



Spanish adaptation of the Personal Meaning Profile-Brief: Meaning in life, psychological well-being, and distress



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Abstract

Background/Objective: This study aimed to adapt the Personal Meaning Profile-Brief (PMP-B) to the Spanish-speaking population and investigate its psychometric properties. The PMP-B is a 21-item instrument that assesses meaning in life through seven sources: relationship, intimacy, achievement, self-acceptance, self-transcendence, fair treatment, and religion.

Method: Participants were 546 Spanish adults comprised of a community sample ($n = 171$) and university students ($n = 375$). The PMP-B, the Ryff's Scales of Psychological Well-Being, and the Depression Anxiety Stress Scale were administered.

Results: The PMP-B showed a bifactor structure with one general factor and seven subfactors. Measurement invariance was found across age, gender, and samples. Internal consistency and test-retest reliability were generally good. Older people showed higher PMP-B scores than younger people. The PMP-B scores, especially relational sources of meaning, were positively associated with psychological well-being and negatively related to psychological distress, mainly to depression.

Conclusions: The validity evidence gathered in this study supports the reliable use of the PMP-B to measure meaning in life. The PMP-B can be a noteworthy contribution to the meaning-centered research.

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PALABRAS CLAVE

Sentido en la vida;
 Personal Meaning
 Profile-Brief;
 Bienestar psicológico;
 Malestar psicológico;
 Estudio instrumental

Adaptación española del Personal Meaning Profile-Brief: sentido en la vida, bienestar y malestar psicológico

Resumen

Antecedentes/Objetivo: El objetivo de este estudio fue adaptar el *Personal Meaning Profile-Brief* (PMP-B) a la población hispanohablante e investigar sus propiedades psicométricas. El PMP-B es un instrumento de 21 ítems que mide el sentido en la vida a través de siete fuentes: relaciones, intimidad, logro, auto-aceptación, auto-transcendencia, trato justo y religión.

Método: Los participantes fueron 546 adultos españoles: una muestra comunitaria ($n = 171$) y estudiantes universitarios ($n = 375$). El PMP-B, las *Ryff's Scales of Psychological Well-Being* y la *Depression Anxiety Stress Scale* fueron administradas.

Resultados: El PMP-B mostró una estructura bifactorial con un factor general y siete subfactores. Se encontró invarianza de medida entre edades, género y muestras. La consistencia interna y la fiabilidad test-retest fueron buenas. Las personas de mayor edad mostraron puntuaciones más altas en el PMP-B que los más jóvenes. Las puntuaciones del PMP-B, especialmente las fuentes de sentido relacionales, se asociaron positivamente con el bienestar psicológico y negativamente con el malestar psicológico, principalmente con depresión.

Conclusiones: La evidencia de validez recogida en este estudio apoya el uso fiable del PMP-B para medir el sentido en la vida. El PMP-B puede suponer una valiosa contribución en la investigación sobre el sentido en la vida.

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Meaning in life (MiL) has been defined as the "sense made of, and significance felt regarding, the nature of one's being and existence" (Steger, Frazier, & Oishi, 2006, p. 81). Reker and Wong (1988) describe it 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" (p. 221). This construct is at the core of human experience and represents a relevant area in clinical and health psychology (Hicks & Routledge, 2013; Wong, 2012). For instance, MiL has been included as one of the main components of psychological well-being (Ryff, 1989), which has a health-protective role in reducing the risk for disease and promoting length of life (Ryff, 2014; Ryff, Heller, Schaefer, van Reekum, & Davidson, 2016). Furthermore, meaning-centered interventions have demonstrated improvements in quality of life and well-being, as well as the reduction of psychological distress (Vos & Vitali, 2018; Vos, 2016).

Because of its clinical relevance, the assessment of MiL has aroused particular interest during the last decades, as evidenced by the ever-increasing number of instruments that measure MiL (Brandstätter, Baumann, Borasio, & Fegg, 2012). Most of the widely used MiL measures focus on the assessment of subjective global meaning, that is, the extent to which one individual perceives their life as meaningful (e.g., the Meaning in Life Questionnaire, MLQ; Steger et al., 2006). However, a subjective global assessment of MiL does not take into account a large part of the meaningfulness phenomenon. To gain a deeper understanding of meaningfulness, we need to know what provides meaning in people's lives, namely the sources of meaning (McDonald, Wong, & Gingras, 2012; Schnell, 2009). Firstly, the findings to date suggest that not all the sources of meaning con-

tribute equally to the sense of meaningfulness (Damásio, Koller, & Schnell, 2013; Schnell, 2011). For example, harmonic relationships and self-transcendence have been found to contribute actively to a sense of fulfillment, whereas tradition, individualism, and challenge seem to have a limited impact on meaningfulness (Damásio et al., 2013; Schnell, 2011). Secondly, some sources of meaning (e.g., intimacy, relatedness, and self-transcendence) have shown stronger associations with positive mental health than others (e.g., religion; Damásio et al., 2013; Demirbaş-Çelik, 2018; Schnell, 2009). Thirdly, having multiple sources of meaning can be protective so that when a meaning domain is compromised, one can still strengthen other sources to sustain MiL (Schnell, 2011). In general, these findings support the multidimensional aspect of MiL (see also Krok, 2018; Zhang, Sang, Chen, Zhu, & Deng, 2018).

