Global Well-being Scale: Analysis of their psychometric characteristics

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ABSTRACT
Interest in the study of well-being remains relevant. Seligman (2011/2012) presents a theory of well-being based on five elements: positive emotions, engagement, meaning, positive relationships and personal accomplishment. On this basis, a global well-being scale (EBeG) was constructed and validated for the Portuguese population. Through the exploratory and confirmatory factorial analysis, a structural model with a well-adjusted component and 9 items was obtained, with a good level of internal consistency.

Keywords: Global well-being scale, Scale validation, Theory of well-being.

1 INTRODUCTION

The question of well-being, of what is the good living has been a central theme in Western civilization since the Greek philosophers (Barros & Moreira, 2014), having constituted a problematic of scientific research and social and clinical intervention at the end of the twentieth century (Diener, 1984; New, 2005; Ryan Deci, 2001; Ryff, 1989; Ryff & Singer, 2008). Well-being is a complex and multifaceted concept that can be investigated from different levels of analysis, in diverse dimensions.

The study of well-being has come to be defined from two dominant theoretical perspectives, the *hedonic and* the *eudemic*, which intertwine with the Greek conceptions of pleasure and happiness. The *hedonic perspective* (Diener, 1984; Diener & Biswas-Diener, 2004) is based on the principle of accumulation of pleasure and avoidance of pain and suffering. Thus, according to this approach, the goal of life is to experience well-being that consists of the "subjective evaluation of happiness and concerns the experiences of pleasure and suffering, broadly situated in the judgments about the good and bad elements of life" (Fernandes, Vasconcelos-Raposo, Bertelli & Almeida, 2011, p. 157). Subjective well-being is based on this *hedonic conception of* well-being arising from the satisfaction of desires, the pursuit of pleasure, avoiding displeasure. On the other hand, the notion of psychological well-being (Ryff, 1989; Ryff & Singer, 2008) is grounded in the classical thought, developed by Aristotle, regarding *eudaimonia*. This concept, often translated as happiness is, however, richer, so it implies the connotations of self-realization, in the sense of the conquest of a virtuous life (*aretê),* ethical

and wise (*phronêsis*), a life in the sense of human flourishing that allows to grow the full potential of each person. Well-being or happiness, in the Aristotelian line, is an activity of the soul in conformity with excellence or virtue. Thus, a good life is one in which we develop our capacities, realize our potential and become what it is in our nature to become (Haidt, 2006/2006).

The approach of well-being (and happiness) in the scope of positive psychology, namely in the perspective of Seligman (2011/2012), embodies an integrating dimension of the two previous approaches, overcoming those constraints. For Seligman (2011/2012) well-being is "at its core a theory of uncoerced choice, and its five elements comprise what free people choose for their *intrinsic value*" (p. 30). In this sense, well-being is not a real thing, but rather a *construct* that "contains several measurable elements, each of which is a real thing that contributes to well-being, *although none of them defines it*" (Seligman, 2011/2012, p. 29). And each of these elements of well-being has in itself three properties: (i) to contribute to well-being, (ii) to be desired by many people for its intrinsic value, not only to obtain one of the other elements, and (iii) to be defined and measured independently of the other elements, that is, being subject to the principle of exclusivity.

The theory of well-being is thus constituted by five elements: positive emotion, involvement, meaning, positive relationships and personal fulfillment that Seligman (2011/2012) designates **PERMA,** an acronym, functioning as a mnemonic, derived from the initials in English of these five elements: ***Positive*** *emotion,* Engagement*, **positive** Relationships, Meaning , **Achievements***. Let us characterize each of these elements.

Positive *emotion*, pleasant life, is the first element of the theory of well-being, encompassing the subjective variables of well-being, such as pleasure, ecstasy, comfort, warm affection and the like. It refers to what the individual feels and thinks is their level of satisfaction with life, which leads them to experience positive emotions associated with the present (joy, emotion, pleasure, love), the future (optimism, hope, faith, trust), and the past (satisfaction, pride, serenity, forgiveness).

Involvement *is* the emotional bond that people establish with work, being marked by the experience of flow – a state in which we feel that we control what we do, that we do it effortlessly and in which we are able to give our best. In this type of experience, thought and feeling are absent, implying attraction, absorption, enthusiasm, commitment, and in which a union with the execution of the task is felt. It is a subjective state of which we are only retrospectively aware, that is, only later, when we remember it, do we have the notion of how fun and wonderful it was.

