

# Measuring Happiness in Portuguese Adults: Validation of the CHQ - Covilha Happiness Questionnaire

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## Abstract

This paper focuses on the study of happiness from two perspectives that have accompanied the historical evolution of its scientific study: its conceptual definition as a construct and its measurement. We aimed to integrate and analyze the development and validation of a new measure, adapted to the reality and socio-cultural specificities of Portugal, which struggles with particular socio-economic contingencies that have emerged contemporaneously. We also aimed to develop methodologies to obtain valid and updated data on psychosocial indicators of happiness and subjective well-being among the Portuguese population. This article thus explores the problem of measuring happiness within the complex conceptual context of (in) definition and operating (un)measurability. The article assumes the instrumental and descriptive objectives and attempts to contribute to the development and validation of a new instrument for assessing happiness. These objectives are founded on a multifactorial theoretical conception that incorporates personal, social and environmental dimensions, and which allows for the provision of specific indicators of happiness and an overall aggregated indicator.

**Method:** This study was a cross-sectional survey of 645 Portuguese people. The Covilhã's Happiness Questionnaire (CHQ) uses 41 items to measure a person's happiness.

**Results:** Exploratory factor analysis revealed a well-fitting 5-dimensional factor structure (KMO = 0.914), with strong factor loadings and excellent internal reliability (Cronbach's  $\alpha$  = 0.921).

The CHQ assessed the following dimensions: positive emotions, socially gratifying interactions, self-caring, participation in meaningful activities, and socio-economic structure engagement.

**Conclusion:** The CHQ has good face validity and sound psychometric properties. It is a culturally adapted measure, thus user-friendly for researchers and others utilizing the scale.

**Keywords:** Happiness measurement; Happiness indicators; Happiness in adults; Portugal

## Happiness – From the Conceptual Problem to the Measurement Problem

Western culture has taken happiness, at least politically and discursively, to be one of its most important goals and objectives to be attained in life, both individually and on a societal level. The approach of the Western world to the happiness and well-being of its populations portrays happiness as a stage in life to be attained. Today, however, the economic, financial and social problems of some countries, namely Portugal, may question the ability of Western populations to reach that stage.

In the scientific field, happiness has been affirming itself as an increasingly investigated variable, referenced in publications of a scientific nature [1]. In addition, happiness as a variable has been referenced both at the exploratory level, in the context of background and conditioning variables and their possible consequences, and in particular under positive conceptions that are relevant to the maintenance and promotion of health [2,3].

Despite this significant and unequivocal development [4], it is evident that the study of happiness and well-being in psychology today remains entangled in some subjectivity. The conceptualization and study of the nature of happiness and well-being and the instruments and measurement methodologies used, have led to persistent questioning of the real contribution of their study in the scientific field, reflected, for example, by the issue raised and deconstructed by Norrish and Vella-Brodrick [5]: "Is the study of Happiness a Worthy Scientific Pursuit?" or the work of Lykken and Tellegen [6] that problematizes happiness

as a phenomenon of stochastic nature. This study aims to reinforce happiness as scientific variable, exploring its assessment, validity and psychosocial determinants, thus contributing to its consolidation as scientific construct.

The concept of happiness used in studies of Positive and Humanistic Psychology ranges from subjective well-being, to the satisfaction or the fulfillment of life goals. Additionally, in Existential Psychology the concept of happiness integrates physical, mental and spiritual dimensions [7]. General happiness is philosophically interpreted as a sense of well-being, which in turn is defined as either a complete and lasting satisfaction with life as a whole, or as a preponderance of positive feelings over negative feelings [8]. To Veenhoven [9] it is a subjective state of mind defined as the overall assessment of life as a whole. Natvig et al. [10] indicate that well-being is often used interchangeably with happiness, although the focus of well-being may be considered wider, and as a term it is traditionally regarded as more scientific [5].

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Psychological happiness reflects a subjective well-being and denotes a mental state associated with success or satisfaction of desires or needs [2]. To Raibley [11] happiness and well-being are conceptually, metaphysically and empirically distinct, understanding happiness as an associated variable required, but not sufficient for achieving well-being.