To identify the prototypical sources of meaning in the general population, Wong (1998) studied the implicit theories of people about what constitutes a meaningful life. After content analysis of participants' responses and other methodological procedures, the Personal Meaning Profile (PMP; Wong, 1998) was developed. Later, McDonald et al. (2012) created a brief version of this questionnaire, the Personal Meaning Profile-Brief (PMP-B). The PMP assesses MiL through seven major sources: relationship (having friends and being liked and trusted by others), intimacy (mutually satisfying family and intimate relationships), achievement (striving for and attaining significant life goals), self-acceptance (accepting personal limitations and suffering), self-transcendence (contributing to society), fair treatment (perceiving fairness from society and life), and religion (seeking to please God). These sources of meaning have also been identified in different cultures (e.g., Schnell, 2009)

and are closely related to the basic human values found by Schwartz (2017).

Validity evidence of the original PMP has been extensively collected (Jaarsma, Pool, Ranchor, & Sanderman, 2007; McDonald et al., 2012; Testoni et al., 2018). Although its brief version (PMP-B) has been less used, it is more practical for the clinical field, as the few existing questionnaires that assess sources of meaning require a relatively long time to be filled in (e.g., Sources of Meaning and Meaning in Life Questionnaire, SoMe; Schnell, 2009). The PMP-B scores have been positively associated with satisfaction with life, positive affect (Brouzos, Vassilopoulos, & Boumpouli, 2016), psychological well-being (Brouzos et al., 2016; Demirbaş-Çelik, 2018), and negatively associated with depressive symptoms, posttraumatic stress (Krumrei-Mancuso, 2017) and negative affect (Brouzos et al., 2016).

Despite its generalized use in the field, none of the two formats of the PMP had been translated into Spanish. For the first time, we adapted the PMP-B to the Spanish-speaking population. Of note, there are more than 40 MiL measures in English (Brandstätter et al., 2012), but only a handful with validated scores in Spanish. Among them, only the Schedule for Meaning in Life Evaluation (SMiLE; Monforte-Royo, Tomás-Sábado, Villavicencio-Chávez, & Balaguer, 2011) includes sources of meaning. The SMiLE is a respondent-generated instrument aimed to provide an individualized assessment of MiL. One possible limitation of this questionnaire is that many people may not be conscious of their sources of meaning and need additional support to articulate them. Moreover, the SMiLE is focused on the global score, and its format makes it difficult to assess distinct sources of meaning as compared to the PMP-B.

The objective of this study was to investigate the psychometric properties of the Spanish version of the PMP-B (factor structure, measurement invariance, internal consistency, test-retest reliability, and relations with other variables). For that purpose, we recruited a community sample and university students, and tested the following hypotheses:

H1. Older people will show higher PMP-B scores than younger people. Previous studies indicate that MiL increases across the lifespan (Schnell, 2009; Steger, Oishi, & Kashdan, 2009).

H2. The PMP-B scores will be positively related to psychological well-being, particularly with the purpose in life dimension.

H3. The PMP-B scores will be negatively associated with psychological distress, especially with depression (Disabato, Kashdan, Short, & Jarden, 2017; Krumrei-Mancuso, 2017; Steger et al., 2006).

H4. Relational sources of meaning (relationship, intimacy, fair treatment, and self-transcendence) will be the sources that most predict purpose in life, psychological well-being, and distress.

Method

Participants

A total of 546 participants comprised of three groups volunteered in this study. Sample 1 was 171 participants from a Spanish community sample. Sample 2 included 295

Table 1 Sociodemographic characteristics of Sample 1 and Sample 2.

Variables	Sample 1. Community sample	Sample 2. University students
<i>N</i>	171	295
Female (%)	103 (60.23)	193 (65.42)
Mean age (<i>SD</i>)	48.77 (12.99)	22.78 (4.56)
Range	19-78	18-54
<i>Region (%)</i>		
Murcia	105 (61.40)	106 (35.93)
Andalucía	66 (38.60)	80 (27.12)
Almería	66 (38.60)	59 (20.00)
Madrid	–	39 (13.22)
País Vasco	–	20 (6.78)
Valencia	–	16 (5.42)
Others	–	34 (11.53)
<i>Education (%)</i>		
No studies-Primary	42 (24.56)	n/a
Secondary Education	77 (45.03)	n/a
University degree	47 (27.49)	n/a
<i>Academic discipline (%)</i>		
Social Sciences & Law	n/a	132 (44.75)
Health Sciences	n/a	103 (34.92)
Technological Sciences	n/a	26 (8.81)
Sciences	n/a	17 (5.76)
Arts & Humanities	n/a	17 (5.76)
<i>Socioeconomic level (%)</i>		
Low	11 (6.43)	n/a
Medium-low	36 (21.05)	n/a
Medium	91 (53.22)	n/a
Medium-high	14 (8.19)	n/a

Note. n/a = not available.

undergraduate students from different Spanish regions and academic disciplines. Descriptive data of Sample 1 and Sample 2 are presented in Table 1. Sample 3 included 80 psychology students from the University of Almeria, with 82.5 % females, ranging from 19-54 years ($M = 22.67$, $SD = 6.61$), and it was used for the test-retest reliability analysis.

