

Research Article

Validation of the Young Schema Questionnaire (YSQ-S3) in Mexican University Students

Daniel Pech Puebla¹, Tulio Suárez-Maldonado², Andrés Sánchez Pájaro³

1. Instituto Mexicano de Psicoterapia Cognitivo Conductual, Mexico; 2. Faculty of Medicine, Universidad Nacional Autónoma de México, Mexico; 3. Centro de Investigación en Salud Poblacional, Instituto Nacional de Salud Pública, Cuernavaca, Mexico

The Young Schema Questionnaire (YSQ) assesses Early Maladaptive Schemas (EMS) in Schema Therapy, and it has demonstrated adequate psychometric characteristics. However, there is a lack of consistent factorial structures in the available research on the psychometric properties of YSQ versions. This study aimed to adapt, validate, and evaluate the psychometric properties of the short version of the YSQ in Mexican university students. A non-probabilistic sample of 772 Mexican university students from different states of was used. A series of exploratory and confirmatory factor analysis were made to compare the proposed instrument with the one proposed by the Schema Therapy. The instrument exhibited a structure of 17 out of the 18 original schemes, organized in the same 5 dimensions proposed in the Schema Therapy, with a total internal consistency level of 0.962. The YSQ-S3-MX version is proposed as a suitable tool for evaluating EMS in Mexican university students, ensuring proper use in clinical practice and research.

Corresponding author: Daniel Pech Puebla, daniel.pech.puebla@hotmail.com

Introduction

Early Maladaptive Schemas (EMS) provide valuable information about the characteristics of patients, the way they behave, think, and feel. Identifying EMS is vital to provide Schema Therapy. The Schema Therapy has been proven to be useful when providing psychological treatment from a scientific approach, and it helps achieving therapeutic objectives tailored to each patient. It is important that the diagnosis, the implementation of the different techniques, the research, and the treatment of patients are specific for each scenario, and that clinicians and researchers have access to instruments that actually measure the EMS in the population that they are working with.

The Young Schema Questionnaire (YSQ) is one of the instruments used in the Schema Therapy. It is a self-report tool that assesses the presence of each of the 18 EMS using phrases that represent the main characteristics of the EMS^[1]. The psychometric properties of the YSQ were first evaluated by Schmidt et al.^[2], reporting high test re-test reliability and internal consistency coefficients. The YSQ has shown good convergent and discriminant validity when assessing psychological distress, self-esteem, cognitive vulnerability for depression, as well for personality disorders symptoms. Also, factorial analysis supports the YSQ structure when used with clinical or non-clinical samples^[3].

There are three different length editions of the YSQ. The third edition, long version of the YSQ (YSQ-L3^[4]), is composed of 232 items, using a six points Likert-type scale. The short version of the YSQ-L3 (YSQ-S3^[5]) includes the most representative five items of each EMS, with a total of 90 instrument items. The YSQ-S3 has similar characteristics as the YSQ-L3^[3]. Stopa et al.^[6] reported that both YSQ-L3 and YSQ-S3 have similar internal consistency, parallel forms reliability, as well as concurrent validity, and the YSQ-S3 can be used for clinical and research purposes^[3]. The YSQ-S3 has been most widely used to study obsessive compulsive disorder, substance abuse and personality disorders.

Several recent studies have been conducted to validate and assess the psychometric properties of the YSQ-S3. It has been validated in Portuguese, Croatian, Flemish, Persian, French and Japanese. In Spanish, it has been validated among university students in Peru and Chile for assessing all 18 EMS. In Mexico, we only found one study about the validation of the YSQ-S3 among students in the state of Hidalgo, showing a good structure of 10 EMS^[7]. To our knowledge, there is only one study about the evaluation of the psychometric properties of the YSQ-S3 in Mexican population. It is of great importance to contribute to the scientific literature and obtain an YSQ-S3 version adapted to the Mexican Spanish language and to the Mexican culture, as well as evaluate its psychometric properties so we can have the certainty that it is actually measuring the EMS in Mexicans. Therefore, the objective of this study was to adapt and validate the YSQ-S3, as well as to evaluate its psychometric properties in Mexican university students.

Method

Design

This study was conducted using an exploratory, transversal, quantitative design^[8].

