the OHQ-SF showed an internal consistency of ϖ = .66, 95% CI [.62, .70] (McDonald, 1999).

Satisfaction With Life Scale (SWLS; Diener et al., 1985). Arce's (1994) Spanish adaptation of the SWLS was used. The SWLS comprises 5 items that score from 1 (Strongly disagree) to 7 (Strongly agree) to assess global cognitive judgements of satisfaction with life (SwL). The total score ranges from 5 to 35: The higher the score, the greater the SwL.

Purpose in Life Test-10 Items (PIL-10; García-Alandete et al., 2013). The PIL-10 is a Spanish adaptation of the scale by Crumbaugh & Maholick (1969) which assesses Meaning in Life (MiL). The PIL-10 comprises 10 items that assess satisfaction with life and purposes and goals in life. The total score ranges from 10 to 70: The higher the score, the greater the MiL.

Seeking Of Noetic Goals-8 Items (SONG-8; García-Alandete et al., 2020). This Spanish version of the SONG (Crumbaugh, 1977) assesses the motivational intensity of finding meaning in life (MiL), that is Search for Meaning (SfM) with an 8-item Likert-type scale (1 = Never; 7 = Continually). The total score is the sum of the scores on the 8 items, ranging from 8 to 56. A high score indicates a high motivation to SfM.

Data analysis

First, the descriptive statistics of the scales used in the present study were calculated and their internal consistency was estimated by using McDonald's omega (ϖ) (McDonald, 1999), which has a value between 0 and 1 (internal consistency is acceptable if ϖ ≥ .70) (McNeish, 2018). Given that ϖ tends to underestimate reliability when there are few items and ordinal scales (as in the current study), the Composite Reliability (CR) and the average inter-item correlation (according to Clark & Watson, 1995, it should be between .15 and .50) of the OHQ-SF were calculated. An acceptable threshold for the CR can range from .60 upwards (Cfr. Bacon et al., 1995). CR was tested using an online calculator (Colwell, 2016) and relying on the formula by Raykov (1997).

Second, a Confirmatory Factor Analysis (CFA) of the OHQ-SF (Hills & Argyle, 2002) was conducted. Given that the scale is ordinal and it was not possible to assume multivariate normality (Mardia's coefficient, normalized estimate was 17.30) (Thompson,

2004), the Diagonally Weighted Least Squares (DWLS) method with robust estimation was used (Li, 2016). Fit indices included the Comparative Fit Index (CFI; Hu & Bentler, 1999), the Tucker-Lewis Index (TLI) (Bentler & Bonnet, 1980) (values ≥ .90 indicate acceptable fit; values ≥ .95 indicate good model fit), and the Root Mean Square Error of Approximation (RMSEA) (Browne & Cudeck, 1993) (values ≤ .08 indicate acceptable model fit; values ≤ .05 indicate good model fit) (e.g., Hair et al., 2010).

Third, a Multi-Group Confirmatory Factor Analysis (MGCFA) was conducted to test invariance across gender for the OHQ-SF (Milfont & Fischer, 2010). Gender-related differences in the OHQ-SF were analyzed using the independent samples T-Test (Student).

Finally, the PIL-10 (García-Alandete et al., 2013), the SWLS (Diener et al., 1985) and the SONG-8 (García-Alandete et al., 2020) were used to test the concurrent validity of the OHQ-SF.

The JASP 0.16 free software for Windows (JASP Team, 2021) was used to conduct all these statistical analyses.

Procedure

Participants completed the scales in large classroom settings under the supervision of the authors of this study, who briefly explained its nature and objectives without emphasizing aspects that could bias the responses. Any questions about the process were clarified, ensuring anonymity and confidentiality, and sincere responses were requested to maximize the validity of the data.

This project was approved by the Ethics Committee of the participants' university (code UCV/2022-2023/126). Ethical requirements for research involving human subjects according to the Helsinki Declaration were met.

Results

Descriptive statistics and internal consistency of the scales used in this study

Table 2 shows the descriptive statistics, skewness, and kurtosis of the scales used in this study. The mean for the OHQ-SF was 36.36 (*SD* = 5.25) for the overall sample. The skewness value for each item was negative, which indicates that the distribution was left-skewed. The kurtosis value for each item was lower than 3, indicating a platykurtic distribution.