Instruments

The Personal Meaning Profile-Brief (PMP-B; McDonald et al., 2012; original version: Wong, 1998) was translated into Spanish by the authors. This questionnaire measures people's perceptions of meaning in their lives. It contains 21 items (see Appendix 1) arranged in seven subscales that represent sources of meaning: Relationship, Intimacy, Achievement, Self-acceptance, Self-transcendence, Fair treatment, and Religion. Respondents rate each item on a Likert scale ranging from 1 (*not at all*) to 7 (*a great deal*). Higher scores indicate more success in approximating an ideally meaningful life. The PMP-B has previously shown good test-retest reliability (total scale: $r = .73$) and good internal consistencies (ranging from .84 to .95; McDonald et al., 2012). Alphas in our sample ranged between .64 and .91.

The Spanish adaptation (Díaz et al., 2006) of the Ryff's Scales of Psychological Well-Being (SPWB; Ryff, 1989) was implemented. This questionnaire measures well-being with a total of 29 items using 6-point Likert-type scales (from *strongly disagree* to *strongly agree*). The SPWB has six subscales: Self-acceptance, Environmental mastery, Positive relations with others, Personal growth, Purpose in life, and Autonomy. The Spanish version has shown appropriate psychometric parameters (Díaz et al., 2006). Cronbach's alphas both in the community sample and in the university student sample ranged between .55 and .84.

The Spanish version of the Depression Anxiety Stress Scale (DASS-21; Bados, Solanas, & Andrés, 2005; original version by Brown, Chorpita, Korotitsch, & Barlow, 1997) was used. Items of this scale describe negative emotional states experienced during the last week and are rated on a 4-point Likert-type scale ranging from 0 (*did not apply to me at all*) to 3 (*applied to me very much, or most of the time*). It consists of 21 items organized in three subscales: Depression, Anxiety, and Stress. The scores of the total scale represent general psychological distress. The Spanish version has shown satisfactory psychometric properties (Bados et al., 2005). In our sample, Cronbach's alpha values for depression, anxiety, stress, and general psychological distress were .90, .83, .83, and .93, respectively.

Procedure

This was an instrumental, transversal study (Montero & León, 2007). The original PMP-B (McDonald et al., 2012) was translated into Spanish, and then it was independently back-translated to English by three researchers fluent in both languages. No significant discrepancy was found with the original version (see Appendix 1). Convenience sampling was used for the three samples. More precisely, Sample 1 was recruited from the local community using personal contacts. Three researchers administrated the self-reported measures in a paper format, including sociodemographic data, the PMP-B, and the SPWB. Participants completed the questionnaires in private and returned them in a closed envelope. Sample 2 (undergraduate students) participated in an online survey created in Google Forms, including sociodemographic data, the PMP-B, the SPWB, and the DASS-21. We recruited undergraduate students by distributing the URL of the survey on social media platforms. Sample 3 (undergraduate students used for test-retest) was recruited by one of the authors through class announcements among third-year psychology students at the University of Almeria. In private, they completed the second PMP-B one week after the first one, both times in paper. Respondents in all samples participated voluntarily, received no compensation for their collaboration, provided informed consent, and were notified of the anonymity and confidentiality of the study. The study was part of a larger research project approved by the Ethics Committee of the Servicio Andaluz de Salud (SAS).

Data analysis

The Statistical Package for the Social Sciences (SPSS, version 24) was used for descriptive data analysis and to assess relationships between instruments. Coefficients omega and

omega hierarchical were estimated with the Omega software (Watkins, 2013). Prior to data analysis, data were tested for normality and outliers.

Confirmatory factor analyses were carried out using SPSS AMOS (Version 22) to evaluate five hypothesized factor structures of the PMP-B in the entire sample (community and both student samples). As there was a significant departure from multivariate normality (Mardia's statistic was 87.54, and its affiliated critical ratio was 32.91), ML estimation with bootstrapping was used. Bootstrap samples were set at 250, with 95% bias-corrected confidence intervals. Bollen-Stine bootstrap p was used as an alternative to the χ^2 p . As the Bollen-Stine p value is sensitive to sample size (e.g., Enders, 2002), standardized residual covariances were assessed to determine whether the majority was less than two in absolute value (e.g., Jöreskog & Sörbom, 1993). Final decisions for model acceptance/rejection were based on Comparative Fit Index (CFI), Root-Mean-Square Error of Approximation (RMSEA), and Standardized Root-Mean-Square Residual (SRMR).

Measurement invariance was tested across samples (community participants and undergraduate students), age groups, and gender. For age comparisons, young (18-34) and middle-older (35+) adults were compared in order to avoid large imbalances in group sizes (see Chen, 2007). Successively more restrictive models of invariance (configural, metric, scalar, and strict levels) were evaluated by CFI, RMSEA, and SRMR differences between models instead of χ^2 , as it is sensitive to sample size and non-normality (Chen, 2007).

In order to analyze test-retest reliability in Sample 3, the intraclass correlation coefficient (ICC) was assessed. Spearman's correlation coefficients were calculated between the PMP-B subscales and between the PMP-B and other measures. Finally, regression analyses were used to evaluate how sources of meaning predict psychological well-being and psychological distress.

