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ORIGINAL PAPER

Spanish Translation, Adaptation, and Validation of the Multidimensional Condom Attitudes Scale with Young Colombian Men and Women

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Abstract
Infection by HIV/AIDS or other STIs and unplanned pregnancies are sexual health problems of considerable impact around the world. Condoms are the only method that prevents all those risks, and attitudes toward the use of condoms are among the best predictors of their consistent use. The purpose of the present study was to translate, adapt, and validate a Spanish-language version of the Multidimensional Condom Attitudes Scale (MCAS) using a sample of young people from Colombia. A total of 1441 young people between the ages of 18 and 26 years responded to a web-based survey conducted between January 2018 and February 2018. The dimensionality of the scale was explored and confirmed to replicate the original five-factor structure (alphas ranged from .65 to .86). Criterion validity was adequate. Women had more positive attitudes toward identity stigma associated with condom use, while men had more positive attitudes toward reliability and effectiveness of condoms and were less embarrassed with condom negotiation and use. The Spanish-language MCAS is suitable for measuring condom-related attitudes among Colombian youth. Future research is needed to validate the Spanish version of the MCAS with other Spanish-speaking populations.

Keywords Condom use · Scale adaptation · Multidimensional Condom Attitudes Scale

Introduction

Condoms are the only method to prevent the transmission of HIV and other sexually transmitted infections (STIs) and unplanned pregnancies (UNAIDS, 2015). Attitudes toward the use of condoms have been shown to be one of the best predictors of the actual use (Albarracin, Johnson, Fishbein, & Muellerleile, 2001; Diez, Juárez, Nebot, Cerda, & Villalbi, 2000; Ferguson, 2011; Sheeran, Abraham, & Orbel, 1999).

The Multidimensional Condom Attitudes Scale (MCAS; Helweg-Larson & Collins, 1994) is one scale used to evaluate attitudes toward condoms with adequate psychometric support. The MCAS consists of 25 items grouped in five dimensions: (1) reliability and effectiveness of condoms, (2) sexual pleasure associated with condom use, (3) identity stigma associated with people who use condoms, (4) embarrassment associated with condom use negotiation, and (5) embarrassment associated with buying condoms. Each dimension includes five items measured using a 7-point Likert-type scale with answers ranging from 1 = *Completely agree* to 7 = *Completely disagree*. When inverted items are reversed, higher scores indicate more positive attitudes.

The MCAS was found to be reliable and valid in ethnically diverse samples of college students (Helweg-Larson & Collins, 1994). The obtained results Cronbach's alpha value ranged from .62 to .80, and it showed a five-factor dimensionality (described above) that explained 65% of the variance. The MCAS has been translated into Spanish by two different research groups: DeSouza, Madrigal, and Millan (1999) and Unger, Greogory, and Molina (1999). DeSouza et al. used the scale with Mexican college students. As for the second study, Unger et al. used an ad hoc translation into Spanish which they administered orally to Hispanic women living in the U.S. who had been scarcely accultured. The psychometric properties of the Spanish scale were mixed with the original English version. The values obtained were

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$\chi^2(257) = 381.05$, $p < .0001$, GFI = .896, CFI = .935. Model fitting was comparable to the fitting obtained by Helweg-Larson and Collins (1994) with the college student sample (CFI for women = .90). Starosta, Berghoff, and Earleywine (2014) confirmed the presence of the five factors but pointed out the possible presence of differential item functioning (DIF) due to gender in three items using the English-language version.

Thus, given the importance of evaluating attitudes toward the use of condoms reliably and validly, and since no record of the Spanish version of the MCAS is available, the present brief report sought to adapt the MCAS for Spanish and validate the scale using a sample of Colombian young adults. We also examined the gender invariance on the Spanish-language MCAS using confirmatory factor analysis.

Method

Participants and Procedure

A total of 1441 young adults between 18 and 26 years of age ($M = 21.3$; $SD = 2.21$) participated in the present study. The gender distribution of the sample was as follows: 58.66% women, 41.14% men, and 0.21% of participants identified themselves as neither woman nor man (see Table 1). The sample was randomly split into two different subsamples; a 600-participant subsample was subjected to exploratory factor analysis (EFA), and an 841-participant subsample was subjected to confirmatory factor analysis (CFA). The rest of the analyses—invariance included—used the full sample.

Measures

UCLA Multidimensional Condom Attitudes Scale (MCAS; Helweg-Larson & Collins, 1994). This scale evaluates attitudes toward the use of condoms. The MCAS consists of 25 items grouped in five dimensions: See the introduction for further information. (The measure can be found in the Appendix).

Demographics and Sexual Intentions and Behaviors. Participant demographics (age, sex, sexual orientation, marital status, education, and steady partner) were collected using a survey. We also collected data on condom use frequency (CF), intention to obtain a condom (IOC), intention to use a condom (IUC), and condom use negotiation (CN).

