

Attitudes Scale Towards Potential Targets of Bullying: Elaboration and Evidence of Validity and Reliability

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Abstract

The present article aimed at describing the elaboration of a measurement of attitudes towards potential targets of bullying, gathering evidence of its factorial validity and internal consistency. Two studies were performed with 800 secondary school students whose mean age was 15 years old, who answered the Attitudes Scale towards Potential Targets of Bullying (*ASTPB*) and some demographic questions. In Study 1 (n = 230) the discriminant power of the scale items was verified, and after performing an exploratory factor analysis two components were identified (*appearance and gender issues* and *social exposure*), with Cronbach's alpha (α) of 0.81 and 0.70, respectively. In Study 2 (n = 570) a confirmatory factor analysis was performed (Maximum Likelihood), confirming the two-factor structure of the scale ($\alpha_{\text{factor I}} = 0.80$ and $\alpha_{\text{factor II}} = 0.65$; CR = 0.80 and 0.64, respectively). Moreover, evidence was also gathered of factorial invariance of this measure in groups of women and men. In conclusion this is a parsimonious measurement with evidences of validity and reliability, suggesting its adequacy for use when the goal is to evaluate attitudes towards potential targets of bullying.

Key words: Bullying, scale, validity, reliability.

Escala de actitudes hacia potenciales víctimas de bullying: elaboración y evidencias de validez y fiabilidad

Resumen

El presente artículo tuvo como objetivo describir la elaboración de una medida de actitudes hacia potenciales víctimas de *bullying*, reuniendo evidencias de validez factorial y consistencia interna de la *Escala de Actitudes frente a Alvos Potenciales de Bullying (EAAPB)* (Escala de actitudes hacia potenciales víctimas de bullying). Se realizaron dos estudios con 800 estudiantes de enseñanza secundaria, con edad promedio de 15 años, los cuales contestaron a preguntas demográficas y la EAAPB. En el Estudio 1 (n = 230) se comprobó el poder discriminativo de los ítems de la escala y se realizó un análisis factorial exploratorio en el que se identificaron dos componentes: *aparición y temas de género* ($\alpha = .81$) y *exposición social* ($\alpha = .70$). En el Estudio 2 (n = 570) se realizó un análisis factorial confirmatorio (máxima verosimilitud), en el que se comprobó la estructura bifactorial de la escala: el primer factor con $\alpha = .80$ y CR = .80; y el segundo con $\alpha = .65$ y CR = .64. Se reunieron evidencias sobre la invariancia factorial de la escala en grupos de mujeres y hombres. Se concluye que la EAAPB es una medida parsimoniosa que presenta evidencias de validez y confiabilidad, por lo que se sugiere su uso para evaluar las actitudes hacia potenciales víctimas de *bullying*.

Palabras clave: Bullying, escala, validez, fiabilidad.

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Escala de atitudes frente a alvos potenciais de bullying: elaboração e evidências de validade e precisão

Resumo

O presente artigo objetivou descrever a elaboração de uma medida de atitudes frente a potenciais alvos de *bullying*, reunindo evidências de sua validade fatorial e consistência interna. Realizaram-se dois estudos com estudantes secundaristas que tinham idade média de 15 anos, os quais responderam a *Escala de Atitudes frente a Alvos Potenciais de Bullying (EAAPB)* e perguntas demográficas. No *Estudo 1* ($n = 230$) foi verificado o poder discriminativo dos itens desta medida e feita uma análise fatorial exploratória, emergindo dois componentes: *aparência e questões de gênero e exposição social*, cujos alfas de Cronbach (α) foram de 0,81 e 0,70, respectivamente. No *Estudo 2* ($n = 570$) foi realizada uma análise fatorial confirmatória (*Máxima Verossimilhança*), que corroborou a estrutura bifatorial ($\alpha_{\text{fator I}} = 0,80$ e $\alpha_{\text{fator II}} = 0,65$; $CC = 0,80$ e $0,64$, respectivamente). Ademais, reuniram-se evidências acerca da invariância fatorial desta escala entre mulheres e homens. Conclui-se que esta é uma medida parcimoniosa, apresentando evidências de validade e precisão que sugerem seu emprego quando o propósito for conhecer atitudes frente a alvos potenciais de *bullying*.

Palavras-chave: Bullying, escala, validade, precisão.

INTRODUCTION

Bullying may be understood as a set of aggressive, intentional, and repetitive attitudes without evident motivation, within a relationship of unequal power, that are adopted by one individual or more against another to intimidate them. In consequence, it will cause pain, anguish, suffering and feelings of vulnerability, shame, and/or low self-esteem (Middelton-Moz & Zawadski, 2007). According to Vanderbilt and Augustyn (2010), bullying is typically related to the bully's attempts for power affirmation via repeated and intentional aggression towards individuals whom s/he considers to be weaker (victims). Therefore, it does not consist in a mere fight between two individuals who are equal in physical and psychological strength, but in a quarrel based on power imbalance and repetition of behaviour (Viscente, 2010).