Participants

A non-probabilistic accidental sampling was used^[9]. The criteria proposed by Nunnally^[10] and Thorndike^[11] was considered, using the formula $N=10k$, where k represents the number of items of the instrument. The proposal of Martínez-Arias^[12] was also considered, using a sample consisting of 5 to 10 participants per item. The inclusion criteria included: being older than 18 years and currently being university student. The exclusion criteria included: having answered any version of the YSQ before the start of this study, having one or more psychiatric disorder diagnoses, having any mental deficiency, having a brain lesion, and being under the influence of any legal or illegal drug. We obtained a sample of 843 students from seven states of the country.

Instruments

We used the Young Schema Questionnaire – Short Form, 3rd Edition (YSQ-S3; Young^[13]). The YSQ-S3 includes 90 items evaluating all 18 EMS in five dimensions. This questionnaire uses a Likert-type scale ranging from option 1: *Completely untrue of me* to option 6: *Describes me perfectly*. The results of this questionnaire can be interpreted using a level in which the EMS are presented, from low to very high.

Procedure

The YSQ-S3 was translated to Mexican Spanish. Two experts in psychology with English certifications evaluated the translation. Modifications from this process were made. Another translation of the questionnaire was made, from Spanish to English, in order to check if the questionnaire was adequately translated and reviewed. Comments from the experts were addressed. The pilot version and the informed consent were applied to 50 people with the same characteristics as the participants of the final sample. According to the results of the pilot phase, corrections to the questionnaire were made, resulting in the final version of the instrument. In order to standardize the application process, reduce the loss of data, and make the general application process easier and faster, an application manual and a web page where the participants were able to respond the final version of the questionnaire were designed. After soliciting authorization from the universities' authorities, the instrument and an informed consent were applied to groups of 30 students, giving them 45 minutes to complete the whole procedure. The results from the pilot and the application phase were captured in a ® IBM SPSS Statistics 21 database for later analysis. The database was cleaned of missing data, eliminating 71 of the total 843 cases registered. The remaining 772 cases were included in the final statistical analysis.

As a result of the adaptation process and the assessment of the questionnaire, the YSQ-S3 version for Mexican population, the “*Cuestionario de Esquemas Desadaptativos de Jeffrey Young tercera edición versión corta para población Mexicana*” (YSQ-S3-MX) was integrated (see supplementary material).

Statistical Analysis

Descriptive analysis of demographic data and questionnaire results were performed. Kolmogorov-Smirnov tests and graphic data analysis were conducted to evaluate the bias of the variables. Chi-square tests were made to evaluate the statistical differences in sociodemographic variables. The following analyses were made: frequency analysis to evaluate if the response scale was attractive to the participants and to evaluate the bias of each item; Student's t tests to assess whether the items discriminated against each other; contingency tables to assess the directionality of the items; reliability analysis using Cronbach's alpha to evaluate the internal consistency of the instrument; bivariate Pearson's correlation analysis to determine the rotation to be used in the following exploratory factor analysis; exploratory factor analysis using the principal components method in order to determine the construct validity of the instrument, and to determine the best factor structure; and a confirmatory factor analysis using Structural Equation Modeling (SEM) with maximum likelihood estimation method in order to compare the factor structure found in the exploratory factor analysis against the original YSQ-S3 structure. The SEM analysis was conducted using ® IBM SPSS and Amos 21 statistics software.

Results

Sample characteristics

The sample consisted in 772 university students: 67% ($n=517$) were female and 33% ($n=255$) male. The mean age was 21.33 ($SD=4.085$) with a minimum of 18 and a maximum of 63 years. The data related to their career, the current semester, and the state of residence is shown in table 1.

Career			Semester		
	n	%		n	%
Psychology	530	68.7	1st semester	129	16.7
Psycho-oncology	1	0.1	2nd semester	55	7.1
Psychiatry	2	0.3	3rd semester	143	18.5
Medicine	4	0.5	4th semester	21	2.7
Biology	1	0.1	5th semester	74	9.6
Administration	2	0.3	6th semester	70	9.1
Electronic Engineering	14	1.8	7th semester	77	10
Law	17	2.2	8th semester	52	6.7
Physics	12	1.6	9th semester	151	19.6
Chemistry	26	3.4			
Industrial Engineering	71	9.2	State of residence		
Mechanical Engineering	20	2.6	Aguascalientes	16	2.1
Environmental Engineering	26	3.4	México City	383	49.6
Civil Engineering	22	2.8	Jalisco	80	10.4
Computational Engineering	11	1.4	State of México	115	14.9
Metallurgical Engineering	9	1.2	Baja California	51	6.6
Communication	1	0.1	Sonora	16	2.1
Electrical Engineering	3	0.4	Tamaulipas	111	14.4

Table 1. Sample characteristics according to career, semester, and place of living (n=772).