Sexual Opinion Survey (SOS-6; Fisher, White, Byrne, & Kelley, 1988). A brief version, adapted by Vallejo-Medina et al. (2016) for Colombia, was used in the present study. The survey evaluated general attitudes toward sexuality along the erotophilia-erotophobia axis. It is composed of 6 items with response items on a 7-point Likert-type scale (1 = *totally agree*, 7 = *totally disagree*). Two items are: "It is exciting for me to think about engaging in sexual intercourse" and "I like to have dreams about sex." People who score low tend to respond with negative evaluations of sexual stimuli—including condoms—and they also tend to avoid condoms. On the contrary, people who score high have more positive emotions toward sexuality, so they tend to evaluate condoms positively and seek sexual stimulation (Fisher et al., 1988). Cronbach's alpha was .82.

Sexual Assertiveness Scale (SAS; Morokoff et al., 1997). The brief version of the SAS, adapted by Vallejo-Medina et al. (2017) for Colombia, was used in the present study. The SAS evaluates three dimensions: Initiation, Refusal, and Pregnancy-STD Prevention. The present study used only the last dimension which consists of three items, and it was scored using a 5-point Likert-type scale (0 = *Never* to 4 = *Always*). Two items are: "When I have sex with my partner, I make sure that we use a condom" and "I refuse to have sex if my partner refuses to use a condom." Higher scores represent greater sexual assertiveness. Cronbach's alpha was .87.

Attitudes Toward the Use of Condoms. Following Ajzen and Fishbein (2005), a scale evaluating perceptions about condoms as a protection method for vaginal or oral sex was constructed. The scale included six items and participants had seven response alternatives ranging from 1 to 7 with anchors of very unpleasant-very pleasant, very unhealthy-very healthy, very bad-very good, very harmful-very beneficial, and very uncomfortable-very comfortable, as well as an item focused on general attitudes toward the consistent use of condoms. Items were summed in a total score. Cronbach's alpha was .79.

Condom Associated Erectile Problems (CAEP). We used the two questions commonly asked to evaluate CAEP (Janssen et al., 2014; Sanders, Hill, Crosby, & Janssen, 2014; Sanders et al., 2015): "How often in the past 90 days did you lose or start to lose your erection while putting the condom on before vaginal intercourse?" and "How often in the past 90 days did you lose or start to lose your erection while wearing a condom during vaginal intercourse?" Participants rated each item on a 5-point scale (0 = Never to 4 = Always). The average score was used in the analysis. Cronbach's alpha was .78.

Procedure

Permission to adapt the MCAS to Spanish was obtained by the scale developers (M. Helweg-Larson, personal communication, October 27, 2016). The scale was adapted to Colombian Spanish-speaking population consistent with published guidelines (American Educational Research Association [AERA], American Psychological Association [APA], and the National Council on Measurement in Education [NCME], 2014; Muñiz, Elosua, & Hambleton,

Table 1 Sample distribution by demographic characteristics

Characteristics	Men ($n=594$)		Women ($n=847$)		Total (N = 1441)	
	n	%	*N*	%	*n*	%
Age (in years)						
18	59	9.93%	112	13.2%	171	11.84%
19	83	14.0%	102	12.0%	185	12.88%
20	86	14.5%	135	15.9%	221	15.37%
21	73	12.3%	144	17.0%	217	15.03%
22	71	12.0%	119	14.0%	190	13.16%
23	80	13.5%	103	12.2%	183	12.74%
24	64	10.8%	67	7.91%	131	9.07%
25	59	9.93%	52	6.14%	111	7.69%
26	19	3.20%	13	1.57%	32	2.22%
Sexual orientation						
Exclusively heterosexual	349	58.75%	685	81.35%	1034	71.88%
Mainly heterosexual, some sporadic homosexual intercourses	32	5.39%	108	12.75%	140	9.72%
Mainly heterosexual, many sporadic homosexual intercourses	13	2.19%	23	2.72%	36	2.57%
Approximately the same number of homosexual and heterosexual intercourses	17	2.86%	12	1.42%	29	2.01%
Mainly homosexual, several sporadic heterosexual intercourses	13	2.19%	1	0.12%	14	0.97%
Mainly homosexual, several sporadic heterosexual intercourses	25	4.21%	7	0.83%	32	2.22%
Exclusively homosexual	141	23.74%	6	0.71%	147	10.28%
Asexual	4	0.67%	1	0.12%	5	0.35%
Marital status						
Single	510	85.86%	725	85.60%	1235	85.91%
Married	4	0.67%	13	1.53%	17	1.18%
In common law marriage	75	12.63%	103	12.16%	178	12.35%
Separated	5	0.84%	2	0.24%	7	0.48%
Widow/Widower			1	0.12%	1	0.07%
Schooling						
No schooling	1	0.17%	1	0.12%	2	0.14%
Primary	2	0.34%			2	0.14%
High School	50	8.42%	49	5.79%	99	6.86%
Technical	56	9.43%	82	9.68%	138	9.56%
Technologist	35	5.89%	48	5.67%	83	5.75%
In college	338	56.90%	496	58.56%	834	57.96%
Completed college degree	82	13.80%	134	15.82%	216	14.96%
Pre-graduate	19	3.20%	26	3.07%	45	3.12%
Completed graduate degree	11	1.85%	11	1.30%	22	1.52%
Stable partner[a]						
Yes	285	47.98%	556	65.88%	841	58.39%
No	309	52.02%	289	34.12%	598	41.61%