Bullying comprises several types of behaviours that may be motivated, for instance, by ethnic, religious, sexual, or gender-related issues. According to Olweus (1991), bullying may be classified as: (1) *indirect*, characterised by situations of subtle intimidation, such as social isolation, exclusion, defamation, and provocations related to some disability-related, racial, or sexual particularity in the victim, causing pain and suffering; or (2) *direct*, manifested by physical or verbal aggression, such as kicking, pushing, mocking, and the attribution of pejorative nicknames. This categorisation shows that bullying has several forms of expression, including physical (e.g., hitting, pinching, spitting), verbal (e.g., insults, threats), and relational (e.g., gossip, social exclusion) aggression. In addition, the continuous advance of technology has made it possible to detect a new modality, known as *cyberbullying*, which consists in the distribution of malicious messages via electronic means (Slonje, Smith, & Frisén, 2013).

Four types of social actors related to bullying are described: victims, perpetrators, victim-perpetrators, and the non-involved (witnesses or spectators) (Cunha, 2009; Olweus, 1993). The *victims* are the target of bullying, and are characteristically sensitive, insecure, and unhappy individuals who exhibit low self-esteem, social inhibition, passivity, submissiveness and feelings of vulnerability, fear or excessive shyness; these characteristics enhance the spread of victimisation (Middelton-Moz & Zawadski, 2007). Victims also exhibit some others enhance the spread of victimisation".physical, social, economic, or sexual orientation-related particularities, such as short height, homosexual relatives, a physical disability, learning problems, obesity, or some ethnic or religious aspect that is divergent from their social environment (Antunes & Zuin, 2008; Tognetta, 2010).

Perpetrators, also known as bullies, are individuals who resort to physical strength and psychological influence to terrify others. With their skills, arrogance and leadership demeanour, they seek to keep others under their control (Fante & Pedra, 2008). Bullies characteristically lack self-control (Pontzer, 2010), and are prone to high attention deficit and hyperactivity levels (Cho, Henderickson, & Mock, 2009). In turn, *victim-perpetrators* are individuals who both intimidate and are intimidated. This group is also known by several other names, such as provoking victims, ineffective perpetrators, and aggressive victims (Pellegrini, 2001). *Witnesses* (or spectators, non-involved actors) typically prefer to stay out of conflict and develop friendship bonds with individuals outside this group.

Bullying has been increasingly more discussed in recent decades, perhaps due to the increase of school violence (Bacchini, Esposito, & Affuso, 2009). Some studies, such as the one by Weinstock and Krehbiel (2009), point to some physical characteristics, such as obesity, as factors

that make individuals more likely to be bullied. Olweus (1993) describes several characteristics that are detected in most bullied children. For instance, they are sensitive, quiet, retiring, timid, and physically weak. However, studies tend to focus more on the consequences of bullying, and therefore, nothing can be said about victims' aspects (individual or situational) that may potentiate positive or negative attitudes towards this phenomenon. The concerns with the measurement of bullying are typically channelled through two axes: *victimisation*, i.e., measures that aim at establishing whether an individual is a victim of some form of bullying (physical, verbal, or psychological), and *behavioural*, which analyzes the bully's aggressive behaviours. Furthermore, no scales that assess the attitudes of individuals towards potential targets of bullying could be located, even though accurate knowledge of such attitudes is relevant to predicting behaviour.

Hamburger, Basile, and Vivolo (2011) compile a compendium with 33 tools that assess bullying in both victims and perpetrators, in addition to bystanders' experience of this antisocial behaviour, with most measures centred on the victimisation-perpetration axis. Measures of this type include the Olweus Bully/Victim Questionnaire (OBVQ), which evaluates the two aforementioned aspects (*bullying* and *victimisation*) through questions that assess the frequency, types, place of occurrence, and perpetrators of bullying; the California Bullying Victimisation Scale (CBVS; Felix, Sharkey, Green, Furlong, & Tanigawa, 2011), which measures the frequency with which respondents experience a series of actions that turn them into victims of bullying; and finally, the Bullying Behavior Scale (Austin & Joseph, 1996), which assesses verbal and physical actions that are characteristic of the perpetration of bullying in the respondents, i.e., actions performed by bullies.

Considering these conceptual definitions of the subject as a theoretical perspective that's substantiate this study, an instrument that assesses the attitudes towards individuals who present characteristics that are common to targets of bullying is important. For this reason, a search was performed in the Google Scholar (2016) database for studies published over the past five years that use the keywords "targets of bullying", "attitudes towards targets", and "scale of attitudes towards targets of bullying". Eleven studies describing the characteristics of, or the situations in which individuals may become targets of bullying were identified, including the profile of bullying targets at the workplace, and situations in which teachers are targets of bullying by their students (e.g., Hoffmann, 2013). A search performed in the PsycINFO (2016) database using the search term "targets of bullying" enabled 240 studies to be located, with the main studies investigating the psychological aspects

(e.g., personality) of bullying victims in organisations, with no mention of any specific assessment tool. In addition, the same keywords enabled 91 studies to be located in the Medline (2016) database, and once again, most studies reported situations of bullying in organisations or defined its process. The use of the search term "scale of attitudes towards targets of bullying" in the Google Scholar (2016), PsycINFO (2016), and Medline (2016) databases did not lead to the identification of any study published over the past five years.

