



Development and validation of the workplace bullying scale EAPA-T

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ABSTRACT. This instrumental study describes the development and validation of a new measure of workplace bullying, entitled *Escala de Abuso Psicológico Aplicado en el Lugar de Trabajo* (EAPA-T). Participants included 85 members of numerous Spanish support associations for targets of bullying selected according to several criteria, such as being involved in legal claims and receiving psychological support. Using Confirmatory Factor Analysis for the EAPA-T, three models (one factor, four correlated factors, and four factors and one second-order factor) were analysed. The results indicated that the model with four factors and one second-order factor provided the best fit to the data. A total of 12 items was equally distributed across four categories: *Control and manipulation of the work context*, *Emotional abuse*, *Professional discredit* and *Role devaluation*. Acceptable reliabilities and significant correlations between the EAPA-T and several health and organizational variables were also found, which all together provided evidence for its validity. Practical implications regarding the use of the scale are discussed.

KEYWORDS. Workplace bullying. Mobbing. Psychological abuse. Scale validation. Instrumental study.

RESUMEN. Este estudio instrumental analiza el desarrollo y validación de un nuevo instrumento de medida de *mobbing*, la Escala de Abuso Psicológico Aplicado en el Lugar de Trabajo (EAPA-T). Los participantes en el estudio fueron 85 miembros de nume-

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rosas asociaciones de apoyo a víctimas de mobbing seleccionados según varios criterios, tales como estar recibiendo ayuda psicológica e implicados en procesos legales. El análisis factorial confirmatorio de la EAPA-T testó un total de 12 ítems distribuidos equitativamente en 4 factores: *Control y manipulación del entorno laboral*, *Abuso emocional*, *Desprestigio profesional* y *Degradación laboral*. Entre los tres modelos evaluados (un factor, cuatro factores correlacionados, y cuatro factores y un factor de segundo orden), los resultados indican que el modelo con cuatro factores y un factor de segundo orden mostró el mejor ajuste a los datos. Se halló también una aceptable fiabilidad y unas correlaciones significativas entre la EAPA-T y diversas variables organizacionales y de salud, lo que da en conjunto evidencia de su validez. Finalmente, se discuten las implicaciones prácticas derivadas del uso de esta escala.

PALABRAS CLAVE. Bullying laboral. Mobbing. Abuso psicológico. Validación de escalas. Estudio instrumental.

Workplace bullying represents a burgeoning research area in organizational psychology (Bowling and Beehr, 2006). Most research has focussed on the multicausal nature of workplace bullying (*i.e.*, Baillien, Neyens, DeWitte, and DeCuyper, 2009; Salin and Hoel, 2010; Zapf and Einarsen, 2010) and the negative effects on employee health and well being (*i.e.*, Mayhew and Chappell, 2007). According to Einarsen, Hoel, Zapf, and Cooper (2003) mobbing or bullying at work means «harassing, offending, socially excluding someone or negatively affecting someone's work tasks. It is an escalating process in the course of which the person confronted ends up in an inferior position and becomes the target of systematic negative social acts» (p. 15). We will use this definition in the article and we will also use the terms «bullying» and «mobbing» interchangeably. It is useful to distinguish workplace bullying from related constructs such as uncivil workplace behaviour. Although bullying at work can share some features with this or other constructs, it is not synonymous with them. Andersson and Pearson (1999) defined uncivil workplace behaviour as «low intensity deviant behaviour with ambiguous intent to harm the target, in violation of workplace norms for mutual respect. Uncivil behaviours are characteristically rude and discourteous, displaying a lack of regard for others» (p. 457). Thus, although workplace bullying sometimes overlaps with other forms of workplace mistreatment, it does not subsume these other forms, nor it is subsumed by them.

Workplace bullying measures

Prior to the current study, several measures available to assess workplace bullying have been used in the Spanish general population since the original Leymann Inventory Psychological Terrorization (LIPT-45; Leymann, 1990). The most widely used is the Negative Acts Questionnaire (NAQ, Einarsen, and Raknes, 1997; NAQ-R, Einarsen, Hoel, and Notelaers, 2009), which has been recently validated into Spanish language in a reduced version by Moreno Jiménez, Rodríguez Muñoz, Martínez, and Gálvez (2007).

