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Sources of Meaning and Meaning in Life Questionnaire (SoMe): Psychometric Properties and Sociodemographic Findings in a Large Brazilian Sample

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Abstract

This study presents the psychometric properties of the Brazilian version of the Sources of Meaning and Meaning in Life Questionnaire (SoMe-BR). Participants were 3.034 subjects (63.9% women), ranging in age from 18 to 91 years. Reliability analysis, parallel analysis (PA), exploratory structural equation modeling (ESEM) and confirmatory factor analyses (CFA) were employed to evaluate the structure and reliability of the SoMe-BR. Through PA and ESEM, a five-dimension structure for the 26 sources of meaning was achieved. CFAs supported meaningfulness and crisis of meaning as two distinct constructs. Convergent validity within the SoMe-BR and between the SoMe-BR and other scales were also achieved. Regarding the SoMe scores and sociodemographic variables, significant main effects were found for gender, age groups and marital status. Our results corroborate the international literature, which claims in favor of the SoMe as a reliable measure to evaluate meaning in life contents in different cultural contexts.

Keywords: Meaning in life, Meaningfulness, Crisis of meaning, Validation, SoMe.

Cuestionario de Fuentes de Sentido y de Sentido de Vida: Propiedades Psicométricas y Aspectos Sociodemográficos en una Amplia Muestra Brasileña

Resumen

En este estudio se presentan las propiedades psicométricas de la versión Brasileña del Cuestionário de Fuentes de Sentido y Sentido de Vida (SoMe-BR). Los participantes fueron 3.034 sujetos (el 63.9% mujeres), con edades variando entre 18 a 91 años. Análisis de confiabilidad, análisis paralela (AP), modelaje de ecuaciones estructurales exploratorio (MEEE) y análisis factorial confirmatorio (AFC) fueron utilizados para evaluar la estructura y confiabilidad del SoMe-BR. A través del AP y MEEE fue encontrada una estructura de cinco dimensiones para las 26 fuentes de sentido. El AFC demostró que el ´meaningfulness´ y ´crisis de sentido´ son dos constructos distintos. Criterios de validad convergente entre el SoMe-Br con otras medidas también fueran adecuadas. En lo que se refiere a los puntajes del SoMe-BR y las variables sociodemográficas, fueron encontrados efectos significativos para género, edad y estado civil. Los resultados corroboran la literatura internacional, que sugiere que el SoMe es una medida fiable para la medición de contenidos relacionados al sentido de vida en contextos culturales distintos.

Palabras Clave: Sentido de vida, Fuentes de sentido, Crisis de significado, Validación, SoMe.

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The notion that meaning in life (MIL) is an important construct for human well-being is not recent. In the first half of the 20th century, Frankl (1963, 1978) developed a robust theory emphatically defending the notion that having a sense of meaning was both a preventive and protective factor of human "existential suffering". Since Frankl´s seminal work, several authors have struggled to comprehend and to clarify the concept of meaning in life (MIL, Cohen & Cairns, 2012). Although the definition of MIL varies across the field (Steger, Frazier, Oishi, & Kaller, 2006), it is widely accepted that MIL constitutes an important element of positive psychological functioning. Decades of research have provided evidence, showing that, for example, meaning in life and crisis of meaning impact on both physical (e.g., Korte, Cappeliez, Bohlmeijer, & Westerhof, 2012; Thompson, Coker, Krause, & Henry, 2003) and mental health (e.g., Fillion et al., 2009; Ho, Cheung, & Cheung, 2010; Rathi & Rastogi, 2007; Schnell, 2009; Steger & Frazier, 2005). More than that, empirical evidence has also suggested that in cases of stressful events, the presence of MIL can foster coping processes that result in resilient adaptations (Halama & Bakosová, 2009).

Besides the importance of MIL to human function, researchers have also focused their attention on understanding how people achieve the notion of a meaningful life (Steger, 2012). Theoretically, meaningfulness can be defined as a fundamental sense of meaning, based on an appraisal of one's life as coherent, significant, directed, and belonging (Schnell, 2009). This – more or less implicit – evaluation is closely linked to the motivational component of sources of meaning, i.e. basic orientations that motivate commitment to and direction of different areas of life (Schnell, 2009). An in depth evaluation of this definition allows one to perceive that MIL combines a cognitive-evaluative and a motivational component. In coherence with this notion, other authors defined meaning in life as the "cognizance of order, coherence and purpose in one's existence, the pursuit and attainment of worthwhile goals, and an accompanying sense of fulfillment" (Reker & Wong, 1988, p. 221).

Both definitions defend the notion that meaning is life is related to "characteristic commitments" (Schnell, 2009), or the "pursuit of worthwhile goals" (Reker & Wong, 1988). These worthwhile goals or commitments can be defined as life purposes (McKnight & Kashdan, 2009), which are linked to what people can define as their sources of meaning (Schnell, 2009).

Sources of meaning are strictly related to the motivational component of the MIL construct, and reflect the interaction of one´s needs and personal values. The sources, tied to a system of personal values, direct individuals' actions, leading them to the quest and achievement of their significant life goals (Emmons, 2003; McKnight & Kashdan, 2006; Schnell, 2009). Sources of meaning can, thus, be considered as the cornerstone of meaning in life, by enabling a meaningful structuring of life without explicitly striving for meaning (Schnell, 2009).

By analyzing the sources of meaning through a developmental perspective, some authors have argued that they tend to vary throughout the lifespan, since they are associated with desires and aspirations related to each stage of life (Van Rast & Marcoen, 2000). Empirical research aiming to evaluate the relation between age and sources of meaning has found that older adults tend to perceive meaning in life more related to religious activities, social causes, self-transcendence, tradition, and

cultural values. Younger adults, in turn tend to be more committed to the fulfillment of their basic needs and personal achievements (Reker, 1988). Other studies found that sources of meaning like 'personal achievements', 'personal development', and 'well-being' were significantly more related to youngsters when compared to the elderly (Prager, 1996). On the other hand, sources of meaning related to moral and human values, social causes, and financial security were more important to the elderly when compared to youngsters (Prager, 1996, 1997). In coherence with these findings, Schnell (2009) showed that self-transcendence and order tend to increase with age ($r = .30$ and $r = .36$, $p < .05$, respectively).