According to the Kolmogorov-Smirnov tests and graphic data analysis, we observed that the sociodemographic variables (age, gender, place of living, field of study, and semester) and the total scores from each EMS did not present a normal distribution (all $p < .000$). It was also observed that there were outliers in age and total scores of the abandonment, mistrust/abuse, social isolation/alienation, defectiveness/unlovability, failure to achieve, practical incompetence/dependence, enmeshment, subjugation, self-sacrifice, entitlement/superiority, and the admiration/recognition-seeking schemas.

There were statistically significant differences in gender ($\chi^2=517, p=.000$), state of residence ($\chi^2=875.974, p=.000$), field of study ($\chi^2=5,967.368, p=.000$), and semester ($\chi^2=210.720, p=.000$).

Psychometric properties of the YSQ-S3-MX

The frequency analysis showed that all response options were attractive to the participants. Items 12, 31, 50, 56, 65, 67, and 89 showed a normal distribution (not biased) while the rest of the items showed a biased distribution. The items with a normal distribution were eliminated and the rest of the analyses were conducted with only the biased items.

The Student's *t* tests showed that all items discriminated against each other correctly when comparing the higher and lower percentiles means. No items were eliminated at this stage. It was observed in the contingency tables that the directionality of the items was correct. There was no need to recode or eliminate items at this stage. The Cronbach's alpha analysis showed an internal consistency overall of .962. There was no need of eliminating items at this stage.

It was determined, through the Pearson's bivariate correlation analysis, that the optimal rotation to use in the exploratory factor analyses was the Varimax (Orthogonal) rotation. This, because the highest correlation found between the overall score of the instrument and each of the items was $r=.670, p < .000$.

The first exploratory factor analysis showed that items 71, 7, 49, 82, 45, 10, 87 and 13 had a low factorial weight and they were eliminated, considering the factorial weight threshold of .40 proposed by Cliff and Hamburguer^[14]. As a result of the second exploratory factor analysis, item 25 was eliminated for having a low factorial weight, and items 90, 81, and 85 were eliminated for having a considerable factorial weight in different factors than the ones purposed by the original instrument. Table 2 shows all items eliminated at this point.

Stage	Items
Frequency analysis (not biased items)	12, 31, 50, 56, 65, 67, 89
1st exploratory factor analysis (low factorial weight)	71, 7, 49, 82, 45, 10, 87, 13
2nd exploratory factor analysis (low factorial weight)	25
2nd exploratory factor analysis (factorial weight in different factors)	90, 81, 85

Table 2. Items eliminated on each analysis stage.

The third and final exploratory factor analysis conducted with the remaining 71 items showed a Kaiser-Meyer-Olkin test coefficient of .944, and a Bartlett's test of $p < .000$. These results suggest that the data is well suited for the exploratory factor analysis, and that there was good correlation between the items. Therefore, the analysis conducted was pertinent, according to the recommendations of Dziub and Shirkey^[15].

All 71 items were distributed in 17 factors, with a total of 65.226% of the variance explained. The Cronbach's alpha analysis showed an overall internal consistency of .959. Table 3 shows the detailed results of the final exploratory factor analysis.