Whereas the measures identified in the literature evaluate conceptual (presence or absence) and typological aspects (victims and bullies), the measure developed in this study differs from others by assessing attitudinal aspects of people considered targets of bullying. Thus, the development of an instrument that embraces the dimension discussed, including analyses of its validity and precision, is important. Therefore, three studies were performed to (1) develop such instrument and analyse its psychometric properties, (2) investigate and confirm its factor structure and internal consistency, and (3) evaluate its factorial invariance. These empirical studies are described next.

STUDY 1

ELABORATION OF THE ATTITUDES TOWARDS POTENTIAL TARGETS OF BULLYING SCALE

The aims of this study were to develop the Attitudes towards Potential Targets of Bullying Scale (APTBS) and gather evidence regarding its factor validity and internal consistency. Firstly, the items that compose the APTBS were developed, and then their discriminant power was investigated through the assessment of the scale's underlying factor structure and internal consistency.

METHOD

Participants

A total of 230 students from João Pessoa - Paraíba (PB), and Cáceres - Mato Grosso do Sul (MT), Brazil, with mean age of 15 years old [(SD) = 1.71; varying from 11 to 20] participated in Study 1. The gender distribution of the sample was even, and the largest proportion corresponded to students who attended the first high school year (38%). Most participants claimed to be catholic (64%) with a religiosity ranking above the mid-point of the response scale [$M = 2.8$, $SD = 1.12$; varying from 0 = *not religious at all* to 4 = *very religious*]. The participants were recruited

by convenience (non-probabilistic) sampling, and all of the invited students who agreed to participate were included.

Instruments

The participants were given a booklet containing questions on demographic variables (gender, age, religion, and religiosity) and the Attitudes towards Potential Targets of Bullying Scale (APTBS). The APTBS was developed by the authors based on a literature review, being composed by 25 items that assess the beliefs, feelings, or behaviours (attitudes) towards individuals who exhibit characteristics or particularities that may turn them into potential victims of bullying (e.g., “A man who does not enter into a fight at least once in his life is odd”; “A person with an ugly voice or face is horrible”). These items are answered on a six-point scale ranging from 1 (*totally disagree*) to 6 (*totally agree*). Then, the semantic validity of the experimental version was checked with a sample of 15 sixth-year students to establish whether they could understand the items and whether the proposed response scale was adequate.

Procedure

For the development of the APTBS, two psychology specialists performed a literature research to establish which characteristics or situations give rise to or initiate bullying. Several items were then elaborated based on the results of this research. An expert panel composed by five investigators (judges) was requested to indicate which items truly related to the construct under assessment (potential targets of bullying) and whether they were clear enough. Finally, these authors compared the results and performed the due adjustments (exclusion of items without a concordance rate higher than 80%), which was followed by semantic validation with a group of children aged from 7 to 9 years old (an age range lower than the one of the target population). The final version, i.e., the object of the present study, was then established.

Next, administrators of educational institutions were contacted to obtain permission to conduct the study. On this occasion, they were informed about the study objectives and were asked to sign an informed consent form. Authorisation was also requested from the children and adolescents' parents. Once the best time for data collection in the classroom was set, it was performed by two properly trained collaborators who instructed the participants to answer the scale individually, and assured them about the voluntary nature of their participation, anonymity, and confidentiality of the responses. The study was approved by the Human Research Ethics Committee (ruling no. 88.166/2012) and complied with the stipulations in the Brazilian National

Health Council (Conselho Nacional de Saúde – CNS) Resolution no. 466/12. The average duration for completing the participation was 15 minutes.

Data Analysis

The PASW software (version 18) was used to calculate descriptive statistics (distribution of frequencies, measures of central tendency and dispersion) and to perform *Student's t*-tests (investigation of the discriminant power of items) in addition to exploratory factor analysis and internal consistency, in order to provide evidence of the adequacy of the scale.

Ethical Considerations

The study was approved by the Ethics Committee on Human Research of the Medical Sciences Faculty of the Universidade Federal da Paraíba (n. 88.166) in accordance with the Brazilian National Health Council (Resolution n. 466/12). The students were informed of the objectives and were guaranteed anonymity and confidentiality with respect to the study.

RESULTS

The discriminant power of the items of the APTBS was calculated first to establish whether they distinguished between the participants with close values for a given trait. The respondents were divided into an upper and a lower group, using the empirical median ($Md = 61$) as basis (half of the total score above and half below the median), forming two criteria groups. For each item, MANOVA was used to compare the means of the participants from the two groups, for all items. Results indicated that there were differences between the groups [Wilks' Lambda = .23; $F(25, 188) = 24.46, p < .001, \eta^2 = .76$]. More specifically, it was determined that all the items discriminated between the two groups in a satisfactory way ($F > 41.78, p < .001$), and the item 5 was the most discriminative ($\eta^2 = .16$) while item 23 was the less discriminative ($\eta^2 = .34$).