 Meaning consists in the understanding of belonging and serving something greater than oneself / *self and* that provides a reason or meaning for life and work; it has two components: a subjective one, which is experienced by the individual in an idiosyncratic way, and another objective, which seeks a dimension of rigor and logical coherence.

Personal *fulfillment* is realized in a successful life. It is based on the realization that people desire success for success, victory, success, and mastery simply for the pleasure of achieving them. This aspect is affirmed in opposition to the theory of impulse reduction, based on the theory of the motivation of competence, according to which the goal of animals and people is to exercise dominion over the environment.

Positive *relationships* refer to the quality of interpersonal relationships. These are characterized by the presence and abundance of closeness, support, protection, affection, empathy and recognition in interaction with other people. In fact, people, others are the high points of life, being the best antidote to when one is in life at the "bottom millstone" and allow us to rise again. The human being is a group being. Biologists D. Wilson and E. Wilson (2007) have gathered evidence that the group is a primal unit of natural selection, being the most successful form of superior adaptation known, as it has allowed the development of the capacity for cooperation. We are beings who, inevitably, seek positive relationships with other peers, even as a way of survival and also of development.

The elements of *PERMA* can be understood as the different ways to increase well-being, that is, the pathways to *flourishing*, and there are people who experience well-being emphasizing some elements more than others. Flourishing presupposes that a person simultaneously experiences high levels of life satisfaction, high engagement with work, high level of positive relationships, high levels of meaning, and outstanding results in personal fulfillment. Thus, flourishing, more than the absence of disease, malaise or any other type of emotional suffering, is defined by the presence of positive signs of life: it is the combination of feeling good and effectively functioning well, and people who flourish are healthier, have longer life expectancy, contribute more in the communities where they live and are actually more productive (Helliwell, Layard & Sacchs, 2013; Lyubomirsky, 2008/2011; Seligman, 2011/2012).

With a view to assessing well-being, both subjective (Lyubomirsky & Lepper, 1999) and psychological (Ryff, 1989) and well-being/PERMA (Butller & Kern, 2015; Gouveia & Caracol, 2016; Huppert & So, 2009; Ibáñez Sepulveda, 2013), several scales have been elaborated. However, there is not, for the context Portuguese, a brief scale that evaluates the five elements of PERMA globally. Therefore, we built and validated for the Portuguese population a scale of well-being/PERMA in order to evaluate the five constitutive elements of well-being/PERMA (Seligman, 2011/2012) as a whole.

The objective of this article is, then, to present the psychometric characteristics of this global well-being scale (EBeG).

2 METHOD

2.1 PARTICIPANTS

Participated in this study 476 subjects from all Portuguese districts, with the exception of the district of Beja and the autonomous region of the Azores, in a non-probabilistic sampling of geometric propagation, *snowball*. Of the respondents, 65 (13.6%) are aged between 18-39 years, 298 (62.3%) are between 40-59 years and 113 (23.8%) are 60 years or older, being of both sexes, although the frequency of female cases is higher (Fem= 72.3%, Masc= 27.7%). Around 85% of the participants have tertiary education. Of the subjects in this sample, 56.5% are married, 24.4% are single, 12.8% are divorced, 2.3% are widowed and 4% are included in other situations.

2.2 INSTRUMENT

The measure used was a Global Well-being Scale (EBeG) and sociodemographic variables. This questionnaire was constructed by the authors of this article taking into account the five elements of the theory of well-being (positive emotion, involvement, meaning, positive relationships and personal fulfillment). This construction was based on the well-being module of the *European Social Survey (ESS)* of Huppert and So (2009) in order to assess flourishing in general and also the well-being/PERMA module, included in the Happiness Barometer, carried out in 2012 in Chile (Ibáñez Sepulveda, 2013).

It is a self-administered questionnaire, consisting of 9 items, distributed over a single dimension. Participants are asked to choose the answer that most accurately describes them. The items are evaluated on a 5-point Likert scale, ranging from 1 = strongly disagree to 5 = strongly agree. All items are positively formulated and the result is obtained by the sum of the answers obtained in each item, which can range between 9 and 45 points Higher values correspond to higher levels of well-being.