Many other concepts have been used in association or even as synonyms for happiness, including life satisfaction and flow and quality of life [12]. Happiness would be contained within quality of life [2] and is recognized today as an indispensable psychological dimension in the evaluation of the quality of the experience of human life, at both the micro level of individuals and at the macro level of nations. It is also significant to note that the interest in measuring happiness in analyses of an economic nature is growing, especially in studies that seek to evaluate and compare any differences in international terms [1,13], e.g., between EU member countries, in studies like Cullis, Hudson and Jones [14] and in recent international approaches based on indicators of GNH - Gross National Happiness [15].

Veenhoven [9] discusses the universality of happiness and considers that there is a remarkable cross-cultural similarity. The biggest change seems to be in the way people are happy. In Portugal there is a lack of scientific studies that would help us to understand and measure levels of happiness in a comprehensive way and the way people are happy. Therefore this research aims to assess data and information about dimensions that constitute happiness as complex and multidimensional variable from a quantitative perspective.

The research of happiness and positive aspects of human experience, framed in today's Positive Psychology, originally appeared to raise a conflict, at least in part, with traditional psychology and the importance of focusing on dysfunctional and negative aspects of the human experience [5]. Therefore, it may be considered that Psychology's focus on happiness appeared late, due to its traditional orientation, but also particularly because of the persistence of a deeply rooted cultural perception of happiness as elusive, inexplicable and subjective, thus impossible to be scientifically studied and measured [16].

A common argument against the scientific research of happiness is that it is impossible to be measure objectively. With the research conducted in this field [17] it is assumed, unequivocally, that happiness can be defined and can be measured; however, it seems unlikely that the study of happiness is closed. On the contrary, happiness as a variable and subject of scientific study requires a continuous effort to consolidate its theoretical specificity and further development of psychometrically validated instruments to measure it that are adapted culturally and contingently.

### **Happiness - The importance of the validity of the measure in its scientific affirmation as a multidimensional construct with socio-cultural specificities**

For Bates [15] all measures of well-being are imperfect, so he proposed the use of multiple methodological alternatives. Happiness and subjective well-being have been assessed according to different perspectives and methodological approaches [18,19]. Most research on happiness is performed through surveys [5], asking people to evaluate their satisfaction with life in general, or satisfaction with areas of life that are significant, such as work or family [20]. The investigation of happiness generally requires that people analyze their current situation or past emotional experiences.

According to Hills and Argyle [21] happiness is a multidimensional construct that includes both emotional and cognitive elements. The

available data suggests that all humans tend to evaluate how much they like their life. This evaluation is based on the affective experience, which is linked to the fulfillment of universal human needs and cognitive comparison, and is shaped by the cultural standards of what is, in a particular context, a good life. The overall assessment of happiness seems to depend more on the first (affective realm) than on the source of information (cognitive field) [9]. Veenhoven [22] presents a major objection to the argument that happiness is relative. He believes that the affective component of happiness is strongly associated with experience and hedonic gratification of needs, and therefore is independent of comparison standards.

Veenhoven [17] believes that happiness is a conscious mental state, which can be measured by the means of questioning it and translating it into an overall judgment that happiness can be measured by the survey method. The subjective view of happiness considers it from the point of view of the respondents [23] and assumes that this can be measured simply by asking people how happy they are. Diener [20] argued that happiness is a democratic concept and that every individual has the right to assess whether his or her life was, or was not, satisfying and whether his or her life was, or was not worth it [5]. For Kamman et al. [8] well-being reflects a gradual notion, and people can experience any number of gradations within the extremes of well-being, ranging from complete happiness to unhappiness or total misery. However, they may be biased in the assessment of human decision, making it complex to measure and validate based on self-assessment [5]. The subjectivist perspective requires that respondents are able to make a valid judgment of their lives, not significantly distorted from the point of view of cognitive and/or emotional limitations [24]. This research, like that of Fordyce [16], Bekhet et al. [2] and Hervas and Vázquez [25], shows that there are many plausible and available instruments focused on a subjectivist perspective [26], which use self-administered surveys (Table 1).

A few instruments are clearly recognized and used more often than others. The analysis of the measures appears to depend on many factors including the population, psychometric characteristics of the measurement, number and accessibility of items, and further adaptation to their linguistic and socio-cultural realities [2]. Most measures of happiness identified are specific to young and middle-aged people [2], with several existing proposals focused on a single item [27]. Some authors try to analyze particular conceptions concerning happiness, such as temporary happiness and long-lasting happiness [28]. Some researchers choose to adapt instruments to new populations and age groups for general use [21,29]. On the other hand, there are some investigations that have focused on the cultural values of East and West and their possible impact on the measurement of happiness [30].