Once the discriminant power of the items was established, the factor structure of the scale was analysed. First, the factorability of the correlation matrix between items was investigated, and the results showed acceptable indexes [Kaiser-Meyer-Olkin (KMO) = .89 and Bartlett's sphericity test, $\chi^2(300) = 1,818.47, p < .001$]. A principal component analysis (PCA) was then performed without any previous restriction regarding the number of components or rotation. The results indicated an initial structure that comprised seven components with an eigenvalue greater than or equal to 1 (Kaiser's Criterion): 7.39, 1.85, 1.46, 1.22, 1.05, 1.02,

and 1.01, which explained 60.1% of the total variance. However, the scree plot test (Cattell's Criterion) indicated a structure with a single component. Considering the fragility of these two criteria (Hayton, Allen, & Scarpello, 2004), a parallel analysis (Horn's Criterion) was performed based on the database parameters (230 participants and 25 items) with 1,000 simulations. A comparison of the eigenvalues found in the PCA with the simulated values showed that the third empirical eigenvalue (1.46) was lower than the simulated value (1.47), which suggested the adoption of a two-component structure.

Given these findings, a second PCA was performed with direct oblimin rotation to extract two components. These two components explained 29.6% and 7.4% of the total variance, respectively, and were mutually correlated ($r = .45, p < .01$). The results are described in Table 1.

The first component, named *appearance and gender issues*, consists of 8 items, which presented a saturation greater than .40, varying from .59 (e.g., Item 12. *Going to the mall or the beach with a fat person is not a good idea*) to .67 (Item 19. *Ugly people should not have ever been born*). The internal consistency (Cronbach's alpha) of the scale was .81, and its homogeneity (mean inter-item correlation, $r_{m,i}$) was .34, varying from .22 (items 10 and 12) to .49 (items 12 and 13).

The second component, named *social exposition*, consists of 5 items, which presented a saturation greater than .40, varying from .57 (Item 1. *The best people to give nicknames to are fat people*) to .73 (Item 3. *I do not trust men with bangs and earrings*). The internal consistency (Cronbach's alpha) of the scale was .70, and its homogeneity (mean inter-item correlation, $r_{m,i}$) was .31, varying from .21 (items 1 and 24) to .41 (items 3 and 4). Based on these results, it