Results

Confirmatory Factor Analysis (CFA)

The unifactorial model with all items loading on only one factor (Bollen-Stine bootstrap $p = .004$, $\chi^2 = 3,168.21$, $df = 189$, $p < .001$, CFI = .424, RMSEA = .170 [90% CI 1.65, 1.75], SRMR = .131), the hierarchical model with seven factors and one higher order factor (Bollen-Stine bootstrap $p = .004$, $\chi^2 = 854.45$, $df = 182$, $p < .001$, CFI = .870, RMSEA = .082 [90% CI .077, .088], SRMR = .080), and the model with seven correlated factors (Bollen-Stine bootstrap $p = .004$, $\chi^2 = 750.93$, $df = 168$, $p < .001$, CFI = .887, RMSEA = .080 [90% CI .74, .86], SRMR = .068) showed inadequate fit to the data. The bifactor model with seven unique factors and a general factor was identified but showed a Heywood case. The improper solution was handled by constraining the error variance estimate of Item 15 to zero as suggested by several researchers (e.g., Chen, Bollen, Paxton, Curran, & Kirby, 2001). With this modification, the model showed an acceptable fit to the data (Bollen-Stine bootstrap $p = .004$, $\chi^2 = 653.80$, $df = 169$, $p < .001$, CFI = .906, RMSEA = .073 [90% CI .67, .78], SRMR = .064). Bollen-Stine

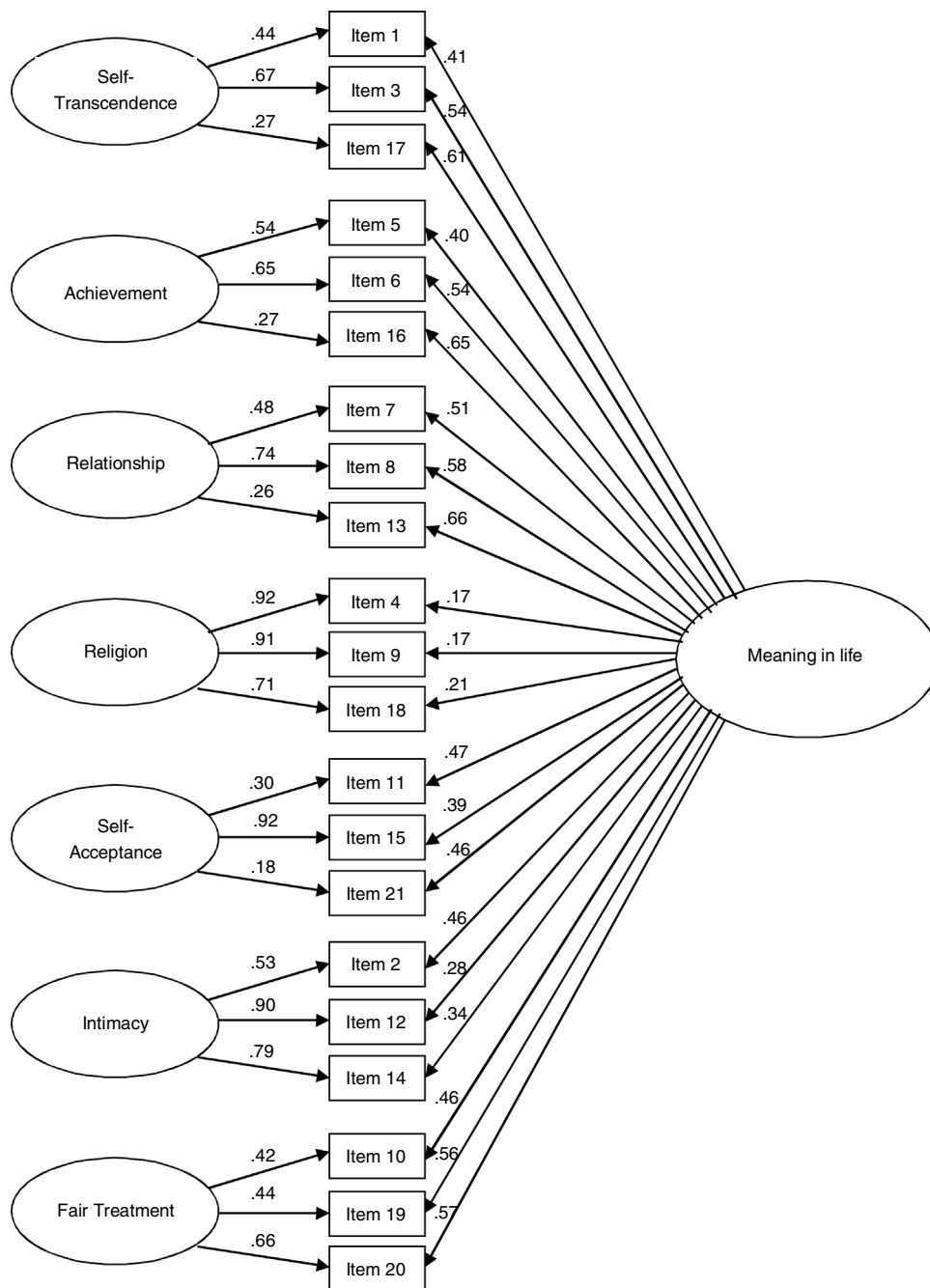


Figure 1 Standardized solution for the bifactor model of the PMP-B in the overall sample. Error is not shown but it was specified for all variables. Error variance estimate was set to zero for Item 15. Error covariances were not permitted. ($N = 546$).

p suggested a potentially poor fit, but the majority of the standardized residual covariances (92%) did not exceed two in absolute value, thus the bifactor model was accepted (Figure 1).