Diener et al. [31] argues that despite the specificities of each methodological approach it is possible to measure happiness with numerous valid and reliable measures as long as they have good psychometric properties and characteristics. Given the value of the work of the instrumental research that has historically been developed, we are contributing to the development of a new measure. As none of the existing options and instruments met the majority of requirements needed in this work, namely: being adaptable for various age groups; being aligned with a multifactorial conception of happiness, incorporating personal, social and contextual dimensions; allowing visualizations of particular indicators and an overall indicator; and, above all, the ability to be developed and adapted to the extent of the crisis contingencies and the social, cultural, and economic reality in contemporary Portugal.

Instrument	Authors	N	Age of Population for Intended Use	Concept of Happiness	Number of Items	Scaling methods	Scoring interpretation
Pemberton Happiness Index	Hervás and Vásquez [25]	4.407	16-60	Measure of integrative well-being that includes remembered and experienced well-being	23 items	Scale from 0 (total disagreement) to 10 (total agreement)	PHI index is the sum of positive experiences and the sum of the absence of negative experiences (each item counted as "1"). The total sum is then divided by 12.
Happiness-Enhancing Activities and Positive Practices (HAPP)	Henricksen and Stephens [12]	2.313	Older subjects 55-73	Measure the importance and engagement of various happiness-enhancing activities	22 items	Five point scale from "not important at all" to "extremely important".	Higher scores represent the higher importance and engagement ratings for the corresponding activity.
The Oxford Happiness Inventory (Italian version)	Meleddu, Guicciardi, Scalas and Fadda [29]	782	Adolescents 14-19 years	Measures positive psychological functioning: SWB and PWB: an eudaimonic model of well-being; a five-factor model	29 items	Four incremental levels of happiness: from 0 ( <i>I do not feel happy</i> ) to 3 ( <i>I am incredibly happy</i> )	The higher the scores, the greater the happiness.
Happiness Subscale of the short version of the Adolescent General Well-Being (AGWB) scale	Mahon and Yarcheski [43]	127 early adolescents	12-14 years	Assesses adolescents' personal experience of happiness	9 items	5- point Likert scale	Higher scores reflect perceived happiness.
The Oxford Happiness Inventory (has been used in the United Kingdom, Spain, Portugal, United States, Australia, and Canada)	Hills and Argyle [21]	257 subjects	18-82 years	Three components: (1) the frequency and intensity of positive affect; (2) the average level of satisfaction; (3) the absence of negative feelings	29 items	Four incremental levels of happiness: from 0 ( <i>I do not feel happy</i> ) to 3 ( <i>I am incredibly happy</i> )	Higher scores reflect greater happiness.
The Oxford Happiness Inventory Hebrew translation for Israel	Francis and Katz [44]		Adults	Happiness made up of four components: the frequency and intensity of positive affect, the average level of satisfaction, the absence of negative feelings, and the feeling of self-fulfillment		Four incremental levels of happiness, from 0 (I do not feel happy), to 3 (I am incredibly happy)	Higher scores reflect greater happiness.
The Subjective Happiness Scale	Lyubomirsky and Lepper [26]		14-94 years (14 samples collected at different times and locations)	A global subjective assessment of whether one is happy or unhappy	4 items	Six-point Likert scale ranging from 1 (not a very happy person) to 7 (a very happy person)	Higher scores reflect greater happiness.
Chinese Happiness Questionnaire (CHI)	Lu and Shih [45]		Undergraduate students (mean age: 20.44 to 21.49 years)	Measures subjective experiences pertaining to a variety of life domains	48 items	Each item has four statements and each statement represents a different level of subjective experience of happiness which is then coded as 0, 1, 2, 3.	Higher scores, reflect greater happiness..
The Depression-Happiness Scale	McGreal and Joseph [46]		Undergraduate students 17-35 years	This scale represents depression and happiness as opposite ends of a single continuum	25 items	Four-point scale ranging from 0 (never) to 3 (often)	The higher the scores, the greater the feelings of happiness and the lower the scores, the greater the feelings of depression.
The Happiness Subscale of the short version of the Adolescent General Wellbeing (AGWB)	Columbo		Adolescents 14-18		9 items	Four-point Likert scale.	Higher scores reflect higher perceived happiness.
The Memorial University of Newfoundland Scale of Happiness (MUNSH)	Kosma and Stones [42]		Younger and older adults	Measures both short and long-term aspects of well-being.	24 items	Yes/no	The scale is scored by subtracting the negative items from positive items.