The psychometric evaluation of sources of meaning does not have a long tradition in the psychological literature. The first psychometric scale designed to evaluate sources of meaning was the Sources of Meaning Profile (SOMP-R, Reker, 1996). The SOMP-R is a 17-item questionnaire that evaluates four different sources of meaning, namely: self-transcendence, collectivism, individualism, self-preoccupation. Despite being the first scale to evaluate sources of meaning, it has not received wide acceptance in the literature, probably because it only assesses few sources of meaning. Considering this, Wong (1998) developed the Personal Meaning Profile (PMP), a 57-item questionnaire, which measures seven different sources of meaning: fulfillment, relationships, religiosity, self-transcendence, self-acceptation, intimacy and justice.

In 2006 and 2009, Schnell presented the English version of the Sources of Meaning and Meaning in Life Questionnaire (SoMe), a 151-item questionnaire which evaluates 26 different sources of meaning in life, as well as two other constructs: meaningfulness (a sense of fulfilment, based on significance, coherence, belonging, and belonging) and crisis of meaning (suffering from a lack of meaning in life). The questionnaire was developed based on a large qualitative research program (Schnell, 2009) which used structured in-depth interviews and a laddering technique to "identify existentially relevant cognition ('personal myth'), action ('personal rituals'), and emotion ('experiences of transcending')" (Schnell, 2009, p. 487). After several processes of qualitative and quantitative analysis, 26 different sources of meaning were coded and then grouped into four high-order dimensions (Schnell, 2009): 1) self-transcendence (including religiosity, spirituality, social commitment, unison with nature, self-knowledge, health, generativity); 2) self-actualization (including challenge, individualism, power, development, achievement, freedom, knowledge, and creativity); 3) order (including tradition, practicality, morality, and reason); and 4) well-being and relatedness (including community, fun, love, comfort, care, attentiveness, and harmony).

Throughout years of refinement, the items for the 26 sources of meaning, the meaningfulness and crisis of meaning scales were examined and improved in several versions of the SoMe, resulting in the final version (Schnell, 2009). The SoMe presents several advantages when compared to the previously described scales. First, it evaluates a large number of sources of meaning (26), covering all existent categories in the literature (Debats, 1999; De Vogler & Ebersole, 1983; Ebersole, 1998; Emmons, 2003; Fiske & Chiriboga, 1991; McKnight & Kashdan, 2006; Prager, 1996; Reker & Wong, 1988). Secondly, each source of meaning is composed by a variety of items, thus enabling the measurement of underlying

constructs. As aforementioned, the 26 sources of meaning are theoretically grouped in four higher-order dimensions (self-transcendence; self-actualization, order and well-being and relatedness), that have repeatedly been considered as reliable indicators of how people generate meaning in their lives (Emmons, 2003; Prager, 1996, 1997; Reker, 1988). More than that, the SoMe also evaluates the levels of meaningfulness and crisis of meaning by two factorially independent scales.

Meaningfulness can be comprehended as a basic trust, unconsciously shaping perception, action, and goal striving. Crises of meaning, in turn, are usually experienced consciously (Schnell, 2009). Theoretical and empirically, meaningfulness and crisis of meaning have been found to be two separated constructs. In Schnell (2009), confirmatory factor analysis supported the two-dimensional model ($\chi^2 = 158.57$; df = 34; $p < .000$; TLI = .94; CFI = .96; RMSEA = .08; CAIC = 220.57), whereas presented poor fit indexes for the one-dimensional model ($\chi^2 = 475.20$; df = 34; $p < .000$; TLI = .80; CFI = .84; RMSEA = .15; CAIC = 535.20).

Considering the importance of MIL in human life and the need for adequately evaluating the components of this construct, the objective of the present study is to present the adaptation and translation process of the SoME to the Brazilian context, test its convergent validity, and evaluate the relations of the sources of meaning and meaning in life categories with sociodemographic variables.

Method

The Brazilian Version of the Sources of Meaning and Meaning in Life Questionnaire (SoMe-BR): Adaptation Process

The translation and adaptation processes of the original SoMe to the Brazilian-Portuguese included several steps, based on the International Test Commission guidelines (ITC, 2010) and on Borsa, Damásio and Bandeira (2012). Initially, the questionnaire was translated from English to Portuguese by two independent translators who were instructed to emphasize the meaning and not literal expressions on the translations. When the translations were not compatible, an external judge verified the item in the original (German) version in order to identify the most reliable translation or to propose one third translation. Thus, in the adaptation process, the English and German versions of the SoMe were used. After the complete synthesis, the instrument was sent to a target-group (N = 16) to evaluate item comprehension. A total of 12 responses (from youngsters to elderly people) were obtained, presenting several contributions regarding the clarity, as well as grammatical, linguistic and semantic aspects of the items. In cases where changes were conducted, we mainly considered the original German version, to base the modifications.

After minor changes, a second version of the SoMe-BR was analyzed by four people, who completely understood the questionnaire. This adapted version was back-translated from Portuguese to English by an English native speaker. The original and the back-translated version were evaluated by the research team, in order to check for any serious discrepancy. After considering the versions both

grammatically and semantically equivalent, the instrument was send to the original author (Schnell, personal conversation), who evaluated the back-translated version and answered 12 minor doubts about different aspects of the items that were not clear enough for the research team. After the final modifications, and after Schnell´s agreement (Schnell, personal conversation), the questionnaire was considered ready to be used.

This study was approved by the Institutional Review Board (Ethics Committee) of the Federal University of Rio Grande do Sul (UFRGS), Brazil.

