

2 **Psychometric Properties of the Spanish Version of the Homophobic**  
3 **Content Agent Target Scale Among Adolescent Students**4 **M. Sánchez-SanSegundo<sup>1</sup> · E. Smith<sup>2</sup> · N. Albaladejo-Blazquez<sup>1</sup> · R. Ferrer-Cascales<sup>1</sup> · N. Ruiz-Robledillo<sup>1</sup> ·**  
5 **Paul B. Perrin<sup>2</sup>**6 Received: 16 May 2018 / Revised: 30 May 2019 / Accepted: 8 July 2019  
7 © Springer Science+Business Media, LLC, part of Springer Nature 20198 **Abstract**9 This study examined the psychometric properties and factor structure of the Spanish version of the Homophobic Content Agent  
10 Target (HCAT) scale in a sample of 1848 high school students. Participants completed an online survey including measures of  
11 homophobic bullying, depression and anxiety. The factor structure showed adequate fit indices in Spanish adolescents similar to the  
12 original scale. An exploratory factor analysis showed a simple factor solution of two related factors strongly correlated describing  
13 the extent to which students use homophobic language (agent) and the extent to students are called homophobic epithets (target)  
14 due to sexual orientation. The Spanish HCAT scale showed high as at the subscale score levels, as well as good convergent valid-  
15 ity. This study contributes a Spanish-language validated measure of homophobic victimization to be used among adolescents.  
16 Implications for understanding homophobic bullying in adolescents are discussed.17 **Keywords** Homophobia · Bullying · Victimization · Psychometric properties18 **Introduction**19 Bullying has consistently been recognized as a major prob-  
20 lem within schools throughout the world (Due et al., 2009).  
21 Although a wide body of research has examined bullying more  
22 broadly, there is a paucity of research on homophobic bullying.  
23 This type of bullying is rooted in homophobic motivations and  
24 is directed at individuals who identify as sexual minorities (i.e.,  
25 gay, lesbian, bisexual), although those who are perceived or  
26 thought to be sexual minority individuals may also experience  
27 homophobic bullying (Prati, 2012).28 Homophobic bullying is one of the most frequent forms  
29 of aggression experienced by sexual minority adolescents in  
30 school-based settings (Kosciw, Greytak, Diaz, & Bartkiewicz,  
31 2010; Poteat, O'dwyer, & Mereish, 2012). Sexual minority  
32 youth are at increased risk of experiencing homophobic vic-  
33 timization (Poteat & Espelage, 2007; Rivers, 2001; Toomey34 & Russell, 2016) and are three times as likely as their hetero-  
35 sexual peers to be absent at school due to verbal harassment and  
36 aggression because of their sexual orientation (Kosciw et al.,  
37 2010). The most recent US National School Climate Survey  
38 reported that nearly of 85% of sexual minority students in mid-  
39 dle and high school experienced verbal harassment (e.g., were  
40 called names or threatened), and 27% were physically harassed  
41 at school in the past year due to their sexual orientation (Kosciw,  
42 Greytak, Giga, Villenas, & Danischewski, 2016). Similar rates  
43 of homophobic victimization among sexual minority students  
44 have been reported in previous research (Kosciw, 2004; Riv-  
45 ers, 2001).46 The most common homophobic bullying behaviors include  
47 the use of homophobic language (e.g., being called “gay,” “fag,”  
48 “dyke”), making derogatory jokes, or spreading of rumors  
49 about an individual’s sexual orientation (Perez, 2014; Rivers,  
50 2001). These forms of verbal harassment have also been found  
51 to be used against heterosexual youth who are perceived to be  
52 “different” (Chambers, Tincknell, & Loon, 2004; Collier, Bos,  
53 & Sandfort, 2013). For example, in a large US nationally repre-  
54 sentative study with a sample of 2064 public school students,  
55 66% of students surveyed had been victims of verbal harass-  
56 ment in form of sexual comments, jokes, or insults of homo-  
57 phobic nature (American Association of University Women,  
58 2000). In the UK and Wales, Thurlow (2001) found that aboutA1 ✉ N. Albaladejo-Blazquez  
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59 a third of pejorative words reported by participants referred  
60 to sexist attitudes, 10% were homophobic in nature, and 7%  
61 were racist pejorative insults. More recently, a national study  
62 with over 600,000 students recruited from the Dane County  
63 Youth Assessment (DCYA) and the California Healthy Kids  
64 Survey (CHSKS) in the USA found that nearly 40% of students  
65 surveyed had been bullied, threatened, or harassed at school in  
66 the past year as consequence of being perceived as gay, lesbian,  
67 or bisexual (GLB) or because of their race/ethnicity (Russell,  
68 Sinclair, Poteat, & Koenig, 2012). Similar studies have also  
69 documented high levels of school-based victimization due to  
70 sexual orientation in Israel (Pizmony-Levy, Kama, Shilo, &  
71 Lavee, 2008), Canada (Taylor & Peter, 2011) Brazil (González-  
72 Jiménez & Fischer, 2017), and more recently in Europe (Costa  
73 & Davies, 2012; Plöderl, Faistauer, & Fartacek, 2010).