KMO:.944																		Factor explained variance	Factor Cronbach's alpha			
Bartlett: p<.000																						
Overall percentage of explained variance: 65.226%																						
Overall Cronbach's alpha:.959																						
Schema	Item	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	F13	F14	F15	F16	F17				
Failure to achieve	42	.799	.086	.136	.110	.119	.076	.060	.094	.035	.093	.126	.001	.156	.068	.073	.043	.138	5.936%	.906		
	78	.797	.125	.071	.110	.121	.095	.184	.028	.107	.026	.129	.064	-.003	.065	.113	.076	.090				
	60	.786	.135	.082	.120	.154	.095	.186	.010	.089	.051	.119	.094	.017	.053	.109	.075	.066				
	24	.707	.124	.138	.210	.094	.044	.010	.129	.017	.106	.071	-.028	.170	.126	.045	.072	.207				
	6	.676	.110	.122	.267	.091	.074	.085	.184	.054	.132	.086	-.027	.232	.050	.076	.058	.111				
Emotional deprivation	55	.158	.766	.042	.166	.183	.140	.039	.083	.078	.134	.053	.058	.137	.069	.063	.053	.072	4.871%	.834		
	19	.102	.754	.081	.142	.222	.094	.087	.049	.084	.117	.028	.017	-.032	.043	.035	.074	.074				
	1	.067	.743	.053	.100	.156	.129	.020	.034	.023	-.022	.048	.032	.025	.120	.167	.039	.062				
	37	.215	.593	.076	.176	.208	.127	.226	.167	.014	.180	.085	.042	.145	.065	-.027	.012	.091				
	73	.074	.584	.063	.030	.030	.052	.091	.242	.133	.078	.032	.044	.068	-.027	.041	-.014	.148				
Admiration/Recognition- Seeking	70	.032	.018	.754	.039	.033	.034	.049	.172	.090	.100	.084	.165	.031	.100	.031	-.014	.091	4.687%	.799		
	88	.044	.040	.704	-.050	-.021	.032	.143	.127	.086	.111	.087	.085	.111	-.047	.140	.054	.084				
	34	.116	.127	.677	.139	.149	.087	.056	.019	.098	.138	.116	.051	.176	.038	.046	.039	-.020				
	16	.205	.074	.638	.065	.039	.072	.008	.015	.116	-.050	.094	.129	.136	.122	.056	.047	.059				
	52	.187	.064	.507	.079	.037	.136	.182	-.089	.071	.032	.021	.210	.009	.369	.148	.164	.142				
Defectiveness/Unlovability	41	.130	.088	-.027	.670	.090	.078	.019	.110	.043	.085	-.039	.071	.021	.060	.259	.066	.185	4.552%	.826		
	23	.223	.258	.146	.635	.188	.119	.114	.190	.108	-.025	.101	.109	.105	.096	-.022	.061	.042				
	59	.126	.081	.012	.634	.206	.117	.136	-.037	.106	.072	.104	-.086	.085	-.023	.058	.020	.169				
	5	.256	.232	.140	.607	.133	.143	.120	.158	.082	.013	.165	.098	.115	.084	.002	.082	.028				
	77	.201	.101	.050	.592	.262	.090	.102	.179	.102	.071	.136	.072	.047	.141	.021	.068	.128				
Social Isolation/Alienation	58	.133	.184	.017	.228	.717	.211	.025	.171	.109	.066	.047	.053	.017	.096	.155	.084	.091	4.516%	.855		
	40	.156	.214	-.010	.228	.709	.243	.061	.158	.119	.071	.050	.077	.035	.029	.117	-.012	.011				
	76	.234	.226	.152	.236	.649	.198	.149	.117	.072	.041	.025	-.003	.040	.119	.078	.118	.052				
	4	.286	.221	.108	.158	.646	.172	.146	.091	-.019	-.008	.032	.052	.024	.166	.043	.152	.022				
	22	-.014	.144	.033	.050	.597	.010	.025	.135	.187	.099	.171	.203	.159	-.051	-.012	.043	.086				
Emotional Inhibition	66	.038	.083	.060	.082	.109	.795	.082	.070	.147	-.011	.065	.084	.020	.067	.049	-.001	.084	4.128%	.825		
	48	.122	.084	.110	.120	.107	.751	-.016	.067	.071	.017	.032	.098	.123	.083	.126	.064	.019				
	84	.033	.155	-.031	.041	.244	.723	.041	.085	.065	.023	.083	.086	.104	-.025	.018	-.025	.151				
	30	.161	.171	.174	.181	.103	.670	.014	.110	.073	.124	.009	.022	.102	.129	.072	.130	.022				
Abandonment	38	.164	.100	.098	.093	.064	.053	.826	.116	.018	.128	.115	.042	.119	.067	.009	.082	.017	3.958%	.816		
	2	.151	.063	.079	.066	.085	.038	.821	.089	.000	.168	.103	.070	.078	.093	.029	.015	.045				
	20	.130	.110	.172	.117	.073	-.032	.656	.157	.091	.137	.089	.008	.013	.135	.125	.098	.165				
	74	.017	.191	.053	.214	.117	.120	.448	.155	-.001	.072	.006	-.013	.279	-.004	.210	.149	.101				
Mistrust/abuse	57	.024	.101	.132	.035	.219	.067	.065	.701	.122	.051	.157	.096	.092	-.011	.091	.023	.086	3.868%	.797		