The scale consists of 14 items using a five-point Likert response scale. The study validated two factors: *Personal bullying* and *Work-related bullying*. Work related strategies include acts such as being given tasks with impossible targets or deadlines and being given work clearly below one's level of competences. Personal related strategies include being ignored or isolated. Another scale is the Leymann Inventory Psychological Terrorization-60 (LIPT-60; González de Rivera and Rodríguez-Abuín, 2003), a Spanish adaptation of the original LIPT-45 developed by Leymann. The study found 5 factors: *Social isolation*, *Frequent tasks changes*, *Violence or threats of violence*, *Attacks at the person's integrity*, and *Direct or indirect criticism*. In addition to these scales, other scales have been used to assess psychological abuse at work. The so called *Hostigamiento Psicológico en el Trabajo* (HPT, Fornés, Martínez-Abascal, and García, 2008) contains of 44 items (although it was finally reduced to 35) to assess the frequency of bullying behaviours on a 5 points response scale. The authors found 5 significant factors: *Humiliation and personal derogation*, *Professional demeaning*, *Professional rejection and privacy invasion*, *Professional demotion*, and *Professional isolation*.

Despite the strengths of the different scales, there is, however, still considerable room for improvement and some weaknesses may be pointed out (Nielsen, Notelaers, and Einarsen, 2010). For instance, although certain scales have been guided by conceptual models, these are rare, and most of the commonly used risk scales are simply lists (*e.g.*, HPT). Furthermore, from a holistic approach, Moayed, Daraiseh, Shell, and Salem (2006) pointed out that there may be an overlap between the scales. The available bullying questionnaires in Spain come either from abroad (Spanish version of the reduced NAQ), which means they lack adaptation to the Spanish culture, or are long in length (LIPT-60), or are based in general samples instead of victims samples (HPT). More specifically, the Spanish adaptation of the NAQ reduced from 22 original items to 14 items was based on the consensus of a group of experts but not on psychometric criteria. In the LIPT-60, no confirmatory factor analysis was conducted and the added items to the original version did not represent a homogeneous category. And finally, the HPT used a sample consisting of students of nursery from the Balearic Islands and the categories found differed in its representativeness from 16 to 3 items. To sum up, as Einarsen *et al.* (2009, p. 25) have stated, many studies have used instruments that are «derivations, expansions or shortened versions of other original scales portraying unknown validity and reliability. Some scales are overly long and, consequently, difficult to use in standard organizational surveys. And some instruments are based on the responses of undergraduate students».

The comparison of the various existing instruments shows several differences between them, making it difficult to come up with a consensus of what bullying is and how it should be distinguished from other concepts, but also, how components of workplace bullying should be differentiated. This makes it hard to compare the various studies. For this reason, theoretical and practical benefits could be derived not only from a new instrument encompassing the previous ones, but also from the validity added by a sample of victims. Therefore, the need for developing a culturally anchored

measurement of bullying at work in Spain, short and comprehensible, seems to be justified. Hence, we will present a new instrument on workplace bullying which includes four sub-categories of bullying but which is relatively short at the same time. Moreover, the instrument was developed in a Spanish context and was based on a sample of victims of bullying selected according to several criteria (see section Method: Participants).

Workplace bullying dimensionality

Hoel and Beale (2006) noticed that «although the growing convergence of definitions of workplace bullying in recent years, there is not unanimous support for the defining characteristics» (p. 241). Hence, one question that arises is whether workplace bullying represents a homogeneous construct, which would imply that all bullying actions show similar frequencies and have similar consequences, or whether there are typical types or categories of bullying that can be differentiated. Agervold (2007) stressed that it is essential to identify certain types of behaviours as bullying, and Keashly (1998) argued that research directed at identifying types of behaviours is of theoretical and practical importance, mostly for workplace policies and prevention/intervention work. The same discussion can be found in related constructs such as incivility in the workplace, where some authors have defined it as an uni-dimensional phenomenon, while other authors have conceptualised it as a multidimensional construct (*i.e.*, Martin and Hine, 2005).

