

Meaning of Life (PIL-Test) in Uruguayan women: a psychometric and descriptive study

El Sentido de la Vida (PIL-Test) en mujeres uruguayas: estudio instrumental y descriptivo

Sentido da Vida (PIL-Test) em mulheres uruguaias: estudo instrumental e descritivo



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Abstract: In scientific literature, the meaning of life is a psychological construct associated with variables of mental health and well-being in women throughout their life cycle. The Purpose in Life Test (PIL) is one of the most widely used globally. The aims of this study are: a) to examine the factorial structure and reliability of the PIL scale, and b) to characterize the meaning of life among women residing in Montevideo, taking into account differences according to Erikson's (1985) psychosocial normative crises. This study employed a psychometric and descriptive design with a sample of 950 women aged 18 to 82 years ($M = 45.99$; $SD = 13.34$). For the first objective, exploratory and confirmatory factor analyses identified two factors that explain 50 % of the variance with a reliability exceeding .80. For the second objective, we employed descriptive and inferential statistics, revealing that women's sense of life is at a medium level and significantly increases across different life stages. This scale is both valid and reliable for assessing women in the Uruguayan context.

Keywords: meaning of life; psychometry; reliability; validity; woman

Resumen: En la literatura científica el sentido de vida es un constructo psicológico que ha sido asociado a variables de salud mental y bienestar en las mujeres a lo largo del ciclo vital. El Test de Sentido de la Vida (The Purpose in Life Test: PIL) es uno de lo más usados en el mundo. Los objetivos de esta investigación son: examinar la estructura factorial y confiabilidad de la escala PIL, y caracterizar el sentido de vida en mujeres de Uruguay residentes en Montevideo considerando diferencias de acuerdo con las crisis normativas psicosociales de Erikson (1985). Se realizó un estudio de diseño instrumental y descriptivo, con una muestra de 950 mujeres de 18 a 82 años ($M = 45.99$; $DE = 13.34$). Para el primer objetivo se ejecutaron análisis factoriales exploratorios y confirmatorios, se encontraron dos factores que explican el 50 % de la varianza con una confiabilidad que supera el .80. Para el segundo objetivo, se emplearon estadísticas descriptivas e inferenciales, que mostraron que el nivel del sentido de vida en las mujeres es medio y que hay incrementos estadísticamente significativos a lo largo del ciclo vital. Se concluye que es una escala válida y confiable para usar con mujeres en el contexto uruguayo.

Palabras clave: sentido de vida; psicometría; confiabilidad; validez; mujer



Resumo: Na literatura científica, o sentido de vida é um constructo psicológico que tem sido associado a variáveis de saúde mental e bem-estar nas mulheres ao longo do ciclo vital. O Teste de Sentido de Vida (The Purpose in Life Test: PIL) é um dos mais utilizados no mundo. Os objetivos desta pesquisa são: examinar a estrutura fatorial e a confiabilidade da escala PIL e caracterizar o sentido de vida em mulheres uruguaias residentes em Montevideu, considerando diferenças de acordo com as crises psicossociais normativas de Erikson (1985). Foi realizado um estudo de delineamento instrumental e descritivo, com uma amostra de 950 mulheres de 18 a 82 anos ($M = 45,99$; $DP = 13,34$). Para o primeiro objetivo, foram realizadas análises fatoriais exploratórias e confirmatórias, encontrando dois fatores que explicam 50 % da variância, com uma confiabilidade superior a 0,80. Para o segundo objetivo, foram utilizadas estatísticas descritivas e inferenciais, que mostraram que o nível de sentido da vida nas mulheres é médio e que há aumentos estatisticamente significativos ao longo do ciclo vital. Conclui-se que é uma escala válida e confiável para uso com mulheres no contexto uruguaio.

Palavras-chave: sentido da vida; psicomетria; confiabilidade; validade; mulher

The Purpose in Life Test (PIL), developed by Crumbaugh and Maholick in 1964, aims to quantitatively operationalize the existential concept as opposed to the condition of existential frustration outlined by Frankl in his theory of noogenic neurosis. The authors posited that 'meaning of life' refers to the ontological definition of subjective experience from the individual's perspective. Consequently, the scale's scores reflect the degree of awareness of the presence or absence of self-perceived life meaning. In terms of psychometric evidence, the test has made three significant contributions: it has concurrent validity with scales of psychopathology and meaning, can distinguish between patients and non-patients, and measures a construct distinct from traditional neurosis.