[a]At least six months

2013). Two independent forward translations were prepared and then revised by a mixed committee of professionals including culturally aware translators who worked with the English–Spanish language combination and psychologists specialized in psychometry and human sexuality. The next step was to conduct a pilot test including 40 participants (Haladyna & Downing, 2011; Schmeiser & Welch, 2006), with the purposes of: (1) collecting reactions from the people who constructed the test, (2) making sure that items and instructions were clearly understandable, (3) recording the time needed to complete the test, (4) collecting information on possible content or form errors to be corrected before the operational phase, and (5) obtaining data for an initial item performance analysis. Finally, an online

non-probabilistic sampling of the Colombian territory was carried out using the Survey Monkey platform. The survey was distributed by Facebook between January 19 and February 14, 2018. Participants had to be a Colombian living in Colombia between 18 and 26 years of age. Exclusion criteria included (1) illiteracy, (2) not accepting the informed consent agreement, and (3) failing to complete the survey. The survey was initially accessed by 2560 people. A total of 265 young people were excluded because they did not provide informed consent, 374 because they were outside the age range (18–26 years of age), 121 because they were not Colombian, and 356 because they failed to complete the survey. The final sample included 1444 participants. The average survey response time was 14 min and 15 s. Facebook was paid 200 USD to disseminate the survey.

Statistical Analyses

Analyses were carried out using R software version 3.4.0 (Ihaka & Gentleman 1993) running on the Rstudio terminal version 1.1.423 (RStudio Team, 2015). The 600-participant subsample was subjected to EFA. The number of factors to be extracted was determined by parallel analysis (PA), and the maximum likelihood (ML) method was selected for extraction. The analysis used the correlation matrix, and varimax rotation was used as rotation method. The 841-participant subsample was subjected to CFA. A robust extraction method (maximum likelihood estimation with robust standard errors and a Satorra-Bentler scaled test statistic; MLM) was selected to compensate for the lack of multivariate normality. Root mean square error approximation (RMSEA), comparative fit index (CFI), and standardized root mean square residual (SRMR) were employed as indices of fit. Scores under .06 for RMSEA and SRMR and equal or higher than .90 in CFI were considered indicators of the model's goodness of fit.

Results

Exploratory Factor Analysis

Results shown in Table 2 reflect the five-factor (suggested by PA) item grouping and saturation score over .30. This factorization explained 57% of the variance.

Confirmatory Factor Analysis

Four different models associated with the previously analyzed model were tested. Model 1 was unidimensional (all 25 items saturate a single factor), Model 2 had five unrelated factors, Model 3 had five first-order factors and a second-order factor, and Model 4 had five related factors. The five related factors model was found to have the best indices of fit of the four tested models (see Table 3). Figure 1 shows the standardized weights and the path diagram for this model.

Gender Invariance

Dimensionality was finally closed with invariance testing. We evaluated if the scale dimensionality was equivalent across genders. In Table 4, it can be observed that scalar level was not achieved. (This level of invariance will be needed in order to compare scores between men and women.) Thus, we consulted the modification index and observed that Item 3 did not support this level of restrictions and we ran a partial invariance for scalar level that was finally reached. Strict level could not be reached.

Table 2 Exploratory factor analysis

	Factor				
	Shame	Pleasure	Reliability	Negotiation	Stigma
Items					
MCAS5	.80				
MCAS10	.57				
MCAS11	.93				
MCAS17	.86				
MCAS23	.69				
MCAS2		.58			
MCAS8		.69			
MCAS15		.65			
MCAS19		.69			
MCAS25		.69			
MCAS4			.56		
MCAS6			.62		
MCAS9			.81		
MCAS14			.58		
MCAS20			.87		
MCAS1				.67	
MCAS7	.33			.51	.38
MCAS12				.70	
MCAS16				.55	.46
MCAS21				.64	
MCAS3					.58
MCAS13					.57
MCAS18					.75
MCAS22					.78
MCAS24					.59
% of explained variance	14%	9%	11%	10%	13%

Values below .30 were omitted

Reliability and Item Psychometric Properties

Table 5 presents some of the items' psychometric properties. Standard deviation was approximately 1, which indicates an adequate response variability. Corrected item-total correlations were higher than .30, and Cronbach's alpha if an item was eliminated (α-item) did not affect the estimated consistency for each factor.

Validity with Respect to a Criterion

Table 6 describes the association between the five factors of the scale with other theoretically related scales and variables. The dimensions of condom negotiation and identify stigma relate to all measures. The dimension of pleasure is also related to all measures, except for the SOS. The dimension of reliability presents an adequate association with all the measures except intentions to use condoms. Finally, the dimension of embarrassment toward condom negotiation was

Table 3 Fit indexes for the four tested models

Model	χ^2 (robust)	*df*	*p*	RMSEA (90% CI)	CFI	SRMR
Unidimensional model	3447.34	275	< .01	.132 (.128–.136)	.38	.121
5 unrelated factors	1046.91	275	< .01	.064 (.060–.069)	.85	.120
5 factors with 1 s order	762.66	270	< .01	.052 (.048–.056)	.90	.060
5 related factors	724.42	265	< .01	.051 (.046–.055)	.91	.054

df, degree of freedom; CFI, comparative fit index; RMSEA, root mean square error approximation; SRMR, standardized root mean square residual (SRMR); CI, confidence interval