The OHQ-SF showed a McDonald´s omega (ϖ) of .66, 95% CI [.62, .70] (which did not improve by dropping any item), a CR of .68 and an average inter-item correlation of .21, 95% CI [.18, .24]. The total-item correlations ranged from .27 to .52 (*M* = .36) (a range from .25 to .55 with an average of .40 is interpreted as good performance).

The other scales used in this study also showed acceptable internal consistency: SWLS, ϖ = .84, 95% CI [.81, .87], PIL-10, ϖ = .88, 95% CI [.87, .89], and SONG-8, ω = .81, 95% CI [.77, .84].

Confirmatory Factor Analysis of the OHQ-SF model

A CFA for the original OHQ-SF (Hills & Argyle, 2002) was specified. The model showed an excellent fit: SBχ2(20) = 22.387, p = .320, CFI = .996, TLI = .995, and RMSEA = .014 [.000, .038]. All parameters were significant at .05 (Figure 1).

Table 2. Descriptive statistics of the scales used in the present study.

Items of the OHQ-SF and scales	M	SD	Skewness (SE)	Kurtosis (SE)	Item-test correlation	ω if item dropped
1. I don't feel particularly pleased with the way I am	4.73	1.37	-1.00 (.10)	-.06 (.20)	.37	.63
3. I feel that life is very rewarding	4.48	1.17	-.82 (.10)	.27 (.20)	.48	.60
12. I am well satisfied about everything in my life	4.90	.98	-1.13 (.10)	1.71 (.20)	.52	.60
13. I don't think I look attractive	4.17	1.35	-.45 (.10)	-.58 (.20)	.29	.65
16. I find beauty in some things	5.02	.88	-.88 (.10)	1.48 (.20)	.29	.64
18. I can fit in (find time for) everything I want to	3.64	1.36	-.25 (.10)	-.72 (.20)	.28	.65
21. I feel fully mentally alert	4.53	1.05	-.73 (.10)	.50 (.20)	.40	.62
29. I don't have particularly happy memories of the past	4.89	1.40	-1.13 (.10)	.21 (.20)	.27	.66
OHQ-SF	36.36	5.25	-.51 (.10)	-.01 (.20)		
PIL-10	56.05	8.76	-1.15 (.13)	1.79 (.26)		
SONG-8	31.49	8.19	.25 (.13)	-.230 (.26)		
SWLS	25.25	4.78	-.67(0.13)	.62(0.26)		

Note. M = Mean; SD = Standard Deviation; SE = Standard Error; OHQ-SF = Oxford Happiness Questionnaire-Short Form; PIL-10 = Purpose in Life-10 Item; SONG-8 = Seeking of Noetic Goals-8 Item; SWLS = Satisfaction With Life Scale. The numbering of the items of the original version (OHQ) was preserved. In Italics, the reverse items of the OHQ-SF.