Rodríguez-Carballeira, Escartín, Visauta, Porrúa, and Martín-Peña (2010) who discussed the question of the core components of bullying, presented a taxonomy of workplace bullying centered on the actions of the bully, avoiding any reference to the consequences that these have or might have on the target (Escartín, Arrieta, and Rodríguez-Carballeira, 2009; Escartín, Rodríguez-Carballeira, Porrúa, and Martín-Peña, 2008). Following the distinction between direct and indirect aggressive behaviours (Baron and Neuman, 1999), the authors differentiated between six categories: the first three categories referred mainly to the indirect aggressive behaviours and the work environment of the person affected (control and manipulation of the work context). The last three categories focused more closely on the direct aggressive behaviours and the experiences of the individuals being affected. These components of abuse comprise elements that are of an emotional nature (emotional abuse), a cognitive nature (professional discredit) and a behavioural nature (role devaluation) (see Table 1). Also, the authors assessed the severity of each abuse category. Thirty experts working in various professions participated in a two-round Delphi survey in order to establish content validity. Their results showed that the workplace bullying categories with the greatest severity were the more direct aspects of bullying (emotion-directed, cognition-directed, and behaviour-directed categories), followed by the more indirect aspects (context-directed categories).

TABLE 1. Taxonomy of workplace bullying and operational definitions (extracted from Rodríguez-Carballeira *et al.*, 2010).

<i>Type</i>	<i>Nature</i>	<i>Categories</i>
Indirect	Work context	Isolation: Restricting the worker’s interaction with his or her co-workers and/or physically separating him or her from them, seeking his or her marginalization or exclusion. Control and manipulation of information: Selecting and manipulating the information received by the worker, lying to him or her, and stemming or interfering with the information that the worker transmits. Control-abuse of working conditions: Intervening or acting negligently in the work environment and working conditions in order to upset the worker as he or she attempts to perform his or her tasks, or to put his or her health at risk.
Direct	Emotion	Emotional abuse: Offensive actions and expressions aimed especially at attacking, injuring and sneering at the worker’s feelings and emotions.
	Cognition	Professional discredit and denigration: Discrediting and denigrating the worker’s professional reputation and standing, belittling his or her knowledge, experience, efforts, performance, etc.
	Behaviour	Devaluation of the role in the workplace: Undervaluing the importance of the role of the worker, unjustifiably relieving the worker of his or her responsibilities or assigning the worker tasks that are useless, impossible or clearly inferior to his category in the organization.

Escartín, Zapf, Arrieta, and Rodríguez-Carballeira (2010) used the above-mentioned taxonomy in a cross-cultural study on the workers’ perception of workplace bullying. They found that direct workplace bullying behaviours (such as emotional abuse) were more frequently considered bullying by both the Central American and Southern European employees. For both the Southern European and Central American employees, the indirect categories were statistically less significant. Similarly, Escartín, Rodríguez-Carballeira, Zapf, Porrúa, and Martín-Peña (2009), through a self-report questionnaire with 35 items representing possible bullying behaviours, assessed the taxonomy with a sample of employees differing in the degree of involvement in bullying (represented by three different groups: victims, witnesses and employees with no previous experience of bullying). As in the Rodríguez-Carballeira *et al.* (2010) study, the results indicated that workers considered all the bullying behaviours as severe. Nonetheless, workers made significantly different assessments of the severity of bullying behaviour, with emotional abuse considered to be the most severe category, manipulating information, abusing working conditions and professional discredit belonging to a middle group, and isolation and devaluing professional role as the least severe categories of behaviour.

To sum up, considering the taxonomy developed by Rodríguez-Carballeira *et al.* (2010) and the cited studies (Escartín, Rodríguez-Carballeira *et al.*, 2009; Escartín *et al.*, 2010), this paper intends to develop and validate a short instrument with a multidimensional four factor structure (*Control and manipulation of the work context, Emotional abuse, Professional discredit* and *Professional devaluation*). In the next section, the aims and research hypotheses are presented, followed by a description of the instrument and its development. After that, empirical evidences on the validity of the instrument are provided, and finally, the limitations and strengths of the instrument are pointed out.