Measurement invariance

Configural, metric, and scalar invariance was obtained in all three multiple-group analyses, as shown by acceptable CFI, RMSEA, and SRMR differences and the low percentage of high

standardized residual covariances between the successively more restrictive models (Table 2). Strict levels of invariance were not obtained in case of age and sample.

Internal consistency

Cronbach’s alphas for the PMP-B (.86) and for all the subscales (ranging between .62 and .89) were deemed to be acceptable. Coefficients omega showed good consistency for all subscales (ranging from .75 to .90). Omega for the PMP-

Table 2 Goodness-of-fit statistics for the multi-group invariance testing.

Model	Comparison	χ^2	<i>df</i>	$\Delta\chi^2$	Δdf	<i>p</i> for $\Delta\chi^2$	RMSEA	Δ RMSEA	CFI	Δ CFI	SRMR	Δ SRMR
Sample: community(<i>n</i> = 171), student (<i>n</i> = 375)												
1. Unconstrained	–	828.67	338	–	–	–	.052 [CI .047, .056]	–	.906	–	.085	–
2. Measurement weights	1	894.58	372	65.91	34	.001	.051 [CI .047, .055]	.001	.899	.007	.097	.012
3. Structural covariances	2	921.14	380	26.56	8	.000	.051 [CI .047, .055]	.000	.896	.003	.102	.005
4. Measurement residuals	3	1,015.60	400	94.46	20	< .001	.053 [CI .049, .057]	.002	.882	.014	.104	.002
Age: 18-34 (<i>n</i> = 390), 35+ (<i>n</i> = 153)												
5. Unconstrained	–	838.75	340	–	–	–	.052 [CI .048, .057]	–	.904	–	.056	–
6. Measurement weights	5	892.73	373	54.02		.012	.051 [CI .046, .055]	.001	.900	.004	.061	.005
7. Structural covariances	6	915.21	381	22.48		.004	.051 [CI .047, .057]	.000	.897	.003	.062	.001
8. Measurement residuals	7	1,031.42	401	116.22		< .001	.054 [CI .050, .058]	.003	.878	.019	.063	.001
Gender: male (<i>n</i> = 184), female (<i>n</i> = 362)												
9. Unconstrained	–	850.96	338	–	–	–	.053 [CI .048, .057]	–	.903	–	.078	–
10. Measurement weights	9	923.22	372	72.24	34	< .001	.052 [CI .048, .056]	.001	.896	.007	.089	.012
11. Structural covariances	10	931.92	380	8.70	8	.369	.052 [CI .047, .056]	.000	.896	.000	.090	.001
12. Measurement residuals	11	985.25	400	53.33	20	< .001	.052 [CI .048, .056]	.000	.889	.006	.092	.002

Note: Δ refers to change in the respective statistic.

Table 3 Descriptive statistics of the PMP-B.

		Self-transcendence	Achievement	Relationship	Religion	Self-acceptance	Intimacy	Fair treatment	PMP-B Total
Total sample (<i>N</i> = 546)	<i>M</i> (<i>SD</i>)	13.39 (3.67)	14.10 (3.87)	15.36 (3.97)	6.56 (4.81)	13.43 (3.65)	14.20 (5.90)	13.29 (3.63)	90.32 (18.11)
	α	.72	.75	.79	.89	.62	.85	.77	.86
	ω	.75	.78	.82	.90	.72	.87	.78	.93
	ω_h	.33	.36	.34	.86	.34	.71	.37	.76
	Skewness (<i>SE</i>)	- 0.37 (0.19)	- 0.31 (0.11)	- 0.70 (0.11)	1.37 (0.11)	- 0.11(0.11)	- 0.40 (0.11)	- 0.19 (0.11)	- 0.36 (0.11)
	Kurtosis (<i>SE</i>)	- 0.27 (0.21)	- 0.48 (0.21)	0.03 (0.21)	0.99 (0.21)	- 0.42 (0.21)	-1.23 (0.21)	- 0.29 (0.21)	0.33 (0.21)
Subsamples									
1: Community (<i>n</i> = 171)	<i>M</i> (<i>SD</i>)	12.66 (4.49)	13.20 (3.90)	15.46 (3.56)	8.13 (5.31)	14.19 (3.47)	16.20 (5.15)	13.45 (3.61)	93.29 (16.81)
2: Student (<i>n</i> = 295)	<i>M</i> (<i>SD</i>)	13.81 (3.86)	14.44 (4.02)	15.26 (4.32)	6.17 (4.61)	12.97 (3.87)	12.86 (6.17)	13.29 (3.82)	88.81 (19.71)
3: Student (<i>n</i> = 80)	<i>M</i> (<i>SD</i>)	13.39 (3.12)	14.73 (2.78)	15.49 (3.46)	4.64 (3.17)	13.49 (2.84)	14.86 (5.02)	12.99 (2.87)	89.57 (13.50)
Age									
18-34 (<i>n</i> = 390)	<i>M</i> (<i>SD</i>)	13.58 (3.72)	14.41 (3.80)	15.33 (4.06)	5.72 (4.29)	13.04 (3.60)	13.42 (6.02)	13.26 (3.61)	88.75 (17.89)
35+ (<i>n</i> = 153)	<i>M</i> (<i>SD</i>)	12.87 (3.53)	13.24 (3.20)	15.42 (3.80)	8.77 (3.39)	14.45 (3.60)	16.11 (5.13)	13.37 (3.66)	94.22 (18.30)
Gender									
Male (<i>n</i> = 184)	<i>M</i> (<i>SD</i>)	13.31 (3.42)	14.77 (3.54)	15.31 (3.92)	6.73 (4.76)	13.92 (3.81)	13.90 (6.01)	13.66 (3.59)	91.61 (18.01)
Female (<i>n</i> = 362)	<i>M</i> (<i>SD</i>)	13.43 (3.80)	13.75 (3.98)	15.39 (4.00)	6.47 (4.84)	13.18 (3.54)	14.35 (5.84)	13.11 (3.64)	89.67 (18.16)