74 The research literature to date has shown that both sexual  
75 minority and heterosexual youth who are targets of homopho-  
76 bic bullying are at an increased risk of a wide range of adverse  
77 outcomes, including aggression among peers (Poteat & DiGio-  
78 vanni, 2010), lower academic performance (Poteat, Mereish,  
79 DiGiovanni, & Koenig, 2011), school absenteeism (Rivers,  
80 2001), and personal distress (Poteat & Espelage, 2017). In  
81 addition, adolescent victims of homophobic bullying are more  
82 likely to experience higher levels of psychological disturbance  
83 including anxiety, depression, somatic complaints, posttrau-  
84 matic stress (Espelage & Swearer, 2008; Poteat & Espelage,  
85 2007; Rivers, 2005), and suicidal behaviors (Almeida, John-  
86 son, Corliss, Molnar, & Azrael, 2009; Rivers, 2001). Inter-  
87 estingly, research has found that children who engage in bullying  
88 behaviors are more likely to experience depression and anxi-  
89 ety symptoms (Turcotte Benedict, Vivier, & Gjelsvik, 2015),  
90 which could be due in part to the positive relationship between  
91 experiencing and engaging in homophobic bullying (Poteat &  
92 Espelage, 2005).

93 The psychological consequences of homophobic bullying  
94 have been found to be particularly significant in males. Past  
95 research has demonstrated that for adolescent males, homo-  
96 phobic insults are one of the most severe and upsetting forms  
97 of provocation (Pascoe, 2007). Male students report more fre-  
98 quent experiences with sexual prejudice, use more homophobic  
99 epithet toward other students, and are more likely to be targets  
100 of homophobic content than females (Herek, 1988; Poteat &  
101 Espelage, 2007). For most students, adolescence is a critical  
102 period of transitions and vulnerability to peer pressure. Males  
103 often tend to show less tolerance toward those who do not iden-  
104 tify as heterosexual and may fear being perceived as gay if they  
105 adopt gender-role beliefs for men in society (Mata, Ghavami,  
106 & Wittig, 2010; Pleck, Sonenstein, & Ku, 1994) which may in  
107 turn affect their psychological wellbeing.

108 Although most findings reported on homophobic bullying  
109 have been found to be consistent across cultures, the majority

110 of the current literature on homophobic bullying comes from  
111 North America and the UK, and while some findings may be  
112 consistent across countries, homophobic language and attitudes  
113 toward sexual minority individuals may be perceived differently  
114 across cultural context (Collier et al., 2013). For example, in  
115 Spain, sexual orientation has been reported to be one of the  
116 most prevalent causes of hate crimes and discrimination (Span-  
117 ish Interior Ministry, 2015). A national survey on Youth and  
118 Sexual Diversity with a sample of 1411 young adolescents and  
119 adults between 15 and 29 found that 75% of participants sur-  
120 veyed had witnessed homophobic aggression in school in form  
121 of insults, slurs, or spreading rumors of sexual orientation, and  
122 6.4% had witnessed physical violence (INJUVE, 2011). Simi-  
123 larly, in a recent study in a sample of 533 secondary school stu-  
124 dents, Elipe, de la Oliva Muñoz, and Del Rey (2018) reported  
125 that almost twice as many non-heterosexual students reported  
126 experiencing harassment compared to their heterosexual coun-  
127 terparts (45.5% vs. 26%).