Following the standards recommended by Carretero-Dios and Pérez (2007), this instrumental study (Montero and León, 2007) intends to develop and validate a short

instrument for the Spanish speaking population (EAPA-T; *Escala de Abuso Psicológico en el Lugar de Trabajo*) enabling researchers and human resource managers to discriminate between different types of workplace bullying that could be related to different health and organizational variables. We also sought to find a balance between the quality of the psychometric properties and the length of the instrument, creating a measure that combines sufficient reliability and saves time and efforts at the same time.

Therefore, three specific aims were addressed in order to evaluate the psychometric properties of the EAPA-T (Ramos-Álvarez, Moreno-Fernández, Valdés-Conroy, and Catena, 2008). The first aim was to analyse the dimensionality of the EAPA-T through 3 different models: a) the first model represented a general factor of workplace bullying indicating that there is no discriminant validity between subscales of bullying; b) the second model represented 4 different and correlated factors, called: *Control and manipulation of the work context*, *Emotional abuse*, *Professional discredit*, and *Role devaluation*; c) the third model comprised the four factors and a second-order factor. The second aim was to evaluate the internal consistency of the EAPA-T. And the third aim was to analyse the relation between the EAPA-T and several study variables to provide information on the validity of the instrument. For this last aim, several research hypotheses were developed.

With regard to convergent validity of the scale the first hypothesis was that the EAPA-T will be correlated with other established measures of bullying; hypothesis 1: Bullying measured by the EAPA-T will be positively correlated with the above-mentioned bullying questionnaire, LIPT-60. The second hypothesis was that the EAPA-T will be correlated with measures of organizational and health psychology; hypothesis 2: Bullying will be positively correlated with ill-health (Hypothesis 2a: PTSD, Anxiety and Depression) and organizational outcome variables (Hypothesis 2b: Intention to quit and Work Tension). The third hypothesis was that the EAPA-T will be correlated with additional items associated with the perpetrators and the bullied; hypothesis 3: The different bullying subscales will have different relationships with other variables such as: Hypothesis 3a: Level of Victimization; Hypothesis 3b: Professional Category of the Bullies; Hypothesis 3c: Number of Bullies and; Hypothesis 3d: Gender of Bullies.

For Hypothesis 3a is expected that the higher the level of victimization, the more forms of abuse will take place. In that sense, various authors (*e.g.*, Mikkelsen and Einarsen, 2001) pointed out that bullying involves a pattern of multiple negative acts, and the majority of targets report being subjected to numerous forms of abuse. In Hypothesis 3b different patterns of behaviours are expected from supervisors and colleagues. According to Hoel and Cooper (2000) when bullying appears to come from superiors, work-related bullying (such as role devaluation) seems to be the most frequently applied behaviours because superiors have more power to affect the work role than the victims' colleagues. In contrast co-workers were expected to use social isolation and attacking the private sphere more often than the supervisors or managers, first of all, because a single supervisor cannot really isolate a victim if the colleagues do not join in. Second, colleagues usually have more knowledge about the private life and can use this knowledge against the victim. As noted by Lutgen-Sandvik, Tracy, and Alberts (2007), for Hypothesis 3c, more bullying behaviours were expected when more than one person bullied the victims. Finally, for Hypothesis 3d, gender differences in the bullying behaviours were expected according to Mackensen von Astfeld (2000), who found that

men more often tended to prefer strategies affecting the victim’s work whereas women used strategies affecting communication, social relationships and reputation.

Method

Participants

The participants in the present study were recruited among members of several Spanish support associations for targets of bullying. All the subjects participated voluntarily and their anonymity was guaranteed at all times. According to the definition of workplace bullying, all of them considered themselves to be victims (30.60% at a «high level» and 69.40% at a «very high level») and they had met the temporal criteria required to judge a situation as bullying (Einarsen, 2000). The final sample was made up of a total of 85 people, 30 (35.30%) were male and 55 (64.70%) female, and the mean age was 47.22 years (*SD* = 8.82, range = 27-69) (see Table 2 for the main characteristics of the sample). The data collection was conducted using face-to-face interviews (which avoided missing data) and it took place between September 2007 and July 2008. The collection of information about the sample was carried out in the facilities of the associations or professionals who provided the access to the participants. The criteria for selecting the participants were as follows: a) the employees were or had been exposed to psychological violence in the workplace; b) they were or had been receiving psychological support; c) they were or had been involved in legal claims; d) they were not in a crisis phase; and e) they were not suffering any psychological severe disorder (individuals who did not meet the above-mentioned criteria were excluded from the study).