Table 4 Correlations of the subscales of the PMP-B in the entire sample ($N = 546$).

Measure	Self-transcendence	Achievement	Relationship	Religion	Self-acceptance	Intimacy	Fair treatment
Achievement	.58***						
Relationship	.41***	.39***					
Religion	.16***	.06	.05				
Self-acceptance	.30***	.33***	.30***	.16***			
Intimacy	.12*	.17***	.32***	.04	.25***		
Fair treatment	.35***	.33***	.43***	.10*	.38***	.19***	
PMP Total	.63***	.62***	.65***	.38***	.61***	.57***	.61***

* $p < .050$; ** $p < .001$; *** $p < .0001$. Two-tailed.

Table 5 Correlations between the PMP-B and other measures.

Measure	Self-transcendence	Achievement	Relationship	Religion	Self-acceptance	Intimacy	Fair treatment	PMP-B Total
Sample 1, community ($n = 171$)								
SPWB-Self-Accept.	.25**	.35***	.32***	.09	.27***	.35***	.44***	.49***
SPWB-Positive Rel.	.13	.13	.54***	-.10	.16*	.17*	.29***	.26**
SPWB-Autonomy	-.07	.18*	.03	-.13	.02	.10	-.02	.00
SPWB-Envir. Mastery	.18*	.23**	.21**	.02	.28***	.28***	.36***	.33***
SPWB Purpose in Life	.38***	.43***	.33***	.22**	.26***	.27***	.36***	.51***
SPWB-Personal Gr.	.32***	.33***	.27***	.14	.23**	.18*	.20**	.38***
SPWB-Total	.26***	.35***	.39***	.03	.26**	.28***	.35***	.42***
Sample 2, students ($n = 295$)								
DASS-Depression	-.27***	-.35***	-.27***	-.03	-.20***	-.23***	-.26***	-.36***
DASS-Anxiety	-.04	-.15**	-.08	-.02	-.16**	-.06	-.16**	-.15**
DASS-Stress	-.01	-.02	-.08	-.03	-.09	-.02	-.16**	-.08
DASS-Total	-.14*	-.22***	-.18**	-.04	-.18**	-.13*	-.24***	-.25***
SPWB-Self Accept.	.48***	.51***	.45***	.08	.36***	.30***	.44***	.58***
SPWB-Positive Rel.	.27***	.19**	.59***	-.12*	.14*	.32***	.28***	.37***
SPWB-Autonomy	.19**	.29***	.12*	-.00	.07	.08	.09	.19**
SPWB -Env. Mastery	.35*	.43***	.30***	-.00	.27***	.36***	.31***	.45***
SPWB-Purpose in Life	.46***	.54***	.34***	.08	.37***	.25***	.36***	.52***
SPWB-Personal G.	.40***	.45***	.34***	.00	.27***	.20***	.21***	.40***
SPWB-Total	.50***	.56***	.49***	.00	.33***	.33***	.39***	.57***

* $p < .050$; ** $p < .001$; *** $p < .0001$. Two-tailed.

B total was excellent (.93). Omega hierarchical was .76 for the PMP-B total, showing that the common factor explains a large percentage of the total score variance. Accordingly, omega hierarchical was low in some of the subscales (ranging from .34 to .86; Table 3).

Except for Religion that did not show correlations with Achievement, Relationship, and Intimacy, the rest of the subscales were significantly related to each (see Table 4). Item-total correlations were high in all subscales, ranging between .71 and .93.

Test-retest reliability

The intraclass correlation coefficients (ICC) for each of the subscales were: .91 for Self-transcendence, .86 for Achievement, .87 for Relationship, .96 for Religion, .82 for Self-Acceptance, .94 for Intimacy, and .85 for Fair treatment. ICC for the total scale was .91. These data indicate that the test-retest reliability of the Spanish PMP-B is excellent.

Demographic differences and relationships with other variables

Descriptive statistics of the PMP-B in all samples can be observed in Table 3. To test H1, we compared age groups and found that older adults tended to have higher PMP-B scores ($Mdn = 96$) than younger adults ($Mdn = 91$), $U = 24,666.50$, $Z = -3.14$, $p = .002$. There were no gender-based differences nor differences between students responding online and on paper ($p > .05$).