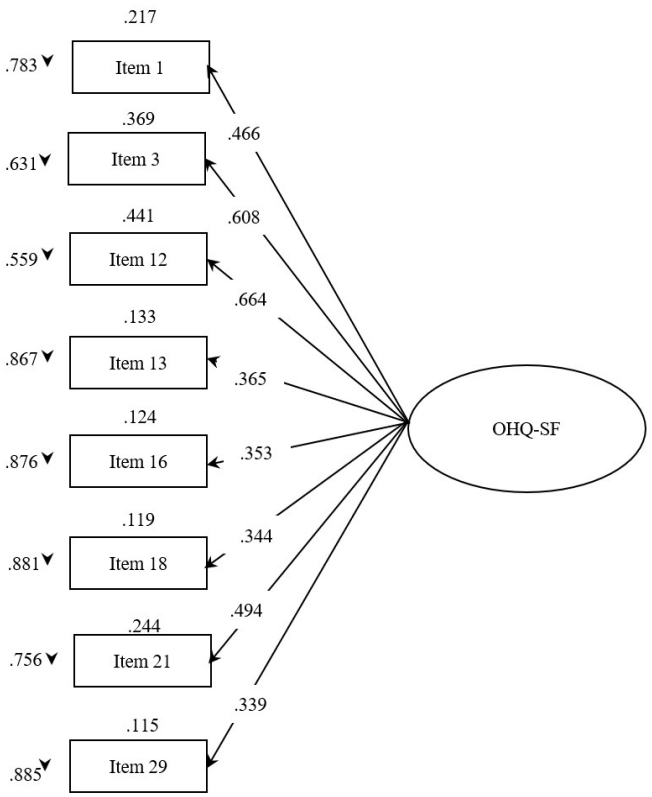

Figure 1. Standardized solution for the OHQ-SF. Note. Item numbering is the same as in the original OHQ-SF. The numbers on the right-hand side indicate standardized regression coefficients. The numbers on the left of the model are the errors. The numbers above each item number represent R^2.

Gender invariance of the OHQ-SF and gender-related differences

The values in ΔCFI and ΔTLI were lower than .01, and the values in ΔRMSEA were lower than .015 for the scalar, metric, and strict models. These results indicate an acceptable fit of the OHQ-SF in the gender groups, demonstrating configural invariance. An acceptable model fit was found for the metric, scalar, and strict invariance models (Table 3).

Women showed higher means than men in the OHQ-SF, M = 36.40, SD = 5.3 and M = 36.27, SD = 5.09, respectively. The difference in means was not significant, p = .776.

Table 3. Gender invariance of the OHQ-SF.

Model	SBχ2	df	p	CFI	TLI	RMSEA [90% CI]	ΔSBχ2	Δdf	ΔCFI	ΔTLI	ΔRMSEA
Baseline men	12.420	20	.901	1.000	1.080	.000 [.000, .028]					
Baseline women	19.328	20	.501	1.000	1.002	.000 [.000, .039]					
Configural	31.747	40	.821	1.000	1.018	.000 [.000, .025]					
Metric	38.103	48	.846	1.000	1.018	.000 [.000, .022]	6.356	8	.000	.000	.000 [.000, .003]
Scalar	46.173	55	.796	1.000	1.014	.000 [.000, .024]	8.070	7	.000	.004	.000 [.000, .002]
Strict	51.559	63	.848	1.000	1.016	.000 [.000, .020]	5.386	8	.000	.002	.000 [.000, .004]

Note. df = degree of freedom; p = p value; CFI = Comparative Fit Index; TLI = Tucker-Lewis Index; RMSEA = Root Mean Square Error of Approximation; CI = confidence interval.

Concurrent validity of the OHQ-SF

The correlations between this scale and the PIL-10, the SONG-8 and SWLS were calculated to report the concurrent validity of the OHQ-SF. The OHQ-SF showed positive, strong correlations with both the PIL-10, ρ = .61, p < .001, and the SWLS, ρ = .64, p < .001. Regarding the SONG-8, the OHQ-SF showed a negative, intermediate correlation: ρ = -.38, p < .001.

Discussion

The aim of the present study was to analyze the psychometric properties of a Spanish adaptation of the OHQ-SF, in a sample of Spanish undergraduates. The hypotheses were that (1) the OHQ-SF would show good internal consistency, (2) the OHQ-SF would show a unidimensional structure, (3) the OHQ-SF would demonstrate invariance across gender, and (4) the OHQ-SF would show good concurrent validity.

The Spanish adaptation of the OHQ-SF showed both acceptable internal consistency and structural validity, and invariance across gender. Happiness showed positive correlations with presence of meaning and satisfaction with life, and negative correlations with search for meaning. These results indicate that the Spanish adaptation of the OHQ-SF is a reliable and valid scale to assess happiness.

Descriptive statistics and internal consistency of the OHQ-SF

Mean in the OHQ-SF. Participants obtained a mean score of 36.36 (SD = 5.25) on the OHQ-SF (Hills & Argyle, 2002), with a range of scores from 8 to 48. This mean is higher

than that obtained in other studies with Spanish populations and other nationalities using the 8-item model and samples similar to the one used in the present study (Cruise et al., 2006; Dogan & Çotok, 2011; Lewis et al., 2005; Maltby et al., 2005).