Participants

Participants were 3.034 subjects (63.9% women), ranging in age from 18 to 91(M = 33.90; SD = 15.01) years old, from 22 Brazilian states. From the total, 59.9% was single, 27.3% was married, 6.1% was divorced, 5.2% was in a stable relationship (dating, engaged, or living with a partner), and 1.5% was widowed. Participants were invited to participate through different sources. A total of 91.4% completed the questionnaires on a web-based platform, whereas the remaining 8.6% responded to the questionnaire in the paper-and-pencil form. Invitations were sent through different sources, such as personal and media invitations, recruitment within social and occupational institutions (especially the adults and the elderly), as well as snowball technique (Patton, 1990).

Instruments

Bio-sociodemographic questionnaire: This instrument was developed to evaluate bio-sociodemographic characteristics of the sample (e.g., gender, age, marital status, educational level, financial income, job satisfaction, religiosity/spirituality, presence or absence of chronic illness and/or special needs, etc.).

Sources of Meaning and Meaning in Life Questionnaire (SoMe, Schnell & Becker, 2007; Schnell, 2009): The SoMe is a 151-item questionnaire, which evaluates 26 different sources of meaning (e.g., Morality: “Everyone needs clear values to hold on to”), and, independently of these, meaningfulness (e.g., “I lead a fulfilled life”) and crisis of meaning (e.g., “I feel pain from finding no purpose in my life”).

In the original study, exploratory factor analysis of the 26 sources of meaning (using oblique and orthogonal rotations) supported four higher-order dimensions (See Table 1). For further theoretically and practically useful differentiation, self-transcendence is subdivided into two minor categories: vertical self-transcendence, which is related to aspects of religiosity and spirituality, and horizontal self-transcendence that taps various forms of commitment that transcend self-related needs.

Items are rated on a 6-point type-Likert scale (0 – totally disagree; 5 – totally agree). The psychometric properties of the SoMe were established, among others, in a representative German sample (*N* = 603; Schnell, 2009). Alpha reliabilities are presented in Table 1. Besides the acceptable reliability indexes, the questionnaire presented acceptable temporal validity. Sources of meaning, meaningfulness and

crisis of meaning presented a high short-term stability for two and six-months time interval: two-month test-retest stability coefficients average of .81 for the scales (sources of meaning, meaningfulness and crisis of meaning) and .90 for the dimensions (self-transcendence, self-actualization, well-being and relatedness, and order); and .72 for the scales, and .78 for the dimensions for a six-month time interval (Schnell, 2009). Lastly, confirmatory factor analysis supported the expected bi-factorial structure for the meaningfulness and crisis of meaning scales [$\chi^2(158,57)$, $p < .001$; TLI = .94; CFI = .96; RMSEA = .07].

Table 1
Dimensions, sources of meaning, number of items per scale, and reliability indexes (Schnell, 2009)

Dimensions	Sources of meaning	Items (*n*)	Alpha reliability
Self-transcendence	--	**34**	**.89**
			.84
Vertical	Explicit religiosity	3	.94
	Spirituality	5	.68
			.87
	Social commitment	5	.65
	Unison with nature	5	.88
Horizontal	Self-knowledge	6	.87
	Health	4	.86
	Generativity	6	.76
Self-Actualization	--	**42**	**.93**
	Challenge	5	.76
	Individualism	6	.68
	Power	5	.68
	Development	6	.81
	Achievement	4	.76
	Freedom	6	.91
	Knowledge	5	.69
	Creativity	5	.85
Order		**24**	**.89**
	Tradition	6	.79
	Practicallity	8	.76
	Morality	5	.71
	Reason	5	.68
Well-being and Relatedness		**41**	**.91**
	Community	5	.77
	Fun	6	.71
	Love	4	.75
	Comfort	6	.75
	Care	4	.70
	Attentivenes	8	.69
	Harmony	8	.85

Adult Hope Scale (AHS, Snyder et al., 1991): The AHS is a 12-item Likert-type scale (ranging from 1 – totally false to 5 – totally true) with four items assessing agency, four items assessing pathways, and four distracters items that are not considered for analysis. Agency refers to the sense of successful determination to meet goals. Pathways refer to the capacity to generate successful

plans to meet goals. In the current study, the goodness-of-fit indexes for the expected bi-factorial solution were: CFI = .98; TLI = .97; RMSEA (90% CI) = .071 (.064 - .077); SRMR = .052.

Life Orientation Test-Revised (LOT-R, Scheier, Carver, & Bridges, 1994): The LOT-R evaluates one´s levels of optimism (e.g., "In uncertain times, I usually expect the Best") and pessimism (e.g., "I rarely count on good things happening to me"). It is composed by ten items (4 fillers), answered in a five-point Likert scale (0 = totally disagree; 4 = totally agree). In this study, the expected bi-factorial solution presented excellent goodness-of-fit indexes: CFI = .98; TLI = .97; RMSEA (90% CI) = .068 (.057 - .078); SRMR = .036.

Satisfaction with Life Scale (SWLS, Diener, Emmons, Larsen, & Griffin, 1985): The SWLS is a 5-item Likert-type scale (ranging from 1 – totally disagree to 5 – totally agree), which assess satisfaction with life by a single-factor solution. In the current study, the SWLS presented excellent goodness-of-fit indexes: CFI = 1.00; TLI =.99; RMSEA (90% CI) = .034 (.021 - .049); SRMR = .011.

Subjective Happiness Scale (SHS, Lyubomirsky & Lepper, 1999) is a 4-item Likert-type scale (ranging from 1 to 7 points, with different anchors), which assesses subjective happiness by a single-factor solution. In this study, the goodness-of-fit indexes of the SHS were: CFI = 1.00; TLI =.99; RMSEA (90% CI) = .037 (.017 - .061); SRMR = .042.

General Self-efficacy Scale (GSS, Schwarzer & Jerusalém, 1995) is a 10-item Likert-type scale (ranging from 1 – not at all true to 7 – Exactly true) which assesses general self-efficacy by a single-factor solution. In the current study, fit indexes were: CFI = .96; TLI =.97; RMSEA (90% CI) = .089 (.084 - .094); SRMR = .062.