The work of Crumbaugh and Maholick (1964) was pivotal in the operationalization of the construct proposed by Frankl (1984, 2014), envisioned as a unidimensional psychological construct. According to Frankl, the search for meaning is central to life's construction, and purpose in life serves as the pathway to achieving it. Although the specific meaning may change over time, the need to perceive a purpose in life remains constant throughout the lifespan, underscoring its importance for mental health and well-being. Within Frankl's logotherapy, the meaning of life is considered essential as it constitutes a primary motivation. Its absence can lead to noogenic neurosis, a condition characterized by existential emptiness. This approach proposes various ways to find the meaning of life, which are linked to will, values, and responsibility.

Numerous reviews (Arunjit et al., 2024; AshaRani et al., 2022) have highlighted that the Purpose in Life (PIL) Test by Crumbaugh and Maholick (1964) is among the most frequently utilized instruments to assess the construct of meaning in life. This instrument has been translated into various languages and validated across diverse cultural contexts including North America, Latin America, Europe, Asia, and Africa (Weber et al., 2022), and is useful in clinical settings (Armas Arráez et al., 2018). Reliable indicators of its score validity have been reported (Arunjit et al., 2024; Zhang et al., 2023). Nonetheless, the PIL's factor structure has been subject to criticism and yielded mixed findings. On one side, studies have confirmed its original unidimensional structure (Brunelli et al., 2012; Marsh et al., 1996; Pacak-Vedel et al., 2021; Schulenberg et al., 2010; Simkin et al., 2018; Steger, 2006). Conversely, other research has identified two-factor models explaining the construct, including notable studies from Argentina by Mikulic et al. (2023), from Spain by García-Alandete et al. (2013, 2016), and Martínez et al. (2012), and from China by Zhang et al. (2023), supporting earlier empirical findings (Dufton & Perlman, 1986; McGregor & Little, 1998; Molcar & Stuempfig, 1988; Morgan & Farsides, 2009; Shek, 1988; Walters & Klein, 1980; Waisberg & Starr, 1999). Additionally, three-factor models have been proposed in studies by Gottfried (2016) in Argentina, Martínez Ortiz et al. (2012) in Colombia, Magaña Valladares et al. (2004) in Mexico, Jonsén et al. (2010) in Sweden, and Caycho-Rodríguez et al. (2022) across seven Latin American countries: Argentina, Colombia, Ecuador, El Salvador, Mexico, Paraguay, and Uruguay. A Spanish study even suggested a four-factor structure, with some items loading on dual factors (Noblejas de la Flor, 1994).

Numerous studies have suggested modifications to the number of items in the PIL, resulting in the elimination of certain items and affecting the scale's length. Notably, the four-item version (items 3, 4, 8, and 20 of the original) proposed by Schulenberg and Melton (2010) and Schulenberg et al. (2011) has been scrutinized within an Ibero-American context. For instance, in Argentina, this version's unidimensional structure and robust reliability were confirmed (Weber et al., 2022). Similar validation occurred in Spain, where reliable and valid findings supported a unidimensional structure (Rubio-Belmonte et al., 2022), and in Ecuador (Moreta-Herrera et al., 2023).

These varying factorial structures and versions of the scale can be attributed to the use of diverse methods and techniques aimed at exploring its psychometric traits, the heterogeneity of the samples involved (García-Alandete et al., 2013), and the significant role of culture in shaping individuals' perceptions of life's meaning (Caycho-Rodríguez et al., 2023; Noblejas de la Flor, 2011). The assortment of versions, each with its own structure, enhances our understanding of the PIL's psychometric properties and its adaptability across different contexts (for further details, refer to the background review conducted by Caycho-Rodríguez et al., 2022).

Empirical evidence has demonstrated significant correlations between the sense of life and various health and well-being aspects across diverse demographic groups, including different ages, professions, and sociodemographic backgrounds. Research has consistently shown positive correlations between PIL measures and salutogenic variables across various life stages, including early and later adulthood. These variables include religiosity, positive affect, social participation, role expectations, achievement motivation, life satisfaction, self-regulation, health locus of control, optimism, and personality traits. Notably, negative correlations have been observed with neuroticism, as well as with depression and low life satisfaction (Bhatt et al., 2023; Gallego-Pérez et al., 2007; Ribeiro et al., 2020). Recently, Mei et al. (2021) utilized machine learning techniques to identify the most significant correlates of the PIL. Lower scores were linked to loneliness, advanced age, depressive symptoms, and the harm avoidance personality trait, which is strongly associated with anxiety and is characterized by worry, fear of uncertainty, shyness, and fatigue. Conversely, higher scores correlated with increased social support, social activities, higher education levels, greater income, the absence of cognitive impairment, and active engagement in both social and cognitive activities during mid-adulthood.