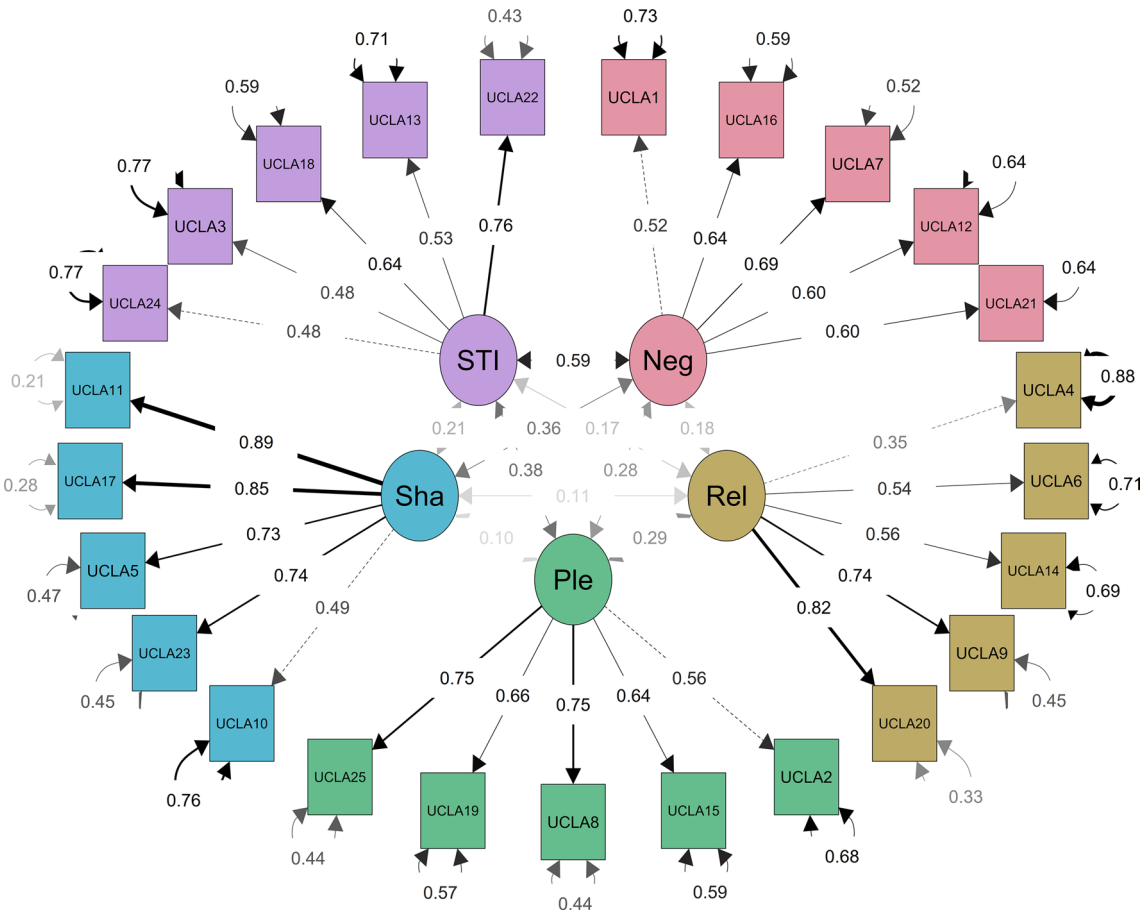

Fig. 1 Path diagram of the final 5-dimensional model. Standardized weights are shown. Ple, pleasure; Sha, shame; STI, stigma; Neg, negotiation; Rel, reliability

Table 4 Fit indices for gender invariance

	χ^2 robust	*df*	*p*	CFI	ΔCFI	RMSEA	RMSEA (CI 90%)	ΔRMSEA
Configural	1189.04	530	< .01	.921	–	.044	.041–.047	–
Metric	1266.91	550	< .01	.914	− .007	.045	.042–.048	.001
Scalar	1401.38	570	< .01	.900	− .014	.047	.045–.050	.002
Partial scalar[a]	1345.13	569	< .01	.906	− .008	.046	.043–.049	.001
Strict	1582.26	595	< .01	.881	− .025	.051	.048–.053	.005

df, degree of freedom; CFI, comparative fit index; RMSEA, root mean square error approximation; ΔCFI, comparative fit index increase; CI, confidence interval; ΔRMSEA, root mean square error approximation increase. [a]Item 3 was not restricted for the partial scalar invariance