Data Analysis

Factor Structure and Reliability

First, an exploratory structural equation modeling (ESEM), using the robust maximum likelihood extraction method with oblimin rotation, was conducted in order to evaluate the factor structure of the 26 sources of meaning. The number of factors extracted was based on the parallel analysis criteria (Hayton et al., 2004). The ESEM approach (Asparouhov & Muthén, 2009) is a newly-developed technique that integrates the advantages of confirmatory factor analyses (CFA), structural equation modeling (SEM), and exploratory factor analyses (EFA) into a single analysis. Within this framework, one is able to compute standard errors for all rotated parameters, as well as goodness of fit indexes for the obtained exploratory solution (Asparouhov & Muthén, 2009). In this study, we evaluated the factor structure adequacy by implementing the root mean square error of approximation (RMSEA), comparative fit index (CFI) and the standardized root mean-square residual (SRMR). According to several guidelines, an acceptable model fit is indicated by an RMSEA value of less than .06 or .08 (with its 90% confidence interval lesser than .10), an SRMR value of less than .08, and by a CFI value equal or greater to .90 (Brown, 2006). Reliability indexes (alpha coefficient) were, then, calculated for all 26 sources of meaning, and for the obtained dimensions.

Confirmatory factor analyses were employed to test the distinction of meaningfulness and crisis of meaning as different constructs. Two models were

evaluated: a one-dimension model, in which meaningfulness and crisis of meaning are grouped together into a single dimension, and a two-dimension model, in which meaningfulness and crisis of meaning are treated as related but distinct constructs. It is expected that the two-factor solution presents better fit indexes when compared to the one-dimension model.

Convergent validity

Convergent validity was examined by employing the SoMe-BR, SWLS, SHS, LOT-R, AHS, and SSS. More specifically, Pearson´s correlations were calculated between the 26 sources and five dimensions of meaning, meaningfulness and crisis of meaning scales. Drawing on previous studies (Schnell, 2009, 2011), it is expected that all sources of meaning correlates positively with meaningfulness and negatively with crisis of meaning; that both horizontal and vertical self-transcendence dimensions presents higher correlational magnitudes with meaningfulness when compared to the other dimensions; and that meaningfulness and crisis of meaning do not overlap more than 50%.

Subsequently, the meaningfulness and crisis of meaning scales were correlated with the LOT-R, AHS, SWLS, SHS and SSS. We expected low-to-moderate correlations among these scales.

SoMe and Sociodemographic Variables

In order to evaluate the SoMe-BR in the Brazilian sample, we sought to examine its relation regarding the following sociodemographic variables: 1) gender; 2) age groups; and 3) marital status. The scalar age variable was transformed into three categories: youngsters (from 18 to 29 years old, n = 1.631; adults, from 30 to 59 years old, n = 1.113; and the elderly, more than 60 years old, n = 290). The age groups were defined according to the Brazilian Institute of Geography and Statistics (IBGE) guidelines (IBGE, 1999).

A multivariate analysis of variance (MANOVA) was performed with gender, age and marital status as independent variables (IVs). A bootstrapping procedure (1.000 re-samplings, with a 99% confidence interval for the mean difference, ΔM) was employed to achieve greater reliability to the results, to correct the non-normal distribution of the sample and the difference in group sizes, and to present a confidence interval of 99% for the mean differences (Haukoos & Lewis, 2005). Effect sizes were calculated by eta-squared (η^2).

Results

Exploratory and Confirmatory Factor Analyses

In order to evaluate the optimal number of dimensions for the 26 sources of meaning, Parallel Analysis for factor retention was employed. PA results suggested a five-factor solution as the most representative to the data.

The obtained five-factor solution (See Table 2) is quite similar to the original factor-structure (Table 1) proposed by Schnell (2009). Minor differences, however, were found. Besides its original five sources of meaning, the dimension 'horizontal

self-transcendence' incorporated four sources of meaning from other dimensions (creativity, knowledge, and development from "self-actualization", and harmony from "well-being and relatedness"). Vertical self-transcendence and order remained the same. Self-actualization and well-being and relatedness remained the same, but without the aforementioned sources of meaning that merged into horizontal self-transcendence. Reliability indexes were satisfactory (α > .70) for the majority of the sources of meaning, and acceptable (i.e., 0.6 ≤ α < 0.7) for some (spirituality, unison with nature, individualism, power, knowledge, reason, and attentiveness).

Table 2
Dimensions, sources of meaning, factor loadings, number of items per scale, and reliability indexes of the SoMe-BR

Sources of Meaning	Dimensions					Items (*n*)	Alpha Reliability
	WBR	HST	VST	SA	ORD		
Fun	**.754**	-	-	-	-	6	.71
Community	**.745**	-	-	-	-	5	.77
Love	**.621**	-	-	-	-	4	.69
Confort	**.517**	-	-	-	-	6	.60
Care	**.513**	.343	-	-	-	4	.75
Attentiveness	**.401**	-	-	-	-	8	.71
Self-knowledge	-	**.633**	-	-	-	6	.75
Social commitment	-	**.615**	-	-	-	5	.62
Development	-	**.596**	-	.315	-	6	.76
Knowledge	-	**.594**	-	.341	-	5	.66
Generativity	-	**.557**	.312	-	-	6	.75
Unison with nature	-	**.523**	-	-	-	5	.85
Harmony	.333	**.519**	-	-	-	8	.88
Creativity	-	**.456**	-	-	-	5	.85
Health	-	**.445**	-	-	-	4	.68
Spirituality	-	-	**.866**	-	-	5	.70
Religiosity	-	-	**.776**	-	-	3	.95
Individualism	-	-	-	**.801**	-	6	.61
Achievement	-	-	-	**.618**	.415	4	.72
Challenge	-	-	-	**.586**	-	5	.67
Freedom	-	-	-	**.526**	-	6	.89
Power	-	-	-	**.513**	-	5	.61
Moral	-	-	-	-	**.661**	5	.72
Reason	-	-	-	-	**.660**	5	.66
Practicallity	-	-	-	-	**.628**	8	.71
Tradition	-	-	-	-	**.597**	6	.69
Alpha Reliability	.81	.84	.82	.78	**.77**	-	-

Note: WBR – Well-being and relatedness; HST – Horizontal self-transcendence; VST – Vertical self-transcendence; SA – Self-actualization; ORD – Order. In bold, items with higher loadings on the factor, and considered in the factor structure. Results presented for loadings ≥ .30.