TABLE 2. Main characteristics of the sample.

<i>Sample: 85 workplace bullying victims</i>			
<i>Variables</i>	<i>Participants</i>	<i>n</i>	<i>%</i>
Gender	Male	30	35.30
	Female	55	64.70
Civil status	Single	23	27.10
	Married or living with partner	57	67.10
	Others	5	5.90
Socio-economic level	Low	16	18
	Medium	54	63.50
	High	15	17.70
Professional category	Manager or director	11	12.90
	Middle management	23	27.10
	Baseline employee	51	60
Type of contact	Permanent	79	92.90
	Temporary	6	7.10
Sector	Public	42	49.40
	Private	43	50.60

Instruments

For the EAPA-T, 12 items were developed, all of which were positive indicators of bullying. The items were written in behavioural terms with no reference to the terms «mobbing» or «bullying». To ensure that the items would be sufficiently clear for the present sample and purpose, a pilot test had been performed with two workplace bullying victims (one man and one woman), who were asked to provide a «cognitive debriefing». These victims were not included in the final sample. The items referred to categories of abuse that emphasise, respectively, elements of a contextual-directed (control and manipulation of the work context), emotional-directed (emotional abuse), cognitive-directed (professional discredit) and behavioural-directed nature (role devaluation). Responses had to be given on a 5-point Likert-type scale, ranging from 0 (*Nothing*) to 4 (*Extremely*). The internal consistency (Cronbach's alpha) for the full EAPA-T was .77.

In addition to sociodemographic items, the validation questionnaire also included several additional measures used to validate the EAPA-T.

- The Leymann Inventory Psychological Terrorization-60 consisted of 60 items related to bullying behaviours with 5-point Likert-type response scales, ranging from 0 (*Nothing*) to 4 (*Extremely*) (González de Rivera and Rodríguez-Abuín, 2003). The internal consistency (Cronbach's alpha) for the scale was .93.
- The Hospital Anxiety Depression Scale (HAD; Zigmond and Snaith, 1983). This 14-item questionnaire mainly used in clinical psychology measures anxiety and depression. We employed the Spanish adaptation (López-Roig *et al.*, 2000). Responses were rated on a Likert scale ranging from 0 (*Never*) to 3 (*Always*). Its internal consistency was .92.
- The Davidson Trauma Scale (DTS; Davidson *et al.*, 1997). This 17-item scale provides a measure of post-traumatic stress disorder symptoms. Responses were rated on a Likert scale ranging from 0 to 4. The Spanish version from Bobes *et al.* (2000) was used. Its internal consistency was .97.
- In order to assess organizational variables, two single-item were used in line with Lutgen-Sandvik *et al.* (2007) who pointed out that for the measure of some organizational variables «single-item measures are strongly correlated with multiple-item measures of the same concept» (p. 848). Hence, two single-item were used to assess work tension and intention to quit, using a Likert-type response scale ranging from 0 to 4. These organizational variables have been considered as influential variables on workplace bullying in several studies (*e.g.*, Zapf, 1999).
- Finally, the questionnaire collected information about the level of victimization (ranging from 0 –*Nothing*– to 4 –*Fully*–), the professional category, and the number and gender of perpetrators (*i.e.*, Zapf, Knorf and Kulla, 1996).

Procedure

In developing the EAPA-T, we followed the guidelines recommended by several authors such as Haynes, Richard, and Kubany (1995), Haladyna, Downing, and Rodriguez (2002), and Moreno, Martínez, and Muñiz (2006). The first step involved generating a satisfactory definition of workplace bullying and definitions of the specific categories

included that could be used as the basis for item development and evaluation (see Table 1). The review of the workplace bullying literature and surveys of experts was done in a previous article (for further information, see Rodríguez-Carballeira *et al.*, 2010) where a taxonomy with categories related to emotional, cognitive and behavioural aspects and the work context was validated. This study provided information on content validity.