As predicted by H2, the PMP-B total scores had strong to moderate positive correlations with the SPWB (see Table 5). As for the subscales of the SPWB, Purpose in life and Self-acceptance showed the strongest relationships with the PMP-B. Among undergraduates, the PMP-B total scores were negatively associated with general psychological distress, anxiety, and depression (H3). However, we found no associations with stress levels ($p > .05$).

When all PMP-B subscales were entered into a simultaneous regression analysis to predict psychological well-being (H4), 40% of the variance was explained ($p < .001$). The sources of meaning predicting psychological well-being were Achievement ($\beta = .30$, $p < .001$), Relationship ($\beta = .17$, $p < .001$), Intimacy ($\beta = .16$, $p < .001$), and Fair treatment ($\beta = .13$, $p = .002$). Likewise, Achievement ($\beta = .33$, $p < .001$), Intimacy ($\beta = .14$, $p = .001$), Fair treatment ($\beta = .16$, $p < .001$), and Self-transcendence ($\beta = .13$, $p = .009$) predicted higher scores on the Purpose in life subscale of the SPWB.

Only 9% of the variance of the DASS-21 ($p = .001$) was explained by the PMP-B. More precisely, the PMP-B accounted for 17% of the variance in depression ($p < .001$) and 6% in anxiety ($p = .009$). The subscales Achievement ($\beta = -.18$, $p = .019$) and Fair treatment ($\beta = -.17$, $p = .012$) predicted lower levels of general psychological distress. Depression was predicted by Achievement ($\beta = -.27$, $p < .001$), Fair treatment ($\beta = -.14$, $p = .030$), and Intimacy ($\beta = -.12$, $p = .030$). Anxiety was predicted by Achievement ($\beta = -.19$, $p = .015$) and Fair treatment ($\beta = -.14$, $p = .044$).

Discussion

The objective of this study was to adapt the PMP-B to the Spanish-speaking population and evaluate its psychometric properties. With this aim, we recruited a community sample and university students, and tested different indices of validity evidence. Confirmatory factor analyses indicated that the only factor structure with acceptable fit to the data was the bifactor model with one general factor and seven specific factors. These results mean that the PMP-B measures seven distinct sources of meaning as proposed by the original authors (McDonald et al., 2012; Wong, 1998), but it is possible to use the total scores as a general indicator of MiL. To our knowledge, this is the first study confirming a factor structure that justifies the use of the PMP total score and each subscale individually. Invariance analyses indicated that at least the global factor structure, factor loadings, and item intercepts are equivalent across groups (gender, age group, and sample). These results support that the assessment of mean differences was valid, and therefore was not result of measurement bias.

Alpha and omega coefficients suggested good internal consistency of the total PMP-B and its subscales. The omega coefficient for the global PMP-B was excellent (.93), further supporting the use of the PMP-B total scores including clinical settings. Apart from the subscale of religion, all subscales were significantly related to each other. The PMP-B in other languages has shown similar internal consistency (Brouzos et al., 2016; Chika Chukwuorji, Ekpedoho, Ifeagwazi, Iorfa, & Nwonyi, 2019; Demirbaş-Çelik, 2018; Krumrei-Mancuso, 2017; McDonald et al., 2012), which increases the validity of our results. Test-retest reliability after one week was also excellent.

This validity evidence represents incremental validity over the SMiLE. For instance, there is no data about measurement invariance and confirmatory analysis of the SMiLE (Monforte-Royo et al., 2011). Indeed, its format does not allow a dimensionality analysis based on sources of meaning. To date, the Spanish PMP-B is the only MiL tool that measures standardized sources of meaning. Hence, the PMP-B can be an exceptional complement to the few existing MiL measures. Especially, areas such as psycho-oncology could benefit from this instrument (e.g., Van der Spek et al., 2017).

To evaluate validity evidence of the PMP-B based on relations with other variables, we formulated five hypotheses. H1 predicted that older people would show higher PMP-B scores than young people. Our results confirmed H1 and are consistent with previous findings suggesting that MiL increases across the lifespan (Schnell, 2009; Steger et al., 2009). The development of MiL across ages could partially explain the general increase of positive mental health observed in some western countries (Schönfeld, Brailovskaia, & Margraf, 2017). Nonetheless, cultural differences and other psychosocial factors should be taken into consideration (Sapranaviciute-Zabazlajeva et al., 2018).

The PMP-B scores were moderately related to psychological well-being in both samples (H2), explaining 40% of the variance (see also Brouzos et al., 2016; Demirbaş-Çelik, 2018). These findings are congruent with the extensive investigation that highlights the centrality of MiL in psy-

chological well-being (Ryff, 2014; Ryff et al., 2016). The sources of meaning predicting psychological well-being were achievement, relationship, intimacy, and fair treatment. The sources of meaning that predicted purpose in life were achievement, intimacy, fair treatment, and self-transcendence. In line with H4, most of these sources were relational; they represent positive and reciprocal relationships with others and with the society in general. Our data also revealed that striving for and attaining significant life goals are crucial to experience MiL. Combined with previous research (Brouzos et al., 2016; Krok, 2018; Schnell, 2011; Wong, 2012), these findings emphasize the importance of relational sources of meaning in meaning-centered interventions, versus self-oriented ones (Vos & Vitali, 2018; Vos, 2016).