Table 5 Psychometric properties of items and reliability of subscales

Factor	Item	*M* (*SD*)	Citc	Skewness	Kurtosis	α-item	Total α (95% CI)	Total *M* (*SD*)
Shame	MCAS5	4.43 (2.04)	.68	− 0.09	− 1.37	.83	.86 (.85–.87)	25.96 (7.36)
	MCAS10	5.79 (1.62)	.47	− 1.46	1.21	.87		
	MCAS11	5.17 (1.89)	.80	− 0.61	− 1.05	.80		
	MCAS17	4.97 (1.99)	.76	− 0.49	− 1.20	.81		
	MCAS23	5.60 (1.63)	.68	− 1.06	0.05	.83		
Pleasure	MCAS2	4.68 (1.92)	.49	− 0.19	− 1.34	.81	.81 (.79–.82)	20.85 (6.41)
	MCAS8	5.30 (1.65)	.65	− 0.60	− 0.88	.75		
	MCAS15	3.33 (1.55)	.59	0.13	− 0.63	.77		
	MCAS19	3.21 (1.57)	.61	− 0.27	− 0.60	.77		
	MCAS25	4.32 (1.86)	.66	− 0.03	− 1.14	.76		
Reliability	MCAS4	6.36 (1.11)	.34	− 2.81	9.18	.77	.76 (.74–.78)	27.79 (5.39)
	MCAS6	5.35 (1.57)	.54	− 0.74	− 0.54	.71		
	MCAS9	5.42 (1.57)	.57	− 1.08	0.41	.70		
	MCAS14	5.21 (1.73)	.56	− 0.78	− 0.59	.70		
	MCAS20	5.43 (1.49)	.63	− 1.15	0.67	.68		
Negotiation	MCAS1	5.98 (1.63)	.47	1.70	1.84	.71	.74	30.08 (5.14)
	MCAS7	6.06 (1.42)	.53	1.74	2.29	.69		
	MCAS12	5.97 (1.50)	.52	1.78	2.54	.69		
	MCAS16	6.18 (1.25)	.52	1.81	2.97	.70		
	MCAS21	5.79 (1.51)	.50	1.49	1.72	.70		
Stigma	MCAS3	6.58 (0.96)	.40	1.90	3.35	.60	.65	31.73 (3.78)
	MCAS13	6.12 (1.36)	.41	2.84	8.62	.59		
	MCAS18	6.52 (0.93)	.43	2.78	9.15	.59		
	MCAS22	6.43 (0.97)	.53	2.35	6.45	.55		
	MCAS24	6.02 (1.51)	.33	1.72	2.09	.65		

M mean; *SD* standard deviation; *Citc* corrected item-total correlation; *α-item* Cronbach's alpha if item is eliminated; *α* Cronbach's alpha

not associated with the SAS, CF, and IUC, but there was no association with the remaining scales.

Gender Differences

Gender differences across the five dimensions are shown in Fig. 2. The only significant differences were observed for embarrassment toward condom negotiation, reliability and effectiveness, and embarrassment about condom negotiation and use. Women had more positive attitudes toward the identity stigma associated with condom use, while men had more positive attitudes toward the reliability and effectiveness of condoms and were less embarrassed with condom negotiation and use.

Table 6 Means, SDs, and correlations with confidence intervals

Variable	*M*	SD	1	2	3	4	5	6	7	8	9	10	11	12
1. Emb	25.96	7.40												
2. Plea	20.85	6.46	.13**											
			[.08, .19]											
3. Relia	27.79	5.37	.15**	.21**										
			[.09, .20]	[.15, .26]										
4. Nego	30.08	5.05	.30**	.25**	.16**									
			[.25, .35]	[.20, .30]	[.10, .21]									
5. Stig	31.73	3.71	.20**	.30**	.18**	.41**								
			[.15, .25]	[.25, .35]	[.13, .24]	[.36, .45]								
6. CF	3.72	2.17	.04	−.37**	−.08**	−.19**	−.13**							
			[−.01, .09]	[−.42, −.32]	[−.14, −.03]	[−.25, −.14]	[−.19, −.08]							
7. IOC	3.85	1.29	.07*	.29**	.07**	.16**	.14**	−.55**						
			[.01, .12]	[.24, .34]	[.02, .13]	[.10, .21]	[.08, .19]	[−.59, −.51]						
8. IUC	3.72	1.36	−.04	.33**	.04	.13**	.10**	−.75**	.64**					
			[−.09, .01]	[.28, .38]	[−.01, .10]	[.07, .18]	[.05, .16]	[−.77, −.72]	[.60, .67]					
9. CN	3.67	1.40	−.06*	.31**	.06*	.11**	.11**	−.63**	.56**	.81**				
			[−.11, −.00]	[.26, .36]	[.00, .11]	[.06, .16]	[.06, .16]	[−.66, −.60]	[.52, .60]	[.79, .82]				
10. SOS	34.31	6.98	.07*	−.02	.12**	.10**	.07*	−.00	−.01	−.04	−.05			
			[.01, .12]	[−.07, .04]	[.07, .18]	[.05, .16]	[.01, .12]	[−.06, .05]	[−.06, .05]	[−.10, .01]	[−.10, .01]			
11. SAS	6.15	4.17	−.02	.42**	.10**	.26**	.24**	−.77**	.55**	.68**	.62**	.03		
			[−.08, .03]	[.37, .46]	[.05, .16]	[.21, .31]	[.19, .29]	[−.79, −.75]	[.51, .59]	[.65, .71]	[.59, .66]	[−.02, .09]		
12. Att	33.82	5.46	.10**	.55**	.50**	.19**	.29**	−.35**	.31**	.35**	.34**	.05	.37**	
			[.05, .15]	[.51, .59]	[.46, .54]	[.14, .24]	[.24, .34]	[−.40, −.31]	[.26, .36]	[.30, .40]	[.29, .38]	[−.01, .10]	[.33, .42]	
13. CAEP	1.61	0.73	−.08**	−.36**	−.08**	−.16**	−.16**	.12**	−.10**	−.14**	−.10**	.07*	−.15**	−.23**
			[−.13, −.03]	[−.40, −.31]	[−.13, −.02]	[−.21, −.10]	[−.21, −.10]	[.06, .17]	[−.16, −.05]	[−.19, −.08]	[−.15, −.04]	[.01, .12]	[−.21, −.10]	[−.28, −.18]