KMO:.944																		Factor explained variance	Factor Cronbach's alpha							
Bartlett: p<.000																										
Overall percentage of explained variance: 65.226%																										
Overall Cronbach's alpha:.959																										
Schema	Item	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	F13	F14	F15	F16	F17								
	75	.056	.060	.153	.061	.241	.057	.079	.630	.157	.061	.140	.112	.067	-.024	-.007	-.026	.130								
	3	.151	.171	.024	.175	.013	.116	.170	.575	.044	.117	.060	.090	.034	.218	.104	.169	-.058								
	39	.157	.210	.064	.338	.108	.080	.114	.563	.040	.083	.112	.148	.021	.093	.234	.083	.063								
	21	.184	.243	.060	.149	.048	.232	.268	.529	.091	-.013	.103	.139	.000	.023	.137	.144	-.091								
Self-Punitiveness	54	.057	.046	.092	.022	.135	.075	-.038	.045	.819	.066	.091	.051	.114	.010	.002	.011	.063	3.810%	.807						
	72	.071	.057	.028	.038	.082	.053	.047	.107	.789	.115	.108	.184	.047	.069	.091	.052	.055								
	36	.080	.124	.198	.119	.127	.124	.025	.112	.669	.084	.054	.005	.086	.054	.127	.083	.083								
	18	.057	.115	.169	.266	-.030	.166	.118	.106	.579	.157	.122	.060	-.014	.122	.170	.036	-.085								
Self-Sacrifice	83	.057	.129	.066	.057	.042	-.008	.158	.012	.061	.718	.054	.059	.072	.126	.155	.055	-.029	3.550%	.733						
	11	.005	.083	.064	-.018	.086	.025	.117	.146	.156	.682	.074	.075	.050	-.051	.122	.174	-.051								
	29	.148	.046	.085	.100	-.014	.041	.103	.046	.096	.673	.121	.123	-.026	.045	-.011	.021	.146								
	47	.092	.107	.104	.048	.109	.079	.056	.020	.064	.623	.046	.027	.023	.342	.018	.140	.149								
Vulnerability to Harm or Illness	44	.147	.034	.187	.069	.056	.021	.195	.185	.124	.117	.647	.075	.079	.116	.036	.101	.042	3.448%	.766						
	80	.128	.108	.184	.036	.065	.027	.103	.091	.086	.133	.643	.106	.111	.064	.139	.138	.099								
	62	.121	.042	.140	.254	.022	.122	-.054	.042	.152	.046	.598	-.084	.191	-.029	-.046	.009	.013								
	26	.132	.008	-.105	-.010	.143	.077	.136	.171	.070	.033	.562	.233	.024	.019	.332	.057	.131								
	8	.186	.113	.101	.143	.162	.026	.137	.290	.036	.141	.448	.018	.083	.166	.386	.013	.107								
Entitlement/Superiority	32	.042	.075	.191	.011	.049	.070	.080	.067	.095	.046	.189	.755	.067	.034	-.041	.039	-.012	3.330%	.746						
	68	.003	.043	.003	.064	.165	.100	-.032	.117	.085	.068	-.058	.720	.145	.036	.241	.034	.063								
	86	.000	.037	.289	.096	.075	.098	-.024	.144	.102	.193	.054	.675	.130	.053	-.010	-.045	-.009								
	14	.090	.015	.378	-.002	-.003	.070	.183	.132	.025	.039	.023	.476	.194	-.075	.032	.110	.083								
Insufficient Self-Control/Self-Discipline	51	.076	.031	.185	.038	.044	.123	.095	.079	.146	.061	.188	.208	.655	.158	-.010	.115	-.016	3.264%	.749						
	15	.228	.062	.146	.036	.146	.052	.050	.069	.065	-.029	.043	.135	.638	.128	.133	.013	.096								
	69	.073	.088	.102	.158	-.036	.161	.133	-.020	.055	.045	.116	.158	.562	-.122	.240	.166	.059								
	33	.226	.183	.291	.140	.072	.108	.151	.077	.071	.070	.191	.079	.525	.187	.100	.062	.002								
Subjugation	64	.152	.096	.160	.076	.015	.129	.131	.048	.070	.199	.077	-.015	.101	.651	.011	.122	.214	2.952%	.674						
	46	.094	.061	.057	.033	.106	.070	.114	.105	.069	.145	-.073	-.002	.321	.623	-.014	-.034	.210								
	28	.083	.089	.085	.171	.132	.071	.060	.068	.096	.063	.261	.090	-.054	.607	.165	.270	-.021								
Pessimism/Worry	35	.206	.155	.209	.193	.064	.109	.161	.152	.146	.115	.179	.097	.116	.085	.634	.039	.020	2.856%	.816						
	17	.154	.177	.207	.112	.177	.168	.080	.132	.174	.176	.124	.100	.214	.067	.584	.026	.071								
	53	.149	.090	.173	.093	.123	.145	.049	.164	.263	.177	.160	.050	.228	.031	.547	.068	.074								
Enmeshment	27	.046	.038	.086	.043	.000	.083	.097	.057	.049	.072	.040	.067	.084	.030	.023	.801	.131	2.794%	.683						
	9	.144	-.016	.028	.080	.140	.040	.090	.162	.025	.139	.135	-.015	.204	.077	-.002	.689	.093								
	63	.102	.164	.069	.104	.167	-.013	.041	-.033	.113	.221	.091	.028	-.052	.311	.099	.579	-.061								

