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A quantitative and qualitative approach to meaning in life evaluation: the SMiLE Brazilian version

Uma abordagem quantitativa e qualitativa da avaliação do sentido de vida: versão brasileira do SMiLE

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Abstract

The aim of this study was to validate the Schedule for Meaning in Life Evaluation for the Brazilian context. Participants were 423 Brazilian adults, aged 18 to 65. Instruments included the Meaning in Life Questionnaire, Snyder's Dispositional Hope Scale, and the Inventory of Anxious Thoughts. Results showed that the target instrument has good internal consistency (0.879), and significant correlations with the other measures. A cluster analysis showed that the most cited areas were family and work, whereas the least cited were artistic interest and hedonism. We discuss possible uses of the instrument in educational, clinical and hospital settings.

Keywords: Anxiety; Hope; Meaning in life; Quantitative evaluation; Validation.

Resumo

O objetivo do estudo foi validar a Escala de Avaliação de Sentido de Vida ao contexto brasileiro. Participaram 423 adultos brasileiros, com idades entre 18 e 65 anos. Os instrumentos incluíram o Questionário de Significado na Vida, a Escala de Esperança Disposicional de Snyder e o Inventário de Pensamentos Ansiosos. Os resultados mostraram que o instrumento tem uma boa consistência interna (0,879), e se correlaciona significativamente com as outras medidas. A análise de cluster mostrou que as áreas mais citadas foram a da família e do trabalho, enquanto as menos citadas foram o interesse em arte e o hedonismo. São discutidos possíveis usos do instrumento em ambientes educacionais, clínicos e hospitalar.

***Palavras-chave**: Ansiedade; Esperança; Sentido de vida; Avaliação quantitativa; Validação.*

This study aims to adapt and validate the Schedule for Meaning in Life Evaluation (SMiLE) (Fegg et al., 2008) for the Brazilian context. Although the concept of Meaning in Life (MiL) has been studied since the Greek philosophers, it was only

after World War II that it started to arouse interest among psychology researchers around the world (Frankl, 1965). The pioneer on questioning and understanding the concept from a psychological perspective was the psychiatrist Viktor Frankl (1905-1997). He stated that a lack of meaning could trigger problems such as depression, hopelessness, and physical decline.

In recent years, several studies have addressed this initial hypothesis, establishing that the absence or lower levels of meaning in life were positively correlated with depression (Huo et al., 2020), anxiety disorders (Humphrey & Vari, 2021), eating disorders, including anorexia, bulimia, and binge eating (Marco et al., 2021), and so on. Contrastingly, having a fulfilling sense of MiL is associated with positive psychological and physical outcomes. For instance, higher levels of life satisfaction (Barros et al., 2021), work satisfaction (Simard et al., 2022), physical health (Ding et al., 2022), and even better treatment adherence in palliative care and HIV patients (Bernard et al., 2020; Quinto, et al., 2022).

Meaning in life is defined as the perception of order and coherence in one's existence, allied with the search for and achievement of meaningful goals or objectives that produce a deep feeling of accomplishment and/or happiness (Morse et al., 2021). The instruments that are most frequently used in scientific research to assess MiL are: the Meaning in Life Questionnaire (MLQ-BR; Steger et al., 2006), the Purpose in Life Test (PIL; Crumbaugh & Maholick, 1964), and the Sense of Coherence Scale (SOC; Antonovsky, 1987). Other less often used measures include the Life Attitude Profile - Revised (Reker, 1992), and Ryff's (1989) Purpose in Life subscale.

In Brazil, the amount of empirical research on MiL has been growing in recent years (Alonso et al., 2023; Cunha et al., 2022; Rocha et al., 2021). Much of this interest is due to the adaptation of suitable instruments to the Brazilian context, which allows a richer understanding of the concept to help clinical psychologists, professors, and researchers in their tasks.

However, most of these measures have only accounted for a quantitative approach to the concept, with higher scores representing more engagement, sense of purpose, fulfillment or meaning, and lower scores representing despair or suffering from a lack of meaning (Schnell, 2021). These approaches, however, exclude qualitative evaluation of the sense of MiL, which is inherently built upon personal experiences, and which differs from person to person and from culture to culture.

Existentialist philosophers pointed out that a sense of MiL shall be found or created by the individual based on personal experiences and analysis (Costin & Vignoles, 2020), serving the individual to create internal resources to deal with adversities and negative experiences. Therefore, without a qualitative assessment, it remains difficult to evaluate and analyze the internal (e.g., personality, coping strategies, spirituality) or external (e.g., social opportunities, culture, work) factors that may influence the construction of a sense of meaning for a person or a specific population (Rocha et al., 2021).