The obtained five-factor solution presented acceptable goodness-of-fit indexes [RMSEA = .072 (90% C.I = .070 – 0.74); SRMR = .03; CFI = .90], suggesting acceptability of the five-factor model. The fit indexes, although

acceptable, were marginal, which suggests that further refinement of the scales could improve the measurement model.

The distinction between meaningfulness and crisis of meaning scales was tested by two CFAs. As can be seen in Table 3, the two-dimensional model presented considerably better fit indexes when compared with the one-dimension model. RMSEA values, however, were high for both models. Specifically regarding the two-dimension model, two error terms of the meaningfulness scale (error of item 85, "I feel I belong to something bigger than myself" and error term of item 113, "I think my life has a deeper meaning") presented a significant modification index (MI = 1108.05, $p < .0001$). When this modification was considered, the two-dimension model presented the following fit indexes: χ^2 (*df*) = 600.79 (33), $p < .001$; TLI = .98; CFI = .98; RMSEA = .075 (.070 - .081); CAIC = 303.20. Meaningfulness and crisis of meaning were negatively correlated ($r = -.61$; $p < .001$).

Table 3
Confirmatory factor analyses for different models for meaningfulness and crisis of meaning scales

Models	χ^2 (*df*)	*p*	TLI	CFI	RMSEA (90% CI)	CAIC
One-dimension model	1978.34 (35)	.001	.734	.793	.135 (.130 - .140)	1662.73
Two-dimension model	1218.50 (34)	.001	.954	.965	.107 (.102 - .112)	911.90

Note: χ^2 – chi-square; *df* – degrees-of-freedom; *p* –p-value; TLI – Tucker-Lewis index; CFI – comparative fit index; RMSEA – root mean square error of approximation; CI – confidence interval; CAIC – consistent Akaike´s information criterion.

Convergent validity between the SoMe-BR and other measures

First, we sought to examine to what extent the sources and dimensions of meaning were related to both meaningfulness and crisis of meaning. In this case, dimensions of meaning were calculated in accordance with the factor structure obtained in the present Brazilian sample. As can be seen in Table 4, all sources and dimensions of meaning are positively correlated with meaningfulness. On the other hand, all sources and almost all dimensions of meaning (except self-actualization) are negatively correlated with crisis of meaning. However, many correlation coefficients are very low and cannot be interpreted as substantial (i.e., $r \leq .10$).

Fisher´s r-to-z difference test (Cohen & Cohen, 1983) showed that horizontal self-transcendence provided higher predictive validity for meaningfulness when compared to all other dimensions of meaning (horizontal self-transcendence and vertical self-transcendence, $Z = 7.71$, $p < .001$; horizontal self-transcendence and self-actualization, $Z = 23{,}14$, $p < .001$; horizontal self-transcendence and well-being and relatedness, $Z = 10.86$, $p < .001$; horizontal self-transcendence and order, $Z = 16.80$, $p < .001$). Regarding crisis of meaning, the same was true: Horizontal self-transcendence presented higher predictive validity when compared to other dimensions (horizontal self-transcendence and vertical self-transcendence, $Z = 6.10$, $p < .01$; horizontal self-transcendence and self-actualization, $Z = 13.52$, $p < .001$; horizontal self-transcendence and well-being and relatedness, $Z = 4.19$, $p < .01$; horizontal self-transcendence and order, $Z = 8.09$, $p < .01$).

Table 4
Pearson´s correlations among the Brazilian structure of the sources and dimensions of meaning with meaningfulness and crisis of meaning

Dimensions	Sources of meaning	Meaningfulness	Crisis of meaning
Self-transcendence (horizontal)		.50**	-.17**
	Self-knowledge	.37**	-.08**
	Social commitment	.29**	-.12**
	Development	.54**	-34**
	Knowledge	.21**	-.07**
	Generativity	.63**	-.30**
	Unison with Nature	.38**	-.18**
	Harmony	.58**	-.26**
	Creativity	.27**	-11**
	Health	.40**	-.32**
Self-transcendence (vertical)		.62**	-.29**
	Spirituality	.42**	-.10**
	Explicit religiosity	.46**	-.20**
Self-actualization		.23**	-.03
	Individualism	.10**	-.06**
	Achievement	.21**	-.06**
	Challenge	.10**	-.04*
	Freedom	.10**	-.04*
	Power	.42**	-.28**
Well-being and relatedness		.48**	-.22**
	Fun	.28**	-.16**
	Community	.37**	-.23**
	Love	.23**	-.04*
	Comfort	.23**	-.10**
	Care	.39**	-.15**
	Attentiveness	.53**	-.23**
Order		.32**	-.12**
	Moral	.38**	-.17**
	Reason	.19**	-.11**
	Practicality	.23**	-.07**
	Tradition	.22**	-.04*

Note: ** $p < .001$; * $p < .01$

Correlations among meaningfulness and crisis of meaning, and the dimensions of meaning with convergent measures were also evaluated. As shown in Table 5, the Brazilian meaningfulness and crisis of meaning scales were substantially ($r > .30$) correlated with hope (agency and pathways), pessimism, optimism, satisfaction with life, subjective happiness and self-efficacy. The highest positive correlation was found between meaningfulness and satisfaction with life ($r = .54$, $p < .001$), and the highest negative correlation was found between crisis of meaning and subjective happiness ($r = -.63$, $p < .001$). Non-significant correlation was found only among pessimism and order ($r = -.01$, p = n.s.). As expected, none of the correlations exceeded an r value higher than .50.