128 The present study seeks to extend this line of research by  
129 examining homophobic bullying among adolescents in Spain.  
130 Given that the use of homophobic verbal content is the most  
131 prominent way in which homophobia is expressed among stu-  
132 dents and the lack of validated measures in Spanish for assessing  
133 homophobic bullying, we conducted a cross-sectional Spanish  
134 validation of the Homophobic Content Agent Target (HCAT)  
135 scale, which has been widely used to evaluate the extent to  
136 which students use and are called homophobic epithets in North  
137 America (Poteat & Espelage, 2005). The HCAT may have the  
138 potential for being used in different cultures given that the use  
139 of homophobic language in the form of insults, humiliation,  
140 and verbal aggression has been found as a universal problem,  
141 culturally ingrained in societies globally and relatively consist-  
142 ent across different countries. In fact, studies conducted in USA,  
143 Canada, UK, Israel, and Europe have documented high levels of  
144 school-based victimization due to sexual orientation. Also, the  
145 results of a European study in 37 countries showed that school  
146 seems to be the social context with the most problems wherein  
147 verbal harassment, prejudice, or discrimination due to sexual  
148 orientation is most manifested.

149 The HCAT is comprised of two factors which measure (a)  
150 how participants act as perpetrators of homophobic verbal con-  
151 tent (agent) and (b) the extent to which participants are targets  
152 of homophobic content by peers (target). Based on previous  
153 research on homophobic behaviors, we hypothesized that the  
154 Spanish HCAT scale would show convergent validity via posi-  
155 tive correlations with depression and anxiety and that psycho-  
156 metric properties of the Spanish version would be similar to  
157 those obtained in the original HCAT English version (Poteat  
158 & Espelage, 2005).

159 **Method**160 **Participants**

161 The present study was a part of a large-scale study on victimiza-  
 162 tion, wellbeing and diet conducted in schools in the Mediter-  
 163 ranean city of Alicante, Spain. The study was approved by the  
 164 University of Alicante and by the Educational Directive Com-  
 165 mittee from Schools involved in the study (UA2015-1013). Par-  
 166 ticipants included 1848 high school students randomly selected  
 167 from five public high schools in Alicante, of which 49.1% were  
 168 female and 50.9% male. Participants ranged in age from 11 to  
 169 19 years with an average age of 13.40 (SD = 1.36). Participants  
 170 identified their sexual orientation as heterosexual (98.0%),  
 171 bisexual (.3%), or gay/lesbian (1.7%). Inclusion criteria were:  
 172 (a) presence in the classroom on the day of the survey, (b) ability  
 173 to read and complete the questionnaires themselves, and (c) be  
 174 fluent in Spanish. Prior to conducting the study, the board of  
 175 each participating school notified the students' parents or legal  
 176 guardian for children under 18 years about objectives, methods,  
 177 evaluation processes in writing. In accordance with the Spanish  
 178 Royal Decree 1720/2007 on the Protection of Personal Data in  
 179 children, all participants and parents or legal guardian were also  
 180 asked to provide an informed consent in writing, explaining that  
 181 their authorization might be revoked or canceled at any time  
 182 according to their own will. Students who were present on the  
 183 day of data collection and assented to participate in the study  
 184 were instructed to complete an anonymous online survey in  
 185 school. All participants received accurate, understandable, and  
 186 appropriate terms to answer the survey and they were assured of  
 187 the confidentiality of their responses. Participants were retained  
 188 in the final sample only if they responded to all the questions  
 189 involving the dependent variables assessing homophobic bul-  
 190 lying, depression, and anxiety. Data were collected in the class-  
 191 room in the presence of a research assistant from the University  
 192 of Alicante during the second and third trimester of the 2016  
 193 academic year, and sessions lasted approximately 60 min.

194 **Measures**195 **Homophobic Bullying**

196 The Homophobic Content Agent Target (HCAT) scale (Poteat  
 197 & Espelage, 2005) is a 10-item scale comprised of two sub-  
 198 scales (agent and target) that assesses homophobic bullying.  
 199 The first subscale consists of five items and examines the  
 200 extent to which students use homophobic epithets against oth-  
 201 ers (agent). The second subscale consists of five items and  
 202 examines the extent to which students are called homophobic  
 203 epithets by other students within the past week (target). Items  
 204 differentiate between types of relationships and perceived

sexual orientation of the perpetrator and victim. Participants  
 respond to the items using Likert-type responses ranging from  
*never, 1 or 2 times, 3 or 4 times, 5 or 6 times, and 7 or more*  
*times* within the past week. The HCAT items were scored on  
 a scale from 0 to 4, where higher scores indicate greater total  
 frequency of homophobic verbal harassment. Both subscales  
 of the HCAT have been shown to be internally consistent, with  
 both the agent ( $\alpha = .85$ ) and target subscales ( $\alpha = .85$ ) demon-  
 strating good internal consistency (Poteat & Espelage, 2005). **AQ5** 3