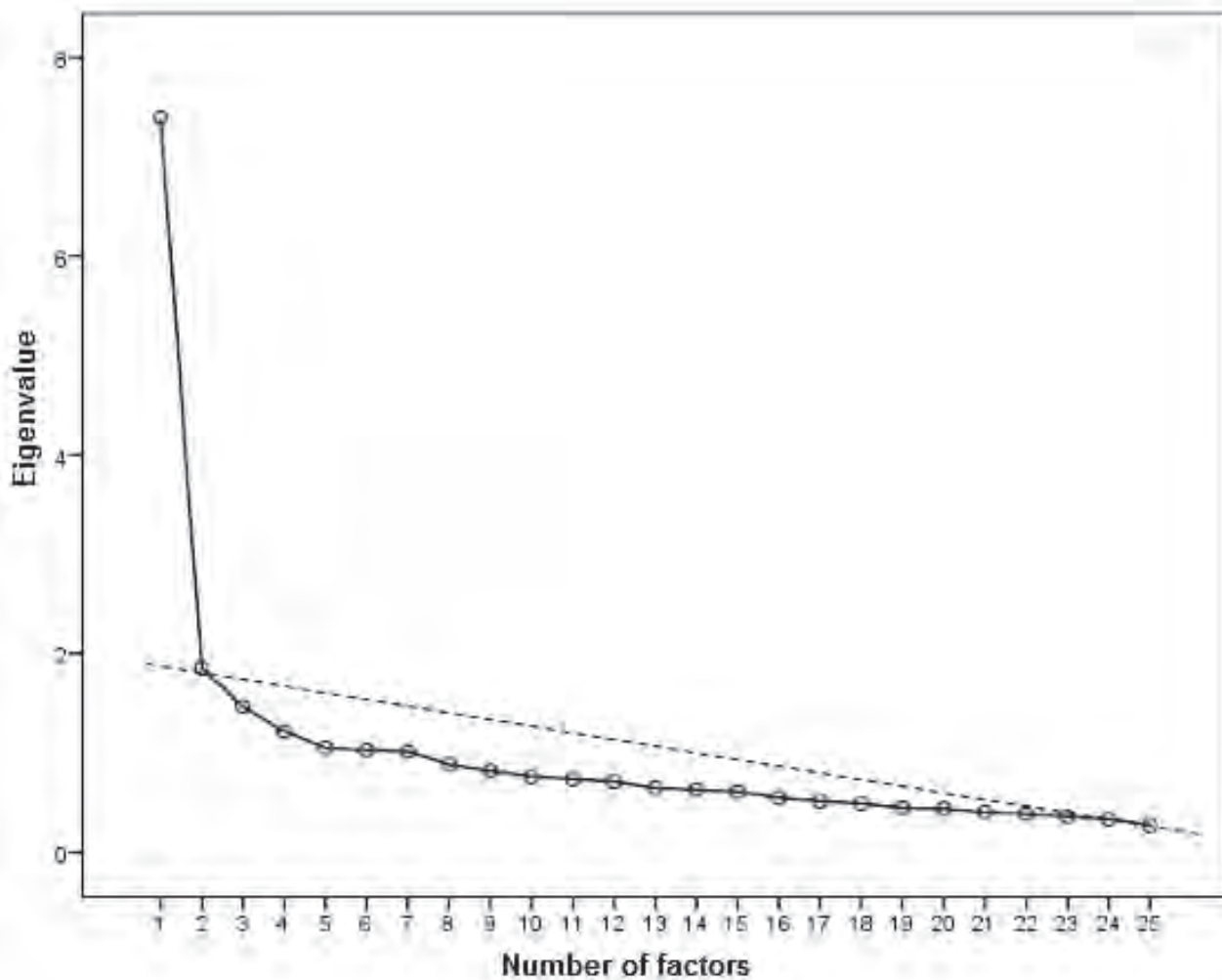


Figure 1. Graphic representation of eigenvalues

Table 1

Factor structure of the Attitudes towards Potential Targets of Bullying Scale (APTBS)

Items	Items content	Components	
		I	II
19	Ugly people should not have ever been born.	.67*	.18
16	To go out with an ugly friend is to invite embarrassment.	.66*	.21
18	Going out with fat people is bad, even at parties, because they leave nothing for us.	.66*	.27
21	A wimpy guy is the worst friend and boyfriend.	.65*	.17
22	It is not good to have a shy friend who does not talk to anyone.	.62	.36
17	If nerds are so smart, they should stay home.	.61*	.26
13	Fat women serve only to have fun with and laugh a bit.	.60*	.27
10	A man who does not enter into a fight at least once in his life is odd.	.59*	.25
12	Going to the mall or the beach with a fat person is not a good idea.	.59*	.27
23	A person with an ugly voice or face is horrible.	.57	.53
9	It is better to avoid someone who does not know how to dress.	.55	.35
6	A skinny man without any muscle is ridiculous.	.55	.41
11	A sensitive man is something inadmissible.	.52	.49
20	A person who wears tacky clothes is horrible.	.52	.46
15	Nerds disrupt class; they interfere with the teachers' explanations.	.42	.34
25	I do not feel at ease with people from another economic or social class.	.41	.41
3	I do not trust men with bangs and earrings.	.23	.73*
24	Men should not dress as women.	.28	.63*
5	A mannish woman, who looks like a man, is odd.	.29	.62*
4	Wearing eccentric clothes and hairdos is madness.	.21	.61*
7	It is good to make fun of fat people.	.50	.58
1	The best people to give nicknames to are fat people.	.22	.57*
14	A woman has to have a feminine, angelic face.	.49	.55
8	A fearful man is the worst thing there is.	.46	.53
2	Nerds talk more than they should.	.46	.49

	Number of items	8	5
	Eigenvalue	7.39	1.85
	% variance	29.59	7.41
	Cronbach's alpha	.81	.70

Notas. *Factor loading commonly accepted for interpretation of the factor ($\lambda \geq |.40|$ on a single factor).

is considered that the Attitudes Towards Potential Targets of Bullying Scale is composed by a two-factor structure.

DISCUSSION

The aims of Study 1 were to develop a measure of the attitudes towards potential targets of bullying and to gather evidence of its factor validity and precision. The results obtained

make it possible to indicate that these aims were accomplished. More specifically, all of the items were discriminant, succeeding in identifying the participants with close values for a given trait (Pasquali, 2003). The structure composed by two factors able to assess the attitudes towards potential targets of bullying, more specifically Factor 1 (appearance and gender issues), refers to the attitudes towards these individuals due to the presence of elements that physically characterize them (e.g. Item 12. Going to the mall or the

beach with a fat person is not a good idea) or due to gender issues (e.g., item 21. A wimpy guy is the worst friend and boyfriend). Meanwhile, Factor 2 (social exposition) embraces attitudes towards situations where these individuals socially expose themselves. The values of the internal consistency indicators (Cronbach's alpha and homogeneity) were superior to those recommended by the literature (Clark & Watson, 1995; Tabachnick & Fidell, 2013). Nevertheless, the analyses performed were prominently exploratory, reason why the study described next was performed.

STUDY 2

CONFIRMATION OF THE FACTOR STRUCTURE AND FACTORIAL INVARIANCE OF THE APTBS ACROSS GENDER

Study 2 sought to confirm APTBS's two-factor structure and internal consistency. Besides that, it seemed appropriate to investigate how much the theorised structure is invariant in relation to a preponderant variable in the explanation of this construct: gender (Bandeira & Hutz, 2012; Silva, Pereira, Mendonça, Nunes, & Oliveira, 2013; Wang, Iannotti, & Nansel, 2009). That is, when compared to girls, boys are more often both perpetrators and victims of bullying.