The Schedule for Meaning in Life Evaluation (SMiLE) is an instrument developed by Fegg et al. (2008). It consists of three parts that evaluate: (1) the specific areas that give meaning to the lives of individuals; (2) the Index of Satisfaction (IoS); and (3) the Index of Weight (IoW) given to the areas. To complete the instrument, participants must indicate 3 to 7 areas or aspects that give meaning to their lives. Then, they must rate their degree of satisfaction with each area (on a scale from -3 to +3). Finally, they rate the importance of each area (on a scale ranging from 0 to 7, from less important to extremely important).

The SMiLE has been translated and adapted to several languages, including Spanish (Monforte-Royo et al., 2011), French (Stiefel et al., 2008), Hindi (Kudla et al., 2015), Italian (Negri et al., 2019), and Japanese (Sumi, 2019). It has also been used in several studies with general and clinical populations, resulting in good validity and reliability scores (Bublitz et al., 2023; Costin & Vignoles, 2020; Fegg et al., 2010; Maffoni et al., 2021). Thus, the aim of this study is to make available an instrument that provides a qualitative and quantitative evaluation of MiL for the Brazilian context.

Method

Participants

Participants provided written consent prior to data collection. They were contacted in public and private universities, technical institutes for adult education, churches and through a virtual platform that was developed for this purpose.

We assessed 423 Brazilian adults ranging in age from 18 to 65 (*M* = 30.39; *SD* = 11.6). The sociodemographic characteristics of the whole sample are portrayed in Table 1. This study was approved by the Ethical Committee for Research in Human Beings (number 3.015.608).

Table 1
Sociodemographic characteristics of the total sample (N = 423)

Variable/Category	*N*	Percentage %
Age in years	*M* = 30.40	*SD* = 11.61
Gender		
Female	324	76.6
Male	95	22.5
Other	4	0.9
Educational level		
Primary school	9	2.1
High school	66	15.8
Technical/ bachelor's degree	225	53.5
Master's or doctoral degree	120	28.6
Income (socioeconomic status)		
Up to 1 minimum wage (Equivalent to US$174.87)*	74	17.9
Up to 2 minimum wages (US$349.74)	107	25.9
From 2 to 5 minimum wages (US$874.35)	140	33.9
From 5 to 8 minimum wages (US$1,398.96)	52	12.6
More than 8 minimum wages	40	9.7

Note: At the time of data collection and analysis, US$1.00 (one American dollar) = R$ 5.69 (Brazilian reais).

Instruments

- Socioeconomic questionnaire, with 12 questions regarding age, gender, educational level, employment status, and income.

- Schedule for Meaning in Life Evaluation (Fegg et al., 2008), as described above.

- Brazilian version of the Meaning in Life Questionnaire (MLQ-BR; adapted by Damásio & Koller, 2015). Composed of 10 items, five of which assess "presence of meaning of life" and the

other five assess "search for meaning", on a seven-point Likert scale. The scale presented good fit indexes for the Brazilian version: CFI = 0.99; TLI = 0.99; SRMR = 0.002; RMSEA (90% CI) = 0.075.

- Snyder's Dispositional Hope Scale (DHS, adapted by Pacico et al., 2011). It evaluates hope as a positive personality trait, consisting of 12 items that assess the sense of determination towards personal goals (4), cognitive judgments in which the subjects seek ways to overcome adversity and achieve their goals (4), and control items (4). The Brazilian version showed a bi-factorial structure and adequate adjustment indexes: CFI = 0.98, TLI = 0.97, RMSEA (90% CI) = 0.071, SRMR = 0.052.

- Satisfaction With Life Scale (SWLS, adapted by Gouveia et al., 2009). Assesses satisfaction with life based on the subjects' judgment about their own lives. The instrument consists of five items, answered on a seven-point scale. The Brazilian version presented a one-factor structure with a satisfactory internal consistency index (χ^2= 0.80) and a good model fit (χ^2[5] = 44.78; GFI = 0.99; CFI = 0.99; RMSEA = 0.06; SRMR = 0.021).

- Inventory of Anxious Thoughts (IPan; adapted by Moreno et al., 2014). This instrument consists of 22 items, evaluated on a four-point Likert scale, and divided into 3 factors: social worry, physical-health worry, and meta-worry. In the Brazilian version, the inventory showed a good level of internal consistency (α = 0.86) and convergent validity with another instrument that assesses symptoms of anxiety (*r* = 0.63, with the Penn State Worry Questionnaire).