There is no definitive evidence of the relationships between gender and age with the sense of life. Some studies suggest differences favoring men (Pinquart, 2002), others favoring women (García-Alandete et al., 2011), and some report no significant differences (Meier & Edwards, 1974; Romero-Ramos et al., 2023). Regarding age, some research points to variations throughout the life cycle (Gottfried, 2016; Noblejas de la Flor, 1994; Romero-Ramos et al., 2021), while other studies find no such differences (García-Alandete et al., 2013).

Specifically concerning the study of meaning in life among women, there is documented evidence of a positive association with breast health behaviors in both Anglo-Saxon and Hispanic populations (Wells & Bush, 2002), and the concept has also been explored among women with breast cancer (Palacios-Espinosa et al., 2015). In samples of older women, high levels of meaning in life and more years of education have been identified as protective factors linked to better cognitive status (Oliveira et al., 2024). A longitudinal study of 26,704 Australian women aged 80 and older demonstrated that meaning in life acts as a protective factor in healthy aging, alongside positive coping and resilience (Woods et al., 2016).

Furthermore, the sense of life and experiences of motherhood have been explored, including during adolescent pregnancy (Hernández & Giraldo, 2021) and among mothers of children with disabilities (Yvana-Yupanqui, 2018). It is noteworthy that in most studies on the meaning of life, women are more frequently represented than men (Caycho-Rodríguez et al., 2022; Moreta-Herrera et al., 2023).

Recently, a study on middle-aged Canadian women demonstrated that the impact of COVID-19 negatively correlated with their sense of life, indicating that some women struggled to cope with the pandemic's emergency. However, those who reported limited socialization and adapted to new routines exhibited higher life meaning levels, suggesting that their sense of life during the pandemic was linked to their ability to adapt or manage the stress caused by the health crisis and the associated uncertainties that could affect women's agency (Newton et al., 2023). Another study involving Polish women highlighted the strong influence of gratitude on life meaning during the COVID-19 crisis, noting that the fear of COVID-19 infection was greater among women with lower life meaning levels, suggesting that women experiencing a crisis may see their life meaning adversely affected (Lasota, 2023). In the Ibero-American context, a study with elderly Spanish women in nursing homes revealed that a reminiscence-based psychological intervention fostered psychological strengths such as sense of life, coherence, and coping during COVID-19 (Sales et al., 2022).

This study will delve deeper into the sense of life among women in Montevideo, Uruguay, grounded on empirical evidence that establishes it as a protective factor in development and as a means to contribute to the conceptualization of women's mental health. This conceptualization is responsive to various evolutionary transitions, which should inform the formulation of public health policies (Bru,

2022; Farré, 2008). Some scholars assert that structural weaknesses in the economic-political system and sociodemographic characteristics linked to inequality can adversely affect women's sense of life (Pinquart, 2002). The focus on women stems from the extensive knowledge regarding their life meaning experiences, which is positively correlated with enhanced cognitive and physical health. This approach aims to foster a more inclusive conceptualization of mental health public policies, addressing the specific evolutionary transitions that women encounter and emphasizing the importance of their well-being. Furthermore, this study seeks to contribute to the Sustainable Development Goals (SDGs), specifically Goal 3, which pertains to Health and Well-being, and Goal 5, which focuses on Gender Equality (United Nations, 2015). The sense of life is identified as a critical protective factor against depression and noogenic neurosis, and its exploration could lead to more effective public policies tailored to meet women's unique needs.

Consequently, the objectives of this study are: a) to examine the factorial structure and reliability of Crumbaugh and Maholick's (1964) PIL scale, and b) to characterize the sense of life among women from Montevideo, taking into account differences based on the psychosocial normative crises outlined by Erikson (1985). The participants will be grouped according to the developmental stages associated with these crises. The hypothesis posits that a factorial structure comprising two or more factors will be identified in the sense of life as assessed by the PIL scale. Furthermore, significant variations in the sense of life are expected across different age groups, corresponding to Erikson's normative psychosocial crises.

Method

Design

The study design is categorized as instrumental research, aimed at examining the factorial structure and reliability of the scale. Additionally, it incorporates a descriptive empirical approach utilizing a cross-sectional associative strategy (Ato et al., 2013).