The Mood Survey	Underwood and Froming [47]		Undergraduate students	Measures three dimensions of mood: the average level, the intensity, and the frequency of mood experiences	18 items	Six-point Likert scale ranging from strongly agree to strongly disagree	Higher scores reflect greater happiness.
Marital Happiness Scale	Azrin, Naster & Jones, [48]		Used primarily for couples aged 23–56 years	Measure of reported marital happiness in each of 10 areas of marital interaction	10 items represent 10 categories	Each of the 10 categories was scored on a point continuum of self-reported happiness that ranged from 1 “completely unhappy” to 10 “completely happy”.	Higher scores reflect greater happiness.
The Bradburn Affect Balance Scale (ABS)	Bradburn and Caplovitz [49]		The young and the middle-aged. It was not standardized on older subjects, but has been validated on them several times	Happiness is the difference between positive and negative affective states and measure psychological well-being	10 items	Yes/no	The scale is scored by subtracting the negative items from the positive items, plus a constant 5 to avoid negative values.

Table 1: List of selected available instruments for happiness measurements.

## Materials and Methods

### Design

This study was a cross-sectional survey of internet users in Portugal who filled out the Covilhã's Happiness Questionnaire (CHQ), which was constructed for the purpose of being psychometrically validated. The questionnaire development involved a long process of activities as proposed by Fink and Kosecoff [32], De Vellis[33] and Hill and Hill [34]. The following steps were taken in consideration: Step 1 - Exploratory interviews; Step 2 - The development of an early version of the questionnaire; and Step 3 - verifying its consistency in a sample of subjects belonging to the study population (pre-test). Instructions, categories, response arrangements and the development of the items sought to rely on simple terminology, so to be adjusted to the recognized standard of academic qualifications and ensure easy apprehension and understanding by the target population of the study.

The survey took place between February and March 2014. The questionnaire data were analyzed using exploratory factor analysis in order to reveal any latent constructs underlying the items in this new questionnaire. The development of the scale was focused on an exploratory factor analysis because, as recommended by Kelloway [35], exploratory factor analysis is more suitable for the initial development of questionnaires.

### Participants

A total of 645 internet users participated in this study. The inclusion criteria for participation in the study were: (1) being Portuguese and living in Portugal, and (2) willingness to participate in the study after knowing its objectives. Participants were recruited through two sampling methods: (1) Informal social networks (eligible internet users who agreed to participate were asked to refer their friends to participate in the study); and (2) The Internet. The researchers distributed announcements via local websites to reach potential participants.

Demographic data (Table 2) show that the sample is highly differentiated and educated. The majority of participants are women (66%), and the majority of them are employed (47.3%). Ages ranged from 15 to 84 (mean = 36.88; standard deviation = 12.95) and 11.2% of all participants were 55 years of age and older.

Also, 56% of all participants said that they had no major problem(s)

in their lives at the present time, indicating that final scores for happiness would reflect what would predicted in a healthy population.

### Measures

Data on participants' age, gender, education level, marital status, and employment history were collected. For the purpose of data analysis, education and marital status were grouped into several categories.

Happiness was operationalized using one measure with 41 items (CHQ). Participants were instructed to respond to the items on a 5-point Likert-type scale (1 = strongly disagree; 5 = strongly agree) with lower scores indicating lower levels of happiness. The process of item generation combined an inductive phase and a deductive

	n	%
Gender		
Female	426	66
Male	219	34
Marital status		
Single	212	32.8
Married	212	32.8
Civil union	73	11.4
Widowed	7	1.1
Emotional attachment	105	16.3
Other	36	5.6
Employment history		
Unemployed	65	10.0
Student	104	16.2
Temporary	32	5.0
Employed	305	47.3
Self-employed	58	8.9
Retired	42	6.4
Other	39	6.1
Education		
Up to 12 years of school	114	17.6
University/college attendance	63	9.7
Pre-graduate degree	202	31.3
Post-graduate degree	266	41.4

Table 2: Demographic characteristics (n=645).



phase. In the inductive phase, the psychological elements that were relevant to a positive psychological framework of happiness were discussed. In the deductive phase, existing questionnaires and papers were reviewed by the authors. Based on this process, the pool of items was narrowed to 41. Taken together, all items were considered to demonstrate reasonable face validity for a full measure of happiness, though perhaps neither exhaustive nor exclusive of one or more other constructs. Because of this uncertainty, exploratory factor analysis was chosen rather than confirmatory factor analysis. Also, the language was kept simple to facilitate the ease of understanding. All statistical analyses were performed using SPSS Version 21 (IBM Corp., Armonk, NY).