Table 5
Pearson´s correlations among the Brazilian structure of the SoMe and hope, pessimism, optimism, satisfaction with life, subjective happiness, and self-efficacy

SoMe		Agency	Pathway	Pessimism	Optimism	Satisfaction with life	Subjective happiness	Self-efficacy
Scales	Meaningfulness	.40**	.52**	-.38**	.46**	.54**	.52**	.39**
	Crisis of meaning	-.32**	-.50**	.48**	-.43**	-.60**	-.63**	-.36**
Dimensions	Vertical self-transcendence	.12**	.13**	-.13**	.25**	.15**	.19**	.08**
	Horizontal self-transcendence	.43**	.43**	-.25**	.34**	.32**	.31**	.40**
	Self-actualization	.31**	.32**	-.05**	.19**	.11**	.12**	.33**
	Well-being and relatedness	.28**	.31**	-.18**	.35**	.33**	.35**	.25**
	Order	.15**	.19**	-.01	.19**	.17**	.09**	.15**

Note: ** $p < .001$

SoMe-BR and Sociodemographic Data

We sought to examine the relation of the SoMe-BR with sociodemographic variables (age groups, gender and marital status). The descriptive statistics are presented in Table 6.

Significant main effects were found for gender [F (7, 2.970) = 5.715; Wilk´s Lambda = .99; $p < .001$; $\eta^2 = .01$], age [F(14, 5.940) = 3.052; Wilk´s Lambda = .99; $p < .001$; $\eta^2 = .01$], and marital status [F(28, 10.709) = 5.738; Wilk´s Lambda = .95; $p < .001$; $\eta^2 = .01$]. No interaction effects were found.

Regarding meaningfulness, no differences were found between men and women ($p = .38$). The adults and the elderly presented higher levels when compared to the youngsters ($p < .001$). No significant differences were found between adults and the elderly ($p = 1.00$). Meaningfulness was also higher for married individuals, when compared to single and unmarried people ($p < .001$). Divorced and widowed individuals did not differ from the other categories ($p > .50$).

Crisis of meaning was higher for men than for women ($p < .001$). The youngsters presented higher levels when compared to both the adults and the elderly ($p < .001$), and no significant differences were found between the latter two groups ($p = 1.00$). Crisis of meaning was also higher for singles, when compared to married and divorced participants ($p < .001$). Married individuals also reported lower levels when compared to divorced and unmarried people ($p < .001$). No significant differences were found between widowed participants and any other group ($p = 1.00$).

Further exploratory analyses established the following associations between dimensions of meaning and demographics (after adjusting for alpha error accumulation):

Vertical self-transcendence was higher for women than for men ($p < .001$). It was lower for youngsters when compared to adults and the elderly ($p < .001$). No significant differences were found among adults and the elderly ($p = 1.00$). Singles also reported lower levels when compared to all other categories (married, widowed, and divorced; $p < .001$), except unmarried people ($p = 1.00$). Unmarried people also reported lower levels of vertical self-transcendence when compared to all other categories (married, divorced and widowed; $p < .001$), except singles ($p = 1.00$). Married people reported higher levels when compared to singles and unmarried people ($p < .001$), but no differences were found between married and widowed ($p = .10$) and divorced participants ($p = 1.00$).

For horizontal self-transcendence, no gender differences were found ($p = .27$). As for age, horizontal self-transcendence presented significant differences for all groups. The elderly reported higher levels when compared to both adults ($p < .001$) and the youngsters ($p < .001$), and adults also presented higher levels than the youngsters ($p = 1.00$). Single people presented lower levels when compared to all other categories ($p < .001$), except unmarried people ($p = .92$). The widowed presented higher levels than the unmarried ($p < .01$).

Regarding self-actualization, men reported marginally significant higher scores when compared to women ($p = .056$), and the youngsters reported higher levels when compared to adults ($p < .001$) and the elderly ($p < .001$). No difference was found between the latter two groups ($p = .77$).

Self-actualization was also higher for singles when compared to the married ($p < .001$) and the divorced ($p < .050$). Married participants also reported lower levels when compared to the unmarried ($p < .50$), and marginally lower scores when compared to the divorced ($p = 0.57$). No differences were found between the widowed and any other group ($p > .50$).

Well-being and relatedness was higher for women than for men ($p < .001$). No age ($p > .10$) and marital status ($p > .50$) differences were found. Lastly, for order, no significant results were found for gender ($p = .82$). For age, in turn, the elderly presented higher levels than adults ($p < .001$) and the youngsters ($p < .001$), and adults presented higher levels than the youngsters ($p < .001$). Regarding marital status, order was lower for singles when compared to all groups ($p < .001$), except the unmarried people ($p = 1.00$). The married reported higher scores when compared to singles, unmarried, and divorced ($p < .001$). Divorced people also reported higher scores when compared to singles and unmarried people ($p < .001$). The widowed, in turn, reported higher levels when compared to all other groups ($p < .001$).

Table 6.
Means and standard deviations for gender, age, and marital status groups