Procedure

Linguistic and Cultural Adaptation Procedures

Following the steps proposed by Hernández et al. (2020), we began with an analysis of the conceptual and item equivalence between the original and the target context. For this purpose, two experts in positive psychology and psychometric assessment were invited to discuss the adequacy of the instrument to the Brazilian context.

Following, four translations of the English version to Brazilian Portuguese were elaborated and then synthesized into a single text. Then it was back-translated by two independent translators. A synthesized English version was elaborated and sent to be evaluated by the original author, who approved it.

A pilot study was carried out with 30 Brazilian undergraduate students (64% female, M_{age} = 20.12, ranging from 18 to 25). They were requested to read and point out any problems with wording, confusing or misleading language. Participants worked individually. They pointed out that rating "zero" on the importance rating did not seem appropriate. Also, the combination of two scores for the same qualitative area (on the importance and satisfaction ratings) seemed confusing to them. Therefore, we adjusted the scores of the importance rating from Pi = 0 into Pi' = 1; and Pi = 7 to Pi' = 5. There were no further doubts or suggestions regarding the format, instructions, or mode of administration.

SMiLE Scores Calculation

For the SMiLE satisfaction index (IoS), it was necessary to recalculate the scores, transforming the Si = -2 (very dissatisfied) to Si' = 0; and the Si = +2 (very satisfied) to Si' = 100. This

index represents the average level of satisfaction experienced by the person with the mentioned area (ranging from 0 to 100), and is calculated as stated in the following formula:

$$IoS = \frac{(S1 + S2 + S3 + \ \ldots + S7)}{Ns}$$

The importance or weight index (IoW) represents the average level of importance that the person gives to the areas he/she cited (ranging from 20 to 100, with the highest scores representing greater importance). This index is calculated by a weighted average of the importance ratings, as follows:

$$IoW = \frac{(I_1 + I_2 + I_3 + \cdots + I_7)}{5} \times 100$$

Finally, the SMiLE index (IoWS) is the score of weighted satisfaction, that is, the degree to which someone feels satisfied considering the importance of the areas mentioned as meaningful for his/her life. Following the formula:

$$IoSW = \frac{\sum(S1 * I1 + \ S2 * I2 + \ S3 * I3 + \cdots + S7 * I7)}{\sum(I1 + I2 + I3 + \ \ \ldots + I7)}$$

Data Analysis

All partial and final scores of the instruments were also calculated following recommended procedures. We used a descriptive analysis to compare these results with those of other samples. Internal consistency was evaluated through Cronbach's alpha analysis. A correlation analysis with the other measure that evaluates the same construct, the Meaning in Life Questionnaire (MLQ), allowed for the evaluation of concurrent validity. Convergent validity was assessed by a correlation with related concepts, such as hope, evaluated by Snyder's Dispositional Hope Scale (DHS), and anxiety, evaluated with the Inventory of Anxious Thoughts (IPan).

Then, we performed multifactorial analyses of variance (t-tests and ANOVAs) with partial and final SMiLE scores (IoS, IoW, and IoWS) to control for variability based on independent variables (age, gender, educational level, and socioeconomic status). Finally, the raw answers were grouped into categories using a cluster analysis, to help determine which areas are more representative in the Brazilian sample.

Results

The results of the descriptive statistics of the main variables, meaning in life, hope, satisfaction with life, and anxiety scores were computed. All measures showed a good internal consistency, except for the Hope index, which achieved only an adequate Cronbach alpha of 0.560. Results are portrayed in Table 2.

Table 2
Descriptive statistical analysis for all measures (N = 423)

Complete scales and subscales	Min	Max	*M*	*SD*	α
SMiLE index (IoWS)	0	100	69.5	23.2	0.879
Importance index (IoW)	20	100	86.2	10.9	
Satisfaction index (IoS)	0	100	69.4	22.1	
Meaning in Life (MLQ-BR)	1.8	6.7	3.9	1.17	0.751
Presence of meaning	1	7	4.0	1.50	
Search for meaning	1	7	3.9	1.5	
Hope (DHS)	12	40	32.6	5.1	0.560
Agency index	1.2	5	3.9	.71	
Pathway index	1.5	5	4.1	.71	
Satisfaction with life (SWLS)	1.60	7	4.5	1.3	0.843
Anxiety (IPan)	25	83	47.6	12.9	0.912
Social worry	12	44	24.9	7.6	
Physical health worry	6	24	11.6	3.7	
Meta worry	4	20	11.0	3.9	

Note: IoW: Index of Weight; IoS: Index of Satisfaction; MLQ-BR: Meaning in Life Questionnaire; DHS: Dispositional Hope Scale; SWLS: Satisfaction With Life Scale; IPan: Inventory of Anxious Thoughts.