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Bartlett: p<.000																				
Overall percentage of explained variance: 65.226%																				
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Schema	Item	F1	F2	F3	F4	F5	F6	F7	F8	F9	F10	F11	F12	F13	F14	F15	F16	F17		
Practical Incompetence/Dependence	61	.172	.166	.117	.276	.041	.104	.027	.064	.084	.094	.108	.074	.030	.087	.084	.029	.705	2.708%	.756
	43	.178	.139	.106	.086	.112	.115	.110	.044	.020	.089	.034	-.001	.072	.181	.054	.130	.625		
	79	.345	.166	.114	.205	.073	.102	.157	.070	.087	-.006	.164	.038	.063	.129	.012	.097	.625		

Table 3. Detailed results of the final exploratory factor analysis of the YSQ-S3-MX.

Table 4 shows the resulting values of the confirmatory factor analysis via SEM using the structure of 71 items in 17 factors from the final exploratory factor analysis shown in table 3.

Index	Value	
Absolute fit indices	χ^2 test (CMIN) (df)	5406.698 (2278)
	Significance (p)	<.000
	Minimum Discrepancy (CMIN/DF)	2.37
	Goodness of Fit Index (GFI)	.826
	Root Mean Square Error of Approximation (RMSEA)	.042
	Root Mean Residual (RMR)	.080
Incremental fit indices	Normed Fit Index (NFI)	.813
	Non-Normed Fit index (NNFI)	.870
	Comparative Fit Index (CFI)	.881

Table 4. Model fit indices of the confirmatory analysis via SEM of the YSQ-S3-MX.

Discussion

This objective of this study was to adapt, validate and to evaluate the psychometric properties of the YSQ-S3 with Mexican university students. This study was conducted using a sample of 772 Mexican university students (67% female and 33% male) from different majors in 7 states of Mexico. We showed that the YSQ-S3 translated to Mexican Spanish was valid to assess 17 out of 18 EMS in the Mexican population.

There are several studies validating the different versions of the YSQ, in different languages and countries. Some studies examined the YSQ-L3^[16], and a considerable amount examined the YSQ-S3^{[17][18][19][20][21][22][23][24][25][26][27]}. Different studies have been conducted in order to assess the psychometric properties of the YSQ-S3, resulting in different structures. Some studies show the same characteristics as the original instrument^{[19][22][23][25][26]}, while others show similar but not the same structure as the original version^{[17][18][20][21][24][27]}. We found only one study of the validation of the YSQ-S3 in Mexican students^[2], showing good psychometric properties when using this instrument in students of the state of Hidalgo, and an interesting structure of 10 factors of the questionnaire. Those results are somehow similar to what we found. This study shows that the YSQ-S3-MX have a similar but not the same factorial structure and characteristics as the YSQ-S3 and have adequate psychometric properties for its correct use for the assessment of the EMS in Mexican university students. This places this study in line with the scientific literature mentioned before. In that sense, this study presents a new valid and reliable instrument for the evaluation of the EMS with Mexican student population, which represents an important addition to the scientific research of the cognitive-behavioral field.