M and *SD* are used to represent mean and standard deviation, respectively. Values in square brackets indicate the 95% confidence interval for each correlation. The confidence interval is a plausible range of population correlations that could have caused the sample correlation (Cumming, 2014). *$p < .05$. **$p < .01$. Emb. , Embarrassment; Plea. , Pleasure; Relia., Reliability; Nego., Negotiation; Stig., Stigma; CF, condom use frequency; IOC, intention to obtain a condom; IUC, intention to use a condom; CN, condom use negotiation; SOS, sexual opinion survey; SAS, sexual assertiveness scale; Att, attitudes; CAEP, condom associated erectile problems

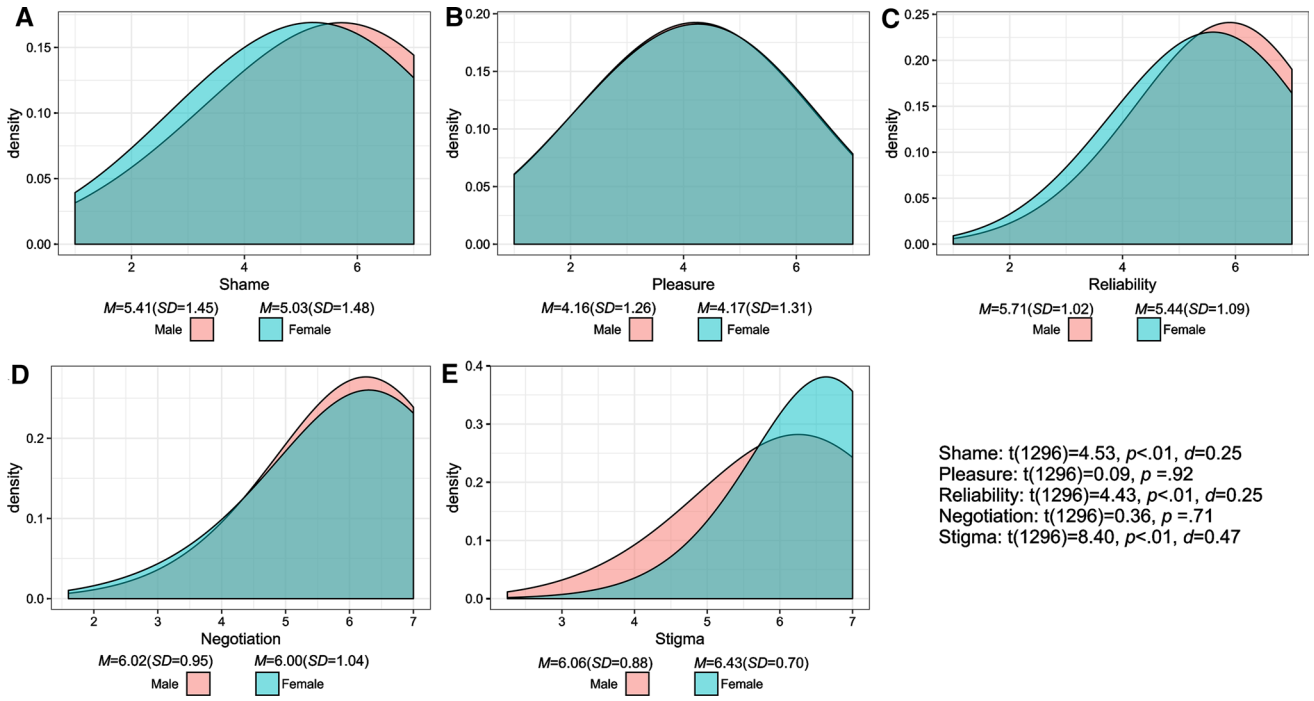

Fig. 2 Sex comparison by gender for the five dimensions of the scale. Item 3 belonging to Stigma was not considered for this analysis due to invariance problems

Discussion

Attitudes toward condoms are among the best predictors of consistent condom use (Glasman & Albarracín, 2006) which can be measured using the MCAS (Helweg-Larson & Collins, 1994; Starosta et al., 2014). The scale had not been adapted, validated, and made widely available for Spanish-speakers until now. Therefore, the present study sought to translate, adapt, and validate the MCAS (Helweg-Larson & Collins, 1994) for Spanish-speaking populations using a sample of Colombian men and women. In general, the scale showed adequate psychometric properties: reliability was confirmed, and adequate construct validity indicators and validity concerning other criteria could also be measured. Therefore, the version adapted by our research group is suitable for use with Colombian young people.

No significant problems were encountered during the scale adaptation process. Initially, the dimensionality of the scale was tested using two complementary procedures: EFA and CFA. EFA suggested the presence of five factors that explained 43% of the variance, and the same five-factor structure was confirmed in an independent subsample. These results are consistent with the dimensional structure of the English-language measure (Helweg-Larson & Collins, 1994; Starosta et al., 2014). Invariance problems were observed for item 3.