Participants

The total sample comprised 950 female residents of Montevideo, ranging from 18 to 82 years old ($M = 45.99$; $SD = 13.34$), selected through non-probabilistic sampling. To facilitate exploratory and confirmatory factor analyses, two stratified random subsamples were derived from the original sample. Stratification was based on age and academic achievement. The first subsample, used for exploratory factor analysis, included 475 participants aged 18 to 80 years ($M = 45.99$; $SD = 13.3$). The second subsample, used for confirmatory factor analysis, included 475 participants aged 18 to 82 years ($M = 45.99$; $SD = 13.39$). Refer to Table 1.

Table 1

Amounts and percentages for educational level and stage according to Erickson in the sample and subsamples

Variable	Values	Complete sample		Subsample 1		Subsample 2	
		n	%	n	%	n	%
Educational level	Basic Cycle	7	0.7%	3	0.6%	4	0.8%
	Basic cycle not completed	1	0.1%	0	0.0%	1	0.2%
	High school education not completed	33	3.5%	15	3.2%	18	3.8%
	Higher Secondary Education	59	6.2%	33	6.9%	26	5.5%
	Completed Elementary School	4	0.4%	1	0.2%	3	0.6%
	University Degree Not Completed	194	20.4%	96	20.2%	98	20.6%
	College or more	652	68.6%	327	68.8%	325	68.4%
	Total	950	100%	475	100%	475	100%
Erikson Stage	Creativity vs. stagnation	536	56.4%	268	56.4%	268	56.4%
	Identity vs. role confusion	60	6.3%	30	6.3%	30	6.3%
	Integrity vs. hopelessness	128	13.5%	64	13.5%	64	13.5%
	Privacy vs Isolation	226	23.8%	113	23.8%	113	23.8%
	Total	950	100%	475	100%	475	100%

Instrument

The Spanish version by Noblejas de la Flor (1994) of Crumbaugh and Maholick's (1964) Purpose in Life (PIL) Test was employed, specifically Part A, which quantitatively measures the construct. This scale consists of 20 Likert items, with response options ranging from 1 to 7, where the number 4 represents a neutral position. Noblejas de la Flor's version (1994) reported a four-factor structure: perception of meaning, experience of meaning, goals and tasks, and the destiny-freedom dialectic. It is noteworthy that some items loaded on more than one factor, and reliability data for the scores were not reported.

Procedure

Data collection was conducted using an online form that included the PIL scale, a sociodemographic questionnaire, and informed consent detailing the study's objectives and characteristics. The questionnaire was distributed via social networks and women's associations, enhancing the study's outreach and ensuring access to a diverse population. The inclusion criteria for participants were to be female, aged 18 years or older, and reside in Montevideo. The study adhered to APA guidelines and the Helsinki Declaration on research involving human subjects, receiving approval from the University of Montevideo's ethics committee (CE2024/14).

Data Analysis

Data were processed using the open statistical programs JASP (0.18.3) and Jamovi. Exploratory analyses were conducted on the database to characterize the sample and items. Given the multiple contradictory findings regarding the scale's factorial structure, it was necessary to perform an exploratory factor analysis (EFA) with subsample 1 to determine the internal structure. To corroborate the factors identified, a confirmatory factor analysis (CFA) was conducted with subsample 2. Additionally, two further CFAs were carried out with this latter sample using the original Crumbaugh & Maholick (1964) model and the three-factor model reported in Argentina (Gottfried, 2016) as a further confirmatory strategy to avoid bias from the EFA overfitting.

To ascertain the internal structure of the PIL scale, EFA was performed using the Weighted Least Squares (WLS) method with PROMAX oblique rotation. This method was chosen as it accommodates ordinal data and assumes correlations between factors, consistent with the theoretical nature of the construct (Ferrando & Lorenzo-Seva, 2018). The analysis was based on the polychoric correlation matrix, given that item responses were collected on a 7-point Likert scale, typifying the data as ordinal and recommending this matrix type for more accurate estimations (Jöreskog & Sörbom, 1996). This procedure ensures that the correlations accurately reflect the underlying nature of the latent variables (Lloret-Segura et al., 2014). The number of factors extracted was determined by eigenvalue criteria greater than 1, parallel analysis, and the theoretical interpretation of the obtained solutions.