METHOD

Participants

An amount of 570 students from João Pessoa (PB) (52.3%) and Cáceres (MT) (47.7%), with a mean age of 15 years old ($SD = 1.66$; varying from 11 to 20 years) participated in Study 2. Most participants were female (53.7%), catholic (65.5%), and with mean levels of religiosity ranking above the mid-point of the response scale ($M = 2.75$, $SD = 1.14$). Similar to Study 1, participants were recruited by means of convenience (non-probabilistic) sampling: all of the invited students who agreed to voluntarily collaborate with the study were included.

Instruments

The participants received a booklet containing the APTBS and demographic questions (gender, age, religion, and religiosity), described in Study 1.

Procedure

The same procedures for data collection and ethical parameters from Study 1 were reapplied. Participation in the study had an average duration of 15 minutes.

Data Analysis

PASW (version 18) was used to calculate descriptive statistics and the internal consistency of the scale. The confirmatory factor analysis (CFA) and analysis of factorial invariance across gender were performed on AMOS (version 18), and multiple indicators of adjustment were taken into account, such as: χ^2 (chi-square), ratio to the model's degrees of freedom (χ^2/df), GFI (Goodness of Fit Index), AGFI (Adjusted Goodness of Fit Index), CFI (Comparative Fit Index), TLI (Tucker-Lewis Index), RMSEA (Root Mean Square Error of Approximation) and its 90% confidence interval (90% CI), SRMR (Standardized Root Mean Square Residual), ΔCFI and $\Delta RMSEA$ (factorial invariance) (Byrne, 2010; Cheung & Rensvold, 2002; Hooper, Coughlan, & Mullen, 2008; Tabachnick & Fidell, 2013). In addition, a specific calculator was used in order to investigate the composite reliability (CR) (Gouveia & Soares, 2015), which is recommended to be higher than .70 (Fornell & Larcker, 1981), even though scores of .60 are also accepted (Škerlavaj & Dimovski, 2009).

Ethical Considerations

In accordance with the Brazilian National Health Council (Resolution n. 466/12), the students were informed of the objectives, were guaranteed anonymity and confidentiality with respect to the study. The participant could withdraw from the study at any time without being penalized. The information regarding this study's approval had been presented beforehand.

RESULTS

The discriminative power of the items was evaluated once again, using multivariate analysis of variance (MANOVA). It was demonstrated that the group-criterion variables (lower and upper) satisfactorily discriminated the set of items [Wilks' lambda = .28, $F(25, 214) = 21.99$, $p < .001$, $\eta^2 = .72$], which prevented the exclusion of any items at this step. These items did not exhibit a univariate or multivariate normal distribution. The most extreme skewness and kurtosis were exhibited by items 24 (-.40 and -.86, respectively) and 19 (1.71 and 16.73, respectively), and the critical ratio for multivariate normality was 44.43. Even though the distribution was not normal, given the sample size ($n > 200$), nevertheless, the analysis was performed.

In order to identify the most appropriate factor structure for the APTBS, analyses were performed to test the two models presented in this study. Model 1 is composed by thirteen items, which saturate in the same factor, and Model 2 presents a solution of two factors, each one of

them corresponding to the components of appearance and gender issues, and social exposition. As it can be seen in Table 2, the model with two factors (M2) showed more plausible adjustments when compared to the model with a single factor (e.g. lower CAIC and ECVI). A more robust evidence of this difference is noted when comparing the respective degrees of freedom, where M_2 was statistically lower than M_1 ($\Delta\chi^2, p < .05$).

The results confirmed the two-factor structure of the APTBS [χ^2 (64) = 169.57 ($p < .01$), $\chi^2/df = 2.65$, $GFI = .96$, $TLI = .92$, $AGFI = .94$, $CFI = .93$, $RMSEA = .054$ (90% CI = .044-.064; $P_{close} = .26$), and $SRMR = .04$]. All of the items presented saturations (lambda) different from zero ($\lambda \neq 0$; $z > 1.96, p < .001$), with values varying from .37 [Item 24. *Men should not dress as women*] to .70 [Item 13. *Fat women serve only to have fun with and laugh a bit*]. These results suggest that the theoretical model fits the data. A summary of the findings is shown in Figure 2.

To test the scale's internal consistency, we checked its Cronbach's alpha ($\alpha_{factor1} = .80$; $\alpha_{factor2} = .65$) and homogeneity

(mean inter-item correlation, $F1r_{m,i} = .26$; $F2r_{m,i} = .33$). The Composite Reliability was calculated in order to confirm the parameter of internal consistency, being observed coefficients of $CR_1 = .80$ and $CR_2 = .64$, which were considered adequate.

After testing the two-factor structure of the adapted version of the APTBS, it was intended to verify its invariance considering the gender of participants. Firstly, the mean of the total scale scores obtained by the sample was compared by gender. The results pointed out to a significant difference ($t_{total} = 5.01, p < .001$; $t_{factor1} = 3.59, p < .001$; $t_{factor2} = 5.21, p < .001$), with males having higher mean scores ($M_{total} = 2.5$, $SD_{total} = .71$; $M_{factor1} = 2.2$, $SD_{factor1} = .83$; $M_{factor2} = 3.2$, $SD_{factor2} = .89$) than females ($M_{total} = 2.2$, $SD_{total} = .69$; $M_{factor1} = 1.9$, $SD_{factor1} = .77$; $M_{factor2} = 2.7$, $SD_{factor2} = .87$). Then, it was sought to establish whether the hypothesis of factorial invariance was tenable. The results are described in Table 3.