The process of translating and validating the HCAT ques-  
 tionnaire was conducted in accordance with the guidelines  
 provided by iOutcomes, the copyright holder of the measure,  
 and a wholly owned subsidiary of the University of Oxford.  
 The methodology used by iOutcomes follows the directives of  
 ISPOR [28]. When translating this instrument, two direct trans-  
 lations were provided by two Spanish translators, along with  
 two back translations carried out by native English speakers.  
 Both groups of translators evaluated the difficulty of translat-  
 ing each of the items independently, scoring them on a scale of  
 linguistic-cultural adaptation from 0 (no difficulty) to 10 (maxi-  
 mum difficulty). They were also asked to indicate the types of  
 changes they needed to make during the translation process:  
 A (no changes and same syntactical structure); B (changes  
 required to syntax or semantics and/or cultural expressions);  
 or C (if the item is not applicable to the target cultural context). **AQ6** 9

The original Spanish version of the measure can be found in  
 Table 1. The original version of the HCAT was translated into  
 Spanish using Chapman and Carter's methodology by which  
 the HCAT scale was translated into Spanish by an independent  
 and bilingual research. Then, another bilingual researcher trans-  
 lated the items back into English. If any discrepancies arose  
 between both versions of the HCAT scale, they were resolved  
 mutually (Chapman & Carter, 1979). In order to examine the  
 interpretability of the questionnaire, interviews were carried  
 out in a pilot study in a sample of students. Participants were  
 randomly selected based on their gender and age. The pilot  
 version of the questionnaire was administered to 40 students,  
 20 (50.0%) male and 20 (50.0%) female, with an average of age  
 of 13.2 (SD = 1.12). Students evaluated the difficulty of each of  
 the items, scoring them on a scale from 0 (no difficulty) to 10  
 (maximum difficulty) to understand. All items were evaluated  
 without difficulty ( $M = .2$ ). **AQ7** 11

247 **Depression**

The Patient Health Questionnaire (PHQ-9; Spitzer, Kroenke,  
 Williams, & Patient Health Questionnaire Primary Care Study  
 Group, 1999) is a 9-item scale that was used to assess depres-  
 sive symptoms. Participants respond to each item on the scale  
 from 0 (*not at all*) to 3 (*nearly every day*), indicating how often  
 each item has bothered the participant over the past 2 weeks.  
 Scores on the PHQ-9 range from 0 to 27, with higher scores cor-  
 responding to greater depressive symptomatology. The PHQ-9 **AQ8** 13

**Table 1** Spanish version of the items of the Homophobic Content Agent Target scale

Algunos chicos/as insultan o usan palabras como gay, lesbiana, maricón, tortillera, etc.,	
	0 veces 1 o 2 veces 3 o 4 veces 5 o 6 veces 6 o 7 veces
<b>Agente</b>	
En los últimos 30 días...	
He llamado a algún amigo con alguna de estas palabras	
Le dije a alguien que no me gustaba con alguna de estas palabras	
He utilizado frases como “eso es de ser gay” en una conversación	
Hice una broma o chiste acerca de los gays, lesbianas o bisexuales	
He propagado un rumor sobre alguien diciendo que es gay, lesbiana o bisexual	
<b>Objetivo</b>	
En los últimos 30 días...	
Te ha llamado algún amigo con alguna de estas palabras	
Te ha dicho alguien que tú no le gustabas con alguna de estas palabras	
Te han dicho frases como “eso es de ser gay” en una conversación	
Te han hecho una broma o chiste acerca de los gays, lesbianas o bisexuales	
Alguien ha propagado un rumor sobre ti diciendo que eres gay, lesbiana o bisexual	

256 is a reliable and valid measure of depression severity in general  
257 and clinical population, with a Cronbach's alpha range of .86  
258 to .89 in Spanish-speaking samples (Wulsin, Somoza, & Heck,  
259 2002).

## 260 Anxiety

261 The Generalized Anxiety Disorder-7 (GAD-7; Spitzer,  
262 Kroenke, Williams, & Löwe, 2006) is a one-dimensional 7-item  
263 questionnaire designed to assess the presence of anxiety symp-  
264 toms. Participants respond to each item on the scale from 0  
265 (*not at all*) and 3 (*nearly every day*), indicating how often each  
266 item has bothered the participant over the past 2 weeks. Scores  
267 on the GAD-7 total score range from 0 and 21, with higher  
268 scores corresponding to greater symptomatology. The GAD-7  
269 has been found to be a reliable and valid measure of anxiety,  
270 with a Cronbach's  $\alpha$  of .93 for Spanish-speaking populations  
271 (García-Campayo et al., 2010).