SoMe constructs	Gender			Age				Marital status					
	Male	Female	*p*	Youngsters	Adults	Elderly	*p*	Single	Engaged	Married	Divorced	Widowed	*p*
Scales													
Meaningfulness	3.62 (.82)	3.77 (.77)	*n.s*	3.60 (.81)	3.85 (.75)	3.86 (.73)	**	3.63 (.82)	3.65 (.84)	3.91 (.69)	3.74 (.78)	3.93 (.61)	**
Crisis of Meaning	1.17 (1.19)	1.06 (1.12)	**	1.24 (1.19)	.93 (1.06)	1.00 (1.06)	**	1.28 (1.22)	1.05 (1.15)	.76 (.91)	1.03 (1.00)	1.04 (.98)	**
Dimensions													
Vertical self-transcendence	1.98 (.99)	2.41 (.89)	**	2.09 (.97)	2.45 (.87)	2.50 (.92)	**	2.16 (.95)	2.03 (.99)	2.44 (.92)	2.44 (.81)	2.85 (.76)	**
Horizontal self-transcendence	3.93 (.59)	4.02 (.55)	*n.s*	3.89 (.57)	4.09 (.54)	4.19 (.59)	**	3.92 (.57)	4.00 (.56)	4.11 (.56)	4.10 (.56)	4.28 (.58)	**
Self-actualization	3.63 (.58)	3.57 (.60)	[a]	3.66 (.57)	3.52 (.59)	3.46 (.64)	**	3.67 (.57)	3.57 (.65)	3.42 (.56)	3.54 (.59)	3.44 (.67)	**
Well-being and relatedness	3.58 (.58)	3.76 (.55)	**	3.70 (.56)	3.68 (.56)	3.76 (.60)	*n.s*	3.70 (.57)	3.65 (.56)	3.72 (.56)	3.60 (.59)	3.80 (.60)	*n.s*
Order	3.70 (.68)	3.77 (.67)	*n.s*	3.59 (.67)	3.90 (.60)	4.11 (.75)	**	3.63 (.67)	3.66 (.72)	3.96 (.64)	3.89 (.57)	4.40 (.63)	**

Note: In parenthesis, standard deviations; ** $p < .001$; *n.s* – not significant result ($p > .05$); [a] – marginally significant result ($p = .056$).

Discussion

As described in the results, the factorial structure of the SoMe-BR was very similar to the original structure (Schnell, 2009). From the 26 sources of meaning, only four were not retained in the expected dimensions. Vertical self-transcendence remained the same, encompassing both spirituality and explicit religiosity. Horizontal self-transcendence incorporated creativity, knowledge, and development from self-actualization, and harmony, from well-being and relatedness. In this study, the sources of meaning that comprised horizontal self-transcendence are, to a high extent, related to aspects of eudaimonic well-being, and still reflect the orientation beyond one´s immediate needs, as proposed by Schnell (2009).

Curiously but not surprisingly, when compared to Schnell´s (2009) findings, the dimension self-actualization "lost" three sources of meaning (related to eudaimonic well-being that merged with horizontal self-transcendence), and became clearly composed by self-centered sources of meaning, reflecting aspects of personal advancements or independence (e.g., individualism, power, freedom). In Schnell´s (2009) study, the self-actualization dimension has blended both eudaimonic (e.g., knowledge, creativity, development) and self-centered (e.g., individualism and power) sources of meaning under one unique dimension. The dimension well-being and relatedness was very similar to the original, with the only difference that harmony merged with horizontal self-transcendence. Just as discussed by Schnell (2009), this source of meaning encompasses aspects of both personal (e.g., fun, comfort) and social (e.g., love, community; attentiveness) well-being. Lastly, order kept its four sources of meaning, clearly representing aspects related to moral values and prudence.

Reliability analyses established adequate coefficients for the large majority of the evaluated sources. Some alpha coefficients were below .70 (but > .60), suggesting that further improvements of the Brazilian SoMe might increase reliability values.

In this study, the differentiation between meaningfulness and crisis of meaning was also supported. The corroboration of this result is particularly important, since the tradition of meaning in life research has posited a unique continuum from crisis of meaning to meaningfulness (Schnell, 2009, 2011). By evaluating meaningfulness and crisis of meaning as two different constructs, it is possible to correctly evaluate for whom and in what circumstances low levels of meaning in life really reflect a crisis of meaning (for more information on this distinction, see Schnell, 2010). This knowledge, for example, can serve as important background for meaning-centered interventions.

All sources and almost all dimensions of meaning were positive correlated with meaningfulness and negatively correlated with crisis of meaning. Just as in Schnell (2011), generativity and harmony were the two sources of meaning most closely related to meaningfulness. As previously mentioned, Fisher´s r-to z transformation test showed that horizontal self-transcendence was the most "powerful" dimension of meaning, and provided higher predictive validity for both meaningfulness and crisis of meaning (in a negative perspective). This result was consistent with the literature. Other empirical studies have shown meaning in life is a construct strongly related to eudaimonic aspects of well-being (McMahan &

Renken, 2011), such as generativity (Emmons, 2003), self-transcendence (Emmons, 2003; Reker & Wong, 1988; Schnell & Hoof, 2012), self-development (Ryan & Deci, 2001), etc.

In a theoretical perspective, Frankl (1963) posited that meaning in life could only be achieved within a eudaimonic approach, by looking beyond one´s immediate needs (i.e., by self-transcendence). Although all sources of meaning are positively related with meaningfulness (what partially contradicts Frankl´s position), our results suggests that focusing on eudaimonic aspects of well-being might be a powerful way for meaning achievement and for crisis of meaning prevention. Another important point to mention is the fact that self-actualization presented no correlations with crisis of meaning. This result seems to indicate that a commitment to self-focused endeavors does not prevent from existential suffering. Further studies, however, are necessary to corroborate this statement.

Regarding convergent validity, substantial correlations between the SoMe-BR meaningfulness and crisis of meaning scales with dispositional well-being aspects of personality (hope, optimism/pessimism, self-efficacy), and with subjective well-being (life satisfaction and subjective happiness) were established. Exploratory analyses of associations between dimensions of meaning and well-being measures reflect strong links of hope and self-efficacy with horizontal self-transcendence and self-actualization. Optimism, satisfaction with life and subjective happiness were substantially associated with well-being and relatedness and horizontal self-transcendence.

As hypothesized, none of the correlations exceeded the expected value of .70. Empirically, this result indicates that the SoMe-BR is a reliable measure of meaning in life qualities and contents, and does not overlap with neighboring constructs. Regarding the SoMe-BR and sociodemographic data, several associations were established. Levels of meaningfulness were equivalent for both men and women. This result is not consensus in the literature. Some studies have found men having higher levels of meaning in life when compared to women (Crumbaugh, 1968; Orbach, Iluz, & Rosenhein, 1987). Others have found women having slightly higher levels when compared to men (Schnell, 2009). Others, in turn, have found no significant differences (King, Hicks, Krull, & Del Gaiso, 2006; Scannell, Allen, & Burton, 2002; Steger et al., 2006). Those contradictory results might be related to cultural aspects, sample biases, or to measurement problems and errors.