Once the dimensionality of the Colombian MACS version was established, the next step was evaluating some of its psychometric properties. Measured reliability values were adequate, except in the case of identity stigma (.65) but comparable to those found by other studies; the original study by Helweg-Larson and Collins (1994) found a Cronbach's alpha of .62; and Unger et al. (1999) obtained a Cronbach's alpha of .56 for this dimension. All items seem to support the reliability of their corresponding subscales except for two items that dragged the reliability of the subscale by barely one hundredth; therefore, no additional changes were considered. Additionally, the items showed optimal corrected item-total correlations. Item means are located in the theoretical median of the response scale (4) or slightly above, as could be expected in general populations free of specific problems. The adequate response distribution was indicated by SD values between 0.96 and 2.04. Finally, concerning skewness and kurtosis, the multivariate distribution of the items cannot be considered normal.

As for criterion validity, the scale showed a stable behavior, which was expected given the observed significant associations, both low and moderate, in comparison with other

scales evaluating similar (or identical) constructs. A consistent association between attitudes toward condoms and general attitudes toward sexuality was observed, except in the case of the pleasure subscale. Nevertheless, these associations were only significant enough to show a slight trend. Several studies have reported relationships between erotophilia and use of condoms and attitudes toward condoms (Kyes, 1990; Ross, 1992; Sanders et al., 2006), although exceptions where this association was not observed have also been reported (Sakaluk & Gillath, 2016). In the present study, we observed an association between attitudes toward condoms and sexual assertiveness in regard to preventing unplanned pregnancies and avoiding STIs. Except for one subscale (embarrassment about negotiation and use), the rest of the associations were moderate or low, an expected result, since sexual assertiveness has been shown to be a good predictor of condom use and condom use negotiation (Uribe-Alvarado, Bahamón, Reyes, Trejos, & Alarcón, 2017; Ward, Seabrook, Grower, Giaccardi, & Lippman, 2018; Widman, Noar, Choukas-Bradley, & Francis, 2014). Observed relationships between attitudes, intentions, and behavior were also as expected. Thus, condom use frequency, intention to obtain a condom, intention to use a condom, and negotiating the use of condoms showed low or moderate relationships with the different MCAS subscales (except again in the case of the dimension of pleasure). The present study also used an ad hoc convergent validity measure to evaluate attitudes toward condoms. As expected, the highest correlations observed were between these variables. Finally, negative relationships were found between attitudes toward condoms and the CAEP. To the best of our knowledge, this is the first evaluation of CAEP and attitudes toward condoms, and there are few referents in this regard; however, CAEP is associated with low motivation for using condoms (Graham, Crosby, Sanders, Milhausen, & Yarber, 2016; Sanders et al., 2014). As can be appreciated from the previous description, our scale relates to other similar scales as expected.

Differences in condom attitudes were observed between men and women. Women held more positive attitudes toward identity stigma than men. Colombian men feel more stigma associated with condom use and perceive that condom use is a woman's problem and responsibility (Morales et al., 2019). Women, however, reported worse attitudes in subscales of embarrassment and reliability of condoms. This is consistent with prior research showing that young women experience heightened embarrassment toward (Reeves, Ickes, & Mark, 2016) and report having less appropriation regarding condom use self-efficacy than men (Sanchez-Mendoza, Soriano-Ayala, & Vallejo-Medina, 2020). Men also held more positive attitudes associated with condoms reliability compared to women. We expected differences between men and women because women were reported more problems/errors using male condom use that affected their condom use self-efficacy in Colombia (González-Hernández, Escobar-Estupinan, & Vallejo-Medina, 2020). These differences are consistent with the original English-language validation (Helweg-Larson & Collins, 1994) and highlight the need for sexual health programs that use different strategies to promote condom use for men and women.

The present study makes it possible to use the MACS scale to obtain reliable and valid measurements of attitudes toward the use of condoms among Colombian young people. However, the study had certain limitations. The non-randomized sampling approach used in the present study rules out the replicability of results to the general national population. Additionally, the survey may not be suitable for young people without access to the internet due to the web-based survey method. Future studies should target other Spanish-speaking samples or specific populations (e.g., adolescents). Additionally, the presence of differential item functioning across genders should be explored. The availability of the Spanish-validated MACS represents a new tool for working for the benefit of Colombian youth sexual health, and it opens the possibility of assessing the effectiveness of sexual health promotion programs.

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Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical Approval The investigation reported in this paper was conducted per the 1975 Helsinki Declaration, revised in 1983 by the Ethics Committee for Clinical Research. Participation was voluntary and anonymous: all participants agreed to participate. The research project associated with the present study was approved by an independent ethics committee from the Fundacion Universitaria Konrad Lorenz.

Informed Consent All participants accepted the informed consent which was maintained throughout the whole research.

Appendix

Actitudes multidimensionales frente al condón UCLA

See Table 7.