## 272 Results

### 273 Statistical Analyses

274 Data were analyzed using SPSS v.24 and AMOS v.24. Prior  
275 to conducting analyses, participants were randomly assigned  
276 to one of two groups using SPSS v.24. First, a scale variable  
277 was created. Then, the random numbers function was used to  
278 assign each participant as either a “0” or a “1.” Participants  
279 coded as a “0” ( $n = 972$ ) were included in an exploratory fac-  
280 tor analysis (EFA), while participants coded as a “1” ( $n = 876$ )  
281 were included in a confirmatory factor analysis (CFA). Then,

to determine what factor structure of the HCAT would emerge  
in Spanish adolescents, an EFA assuming no a priori factor  
structure was conducted using maximum likelihood factoring  
and a Promax rotation including all 10 items of the original  
scale. To evaluate the factor solution, the following criteria were  
used: (a) eigenvalues greater than 1 (Kaiser rule; numerical and  
as interpreted from a scree plot) and (b) simple structure (items  
that load  $\geq .40$  on its primary factor,  $< .30$  on all other factors).

Then, a CFA was conducted to determine whether the fac-  
tor structure fit the data well with the second half of the sam-  
ple. To evaluate the CFA, the following fit indices and criteria  
recommended by Meyers, Gamst, and Guarino (2013) were  
used: the goodness of fit index (GFI,  $\geq .90$ ), adjusted goodness  
of fit index (AGFI,  $\geq .90$ ), the normed fit index (NFI,  $\geq .95$ ),  
the incremental fit index (IFI,  $\geq .90$ ), the comparative fit index  
(CFI,  $\geq .95$ ), and the root mean square error of approximation  
(RMSEA,  $\leq .10$ ). A second-order CFA was then conducted to  
determine whether homophobic bullying and victimization are  
related to a high-order latent factor. Finally, invariance testing  
by gender was conducted to examine the scale's differential  
performance among girls and boys.

Cronbach's alphas were calculated for the subscales on the  
entire sample ( $n = 1848$ ). Interclass correlations (ICC) were  
calculated to examine the temporal stability of the HCAT after  
6 months by assessing a randomized sample of 1278 partici-  
pants. The final scale was correlated with depression and anxi-  
ety to examine convergent validity.

### Exploratory Factor Analysis (EFA)

A scree plot (Cattell, 1996) revealed a pronounced inflection  
point at the second-highest eigenvalue. The pattern matrix for AQ8 1

the model is shown in Table 2. The first factor consisted of items describing victimization (the target subscale in the original validation study; Poteat & Espelage, 2005), while the second factor consisted of items describing acts of aggression (the agent subscale in the original validation study; Poteat & Espelage, 2005). The first factor explained 42.55% of the variance, and the second factor explained 13.12%, for a total of 55.67% of cumulative explained variance. Both factors of the HCAT demonstrated simple structure, with items loading  $\geq .40$  on the primary factor and  $< .30$  on the other factor. The two factors were strongly correlated with each other ( $r = .62$ ), demonstrating that the agent and target subscales are related but unique factors. As noted by Meyers et al. (2013), correlations among factors within scales should be  $\leq .70$ , suggesting that the correlation in the current study is acceptable.

### Confirmatory Factor Analyses (CFA)

The manifest variables in the CFA were the 10 items of the HCAT. The two latent variables were the agent and target subscales. The CFA consisted of 22 variables, of which 10 were observed, 10 were uniqueness, and 2 were factors (Fig. 1).

The GFI (.93), AGFI (.88), NFI (.90), IFI (.91), CFI (.91) [with values  $\geq .90$  indicate adequate fit], and RMSEA (.10) [values  $\leq .10$  adequate fit (Meyers et al., 2013)] suggest that the model fit the data adequately. All items had statistically significant loadings onto their respective latent construct (all  $p$ 's  $< .001$ ). Within this model, the correlation between the latent variables of victimization and aggression was .60 ( $p < .001$ ). Taken together, this suggests that the original HCAT factor structure demonstrates adequate fit indices in Spanish adolescents.