The second step, which consisted of the generation of items, involved listing examples of behaviours that corresponded to the definitions provided in the workplace bullying taxonomy (Rodríguez-Carballeira *et al.*, 2010), differentiating into the four conceptually homogeneous categories: Control and manipulation of the work context, Emotional abuse, Professional discredit and Role devaluation.

As mentioned in the previous sections, Escartín, Rodríguez-Carballeira *et al.* (2009) developed a self-report questionnaire with 35 items representing possible bullying behaviours, which tried to cover the different scales differentiated in the workplace bullying taxonomy (Rodríguez-Carballeira *et al.* 2010). So, in developing the EAPA-T scale, we developed a pool of 20 items. These items were developed based on the above-mentioned Escartín, Rodríguez-Carballeira *et al.*, (2009) instrument and on the Rodríguez-Carballeira *et al.* (2010) definitions. In addition, these items were based on a review of previous bullying research and existing measures cited in the previous section. The selected items developed by the authors independent from previous workplace bullying instruments, followed the guidelines of several authors (*e.g.*, Haladyna *et al.*, 2002; Moreno *et al.*, 2006) including criteria such as appropriate language, trying to show the intended content, being as clear as possible, and without involving unnecessary and irrelevant difficulties.

The third step involved presenting the scale to a group of experts for review. Items were reviewed for clarity, relevance, and redundancy and were reworded or excluded as required, which resulted in the retention of 12 items, three for each of the four mentioned categories. For the validation of the EAPA-T three different evidence criteria were addressed (APA, AERA, and NCME, 1999): Dimensionality, internal consistency and relation with other study variables.

Data analysis

The previous studies of Rodríguez-Carballeira *et al.* (2010), Escartín, Rodríguez-Carballeira *et al.* (2009) and Escartín *et al.* (2010) already provided information on the content validity (Turoff and Hiltz, 1996). Therefore, we chose confirmatory factor analysis (CFA) to confirm the existing theoretical model and the existing empirical findings of the previous studies.

Hence, with regard to the dimensionality of the scale, three hypothesized structures were tested by means of CFA using the program LISREL, version 8.80 (Jöreskog, Sörbom, and du Toit, 2007). Because we had no missing data, maximum likelihood estimation was used, although the non-normality of several items (*e.g.*, Savalei, 2008). In this note, several studies have shown that under certain conditions (such as complete data) the ML chi-square remains robust to non-normality and retains its asymptotic chi-square distribution (*e.g.*, Hu, Bentler, and Kano, 1992; Savalei, 2008). Various criteria were used for evaluating the overall fit of the theoretical model and the empirical data

(see Schermelleh-Engel, Moosbrugger, and Müller, 2003): χ^2 statistic, Goodness of Fit Index (GFI), Non-Normed Fit Index (NNFI), Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA) and its corresponding 90% confidence intervals, standardized Root Mean Square Residual (SRMR) and Akaike's Information Criterion (AIC). These indices are among the most frequently used and they contain indices which are not affected by sample size (García-Cueto, Gallo, and Miranda, 1998; Schermelleh-Engel *et al.*, 2003). It was considered to be indicators of a good adjustment (Kaplan, 2000), that the χ^2 statistic was not significant and that the indexes GFI, NFI, NNFI and CFI had higher values than .90. For the RMSEA and the SRMR index, according to Browne and Cudeck (1992) values lower than .05 mean a good fit, values between .05 and .08 an acceptable fit and values higher than .08 a poor fit. For the AIC, lower value indicates a better fit of the model (Akaike, 1987). Furthermore, the unit of measure of the EAPA-T was chosen by fixing an indicator of each dimension at 1 (Brown, 2006). Finally, internal consistency was assessed by Cronbach's alpha coefficients; correlations between the EAPA-T and the validation scales were also conducted.