Skewness values of the OHQ-SF items were negative, indicating that the tail is on the left side of the distribution, extending towards more negative values. Kurtosis values for each item indicated that the OHQ-SF tends to produce fewer and less extreme outliers than the normal distribution.

Internal consistency. The OHQ-SF obtained a McDonald's ϖ of .66. This result is similar to previous studies with values around .70 in non-Spanish samples (e.g. Cruise et al., 2006; Dogan & Çotok, 2011; Figueiredo-Braga et al., 2021; Lewis et al., 2005; Maltby et al., 2005; Morley, 2014) and Spanish samples (e.g. Tomás-Sábado et al., 2014). The item-total correlations showed that the items of the OHQ-SF contribute to this scale's reliability by measuring the same construct, that is happiness.

In addition to McDonald's ϖ, we calculated the CR and the average inter-item correlation of the OHQ-SF. The CR was .68 and the average inter-item correlation was .21, 95% CI [.18, .24]. Although the McDonald´s omega and the CR of the OHQ-SF were slightly lower than the criteria suggested by De Vellis & Thorpe (2021) and Hair et al. (2010), the average inter-item correlation supported the internal consistency of the scale (Clark & Watson, 1995) and suggested that the items on the OHQ-SF are well related to each other and might be suitable for measuring the same construct. It should be noted that the OHQ-SF is a brief scale (8 items) and it is common for internal consistency to be negatively conditioned in these cases.

Structural validity of the OHQ-SF

The current study is the first to analyze the factor structure of the OHQ-SF in the Spanish population. Previous studies corroborated the unidimensionality of the OHQ-SF models (Dogan & Çotok, 2011; Hills & Argyle, 2002). In this study, an adequate model-data fit for that scale was achieved, confirming the structure's validity.

These results suggest that the OHQ-SF is a short, parsimonious scale with good psychometric properties, indicating the potential replication of the structure proposed by Hills & Argyle (2002).

Gender invariance of the OHQ-SF

This study is the first to analyze the gender invariance of the OHQ-SF. The unidimensional model of the OHQ-SF showed an acceptable fit in the gender groups, demonstrating configural, metric, scalar, and strict invariance. That is, the factor structure, factor loadings, means, and error variance are equivalent across gender for the measure of happiness (Milfont & Fischer, 2010).

Gender-related differences in the OHQ-SF

The difference in means between men and women in the OHQ-SF was non-significant. These results are similar to those reported in other studies (Figueiredo-Braga et al., 2021). However, the literature is abundant regarding gender differences related to happiness with

the OHQ and other subjective well-being measures, there are few works that explore these differences using the OHQ-SF. Due to its limited number of items, the OHQ-SF may not be sensitive to gender differences, especially in societies like Spain, where such differences have been notably reduced in recent decades. Nevertheless, it is interesting to note that women scored higher on average than men on happiness in the present study.

Concurrent validity of the OHQ-SF

Positive correlations were found between the OHQ-SF and the SWLS, like Dogan & Çotok (2011), Morley (2014), and Soucase et al. (2023). Other studies have reported positive relationships between the OHQ-SF and measures of subjective well-being (Figueiredo-Braga et al., 2021; Lewis et al., 2005), as well as perceived optimism (Morley, 2014), resilience, self-esteem, and perceived competence (Tomás-Sábado et al., 2014).

Positive and significant correlations were also found between the OHQ-SF and the PIL-10. Although some studies explain the relationship between happiness as measured by the OHQ and Meaning in Life as measured by the PIL, most studies examine these relationships using the extended version of the OHQ and the abbreviated versions of the PIL (PIL-10 or PIL-SF). There are few studies that report the results of this type of relationship using the OHQ-SF. The results obtained in this study are similar to those reported by Soucase et al. (2023) with the PIL-10 and the OHQ, and by Rubio-Belmonte et al. (2023) with the PIL-SF and the OHQ, and are in line with the results obtained in other studies using similar instruments to assess meaning in life and subjective well-being (e.g., Steger et al., 2006).