Although we have found no significant differences in meaningfulness across gender, crisis of meaning was slightly higher for men. This result corroborates the notion that meaningfulness and crisis of meaning are two different constructs.

Regarding age, the youngsters presented lower levels of meaningfulness when compared to older people. The transition phase that youngsters in general have to face presents many challenges, such as the choice of a career, first jobs, search for financial independence, etc. Once meaningfulness is related to the pursuit and achievement of personal significant goals, it is expected that meaning in life tends to increase with age. This must be related to the fact that the youngsters are facing a life-stage transition, namely emerging adulthood (Arnett, 2000), in which personal life projects are in development. Furthermore, the

younger youngsters are generally in a self-concept developmental phase, which implies they are solving the puzzle of "who am I in the world" (Schlegel, Hicks, King, & Arndt, 2011). Over time, people tend to establish a stable notion of them and to develop significant goals, thus aiding the achievement of a meaningful life.

Married people presented higher levels of meaningfulness and lower levels of crisis of meaning when compared to the other marital categories. The literature has shown that marriage can highlight a belonging sensation, enhancing life goals more objectively, through the aim of building a home or raising children, for example (Schnell, 2009). Thus, marriage can still nowadays enhance a life-course perspective.

Curiously, widowed and divorced individuals did not report different levels of meaningfulness or crisis of meaning when compared to both single and unmarried people, although divorce and the death of a spouse is typically seen as a negative life event. Regarding divorce, the literature has shown that well-being tends to increase again after a relative short period of time after the event (Luhmann, Hofmann, Eid, & Lucas, 2012). As regards widowed individuals, these, because of the natural course of development, tend to be older people. In these cases, studies have found that older people generally report adequate coping strategies when facing the challenges of a marital transition, resulting in resilient outcomes (Marks & Lambert, 1998; Ong, Bergeman, Bisconti, & Wallace, 2006). Park (2010), for example, has shown that although stressful live events (such as the death of a spouse) can hamper well-being levels for a while, the notion that highly stressful events shatter global meaning is minimal. This happens because people tend to adapt to negative life events through different meaning-making processes (for more information, see: Joseph & Linley, 2005; Park, 2010).

Regarding the sources of meaning, women reported higher levels of vertical self-transcendence and well-being and relatedness. Religiosity and spirituality (components of vertical self-transcendence) are very important issues in Brazilian culture, with 92% of the population claiming to have a religion or spiritual belief (IBGE, 2010). According to the Brazilian Institute of Geography and Statistics (IBGE, 2010), for all groups of religion/spiritual beliefs, the number of women is higher. On the other hand, men are prevalent within the atheists, agnostics and nonreligious (IBGE, 2010). Our findings, thus, corroborate this data, which suggest that spiritual or religious beliefs are more preeminent and substantially more important among women than men.

Well-being and relatedness was also higher for women than for men. This result might reflect gender roles. For example, the dimension well-being and relatedness encompasses sources of meaning mainly related to social relationships, which might be more endorsed by women than by men. Consistent with these findings, self-actualization, a predominantly self-focused dimension, was higher for men than for women. Thus, the conjunction of these results provided evidence that women were more focused on social relationships and personal comfort, whereas men tended to be more self-focused. The finding is in line with the literature and replicates results from previous studies (Schnell, 2009; Schnell & Keenan, 2012).

Significant differences between the dimensions of meaning and age were also found. The youngsters reported lower levels in the majority of the dimensions of meaning (expect self-actualization, in which this group was higher). Younger people, thus, tended to be less broadly committed or engaged, which might explain the reason why the youngsters reported both lower levels of meaningfulness and higher levels of crisis of meaning. As discussed by Schnell (2010), commitment to sources of meaning is the cornerstone of a sense of meaningfulness. Because youngsters are in a phase of development and/or transition of personal characteristics, shaping their "true-self" (Schlegel et al., 2011), this lack of commitment is comprehensible, albeit can reflect negatively and enhance existential conflicts typical of the youth (Fitzgerald, 2005).

Older people reported higher levels on the dimension order. This result corroborates a large body of research (Prager, 1996, 1997; Reker, 1988; Schnell 2009). It is possible that developmental changes through the lifespan result in changes in commitment to different sources of meaning. However, longitudinal studies are necessary to evaluate this hypothesis.

Finally, the association among dimensions of meaning and marital status showed that singles presented lower levels in all dimensions, except self-actualization. Unmarried people also tended to report lower levels when compared to the other categories. These results are surely linked to age, with youngsters showing comparable values.

Married, widowed and divorced individuals, in turn, tended to present comparable patterns of commitment to sources of meaning. This suggests that engagement with dimensions of meaning might be more intrinsically related to personal values and life-stage aspects (such as age) than to external or relational influences.

This study has some limitations. First, our sample, albeit large, was not representative of the Brazilian population, which hampers generalization. The factor structure found in this study is a preliminary one, and it is possible that it may not be found in subsequent studies. Another problem is that all conclusions draw on self-report measurement. The inclusion of other designs, such as second-informants or an experimental design would strengthen the results of this study. Further studies are welcome to replicate or not the findings presented here.

Conclusions

In this study, we sought to present the validation process and the psychometric properties of the Brazilian version of the SoMe. Our results provided evidence that the SoMe is a reliable and comprehensive questionnaire to evaluate meaning of life qualities and contents. To a great extent, the results presented here were similar to those presented by Schnell (2009). This corroboration strengthens the notion that the SoMe is a reliable measure, and that the meaning in life construct can be reliably accessed by self-report inventories. The reported psychometric properties indicate that the conceptualization of meaning in life underlying the SoMe can validly be transferred to the Brazilian culture. Future

studies aiming to contradict or corroborate, and expand the results presented here are welcome.

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