	M	SD	Corrected Item-Total Correlation	Cronbach's $\alpha$ if Item Deleted
Item 1	3.80	1.07	0.639**	0.918
Item 2	3.59	1.14	0.678**	0.917
Item 3	4.29	.84	0.489**	0.919
Item 4	2.63	1.23	0.359**	0.921
Item 5	3.56	1.17	0.680**	0.917
Item 6	3.73	.91	0.659**	0.918
Item 7	3.63	1.16	0.742**	0.916
Item 8	3.56	1.12	0.718**	0.917
Item 9	4.30	.98	0.374**	0.92
Item 10	4.12	1.22	0.293**	0.921
Item 11	3.60	.96	0.426**	0.92
Item 12	3.27	1.09	0.346**	0.921
Item 13	3.43	1.16	0.427**	0.92
Item 14	3.37	1.24	0.476**	0.919
Item 15	3.52	1.10	0.620**	0.918
Item 16	3.82	1.06	0.539**	0.919
Item 17	3.55	1.08	0.702**	0.917
Item 18	4.42	.91	0.498**	0.919
Item 19	3.94	.99	0.581**	0.918
Item 20	2.69	1.09	0.413**	0.92
Item 21	3.88	1.11	0.628**	0.918
Item 22	3.57	1.30	0.564**	0.918
Item 23	4.18	.88	0.522**	0.919
Item 24	4.00	1.01	0.523**	0.919
Item 25	3.55	1.15	0.672**	0.917
Item 26	4.08	1.04	0.559**	0.918
Item 27	3.45	1.23	0.346**	0.921
Item 28	3.35	1.18	0.396**	0.92
Item 29	1.53	.88	0.158**	0.922
Item 30	1.65	.88	0.134**	0.922
Item 31	2.92	1.32	0.267**	0.922
Item 32	3.04	1.10	0.463**	0.92
Item 33	2.25	1.17	0.326**	0.921
Item 34	2.69	1.24	0.395**	0.92
Item 35	3.99	1.11	0.419**	0.92
Item 36	3.77	1.40	0.254**	0.923
Item 37	3.25	1.25	0.495**	0.919
Item 38	3.50	1.08	0.761**	0.916
Item 39	3.04	1.23	0.403**	0.92
Item 40	3.49	1.26	0.568**	0.918
Item 41	3.84	1.05	0.767**	0.916

\*\*p< 0.001

**Table 3:** Mean, SD, Item-Total Correlations and Cronbach's  $\alpha$  Coefficients if Item Removed, for the Scale Items.

## Results

The distribution of scores on the CHQ were normal according to the criteria recommended for large samples [36], thus parametric tests were applied.

Following recommendations for questionnaire development [33], the descriptive statistics and item-total correlations for each of the 41 items were assessed. Table 2 shows the mean, SD, item-total correlations, and Cronbach's  $\alpha$  coefficients if item removed, for the Happiness Scale items. Cronbach's  $\alpha$  and average inter-item correlations were also assessed. Table 3 shows the inter-item correlation matrix for the items. All correlations are significant at  $p < 0.001$ . Almost all items were retained because they had an item-total correlation  $> 0.30$  and an SD  $> 0.4$ , showing reasonably high variance in response. We chose to keep correlations under .30 because this was an exploratory analysis and theoretical determinants were also important to maintain; Cronbach's  $\alpha$  for the entire scale was 0.921, indicating very good internal consistency.

An exploratory factor analysis was conducted to examine the factor structure of the Happiness Scale. The factor analysis used maximum likelihood estimation. The extraction and the retention of factors were based on visual examination of the scree plot [37] and eigenvalues of  $> 1.0$  were retained [38]. Five factors were suggested by the scree plot to be retained. Also, one factor was found to be accountable for 27.59% of the variance in scoring after extraction. The threshold for the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy is 0.6 [39], and the observed KMO of 0.914 indicated very good factorability. Similarly, Bartlett's Test of Sphericity was significant ( $\chi^2(820) = 9216.129$ ,  $p < 0.001$ ) indicating factorability of the correlation matrix.