In addition, a second-order factor analysis was conducted. This CFA included the second-order and combined latent variable of the agent and target subscales. In this model, the three latent factors consisted of the second-order latent variable bullying/victimization, as well as the two first-order factors of agent and target. The CFA consisted of 25 variables, of which 10 were observed, 10 were uniqueness, 2 were disturbance terms, and

**Table 2** Factor loadings for all 10 items of the HCAT

Item	Factor 1	Factor 2
10	.836	-.214
7	.773	-.010
8	.625	.134
6	.491	.262
9	.462	.264
3	-.113	.783
1	-.096	.755
4	.11	.544
2	.058	.518
5	.152	.432

3 were factors. The model was unidentified (i.e., the amount of unknown information in the model is less than or equal to the known information). Although this often occurs when the model has negative degrees of freedom (Bollen, 1989; Hoyle, 2012), this was not the case as the current model had 33 degrees of freedom. Constraining both paths to 1 from the second-order factor to aggression and bullying created an identified model, but the fit indices were equal to those from the first CFA. Taken together, this suggests that the second-order model is not an appropriate solution (Hoyle, 2012), and the more parsimonious original first-order CFA was retained.

### Invariance Testing by Gender

In order to determine whether the 2-factor CFA differed for boys and girls, an invariance design was employed as a function of gender. The analysis evaluated the difference between an unconstrained model, which assumes that the groups are yielding different parameter values when the model is applied to the data, and a constrained model, which assumes that the groups are yielding equivalent parameter values. Three sets of comparisons were of interest: measurement weights (loadings of items onto their respective latent construct), structural covariances (correlation between the latent factors), and measurement residuals (uniqueness or error terms of the scale items).

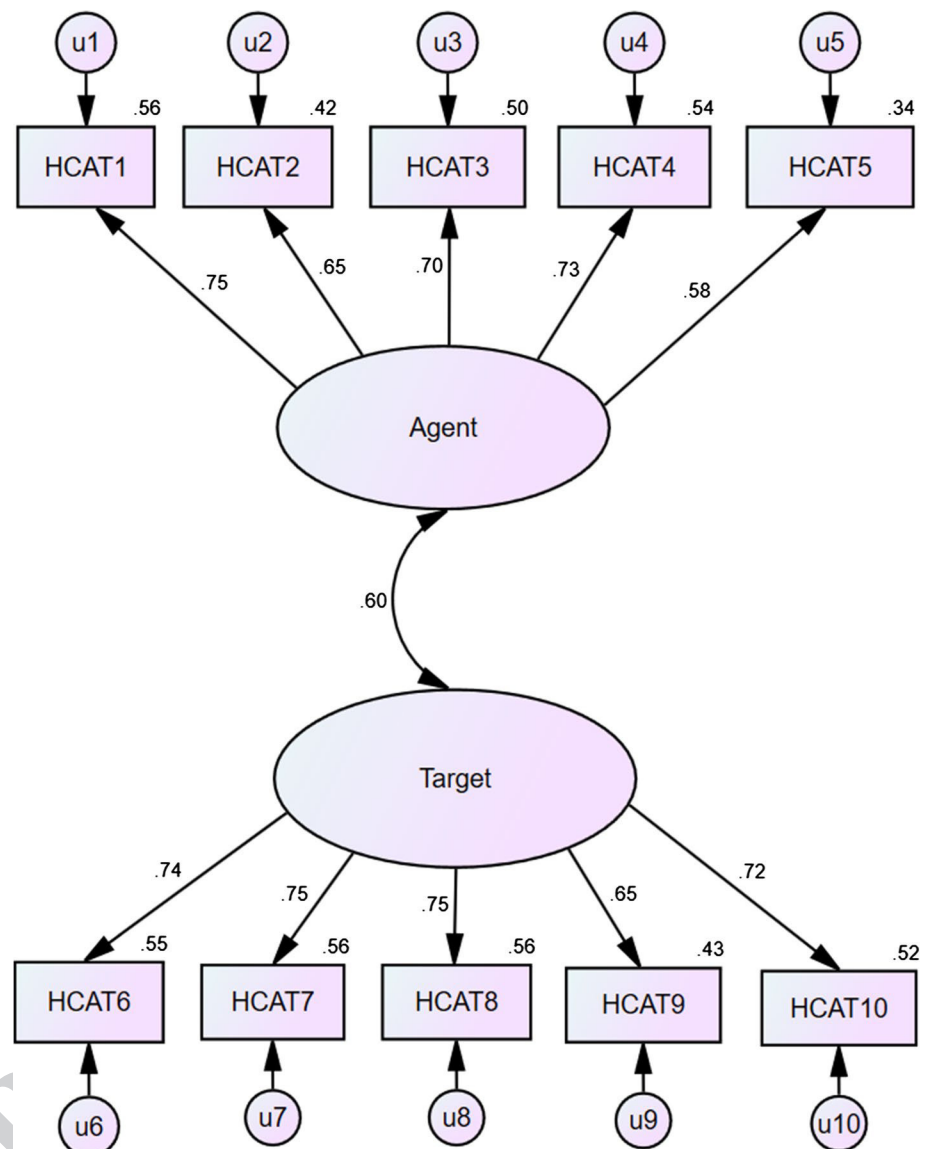
All three sets of comparisons were significant (all  $p$ s  $< .001$ ), suggesting that all three types of parameters differed between boys and girls. Bonferroni-corrected post hoc comparisons (with differences evaluated at  $z = 2.58$ ) for measurement weights suggested that item 3 loaded on the agent subscale more highly for girls than for boys. The comparison (not Bonferroni-corrected) for structural weights suggested that the correlation between the two latent factors was slightly higher for boys ( $r = .62$ ) than girls ( $r = .56$ ). Bonferroni-corrected post hoc comparisons (with differences evaluated at  $z = 2.58$ ) for measurement residuals suggested that there was a higher proportion of error in all items in boys than in girls, except for items 8 and 9.