The identified factorial solution was then applied in the CFA, which also used the WLSMV estimation method, suitable for handling ordinal data and non-normal distributions (Muthén & Muthén, 2017). Fit indicators included the chi-square test and its statistic (χ^2), as well as χ^2/df , root mean square error of approximation (RMSEA), standardized root mean square residual (SRMR), comparative fit index (CFI), and Tucker-Lewis index (TLI). Reference values that classified these indicators as acceptable and optimal are presented in Table 6 (Byrne, 1998; Hu & Bentler, 1999; Kline, 2016; Steiger, 2007; Tabachnick & Fidell, 2019). Reliability was assessed using McDonald's omega coefficient, with values greater than .70 considered adequate and values above .80 considered optimal (Hair et al., 2011). Mean Variance Extracted (MVE) was calculated as evidence of convergent internal validity (Moral de la Rubia, 2019). Descriptive statistics were used to characterize the sample based on the confirmed factors of the scale. For result analysis, descriptive statistics were employed, and a non-parametric ANOVA (Kruskal-Wallis) was used to explore relationships between variables, as no quantitative variables were normally distributed; statistically significant differences were identified at .05.

Results

The PIL items exhibited means ranging from 4.93 to 6.25, with standard deviations between .95 and 1.55, indicating a moderate dispersion of responses and a general trend towards medium-high scores on the scale (Table 2). Regarding skewness, most items displayed negative values, suggesting a slight concentration towards the higher end of the scale. This trend is particularly pronounced in items

associated with emotional or existential issues, such as item 16 ("Regarding suicide"), which showed a skewness of -2.06 and a kurtosis of 3.92, reflecting a higher clustering of responses at the upper extremes of the scale.

From the exploratory factor analysis (EFA) conducted, two factors were extracted (Table 3), explaining 25% and 24% of the total variance, respectively, cumulatively accounting for 50% of the test's total variance. This was supported by a Kaiser-Meyer-Olkin (KMO) index of .88 and Bartlett's test of sphericity ($\chi^2(190) = 4497.68$; $p < .001$). Both factors demonstrated adequate internal consistency, with Factor 1 and Factor 2 both having an omega coefficient (ω) of .88.

Table 2

Descriptive statistics of the items used for the AFE

Item	Media	Standard deviation	Asymmetry	Kurtosis
1	5.01	0.96	-.39	1.11
2	5.02	1.22	-.66	1.08
3	5.84	1.21	-.90	.22
4	5.87	1.15	-.77	-.18
5	5.17	1.33	-.50	.13
6	5.75	1.20	-.97	1.02
7	5.95	1.19	-1.32	2.20
8	5.26	0.95	-.14	-.20
9	5.75	1.03	-.56	.03
10	6.02	1.08	-.87	.21
11	6.23	1.16	-1.66	2.71
12	5.05	1.29	-.58	.57
13	6.22	0.95	-1.28	1.43
14	5.27	1.25	-.43	-.07
15	4.93	1.55	-.63	-.07
16	6.25	1.29	-2.06	3.92
17	6.09	1.12	-1.27	1.25
18	5.72	1.10	-.88	1.21
19	5.35	1.16	-.63	.57
20	5.76	1.11	-.68	-.04

Table 3

Component matrix

	Factor 1	Factor 2
Item 3	.79	
item 5	.79	
item 4	.78	
item 20	.67	
item 2	.63	
item 17	.59	
item 1	.50	
item 15	.47	
item 7	.40	
item 12		.72
item 11		.65
item 18		.63
item 16		.58
item 6		.58
item 9		.58
item 10		.52
item 8		.49
item 14		.49
item 13		.47
item 19		.47
Ω	.88	.88

The analysis of the results was further refined by assessing the internal consistency upon removing each item from its respective factor, as detailed in Tables 4 and 5. Additionally, the correlation between the factors was determined to be .69.

Table 4

Loading factor 1 if an item is removed

Item	McDonald's ω
1. In life I have:	.85
5. Every day is:	.85
4. My personal existence is:	.85
20. I have discovered:	.85
2. Life seems to me:	.86
17. I consider my ability to find meaning, purpose in life to be:	.86
1. I usually meet:	.86
15. With respect to death, I am:	.88
7. After retiring:	.88

Table 5

Factor 2 loading if an item is removed

Item	McDonald's ω
12. As I see it in relation to my life, the world:	.86
11. Thinking about my own life:	.86
18. My life is:	.87
16. Regarding suicide:	.88
6. If I could choose:	.86
9. My life is:	.86
10. If I were to die today, it would seem to me that my life has been:	.86
8. In achieving my life goals:	.87
14. As to the freedom available to him to make his own choices, I believe that man is:	.87
13. I consider myself:	.88
19. Facing my daily tasks involves:	.86