Table 4 shows the factor loading values for the items. Factor loadings should be of at least 0.40 to indicate a good factor [40]. For the Happiness Scale, the majority of items loaded for the 5 factors were above the threshold for acceptability (0.4) [41]. Table 3 also shows the correlation matrix between factors, indicating strong and significant correlations between all factors ( $p < 0.001$ ).

## Scoring

The happiness scale allows the calculation of the mean of the 41 items (Total scores), and the scores of each dimension. Table 5 shows mean scores for both men and women for each factor and for total happiness. Higher scores indicate higher levels of happiness. Significant differences between men and women were found for socially gratifying interactions ( $p < 0.05$ ).

## Discussion

This paper describes the development and validation of a 5-dimensional scale for measuring happiness using a questionnaire. The reliability analysis demonstrated excellent internal consistency (Cronbach's  $\alpha = 0.921$ ), and the factor analysis found a well-fitting factor structure (e.g., KMO = 0.914) with strong factor loadings.

In the present sample, the CHQ scores were slightly higher in women than men, though not statistically so. This study has been able to establish an approximate norm (3.44) of healthy scoring for the CHQ. The norm is based on statistical properties of the survey responses, and the presence of a cut-off is thus a useful index for any future research that seeks to compare their scores to an established criterion. Based on the norm, it appears that Portuguese people are slightly happier, on average, than might be expected.

The present study also found a small but statistically significant

	Factors				
	Positive Emotions	Socially Gratifying Interactions	Self-Caring	Participation in Meaningful Activities	Socio-Economic Structure Engagement
Item 8	0.707				
Item 41	0.692				
Item 38	0.676				
Item 5	0.674				
Item 7	0.666				
Item 2	0.650				
Item 1	0.649				
Item 37	0.600				
Item 6	0.564				
Item 25	0.564				
Item 40	0.467				
Item 39	0.413				
Item 9	0.385				
Item 4	0.369				
Item 19		0.750			
Item 21		0.688			
Item 18		0.677			
Item 16		0.534			
Item 22		0.480			
Item 10		0.379			
Item 20		0.373			
Item 27		0.312			
Item 35		0.242			
Item 11			0.763		
Item 12			0.730		
Item 13			0.712		
Item 17			0.516		
Item 14			0.504		
Item 15			0.468		
Item 36			0.174		
Item 32				0.691	
Item 24				0.661	
Item 23				0.625	
Item 31				0.622	
Item 26				0.515	
Item 3				0.432	
Item 29					0.748
Item 30					0.694
Item 33					0.544
Item 34					0.493
Item 28					0.338
Cronbach's $\alpha$	0.902	0.747	0.742	0.740	0.635
Correlations Between Factors					
Positive Emotions	-				
Socially Gratifying Interactions	0.661**	-			
Self-Caring	0.549**	0.539**	-		
Participation in Meaningful Activities	0.524**	0.494**	0.452**	-	
Socio-Economic Structure Engagement	0.392**	0.296**	0.284**	0.205**	-

\*\*p < 0.001

**Table 4:** Factor loadings values for the items and the correlation matrix between factors

	Gender	Mean	Std. Deviation	t(df)	p
Positive Emotions	Female	3.53	0.75	-0.242(628)	0.809
	Male	3.55	0.74		
Socially Gratifying Interactions	Female	3.80	0.69	2.387(631)	0.017*
	Male	3.66	0.68		
Self-Caring	Female	3.53	0.75	1.194 (627)	0.233
	Male	3.45	0.69		
Participation in Meaningful Activities	Female	3.79	0.66	1.907 (627)	0.057
	Male	3.68	0.74		
Socio-Economic Structure Engagement	Female	2.26	0.66	-1.551 (627)	0.121
	Male	2.35	0.73		
Total Happiness	Female	3.46	0.59	0.806 (631)	0.420
	Male	3.42	0.60		

\*p < 0.05

**Table 5:** Gender differences.

effect of “socially gratifying interactions” on the CHQ score, indicating that social dimensions really play an important role in achieving and maintaining happiness levels. Other questionnaire measures that have been developed have been designed to be more sensitive to the self-assessment of happiness. The CHQ offers a new approach, using dimensions to evaluate happiness. Meanwhile, other measures evaluate this construct as self-perceptions about: (1) dimensions of mood [42]; (2) integrative well-being [25]; or (3) aspects of positive psychological well-being (SWB) and subjective well-being (SWB) [29].