The results from the correlation analysis (Table 3) show that the SMiLE subscales have significant and positive correlations with each other. As expected, the SMiLE total index (IoWS) was significantly and positively correlated with the Meaning in Life Questionnaire ($r = 0.21$, $p < 0.001$), including its subscale presence of meaning ($r = 0.38$, $p < 0.001$), proving its concurrent validity with different assessments of the same construct.

Also, it was possible to verify a positive and significant correlation with hope ($r = 0.18$, $p < 0.001$) and life satisfaction ($r = 0.29$, $p < 0.001$), and a significant but negative correlation with anxiety scores from IPan ($r = -0.22$, $p < 0.001$), including two of its subscales, social anxiety ($r = 0.23$, $p < 0.001$) and meta-worry ($r = 0.20$, $p < 0.001$). Although these results could be considered very low in the case of nomothetic scales, they are acceptable in respondent-generated instruments, such as the case of SMiLE (Ashworth et al., 2019; Schwartz & Rapkin, 2004). Also, these values are very similar to the correlation scores obtained in the studies of the psychometric properties of the instrument in Spain (Monforte-Royo et al., 2011), with other instruments.

The assumption of normal distribution was met in our sample for the partial and final scores of the target instrument. Results from the analyses of variance showed that there was no significant difference in meaning in life between women ($M = 69.1$; $SD = 24.0$) and men ($M = 71.5$; $SD = 19.3$); t (372) = -0.85, $p = 0.39$. Likewise, there were no significant differences among the groups divided by age ($F(4, 364) = 1.65$, $p = 0.15$), educational level ($F(3, 372) = 1.19$, $p = 0.31$), or socioeconomic status ($F(4, 366) = 0.68$, $p = 0.60$).

Finally, we obtained a total of 1,892 open answers from the 423 participants. These data were transcribed and organized into different categories defined a posteriori by two independent raters. A binary cluster analysis was conducted with all areas that had frequencies > 3%, eliciting 13 different categories that represent the MiL areas for the Brazilian population. As can be seen in Table 4, the areas most cited were "family" (95.1%) and "work" (85.8%). Whereas the least cited ones were "interest in culture and arts" (7.1%) and "hedonism" (4.7%). We present also the mean and standard deviation of the final SMiLE scores for each area (where *Min* = 0, *Max* = 50).

Table 3

Correlation results between meaning in life (SMiLE, and MLQ-BR), hope (DHS), satisfaction with life (SWLS) and anxiety (Ipan) partial and total scores

Complete scales and subcales	SMiLE (IoWS)	IoW	IoS	MLQ-BR	Searching for meaning	Presence of meaning	DHS	SWLS	Social worry	Physical health worry	Meta-worry	IPAN
SMiLE index (IoWS)	1											
Importance index (IoW)	0.263**	1										
Satisfaction index (IoS)	0.971**	0.257**	1									
Meaning in life (MLQ-BR)	0.210**	0.090	0.197**	1								
Searching for meaning	-0.037	-0.013	-0.055	0.777**	1							
Presence of meaning	0.381**	0.158**	0.383**	0.590**	-0.049	1						
Hope Scale (DHS)	0.186**	-0.066	0.187**	0.095	-0.196**	0.402**	1					
Satisfaction with life SWLS)	0.299**	0.265**	0.316**	0.252**	-0.229**	0.598**	0.640**	1				
IPAN	-0.222**	-0.047	-0.241**	0.098	0.417**	-0.381**	-0.500**	-0.529**	1			
Social worry	-0.235**	-0.068	-0.242**	0.061	0.390**	-0.404**	-0.508**	-0.523**	0.934**	1		
Physical health worry	-0.072	0.043	-0.091	0.126*	0.274**	-0.155**	-0.257**	-0.250**	0.452**	0.686**	1	
Meta-worry	-0.202**	-0.072	-0.227**	0.077	0.361**	-0.343**	-0.445**	-0.499**	0.763**	0.446**	0.863**	1

Note: * Correlation is significant at 0.005 level. **Correlation is significant at 0.001 level. DHS: Snyder's Dispositional Hope Scale; IPAN: Inventory of Anxious Thoughts; MLQ-BR: Brazilian version of the Meaning in life Questionnaire; SMiLE: Schedule for meaning in life evaluation; SWLS: Satisfaction with Life Scale; IPan: Inventory of Anxious Thoughts.