After that, the tow-factor model was tested for male ($\alpha_{factor1} = .80$; $\alpha_{factor2} = .61$) and female ($\alpha_{factor1} = .79$; $\alpha_{factor2} = .64$), separately. Overall, the indicators of goodness of fit were

Table 2
Comparison models the APTBS

Models	$\chi^2(df)$	χ^2/df	GFI	AGFI	TLI	CFI	RMSEA (90%CI)	CAIC	ECVI	$\Delta\chi^2$
M_1	294.19 (65)	4.53	.91	.88	.82	.85	.078 (.069 - .088)	485.36	.604 (.518 - .704)	-
M_2	169.57 (64)	2.65	.96	.94	.92	.93	.054 (.044 - .064)	368.09	.390 (.329 - .464)	124.62* (1)

Notas. M_1 = unifactorial e M_2 = bifactorial. * $p < .001$.

Table 3
Indicators of APTBS factor invariance

Models	$\chi^2(df)$	χ^2/df	GFI	AGFI	TLI	CFI	RMSEA (90%CI)	$\Delta RMSEA$
Male	122.56 (64)	1.91	.93	.90	.90	.92	.059 (.043 - .074)	
Female	160.25 (64)	2.50	.92	.90	.85	.88	.070 (.057 - .084)	
Configural Invariance (no restriction)	282.80 (128)	2.20	.93	.90	.88	.90	.046 (.039 - .053)	-
Metric Invariance (saturation)	320.80 (139)	2.31	.92	.90	.87	.88	.048 (.041 - .055)	.002
Structural Invariance (covariance)	323.67 (142)	2.28	.92	.90	.87	.88	.047 (.040 - .054)	.001
Residual (errors)	348.26 (155)	2.25	.91	.90	.87	.87	.047 (.040 - .053)	.000