Table 6 displays the results of the CFA, which evaluated the factors identified in the exploratory analysis and compared them with the one-factor model proposed by Crumbaugh and Maholick (1964) and the three-factor model by Gottfried (2016), both applied to a sample from the Argentine population. The results show optimal indicators that support the two-factor correlated structure, evidenced by both incremental and absolute fit indices, as well as the χ^2/df ratio. Additionally, the Mean Variance Extracted (MVE) was assessed as a measure of convergent validity for this two-factor model; though the value for the second factor did not meet the .50 threshold, it was remarkably close to ideal. The high reliability of the scores, evaluated using McDonald's omega coefficient, further corroborates the robustness of the analyzed model. Beyond these findings, reporting an overall score is feasible given that the two-factor model accounts for 70% of the total variance, with 50% attributed to the first factor and 20% to the second, suggesting both factors are significant and relevant.

Table 6

Confirmatory factor analysis of the PIL

Indicators	Acceptable	Optimum	PIL in this study	1 factor of Crumbaugh & Maholick (1964)	3 Gottfried (2016) factors
χ^2	NA	NA	475.92	565.00	486.00
Df	NA	NA	169	170	167
χ^2/df	< 5.00	< 3.00	2.81	3.32	2.91
p-value χ^2	> .01	> .05	< .001	< .001	< .001
RMSEA	< .08	< .05	.05	.07	.06
LCI RMSEA	< .08	< .08	.05	.06	.06
LCS RMSEA	> .08	< .08	.07	.08	.07
SRMR	< .08	< .05	.06	.06	.06
IFC	> .90	> .95	.99	.99	.99
TLI	> .90	> .95	.99	.99	.99
GFI	> .89	> .93	.99	.99	.99
Omega Factor 1	> .70	> .80	.84	.93	.87
Omega Factor 2	> .70	> .80	.86	-	.84
Omega Factor 3	> .70	> .80	-	-	.55
VME factor 1	$\geq$.50	> .70	.50	.45	.46
VME factor 2	$\geq$.50	> .70	.44	-	.59
VME factor 3	$\geq$.50	> .70	-	-	.39

Table 7 presents the mean values for the total score and each factor. The total sense of life score for each of the normative crisis groups is also calculated (Table 8), showing that the score increases in line with the normative crisis, that is, as age advances. Analyses using the Kruskal-Wallis H-test were conducted to determine if there were differences in the total score and both factors based on educational level and Erikson's life stages. No statistically significant differences were found for the first condition. However, the test revealed the impact of normative crises on the sense of life, specifically on the total sense of life score ($H = 62.2$ (3), $p < .001$), on Factor 1 related to the perception of sense and general meaning in life ($H = 45.17$ (3), $p < .001$), and on Factor 2 concerning satisfaction and control over one's own life ($H = 65.43$ (3), $p < .001$). Post-hoc tests using Bonferroni correction indicated differences between all groups in the general factor, with the most significant difference observed between Identity vs. Role Confusion and Integrity vs. Despair (Table 9).

Table 7

Descriptive for factors and total score

	PIL	Factor 1	Factor 2
<i>n</i>	950	950	950
Median	116	51	65
Mean	113.31	50.09	63.22
<i>SD</i>	14.49	7.35	8.16
IQR	19	11	10
Shapiro-Wilk P-value	< .001	< .001	< .001

Note. When non-normal distributions are presented, the median is presented and IQR as complementary measures.

Table 8

Descriptive: General factor sense of life

Stage according to Erikson	N	Mean	SD	SE	Coefficient of Variation
Creativity vs. stagnation	536	114.38	13.79	.60	.12
Identity vs. role confusion	60	100.80	16.05	2.07	.16
Integrity vs. hopelessness	128	118.57	12.29	1.09	.10
Privacy vs Isolation	226	111.11	14.69	.98	.13

Table 9

Post-hoc comparisons: Erikson stage

		Mean Difference	SE	t	p _{Bonf}
Creativity vs. stagnation	Identity vs. role confusion	13.58	1.90	7.14	<.001
	Integrity vs. hopelessness	-4.19	1.37	-3.05	.01
	Privacy vs Isolation	3.27	1.11	2.95	.02
Identity vs. role confusion	Integrity vs. hopelessness	-17.77	2.19	-8.13	< .001
	Privacy vs Isolation	-10.31	2.03	-5.08	< .001
Integrity vs. hopelessness	Privacy vs Isolation	7.46	1.55	4.83	< .001