The exploratory factor analyses showed that the YSQ-S3-MX has adequate characteristics regarding item distribution on each factor, and their factorial weight. It also showed good values related to the association between items from the KMO test, good variance homogeneity from the Bartlett's test, good percentage of variance explained, as well as a high internal consistency from Cronbach's alpha coefficient.

The confirmatory factor analysis using SEM showed contradictory results regarding the model fit, according to the recommendations from different authors^{[28][29][30]}. First, the absolute fit indices' χ^2 test indicated a non-adequate model fit considering the criteria proposed by Barrett^[21] where a non-significant χ^2 test result is needed for a good model fit. However, there are a few considerations when using the χ^2 test as a determinant of the model fit, because it has been proven that when using this test, a large deviation from normality is assumed, leading to a rejection of the model even when the model is correctly specified^[32]. Also, because the χ^2 test significance is sensitive to the size of the sample, it has been observed that on most occasions when a large sample is used, the results ended being significant, leading to a rejection of the model^{[33][34]}. This is a possible explanation of the χ^2 test result from this study, which suggests a poor model fit. Because of the limitations when using the χ^2 test alone, it is recommended to consider the CMIN/DF index for the model fit^[35], with values for a good model fit ranging from 2.0^[36] to 5.0^[35]. According to this, the results from this study showed a good model fit. The GFI index showed values close but not enough for a good model fit, according to the recommendations of good model fit values higher than .90 or .95^[37]. Despite of that, because of the sensitivity of this index, it has become less used and popular, and it is recommended to not use this specific index^[38]. The RMSEA index showed a good model fit on this study, according to the good fit model values of less than .06^[39] and .07^[40]. The RMR index showed a good fit model as well, considering the values of less than .08 proposed by Hu & Bentler^[39]. However, there is not a good model fit considering stricter values of less than .05 proposed by Byrne^[41], and by Diamantopoulos and Siguaw^[42].

Secondary, the incremental fit indices, and specifically the NFI and NNFI indices showed that there is not a good fit model, considering the recommendations of values higher than .095 by^[39]. However, it has been considered that these indexes should not be determinant for the model fit by themselves^[43]. The CFI index showed a non-good model fit, considering the proposed value of higher than .095 by Hu and Bentler^[39]. It is considered that, despite the contradictory results from the confirmatory factor analysis, the YSQ-S3-MX is a newly proposed instrument that has the proper characteristics and psychometric properties to be used in the professional practice.

It is important to note that just one of all EMS did not show in the resulting factorial structure. The possible reasons considered for this are: the way the items were phrased; the number of items included in that specific EMS; the characteristics of the studied population, related to the Mexican culture and/or the age of the participants; or what that specific EMS establishes. It is possible that the characteristics of the Unrelenting Standards schema are perceived by the studied population within other EMS in the same dimension, or that this schema is perceived differently by the studied population compared to the population in which the YSQ was developed.

There are some limitations to consider in this study. The sample had some initial differences in gender, age, major, location, and semester. That is, the majority of participants were female, were studying psychology, and were living in Mexico City; there was not an adequate control of outliers in age and in some EMS, which could have affected the results somehow. Also, the reasons why the missing EMS was not presented were not clarified.

For future research, it is suggested to conduct studies with a stricter methodological rigor regarding the initial equivalence of the participants for variables such as age, gender, major, and location. It is important to eliminate outliers in order to have a better interpretation and to get a better generalization of the data. It is also necessary to conduct more studies to explore the reasons why the Unrelenting Standards was not presented in the factor structure. Finally, it is suggested to keep making adaptation studies and to keep studying the psychometric properties of the YSQ-S3 in different clinical and non-clinical populations.

It is considered that the major contribution of this study was the development of the YSQ-S3-MX (see supplementary material). The YSQ-S3-MX is an instrument with good factorial structure, construct validity, internal consistency, and moderate model fit, which has the proper characteristics to evaluate 17 out of the 18 EMS and useful for the diagnosis and patient treatment.

Statements and Declarations

Conflicts of Interest

The authors declare not having any competing financial or non-financial interests to disclose. The authors did not receive support from any organization for the submitted work.

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