Table 7 Cada uno de los enunciados de este cuestionario de opinión expresa un sentimiento o una actitud hacia el uso del condón (Each statement in this questionnaire expresses a feeling or attitude towards condom use)

Marque (X) en qué medida está de acuerdo o en desacuerdo con la actitud expresada en cada enunciado como usted lo percibe (Check (X) to what extent you agree with the attitude expressed in each statement as you perceive it)	Totalmente en desacuerdo (Strongly Disagree)	En desacuerdo (Disagree)	Un poco en desacuerdo (Slightly Disagree)	Ni de acuerdo ni en desacuerdo (Neither agree nor disagree)	Un poco de acuerdo (Slightly Agree)	De acuerdo (Agree)	Totalmente de acuerdo (Strongly Agree)
1. Es muy difícil tocar el tema de usar condón con mi pareja* (It is really hard to bring up the issue of using condoms to my partner)	1	2	3	4	5	6	7
2. El uso del condón interrumpe el juego previo* (Use of a condom is an interruption of foreplay)	1	2	3	4	5	6	7
3. Las mujeres piensan que los hombres que usan condones son idiotas* (Women think men who use condoms are jerks)	1	2	3	4	5	6	7
4. El condón es un método efectivo para prevenir la transmisión del SIDA y otras infecciones de transmisión sexual (Condoms are an effective method of preventing the spread of AIDS and other sexually transmitted diseases)	1	2	3	4	5	6	7
5. Siempre me siento incomodo/a cuando compro condones* (I always feel really uncomfortable when I buy condoms)	1	2	3	4	5	6	7
6. Los condones no son confiables* (Condoms are unreliable)	1	2	3	4	5	6	7
7. Cuando sugiero usar un condón casi siempre me da pena* (When I suggest using a condom I am almost always embarrassed)	1	2	3	4	5	6	7
8. Los condones arruinan el acto sexual* (Condoms ruin the sex act)	1	2	3	4	5	6	7
9. Creo que los condones son un excelente método anticonceptivo (I think condoms are an excellent means of contraception)	1	2	3	4	5	6	7
10. No creo que comprar condones sea raro (I don't think that buying condoms is awkward)	1	2	3	4	5	6	7
11. Comprar condones es muy vergonzoso* (It is very embarrassing to buy condoms)	1	2	3	4	5	6	7
12. Es fácil sugerirle a mi pareja que usemos condón (It is easy to suggest to my partner that we use a condom)	1	2	3	4	5	6	7
13. Si una pareja está a punto de tener sexo y el hombre sugiere usar condón es menos probable que tengan sexo* (If a couple is about to have sex and the man suggests using a condom, it is less likely that they will have sex)	1	2	3	4	5	6	7
14. Los condones no ofrecen una protección confiable* (Condoms do not offer reliable protection)	1	2	3	4	5	6	7
15. Los condones son muy divertidos (Condoms are a lot of fun)	1	2	3	4	5	6	7
16. Nunca sé que decir cuando mi pareja y yo tenemos que hablar sobre condones u otro tipo de protección* (I never know what to say when my partner and I need to talk about condoms or other protection)	1	2	3	4	5	6	7

Table 7 (continued)

Marque (X) en qué medida está de acuerdo o en desacuerdo con la actitud expresada en cada enunciado como usted lo percibe (Check (X) to what extent you agree with the attitude expressed in each statement as you perceive it)	Totalmente en desacuerdo (Strongly Disagree)	En desacuerdo (Disagree)	Un poco en desacuerdo (Slightly Disagree)	Ni de acuerdo ni en desacuerdo (Neither agree nor disagree)	Un poco de acuerdo (Slightly Agree)	De acuerdo (Agree)	Totalmente de acuerdo (Strongly Agree)
17. Seria vergonzoso que me vieran comprando condones en una tienda* (It would be embarrassing to be seen buying condoms in a store)	1	2	3	4	5	6	7
18. La gente que sugiere el uso del condón es un poco ñoña* (People who suggest condom use are a little bit geeky)	1	2	3	4	5	6	7
19. El usar condón puede hacer que el sexo sea más estimulante (The use of condoms can make sex more stimulating)	1	2	3	4	5	6	7
20. Los condones son un método anticonceptivo efectivo (Condoms are an effective method of birth control)	1	2	3	4	5	6	7
21. Me siento cómodo/a hablando de condones con mi pareja (I'm comfortable talking about condoms with my partner)	1	2	3	4	5	6	7
22. Los hombres que sugieren usar condón son muy aburridos* (Men who suggest using a condom are really boring)	1	2	3	4	5	6	7
23. Cuando necesito condones, con frecuencia me da miedo conseguirlos* (When I need condoms, I often dread having to get them)	1	2	3	4	5	6	7
24. Una mujer que sugiere usar condón no confía en su pareja* (A woman who suggests using a condom does not trust her partner)	1	2	3	4	5	6	7
25. Los condones son incomodos para ambos* (Condoms are uncomfortable for both parties)	1	2	3	4	5	6	7

*Items que requieren inversión (1, 2, 3, 5, 6, 7, 8, 11, 13, 14, 16, 17, 18, 22, 23, 24, y 25). En ese caso, puntuaciones más altas significan mejores actitudes en la escala (Inverse items: (1, 2, 3, 5, 6, 7, 8, 11, 13, 14, 16, 17, 18, 22, 23, 24, and 25). In this case, higher scores mean higher attitudes on the scale)

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