2.3 PROCEDURE

Inspired by the items of the scales of Huppert and So (2009) and Ibáñez Sepulveda (2013) we adapted and constructed the items of this scale. The formal process of data collection was carried out with the publication in *Google Drive,* having been assured the informed consent and guaranteed the confidentiality of the data. Data analysis was performed using the *statistical* software SPSS 20.0 *and* Amos 20.0.

3 FINDINGS

In order to validate the Global Well-being scale, an exploratory factor analysis was performed using the technique of principal component analysis with *Varimax* rotation, reliability analysis according to Cronbach's alpha, as well as confirmatory factor analysis.

Table 1 presents the descriptive data of the scores of each of the items of the scale. Item 3 - «I love learning new things» - was the item that presented the highest average (M=4.63, SD=0.69). Items 5 to 8 also presented mean scores higher than 4. Item 2 - "the conditions of my life could not be better" - recorded the lowest average score compared to the other items.

Table 1. Scores (Means and Standard Deviation) of the Global Well-being Scale Items

Item	Average	DP
1 - I feel satisfied with my life.	3,66	0,94
2 - The conditions of my life could not be better.	2,79	1,07
3 - I love learning new things.	4,63	0,69
4 - I like the work I do and it is one of the most important things in my life.	3,89	0,92
5 - There are people in my life who are important to me and who really care about me.	4,62	0,62
6 - I feel, generally, that what I do in my life is valid and worth doing.	4,22	0,75
7 - I feel that I belong and contribute to something bigger than myself.	4,08	0,82
8 - I face the obstacles and challenges of life, believing I am able to overcome them.	4,07	1,03
9 - I usually achieve my goals.	3,94	0,64

As it was conceived with the intention of a global well-being assessment scale, a single dimension was tested through factor analysis. The *Kaiser-Meyer-Olkin* test (KMO) showed a value of 0.82 (p<0.001), thus indicating an adequacy of the sampling to the scale data (Table 2). Next, we analyzed the commonalities presented in Table 2, which ranged from 0.30 to 0.60. The factor explains 40.6% of the variance and all factor loadings described in Table 2 were higher than 50%.

Table 2. Commonalities and Saturation Values in the Items of the Well-being/PERMA Scale

Item	Comunalidades	Saturation values
1 - I feel satisfied with my life.	0,44	0,80
2 - The conditions of my life could not be better.	0,28	0,73
3 - I love learning new things.	0,26	0,69
4 - I like the work I do and it is one of the most important things in my life.	0,48	0,67
5 - There are people in my life who are important to me and who really care about me.	0,28	0,66
6 - I feel, generally, that what I do in my life is valid and worth doing.	0,64	0,56
7 - I feel that I belong and contribute to something bigger than myself.	0,53	0,53
8 - I face the obstacles and challenges of life, believing I am able to overcome them.	0,31	0,52
9 - I usually achieve my goals.	0,44	0,51
SME	0,820	
P	<0,001 KMO	

Therefore, the factor analysis in principal components revealed the emergence of a single factor, a result that suggests a great coherence for the concept (Huppert & So, 2009; Ibáñez Sepulveda, 2013).

Next, the reliability of the scale was analyzed using *Cronbach*'s alpha values for each of the items that compose it and for its totality (Table 3). Individually, the alphas obtained were all higher than 0.76 and lower than 0.80. The alpha for the 9 items was 0.801, showing a high internal consistency of the present scale.

Table 3. Reliability of the Global Well-Being Scale

Item	*Alfa de Cronbach*
1 - I feel satisfied with my life.	0,771
2 - The conditions of my life could not be better.	0,796
3 - I love learning new things.	0,794
4 - I like the work I do and it is one of the most important things in my life.	0,773
5 - There are people in my life who are important to me and who really care about me.	0,793
6 - I feel, generally, that what I do in my life is valid and worth doing.	0,761
7 - I feel that I belong and contribute to something bigger than myself.	0,770
8 - I face the obstacles and challenges of life, believing I am able to overcome them.	0,795
9 - I usually achieve my goals.	0,777
Total	0,801

Subsequently, confirmatory factor analysis was performed at the same scale. The analysis of the structure resulting from the exploratory factor analysis revealed adequate indices of adjustment to the tested model: ratio $\chi2$ to degrees of freedom ($\chi2$/df)= 1.705, RMSEA index (root mean square error of approximation)= 0.057, CFI (comparative fit index)= 0.971; GFI (goodness-of-fit index)= 0.961, NFI (normed fit index)= 0.936, IFI (incremental fit index)= 0.971, TLI (Tucker- Lewis index)= 0.958,

RFI (relative fit index)= 0.908, PGFI (parsimony goodness-of-fit index)= 0.534, PCFI (parsimony comparative fit index)= 0.674, and the PNFI index (parsimony normed fit index)= 0.650.