A negative relationship was found between the OHQ-SF and the SONG-8, which aligns with the results reported by Soucase et al. (2023) and suggests that the greater the presence of meaning, and therefore the greater happiness, the less motivation to search for meaning and purpose in life.

Park et al. (2010) found a negative relationship between meaning in life and negative affect and depression. Some studies have also explored the relationships between the OHQ-SF and different measures of psychological distress, with the result of a negative relationship with happiness (e.g., Dogan & Çotok, 2011; Figueiredo-Braga et al., 2021; Maltby et al., 2005).

In sum, the greater the happiness the higher the meaning in life and satisfaction with life, and the less search for meaning. Taking these results into consideration, the OHQ-SF is a valid scale for the measurement of variables related to personal well-being.

Limitations of the present study and suggestions for further research

The results of the present study should be interpreted considering the limitations outlined below, along with suggestions for future research. The sampling method and the composition of the sample limit the generalizability of the results. Although this is sufficient for the statistical analysis proposed, the size of the women's group (n = 450) was significantly larger than the men's group (n = 175). Additionally, the age range (from 18 to 29 years) was too narrow to conduct comparative analyses to test the effect of age on the variables under study. Future studies should use randomized, size-balanced, and more heterogeneous samples to ensure the generalizability of the results and the statistical goodness of the comparisons. It would be interesting to analyze age invariance, which could not be addressed in this study due to the age range of its participants.

Some additional limitations to this study are: (1) response bias due to social desirability, which is a common problem in this type of research when asking about happiness, life satisfaction, or meaning in life; and (2) the inconclusive results regarding gender-related differences in happiness and, furthermore, the scarcity of studies exploring such differences using the OHQ and, in particular, the OHQ-SF as measurement instruments, which hinders the comparability of the results.

It would have been interesting to examine the test-retest reliability, which was not possible in the present study because of its cross-sectional design. Future studies with a longitudinal design could extend the reliability results for this scale.

Likewise, it would be interesting to further examine the construct validity of the OHQ-SF in different populations (older adults, caregivers of dependent individuals, individuals with mental disorders, disabilities, or chronic and terminal illnesses, among others). Moreover, longitudinal and cross-cultural studies related to each of the variables investigated and the relationships between them have little presence in the current literature, and so it would be advisable to conduct such studies.

Despite these limitations, the unique contributions of this study are worth highlighting. The OHQ-SF is a brief, self-administered scale that shows optimal psychometric properties, validity, and invariance across gender. As far as we know, this is the first study that has examined the factorial structure of the OHQ-SF in a Spanish population, as well as its invariance across gender. As Hills & Argyle (2002) commented, it is very useful to have a brief instrument with good psychometric properties to measure happiness when time and space is limited. Measuring happiness in a reliable and valid way with few items involves investing not only less time but also less effort in responding and, therefore, improves its potential usefulness, for example in populations that have difficulties completing questionnaires (people with mental health problems, people with disability or even older adults). In addition, the use of brief measures like the OHQ-SF can favour the development of longitudinal studies or large evaluation protocols with a wide spectrum of variables given that the response time is reduced. This represents an opportunity to deepen the study of the relationships between different constructs related to well-being, meaning in life, optimal variables associated with optimal psychological functioning, but also variables related to psychological distress.

Concluding Comments

In conclusion, it can be stated that this study provides information on the adequate functioning of the OHQ-SF scale, showing good adjustment indices in its factorial structure, good psychometric qualities, and invariance across gender; complementing and amplifying the results reported by Hills & Argyle (2002).

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Author's Contributions
César Rubio-Belmonte and Joaquín García-Alandete contributed equally to the study design. César Rubio-Belmonte and Joaquín García-Alandete reviewed literature relevant to the objective of the study. César Rubio-Belmonte obtained the data and wrote the initial draft of the Introduction and Discussion sections. Joaquín García-Alandete performed the statistical analyses and wrote the initial draft of the Method and Results sections. César Rubio-Belmonte and Joaquín García-Alandete reviewed and approved the final version.

Funding Source

This study was not funded.

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Section editor
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