Table 4
Descriptive statistics of the areas cited as meaningful for life in Brazil from more to least cited

Listed Areas	*N*	%	IoWS	
			M	*SD*
Family (family, children, grandparents, parents, siblings)	414	95.1	35.83	17.01
Work (job, occupation, professional goals, studies, career, university)	363	85.8	26.09	14.52
Friendships (acquaintances, friends, social life)	243	57.4	30.81	15.14
Romantic relationships (love, marriage, girlfriend/boyfriend, relationships)	173	40.1	28.91	18.39
Religion and Spirituality (God, church life, faith, spirituality, Jesus)	146	34.5	35.85	17.26
Leisure time (leisure, hobbies, dance, sports, traveling, reading)	120	31.9	23.01	15.64
Self-development (personal projects, fulfilling dreams, me/myself)	127	30.0	26.31	16.55
Health (physical and mental health, well-being, inner peace)	97	22.9	23.96	16.92
Finances (financial security, money, income, household)	73	17.2	16.83	13.23
Nature (animals, pets, gardening, love for nature, love for the planet)	52	12.3	38.02	15.04
Hedonism (seeking happiness, pleasure, having fun)	46	9.9	22.57	17.28
Altruism (altruism, solidarity, helping others, helping the community)	42	7.1	29.12	12.57
Culture and Arts (cinema, music, literature, art)	30	4.7	25.34	12.84

Note: IoWS: SMiLE index.

Discussion and Future Directions

This study offers initial results of the psychometric qualities of the Schedule for Meaning in Life Evaluation (SMiLE). The instrument represents an innovative way of evaluating the sense of meaning in life of an individual, considering the qualitative and quantitative aspects of the construct. While the qualitative part of this instrument provides an in-depth look at the areas an individual considers most relevant to their life, within which they built up their sense of meaning in life. The quantitative part enables the evaluation of these areas, observing their importance and satisfaction. Thus, this instrument allows for the comparison of the areas within-subject, or between subjects of the same sample, or even between samples, in larger studies.

The results showed a good level of internal consistency, yielding values between 0.69 and 0.89, for the partial and final scores, with significant and positive correlations with each other, revealing a cohesive underlying construct. Furthermore, the correlation analysis had consistent results with other variables that have a theoretical approach to the concept, showing positive correlations with hope (DHS), Satisfaction With Life (SWLS), and even a nomothetic scale that evaluates the same concept (MLQ-BR), and negative and significant correlations with anxiety (IPan), including its subscales of social anxiety and meta-worry.

The qualitative data gathered allowed a first characterization of the areas that appear to be important to Brazilians in the construction of their sense of meaning in life. Unsurprisingly, we found that among the most cited areas, were those about close relationships (e.g., family, friendship, and romantic relationships). These results differ from the German and Japanese samples where aspects such as self-development and nature were among the most cited. This suggests that regardless of age, sex, race or socioeconomic status, relationships with others remain as one of the most important areas in life for Brazilian people. It is in their bond with others that they find a source to build up their identity, sense of belonging, and coping strategies to deal with adversity.

Although the results of the psychometric characteristics of the instrument have been positive, they are not sufficient to determine discriminant or convergent validity, requiring further studies to gather new evidence of validity and precision. However, it should be noted that the use

of the SMiLE, as an idiographic measure, in conjunction with other nomothetic instruments can be complementary in an in-depth, more personalized assessment. This type of measure allows individuals to tell their own stories, promoting and legitimizing their participation as an active subject, rather than a passive object in the research, treatment path, and follow-up evaluation.

However, this study had some limitations, especially due to the Coronavirus Disease 2019 (COVID-19) pandemic that prevented us from collecting a broader and more diverse sample. We intended to gather data from patients and professionals in hospital settings, to compare the results about what gives meaning to life of the population in general and people who are continually exposed to the notion of the end of life. However, we believe that this purpose could be achieved in future research.

Finally, the sense of meaning in life remains an important aspect of the human experience, particularly so in times of adversity, through adolescence, or for populations in vulnerable situations, as it helps individuals to "have something to continue to move forward". This instrument allows us to assess the degree of the meaning in life of individuals, while at the same time letting us know what areas people establish as their sources of meaning. Used at an individual level, or in smaller samples, it could contribute to understanding what the most important areas in the life of a person (or a community) are and if they feel satisfied or unsatisfied with them. This could be an important basis to create more suitable interventions for individuals in schools, hospitals, and therapeutic settings.

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