Discussion

One of the objectives of this study was to examine the factor structure and reliability of the PIL scale. The findings diverge from the original study by Crumbaugh & Maholick (1964) and subsequent research supporting a unidimensional model (Brunelli et al., 2012; Marsh et al., 1996; Pacak-Vedel et al., 2021; Schulenberg et al., 2010; Simkin et al., 2018; Steger, 2006). Instead, the results support a two-factor structure, which is correlated, thus confirming the hypothesis that a multifactorial approach is applicable in analyzing life's purpose. This discovery is in line with previous research that also identified a two-factor model to elucidate this concept (Dufton & Perlman, 1986; García-Alandete et al., 2013; García-Alandete et al., 2016; Martínez et al., 2012; McGregor & Little, 1998; Mikulic et al., 2023; Molcar & Stuempfig, 1988; Morgan & Farsides, 2009; Shek, 1988; Waisberg & Starr, 1999; Walters & Klein, 1980; Zhang et al., 2023). Although the present study's findings refute a unidimensional structure, they did not provide evidence for a model of more than two factors, unlike studies suggesting three factors (Caycho-Rodríguez et al., 2022; Gottfried, 2016; Jonsén et al., 2010; Magaña Valladares et al., 2004; Martínez Ortiz et al., 2012) or even four (Noblejas de la Flor, 1994).

The factors identified in this study align closely with those reported by Molcar and Stuempfig (1988), specifically Factor 1 termed 'general meaning in life' comprising items 3, 4, 7, 17, and 20, and Factor 2 named 'exciting daily-life' including items 10, 12, 14, 18, and 19. This structural configuration significantly influences our understanding of life's meaning with an emphasis on satisfaction with life's goals and general meaning, combined with the enthusiasm experienced in daily activities. Additionally, there is a high theoretical similarity with García-Alandete et al. (2013), although their scale comprised only 10 items, they also observed two correlated factors: Factor 1 aligning with 'satisfaction and sense of life' and Factor 2 termed 'goals and purposes in life.'

Furthermore, the item groupings forming the factors in this study show a strong concurrence with the framework proposed by Magaña Valladares et al. (2004). Their factor named 'perception of meaning and significance of life' aligns with items 1-5, 7, 17, and 20 that was categorized under Factor 1, while their 'satisfaction with one's own life' factor encompasses items 6, 11, 12, 16, and 18, which correspond to Factor 2 of this study. Their third factor, 'freedom and control of life,' associated with themes of death and suicide, includes exclusively items 15 and 16, wherein the former is grouped under the first factor of this study and the latter under the second factor.

Drawing from the insights provided by Molcar and Stuempfig (1988), García-Alandete et al. (2013), and Magaña Valladares et al. (2004), Factor 1 was designated as 'perception of meaning and general significance in life' and Factor 2 as 'satisfaction and control of one's own life.' These categories resonate with findings from other studies that reported two factors related to experiencing meaning and enthusiasm, and goals/purposes (Martínez et al., 2012; Mikulic et al., 2023; Zhang et al., 2023).

The results suggest that the two-factor structure, namely 1) 'Perception of meaning and general significance in life' and 2) 'Satisfaction and control of one's own life', is valid and relevant. Theoretically, this structure may reflect different dimensions of the sense of life, such as those related to perceived meaning and reflections on life control, which might not have been adequately captured in previous models. The high correlation between the factors indicates that, although distinct, they are interrelated, consistent with the theory that the sense of life is a multidimensional construct, as supported by the referenced studies. Additionally, the specific characteristics of the sample, focused on women, as well as the cultural and demographic context, may influence how these aspects of the sense of life are perceived and measured, justifying the new factorial solution. This perspective not only enriches the understanding of the sense of life but also provides a more robust framework for future research and practical applications in diverse populations.

The reliability of the scale has been confirmed as adequate, a finding corroborated by various instrumental studies that evaluated it in Spanish language versions (Caycho-Rodríguez et al., 2022; García-Alandete et al., 2013; Martínez Ortiz et al., 2012), as well as in global assessments (Arunjit et al., 2024; Zhang et al., 2023). Specifically, it compares favorably with the results from validations conducted in the Argentine context that included the original 20 items, which reported Cronbach's Alpha values starting from .80 (Gottfried, 2016; Simkin et al., 2018).