Results

Confirmatory factor analysis

Three different models were tested. Model 1 postulated a single factor on which all the items the EAPA-T loaded; model 2 proposed a structure of four correlated factors; and model 3 postulated a four-factor structure with independent, uncorrelated factors and a second-order factor.

The results from the confirmatory factor analysis, summarized in Table 3, indicate that both four-factor models fit the data well and are significantly better than the single-factor model that fits the data only poorly (χ^2 significant; $p < .001$; GFI, NNFI and CFI indices lower than .90; RMSEA and SRMR indexes higher than .08). Both four-factor models indicated scores up to the standard criteria and with a non-significant χ^2 . The AIC value was used to select the best fitting model. However, the AIC for both models was dramatically similar (Model 2 AIC value = 113.25; Model 3 AIC value = 113.29). Also the χ^2 difference for the models 2 and 3 was non-significant ($D \chi^2 = 2.64$; $p > .10$; $df = 2$).

TABLE 3. Summary of fit indices for the EAPA-T from confirmatory factor analysis ($N = 85$).

<i>Model</i>	<i>RMSEA</i>	<i>90% CI</i>	<i>SRMR</i>	<i>GFI</i>	<i>NNFI</i>	<i>CFI</i>	<i>AIC</i>	χ^2	<i>df</i>	<i>p</i>
1- EAPA-T single factor	.18	.15 - .21	.14	.71	.43	.53	250.83	195.55	54	< .0001
2- EAPA-T four factor	.036	.0 - .082	.08	.90	.96	.97	113.25	57.70	48	.16
3- EAPA-T four factor & one second-order factor	.042	.0 - .085	.08	.90	.96	.97	113.29	60.34	50	.15

Note. RMSEA: Root Mean Square Error of Approximation; 90% CI: 90% Confidence Interval; SRMR: Standardized Root Mean Square Residual; GFI: Goodness of Fit Index; NNFI: Non-Normed Fit Index; CFI: Comparative Fit Index; AIC: Akaike's Information Criterion.

Hence, although both models were plausible, the more parsimonious one was selected (Model 3: EAPA-T four factors and one second-order factor).

The pattern of factor loadings also corroborated this selection. The factor loadings for the three tested models are presented in Table 4. Factor loadings are interpreted as coefficients that estimate the direct effects of the factors on the indicators (Kline, 2005). For such models the factor loadings are all positive. For model 1 the standardized loadings ranged from .14 to .75. For model 2 the standardized loadings ranged from .49 to .91. And for model 3 the standardized loadings ranged from .47 to .91. Therefore, for the models 2 and 3 the coefficient patterns were very similar and all the factor loadings were superior to .45, showing relevancy as indicators of the corresponding construct (*i.e.*, Spector, 1992).

TABLE 4. Confirmatory factor analysis for each item of the EAPA-T distributed by subscales.

		<i>One factor solution</i>			<i>Four factors solution</i>			<i>Four factors & one second order factor solution</i>		
		λ	$\theta\delta$	R^2	λ	$\theta\delta$	R^2	λ	$\theta\delta$	R^2
Control & manipulation work context	Item 1	.46	.79	.21	.57	.67	.33	.57	.68	.32
	Item 2	.57	.67	.33	.77	.41	.59	.77	.41	.59
	Item 3	.62	.62	.38	.82	.33	.67	.82	.32	.68
Emotional abuse	Item 4	.50	.75	.25	.83	.30	.70	.84	.29	.71
	Item 5	.51	.74	.26	.80	.36	.64	.80	.37	.63
	Item 6	.52	.73	.27	.59	.65	.35	.59	.65	.35
Professional discredit	Item 7	.66	.57	.43	.66	.56	.44	.67	.56	.44
	Item 8	.64	.60	.40	.73	.46	.54	.74	.46	.54
	Item 9	.71	.49	.51	.91	.17	.83	.91	.18	.82
Role devaluation	Item 10	.06	1.00	.00	.82	.32	.68	.85	.28	.72
	Item 11	.14	.98	.02	.49	.76	.24	.47	.78	.22
	Item 12	.15	.98	.02	.64	.58	.42	.63	.60	.40

Note. λ : Factor loadings; $\theta\delta$: Error variances; R^2 : Squared multiple correlations for X-variables.