Figure 1 systematizes the confirmatory factor analysis of EBeG.

Figure 1. Confirmatory factor analysis of the global well-being scale (EBeG).
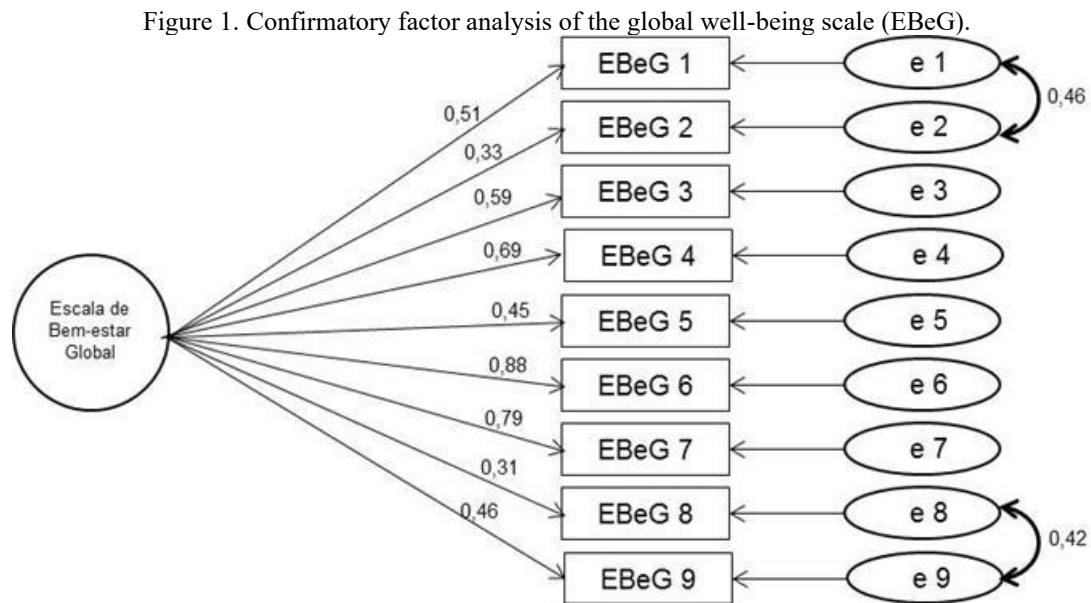
4 DISCUSSION

The objectives of the work of this chapter were the construction and validation of the global well-being scale (EBeG). These objectives were developed through different statistical procedures to determine the most appropriate factor structure for the study population. The statistical procedures were initially based on principal component analysis in order to explore the factor structure, followed by internal consistency analysis and confirmatory factor analysis of the final solution. The initial version of the scale included nine items.

By the exploratory analysis in principal components to the factorial structure of the original scale, it was found that the most appropriate solution was maintained through a unifactorial structure. The data showed that the one-factor solution indicated an adequacy of the sampling to the scale data with an explained variance level of 40.2%. The reliability analysis also demonstrated a satisfactory value of consistency for the present scale.

The factor analysis confirmatory to the structure resulting from the exploratory factor analysis revealed adequate indices of adjustment to the model tested, so that the number of initial items was maintained in the final version of the present scale.

The fact that this scale was confirmed and validated was in the expected direction, since the construction of this scale was based on both the well-being/flourishing module of Huppert and So (2009), widely applied in several European countries, and the well-being/PERMA module, included

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in the happiness barometer, carried out in 2012 in Chile (Ibáñez Sepulveda, 2013), countries that, although culturally different, maintain many affinities and idiosyncrasies with each other.

In this validation study, no other concurrent scales were applied, and therefore it is not possible to test the concurrent validity, constituting, therefore, a limitation to this validation work.

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