Additionally, the PMP-B scores were negatively associated with general psychological distress, depression, and anxiety (H4). The strongest relationships were observed with depression levels, and their predictors were achievement, fair treatment, and intimacy (see also Disabato et al., 2017; Krumrei-Mancuso, 2017; Steger et al., 2006; Testoni et al., 2018). Finally, we found no correlations with physiological stress. The latter results support the notion that MiL may prevent stress from transforming into anxiety, depression, and other health problems (Van Tongeren, Hill, Krause, Ironson, & Pargament, 2017).

Several limitations of the present study should be considered. For instance, the sample was not representative of the general Spanish-speaking population, most participants were young females from the provinces of Murcia and Almería. It is also impossible to determine to what extent the application method of the questionnaires influenced the differences observed between the community sample and university students. However, as there were no significant differences between the two student groups (online application vs. on paper), we may conclude that our findings are most probably not due to the application format of the measures. Only student participants completed the DASS-21, thus the reported associations with the PMP-B may

be limited to this specific population. Future studies could evaluate these findings in different samples. Finally, the one-week test-retest interval may have been too short to assess the stability of the PMP-B over time. Nevertheless, the original questionnaire showed to be stable over a five-week period ($r = .73$; McDonald et al., 2012).

Despite these shortcomings, this paper provided several indicators of validity evidence that supported the use of the PMP-B to measure MiL in the Spanish adult population. The short format of the questionnaire and assessment of personal sources of meaning make the PMP-B a noteworthy contribution to the meaning-centered research.

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Appendix 1 Spanish version of the PMP-B

Este cuestionario está destinado a identificar lo que realmente le importa en su vida, mide la percepción de las personas sobre el sentido de sus vidas. Generalmente, una vida con sentido implica un sentimiento de propósito y significado personal. Sin embargo, la gente a menudo difiere en lo que más valora y tiene diferentes ideas sobre lo que hace la vida valiosa. Las siguientes afirmaciones describen posibles fuentes de una vida con sentido. Por favor, lea cada afirmación cuidadosamente e indique hasta qué punto cada ítem caracteriza su propia vida. Es importante que responda honestamente sobre la base de su propia experiencia y creencias. Responda haciendo un círculo en el número apropiado según la siguiente escala:

		1	2	3	4	5	6	7
		De ningún modo			Moderadamente			Muchísimo
1.	Creo que puedo aportar algo diferente al mundo (<i>I believe I can make a difference in the world</i>).	1	2	3	4	5	6	7
2.	Tengo a alguien con quien compartir sentimientos íntimos (<i>I have someone to share intimate feelings with</i>).	1	2	3	4	5	6	7
3.	Me esfuerzo por hacer de este mundo un lugar mejor (<i>I strive to make this world a better place</i>).	1	2	3	4	5	6	7
4.	Busco cumplir la voluntad de Dios (<i>I seek to do God's will</i>).	1	2	3	4	5	6	7
5.	Me gusta el desafío (<i>I like challenge</i>).	1	2	3	4	5	6	7
6.	Tomo la iniciativa (<i>I take initiative</i>).	1	2	3	4	5	6	7
7.	Tengo un gran número de buenos amigos (<i>I have a number of good friends</i>).	1	2	3	4	5	6	7
8.	Tengo la confianza de otros (<i>I am trusted by others</i>).	1	2	3	4	5	6	7
9.	Busco la gloria de Dios (<i>I seek to glorify God</i>).	1	2	3	4	5	6	7

10.	La vida me ha tratado justamente (<i>Life has treated me fairly</i>).	1	2	3	4	5	6	7
11.	Acepto mis limitaciones (<i>I accept my limitations</i>).	1	2	3	4	5	6	7
12.	Tengo una relación de amor mutuamente satisfactoria (<i>I have a mutually satisfying loving relationship</i>).	1	2	3	4	5	6	7
13.	Soy querido por otros (<i>I am liked by others</i>).	1	2	3	4	5	6	7
14.	He encontrado a alguien al que amar profundamente (<i>I have found someone I love deeply</i>).	1	2	3	4	5	6	7
15.	Acepto lo que no se puede cambiar (<i>I accept what cannot be changed</i>).	1	2	3	4	5	6	7
16.	Soy persistente e ingenioso a la hora de conseguir mis objetivos (<i>I am persistent and resourceful in attaining my goals</i>).	1	2	3	4	5	6	7
17.	Hago una contribución significativa a la sociedad (<i>I make a significant contribution to society</i>).	1	2	3	4	5	6	7
18.	Creo que uno puede tener una relación personal con Dios (<i>I believe that one can have a personal relationship with God</i>).	1	2	3	4	5	6	7
19.	Soy tratado justamente por otros (<i>I am treated fairly by others</i>).	1	2	3	4	5	6	7
20.	He recibido mi parte justa de oportunidades y gratificaciones (<i>I have received my fair share of opportunities and rewards</i>).	1	2	3	4	5	6	7
21.	He aprendido a vivir con el sufrimiento y hacer lo mejor de él (<i>I have learned to live with suffering and make the best of it</i>).	1	2	3	4	5	6	7

Note: Achievement = 5, 6, 16; Intimacy = 2, 12, 14; Fair treatment = 10, 19, 20; Relationship = 7, 8, 13; Self-transcendence = 1, 3, 17; Self-acceptance = 11, 15, 21; Religion = 4, 9, 18.

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