The CHQ offers a scale that assesses not only a limited range of psychological happy experiences, but it also measures other experiences in a more comprehensive way, allowing more richly detailed information than the information produced by other questionnaires, such as such as the Pemberton Happiness Index or the Oxford Happiness Inventory.

However, there are limitations, such as the inevitable voluntary effect associated with internet-based research, and the lack of control of other variables such as personality. Nevertheless, a review of survey methods found that despite the limitations that Internet-based data collection may present, it can also be an asset because it aids in the effective dissemination of the survey.

The factors that have resulted from the exploratory factor analysis have yielded a richer, multidimensional solution of how happiness really should be measured, and we believe that this is a suitable measure for Portugal and has potential applications in Portuguese-speaking countries.

Having a norm score is convenient for the future use of the CHQ. However, future research should test the CHQ on clinical samples, and also test whether different populations require different cut-off points, for example, a cut-off for clinical scoring. This second goal might be achieved by administering the CHQ to a clinical population, while running it concurrently with a measure of mental distress.

In conclusion, the present assessment of the CHQ strongly suggests its usefulness as a measure of positive psychological happiness in Portugal and among Portuguese people, in particular, but with potential for adaption for other nations, especially among Portuguese speaking countries. The CHQ is convenient for participants and researchers to use, and the simplicity of scoring lends itself to use by researchers of all levels of experience. The CHQ emphasizes the importance of mindset and environment in relation to the person's experience. In summary, the potential applications of the CHQ are wide-ranging.