Based on these patterns of non-invariance, we can draw the inference that the CFA has some differences between boys and girls, although it is important to note that the current study's large sample size likely is magnifying these statistical differences. As a result, the only consistent and notable finding is likely that the scale items have a greater proportion of error in boys than in girls.

### Reliability and Convergent Validity

Both the target and agent subscales demonstrated acceptable internal consistency ( $\alpha = .81$ ,  $\alpha = .78$ ). The overall reliability of the scale was not calculated as results suggested that the agent and target subscales are better modeled as separate factors. In a randomized subsample of 1278 participants after 6 months,

**Fig. 1** Confirmatory factor analysis of the HCAT



398 both the target and agent subscales demonstrated temporal stability; the agent subscale had a  $\alpha = .86$  (ICC = .86) and the target  
399 subscale had a  $\alpha = .71$  and temporal stability (ICC = .71). To  
400 examine the HCAT's convergent validity in Spanish adoles-  
401 cents, HCAT subscale scores were correlated with a measure  
402 of depression (PHQ-9) and anxiety (GAD-7). Both HCAT sub-  
403 scales were positively associated with depression and anxiety  
404 in the full sample ( $n = 1848$ ), demonstrating good convergent  
405 validity (Table 3).  
406

## 407 Discussion

408 The purpose of the current study was to examine the psycho-  
409 metric properties and factor structure of the Spanish version  
410 of the Homophobic Content Target Agent (HCAT) scale in a

large sample of adolescent students. The preliminary findings  
411 of this study suggest that the HCAT Spanish version showed  
412 good psychometric properties comparable to those reported in  
413 the original English version (Poteat & Espelage, 2005). Overall,  
414 the HCAT Spanish version was found to be easy to understand  
415

**Table 3** Correlation matrix examining convergent validity

	1	2	3
1. HCAT agent			
2. HCAT target	.536**		
3. Anxiety	.178**	.248**	
4. Depression	.237**	.331**	.611**

\*\*Correlation is significant at the .01 level

\*Correlation is significant at the .05 level

416 for respondents and no linguistics changes were required after  
417 the first stage of the cross-cultural validation into Spanish. The  
418 exploratory factor analysis (EFA) supported a factor solution of  
419 two related but distinct constructs reflecting the extent to which  
420 students use homophobic language (agent) and the extent to  
421 which students are called homophobic epithets (target) due to  
422 sexual orientation. The target subscale was the first and larg-  
423 est factor, which explained 42.55% of the variance in Span-  
424 ish adolescents. However, both agent and target factors were  
425 conceptually and statistically related to each other. The results  
426 of the confirmatory factor analysis (CFA) then showed a fac-  
427 tor structure of the HCAT with adequate fit indices in Spanish  
428 adolescents. Finally, an invariance design was employed as a  
429 function of gender, which suggested that there were some dif-  
430 ferences between boys and girls in the CFA. Specifically, some  
431 scale items had a greater proportion of error in boys than girls.

432 Past research has shown that adolescents who are called  
433 homophobic epithets are also more likely to engage in more  
434 homophobic aggression and more likely to express negative  
435 attitudes and prejudice toward lesbian and gay individuals  
436 (Poteat, 2008; Poteat & DiGiovanni, 2010). Recent research  
437 suggests group interaction effects that may lead adolescents to  
438 engage in homophobic behavior under certain social situations,  
439 particularly when they feel pressured to express their sexual  
440 orientation identity within a group to avoid misclassification  
441 (Poteat, Rivers, & Vecho, 2015).