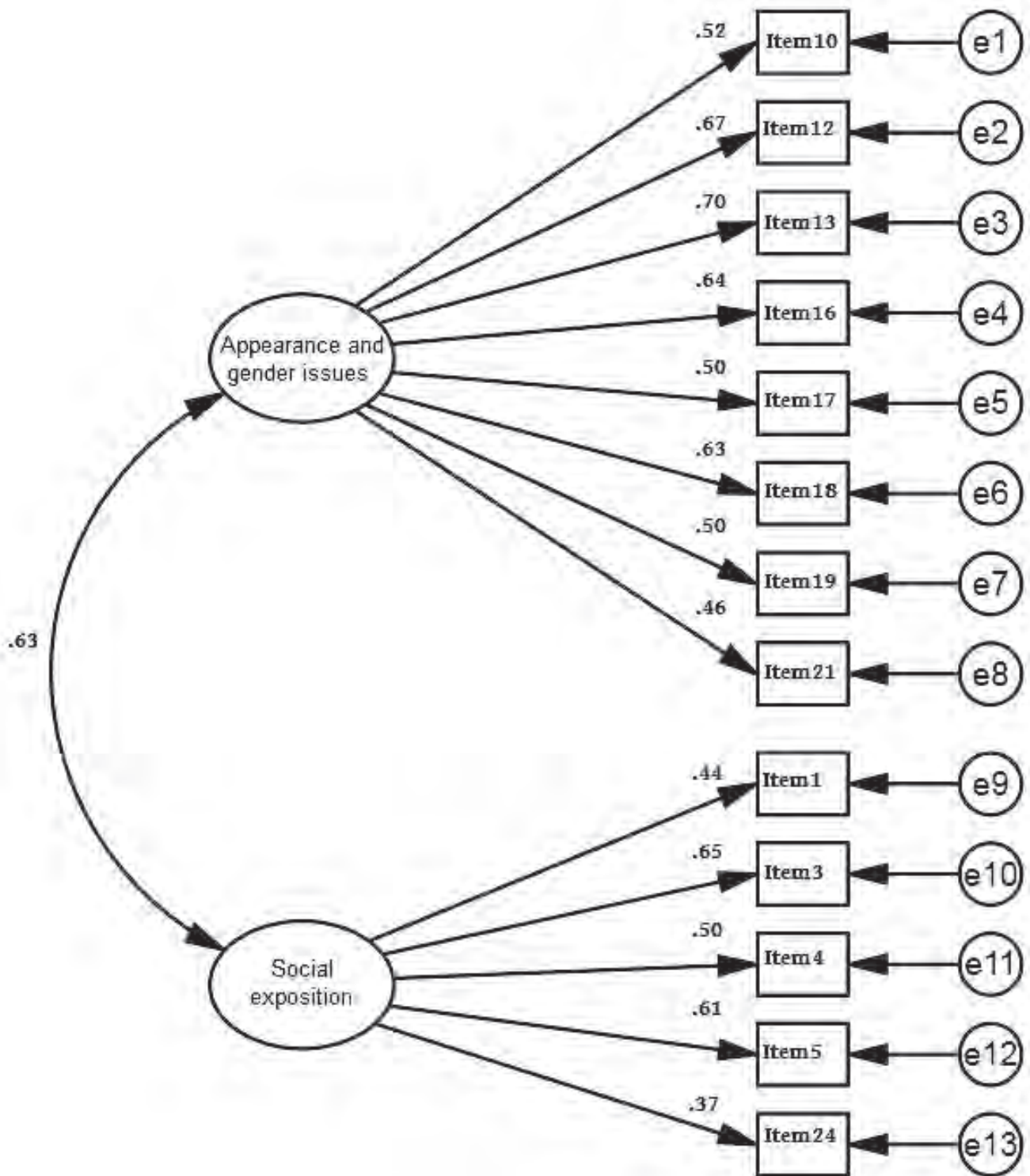


Figure 2. Confirmatory Factor Analysis of the APTBS

satisfactory (e.g., $\chi^2/df < 3$). Next, the initial model without restrictions was tested as baseline for the investigation of configural invariance. Subsequently, loading restriction (saturation), covariance, and residuals (errors underlying the items) were tested. Even though the ΔCFI values were not entirely satisfactory, a comparison between the model without restrictions and all others indicated satisfactory results regarding $\Delta RMSEA (\leq .01)$, suggesting that the structure of the analysed scale is invariant across gender.

DISCUSSION

Study 2 sought to gather evidence of factorial structure and internal consistency, and to investigate the factorial invariance of the APTBS across gender. The results confirmed the adequacy of the two-factor structure, with indicators following the recommended levels of adequacy (e.g., CFI, TLI, GFI $< .90$) (Byrne, 2010; Garson, 2003; Tabachnick & Fidell, 2013). Regarding the factorial invariance, results indicated configural (without restriction; the model exhibited the same factor structure across groups), metric (the factor loadings were equivalent across groups), structural (covariance), and residual (error variance) invariance.

GENERAL DISCUSSION

The objective of this study was to develop the Attitudes Towards Potential Targets of Bullying Scale and to gather evidence of its factor validity and internal consistency, ensuring its metric quality and demonstrating its factorial invariance across gender. These aims are likely to have been attained because the gathered evidence demonstrates that the psychometric adequacy of the scale supports its use with Brazilians in order to investigate the attitudes towards potential targets of bullying.

However, as in any scientific study, some potential limitations might be pointed out. For instance, the participants were recruited in a convenience (non-probabilistic) sample, which may restrict the generalisation of the results beyond the scope of the present study. A second possible limitation derives from the use of self-report instruments, of the “paper-and-pencil” type, which allows respondents to give false answers (Kohlsdorf & Costa Junior, 2009) or to answer in a socially acceptable manner (Gouveia, Athayde, Mendes, & Freire, 2012). However, this type of limitation is not exclusive to the APTBS, given that it is inherent to most instruments used in psychology, and has

motivated the development of alternative procedures, such as implicit measures (Gouveia et al., 2012).

Regarding the main findings of the present work, Study 1 gathered evidences of the psychometric adequacy of the instrument, in accordance with the recommendations of the literature (Pasquali, 2003). The items of the APTBS were discriminant, a structure with two components clearly emerged, and the internal consistency – assessed through Cronbach’s alpha and the homogeneity of the full set of items – clearly met the requirements described in the literature (Clark & Watson, 1995). These findings confirmed the adequacy of the APTBS to measure attitudes towards potential targets of bullying.

The scope of Study 2 went beyond the previous study, providing evidences of the adequacy of the theorised structure through a more robust statistical model (structural equation modelling). The results were adequate for the two-dimensional structure, being consistent with previous studies (Study 1). The coefficients of internal consistency were coherent to the ones found in Study 1, with Factor 2 presenting lower indices than Factor 1, but still demonstrating values recommended by the literature ($\alpha > .60$) (Hair et al., 2009). This value might be justified by the fact that, as Pasquali (2003) explains, when the number of items that composes the factor is small (Factor 2 = 5 items), this value is relative. Furthermore, in agreement with the factorial invariance, Study 2 showed that bullying-related issues seem to be more present around males than females (Bandeira & Hutz, 2012; Silva et al., 2013). Nevertheless, this gender-based difference did not affect the scale’s structure, with the set of analysed indicators suggesting that it is invariant.

Finally, the need to conduct future studies on attitudes of individuals towards potential targets of bullying is emphasised, such as replicating the studies previously described with samples of different ranges of age (the inclusion of children under nine years old), different tools (the development of implicit measures), and, consequently, different educational levels, to establish whether the respondents’ scores are predictors of bullying behaviours, as either perpetrators or victims, or of related variables, such as antisocial and delinquent behaviours. The degree of association between the APTBS scores and the constructs that describe individuals (personality traits), or the principles that guide their lives (human values), remains to be established. It is further expected that the APTBS will contribute to the formulation of bullying prevention policies, because once the attitudes of individuals in this regard are known, it will be possible to make decisions about educational campaigns and/or control actions aiming at repressing them.

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