The McDonald omega coefficient was utilized in this study due to its methodological advantages over Cronbach's alpha for assessing internal consistency. Although alpha is widely used, its calculation relies on strict assumptions, such as the equality of factor weights and measurement errors among items, conditions that are often not met in practice. This can lead to biased estimates of reliability when items have varied factor loadings. Conversely, McDonald's omega provides a more accurate measure of internal consistency by considering the actual item weights derived from a factor model. Additionally, omega is particularly suitable for multidimensional scales, as it can be adjusted to calculate the reliability of each factor separately, which is pertinent in this study where two factors were identified in the assessed scale. For these reasons, the omega coefficient is considered a methodologically more robust choice, aligned with the characteristics of the scale analyzed.

However, this is the first study conducted in Uruguay using this scale with women aged 18 to 82 years, where the examination of the scale's factorial structure supports the findings with both empirical and theoretical relevance to the construct. At the overall score level, the sense of life in women in this sample is positioned at a medium level, shaped by the mean values of Factor 1 'Perception of meaning and general significance in life' and Factor 2 'Satisfaction and control of one's own life'. This evidence aligns with findings reported by other studies in the general population, such as those in Argentina (Gottfried, 2016), Panama (Romero-Ramos et al., 2021), and Spain (Noblejas de la Flor, 1994, 2011). Additionally, the results confirm findings that link evolutionary stages with the sense of life (Gottfried, 2016; Noblejas de la Flor, 1994; Romero-Ramos et al., 2021). It can be inferred that the sense of life is shaped by life events, crises, sociocultural influences, and expectations of each normative life cycle stage (Erikson, 1985), which supports the hypothesis of finding significant differences in the sense of life across different age groups.

Among the theoretical implications, the grouping of items into two factors that address meaning and purpose — namely, the perception of meaning and purpose alongside the perception of control over one's life — aligns with Frankl's (1984, 2014) proposition. Frankl noted that individuals who perceive a high level of transcendence in their actions are more likely to endure extreme conditions. This concept aligns with scientific literature that recognizes the sense of life as a protective factor in general populations (Bhatt et al., 2023; Gallego-Perez et al., 2007; Lasota, 2023; Mei et al., 2021; Ribeiro et al., 2020) and particularly in the mental and physical health of women (Aguilar et al., 2017; Hernández & Giraldo, 2021; Newton et al., 2023; Oliveira et al., 2024; Palacios-Espinosa et al., 2015; Sales et al., 2022; Wells & Bush, 2002; Woods et al., 2016). Multidimensional models of psychological well-being further emphasize the role of life's meaning as a protective factor (van Dierendonck & Lam, 2023).

Practically, this study underscores the value of having a valid and reliable scale for measuring this construct among women in Montevideo. Echoing Weber et al. (2022), this tool is pivotal for deepening research into the meaning of life and mental health in Spanish-speaking populations, which are often underrepresented in research. Accordingly, measurements obtained from this scale can inform public health and educational policy-making, fostering psychological interventions designed to create reflective and self-aware environments. These interventions could help individuals recognize factors that contribute to establishing or enhancing life's meaning, and promote well-being, mental health, and the reduction of risk factors like anxiety, depression, or loneliness, which may lead to existential crises. In Uruguay, the pressing issue of high suicide rates among women, which peaked in 2023, calls for urgent research into protective factors. Reliable and valid tools are essential for interventions in primary psychological care settings (Machado et al., 2021). Recently, the Ministry of Public Health (2024) reported a modest decline in the general population's suicide rate, attributing this to targeted suicide prevention strategies and enhanced mental health care.

This study's limitations include non-probabilistic sampling, which may restrict the generalization of results, and the absence of other psychometric measures for assessing relationships with salutogenic or psychological distress variables, which would have provided broader evidence of convergent and divergent validity. Future research directions must consider more extensive studies that include the male population, employ probabilistic sampling across various Uruguayan regions, and incorporate sociodemographic data such as income level, marital status, and type of employment. Future studies should also continue to validate the factorial structure most suitable for the local population and explore the psychometric performance of the shortened four-item scale proposed by Schulenberg and Melton (2010), specifically items 3, 4, 8, and 20, within the Uruguayan context.

Conclusions

It is concluded that the PIL scale by Crumbaugh and Maholick (1964) exhibits a two-factor structure, namely: 1) 'Perception of meaning and general significance in life' and 2) 'Satisfaction and control of one's own life,' with the scores demonstrating adequate reliability in a sample of women from Montevideo. This scale is considered a valid and reliable tool for measuring the construct in this context. Furthermore, the levels of meaning in life are found to be satisfactory and show significant increases with the evolutionary stage, specifically in relation to Erikson's normative crises.

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