442 The Spanish version of the HCAT also showed adequate  
443 reliability for both internal consistency and stability over  
444 time. These results are in line with those obtained by Poteat  
445 and Espelage (2005) using a sample of 191 middle school  
446 students. In the present study, the agent and target subscales  
447 were associated with depression and anxiety, demonstrating  
448 good convergent validity of the HCAT in Spanish adolescents.  
449 Poteat and Espelage (2007), in a study exploring the relation-  
450 ship between homophobic victimization and adverse psycho-  
451 logical outcomes, found that even after controlling for previ-  
452 ous reported levels of psychological outcomes, homophobic  
453 victimization predicted negative mental health outcomes such  
454 as depression and anxiety in adolescent students. Additionally,  
455 previous research has found that children and adolescents who  
456 are perpetrators of bullying behaviors have a threefold increase  
457 in odds of a diagnosis of depression and anxiety (Turcotte Ben-  
458 edict et al., 2015). The current findings extend previous research  
459 conducted in Spain by providing a valuable measure that may  
460 be used as a screener to inform further assessment of homopho-  
461 bic victimization or perpetration. Therefore, this study adds to  
462 literature a validated measure that can be useful, as well as easy  
463 and quick to administer by clinicians and educators.

464 The invariance design employed as a function of gender  
465 in the current study found some differences between boys  
466 and girls. There was a higher level of error in items among  
467 boys compared to girls apart from two items. Further, the

468 relation between the subscales was significantly higher for  
469 boys than girls. It is unknown whether this greater proportion  
470 of item error in boys is due to the scale itself or the Spanish  
471 translation, as the original scale development study did not  
472 conduct invariance testing by gender (Poteat & Espelage,  
473 2005). However, boys in the original study did report signifi-  
474 cantly higher scores on both the agent and target subscales  
475 than girls. Future studies should further examine these minor  
476 differences by gender, as the current study's large sample size  
477 may be magnifying negligible differences.

478 However, the current study has a number of limitations,  
479 which suggest areas for future research. First, participants  
480 in this study were only from Spain and were recruited from  
481 one Mediterranean area in particular. As a result, the findings  
482 may not be fully generalizable to students in other regions and  
483 from other ethnic groups. Future research should examine the  
484 reliability and validity of the HCAT in other regions of Spain  
485 or Latin America to determine the generalizability of the  
486 HCAT scale in Spanish-speaking population including Latin  
487 American cultures. Second, data were collected through the  
488 use of self-report measures. Although the method of self-  
489 report has been shown to be a reliable and valid method for  
490 data collection, social desirability responses are more likely  
491 to occur in responses to socially sensitive questions such as  
492 sexual orientation, aggression, and victimization, increas-  
493 ing participants' tendency to present a favorable image of  
494 themselves to avoid criticism or gain social approval from  
495 peers (Van de Mortel, 2008). Thus, future research should  
496 examine the use of homophobic language among students  
497 using alternative methods (e.g., parent, peer and teacher rat-  
498 ings). Third, several other potential outcomes that may be  
499 linked to homophobic victimization in adolescent students  
500 were not included in the current study. Future research should  
501 assess additional variables such as academic performance,  
502 stress, aggression among peers, as well as the protective role  
503 of family and social support in individuals at high risk for  
504 being victimized.

505 Despite these limitations, this study provides evidence  
506 for the use of the Spanish version of the HCAT scale. It sup-  
507 poses a significant advance for the study of homophobic  
508 bullying which may in turn have important implications for  
509 educational and research practice. It may be important to  
510 target interventions focused on identifying youth at risk for  
511 homophobic victimization as well as to understand the effects  
512 of homophobic bullying on health and social functioning  
513 of students who are targets of homophobic victimization,  
514 since those who are targets of homophobic victimization  
515 may require additional support from clinical and commu-  
516 nity services. In addition, these results demonstrate the need  
517 for designing and implementing school programs that target  
518 homophobia among adolescent students.

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## 523 Compliance with Ethical Standards

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

526 **Ethical Approval** This study was approved by institutional and/or  
527 national research committee and was conducted in accordance with  
528 the 1964 Helsinki Declaration and its later amendments or comparable  
529 ethical standards. All procedures performed in the present study were  
530 in accordance with the ethical standards of the University of Alicante  
531 and the Educational Directive Committee from Schools involved in the  
532 study (Ref Number: UA2015-1013).

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