## References

- Veenhoven R (2005) Inequality of Happiness in Nations. *Journal of Happiness Studies* 6: 351-355.
- Bekhet AK, Zauszniewski J, Nakhla WE (2008) Happiness: theoretical and empirical considerations. *Nursing Forum* 43: 12-23.
- Veenhoven R (2009) World database of happiness – Tool for dealing with the 'data-deluge'. *Psychological Topics* 18: 221-246.
- Veenhoven R (1995) World Database of Happiness. *Social Indicators Research* 34: 299-313.
- Norrish JM, Vella-Brodrick D (2008) Is the Study of Happiness a Worthy Scientific Pursuit?. *Social Indicators Research* 87: 393-407.
- Lykken D, Tellegen A (1996) Happiness is a stochastic phenomenon. *Psychological Science* 7: 186-189.
- Jacobsen B (2007) What is Happiness?: The concept of happiness in existential psychology and therapy. *Existential Analysis* 18: 39-50.
- Kammann R, Farry M, Herbinson P (1984) The analysis and measurement of happiness as a sense of well-being. *Social Indicators Research* 15: 91-115.
- Veenhoven R (2010) How universal is happiness? In: J Diener, J Helliwell & D Kahneman (Eds.), *International differences in well-being*. Oxford University Press, New York.
- Natvig GK, Albrektsen G, Qvarnstrom U (2003) Associations between psychosocial factors and happiness among school adolescents. *International Journal of Nursing Practice* 9: 166-175.
- Raibley JR (2011) Happiness is not Well-Being. *Journal of Happiness Studies* 13: 1105-1129.
- Henricksen A, Stephens C (2012) The Happiness-Enhancing Activities and Positive Practices Inventory (HAPPI): Development and Validation. *Journal of Happiness Studies* 14: 81-98.
- Judge TA, Kammeyer-Mueller JD (2011) Happiness as a Societal Value. *Academy of Management Perspectives* 25: 30-41.
- Cullis J, Hudson J, Jones P (2010) A Different Rationale for Redistribution: Pursuit of Happiness in the European Union. *Journal of Happiness Studies* 12: 323-341.
- Bates W (2009) Gross national happiness. *Asian-Pacific Economic Literature* 23: 1-16.
- Fordyce MW (1988) A review of research on the happiness measures: A sixty second index of happiness and mental health. *Social Indicators Research* 20: 355-381.
- Veenhoven R (2003) Happiness. *The Psychologist* 16: 128-129.
- Alexandrova A (2008) First-Person Reports and the Measurement of Happiness. *Philosophical Psychology* 21: 571-583.
- Dodds PS, Danforth CM (2009) Measuring the Happiness of Large-Scale Written Expression: Songs, Blogs, and Presidents. *Journal of Happiness Studies* 11: 441-456.
- Diener D (2000) Subjective well-being: The science of happiness and a proposal for a national index. *American Psychologist* 55: 34-43.
- Hills P, Argyle M (2002) The Oxford Happiness Questionnaire: a compact scale for the measurement of psychological well-being. *Personality and Individual Differences* 33: 1073-1082.
- Veenhoven R (2012) Cross-national differences in happiness: Cultural measurement bias or effect of culture? *International Journal of Wellbeing* 2: 333-353.
- Swami V (2007) Translation and Validation of the Malay Subjective Happiness Scale. *Social Indicators Research* 88: 347-353.
- Bergsma A, Veenhoven R, Have M, Graaf R (2011) Do They Know How Happy They Are? On the Value of Self-Rated Happiness of People With a Mental Disorder. *Journal of Happiness Studies*, 12: 793-806.
- Hervás G, Vázquez C (2013) Construction and validation of a measure of integrative well-being in seven languages: the Pemberton Happiness Index. *Health and Quality of Life Outcomes* 11: 66.
- Lyubomirsky S, Lepper HS (1999) A measure of subjective happiness: preliminary reliability and construct validation. *Social Indicators Research* 46: 137-155.
- Abdel-Khalek AM (2006) Measuring happiness with a single-item scale. *Social Behavior and Personality: An International Journal* 34: 139-150.
- Dambrun M, Ricard M, Després G, Drelon E, Gibelin E, et al. (2012) Measuring happiness: from fluctuating happiness to authentic-durable happiness. *Frontiers in Psychology*.
- Meleddu M, Guicciardi M, Scalas LF, Fadda D (2012) Validation of an Italian version of the Oxford happiness inventory in adolescence. *Journal of Personality Assessment* 94: 175-185.
- Luo L, Gilmour R, Kao SF (2001) Cultural values and happiness: an East-West dialogue. *The Journal of Social Psychology* 141: 477-493.
- Diener E, Eunkoo M, Robert E, Heidi L (1999) Subjective Well-Being: Three Decades of Progress. *Psychological Bulletin* 125: 276-302.
- Fink A, Kosecoff J (1985) *How to conduct surveys: a step by step guide*. Sage Publications, Newbury Park.
- DeVellis RF (1991) *Scale development: Theory and applications*. Sage publications. Newbury Park, CA.
- Hill M, Hill A (2000) *Investigação por questionário*. Lisboa: Edições Sílabo.
- Kelloway E (1995) Structural equation modelling in perspective. *Journal of Organizational Behavior* 16: 215-224.
- Field A (2006) *Discovering Statistics Using SPSS (Introducing Statistical Methods series)*. Sage publications, London.
- Cattell RB (1966) The scree test for the number of factors. *Multivariate Behavioral Research* 1: 245-276.
- Kaiser HF (1960) The application of electronic computers to factor analysis. *Educational and Psychological Measurement* 20: 141-151.
- Tabachnick B, Fidell L (2001) *Using multivariate statistics*. Allyn and Bacon, Boston.
- Ford J, MacCallum R, Tait M (1986) The application of exploratory factor analysis in applied Psychology: A critical review and analysis. *Personnel Psychology* 39: 291-314.
- Costello AB, Osborne JW (2005) Exploratory Factor Analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research, and Evaluation* 10: 1-9.
- Kosma A, Stones MJ (1980) The measurement of happiness: The development of the Memorial University of Newfoundland Scale of Happiness (MUNSH). *Journal of Gerontology* 35: 906-912.
- Mahon NE, Yarcheski A (2002) Alternative theories of happiness in early adolescents. *Clinical Nursing Research* 11: 306-323.
- Francis LJ, Katz YG (2000) Internal consistency reliability and validity of the Hebrew translation of the Oxford Happiness Inventory. *Psychological Reports* 87: 193-196.
- Lu L, Shih JB (1997) Personality and happiness: Is mental health a mediator?. *Personality and Individual Differences* 22: 249-256.
- McGreal R, Joseph S (1993) The Depression-Happiness Scale. *Psychological Reports* 73: 1279-1282.
- Underwood B, Froming WJ (1980) The mood survey: A personality measure of happy and sad mood. *Journal of Personality Assessment* 44: 404-414.
- Azrin NH, Naster BJ, Jones R (1973) Reciprocity counseling: A rapid learning-based procedure for marital counseling. *Behavior Research and Therapy* 11: 365-382.
- Bradburn NM, Caplovitz D (1965) *Reports on happiness*. Adline, Chicago.