According to the CFA analyses, the four factors and one second-order factor solution was associated with the best fit. The correlation between the EAPA-T and its four factors was calculated through the corrected subscale-total-scale correlation (*cf.* Table 6). This is the correlation of a subscale with the total scale without the items of the respective subscale. This was done because without this correction, the correlation would be spuriously inflated. The correlations varied between .43 and .76 reflecting that the participants are more or less bullied with regard to all EAPA-T subscales, thus adding validity to the second-order factor solution. Moreover, the correlations of the EAPA-T subscales range from -.08 to .43, that is they range from very low to moderate (*cf.* Table 6) indicating discriminant validity between the scales.

Internal consistency

The internal consistency of the four categories of the EAPA-T scale was examined by using Cronbach’s alpha. Descriptive data (together with skewness, kurtosis and test of normality) and the alpha coefficient for the EAPA-T subscales and full scale (including

the validation measures) are presented in Table 5. All the values are higher than the common criterion value of .70 (Nunnally and Berstein, 1994), except for the *Role devaluation* subscale, which had an alpha only marginally below .70 (.69). The global internal consistency coefficient for the scale was .77.

TABLE 5. Descriptive statistics and reliability (Cronbach's alpha) for validation scales, the EAPA-T subscales and full scale ($N = 85$).

<i>Construct</i>	<i>M</i>	<i>SD</i>	<i>Skewness</i> ¹	<i>Kurtosis</i> ²	<i>Test of normality</i> ³	<i>Std. Error</i>	<i>N° items</i>	<i>Alpha</i>
Work Tension	2.72	1.23	-.61	-.75	.22	.00	1	---
Intention to quit	1.84	1.39	.08	-1.22	.15	.00	1	---
Total HAD	2.50	.53	-.00	-1.23	.13	.00	14	.92
Total DTS	2.33	1.01	-.58	-.88	.16	.00	34	.97
LIPT60	1.64	.59	.06	-.43	.06	.20	60	.93
EAPA-T Control-manipulation of the work context	2.04	1.27	-.02	-1.14	.09	.05	3	.77
EAPA-T Emotional abuse	2.40	1.25	-.33	-.99	.14	.00	3	.79
EAPA-T Professional discredit	2.69	1.18	-.68	-.59	.15	.00	3	.82
EAPA-T Professional devaluation	2.01	1.19	-.05	-1.01	.10	.03	3	.69
Total EAPA-T	2.29	.78	.05	-.55	.06	.20	12	.77

Note. ¹skewness standard error = 0.26; ²kurtosis standard error = 0.51; ³Lilliefors significance correction.

Relation with other scales

Other evidence for the validity of the EAPA-T scales was studied by analysing the correlations between the scale categories and other, theoretically related, constructs. As shown in Table 5, the EAPA-T and all its subscales were significantly correlated with the LIPT-60 ($r = .82$; $p < .01$; for the full scale) adding support to the Hypothesis 1 (convergent validity). As expected, the correlations between the EAPA-T and the LIPT-60 were positive, indicating that respondents who experienced higher levels of workplace bullying according to the EAPA-T were likely to experience also higher levels of workplace bullying according to the LIPT-60.

The analysis also indicated that the EAPA-T was positively correlated with the DTS and the HAD, indicating a positive correlation with health problems ($r = .32$ and $.23$; $p < .01$ and $.05$, respectively) and confirming Hypothesis 2a. When the categories were analysed individually, the DTS correlated with the *Control and manipulation of the work context* and *Emotional abuse* categories ($r = .24$ and $.22$; $p < .05$, respectively), but not with the *Professional discredit* and *Role devaluation* categories. The HAD was not significantly correlated with any of the four categories individually although the correlations were in the expected direction. The full EAPA-T was also positively correlated with work tension and intention to quit confirming Hypothesis 2b, as well. When the subscales were analysed, work tension correlated significantly with the *Emotional abuse* subscale ($r = .39$; $p < .05$) and intention to quit correlated significantly with the *Emotional abuse* and *Professional discredit* subscales ($r = .40$ and $.28$; $p < .01$ and $.05$, respectively).

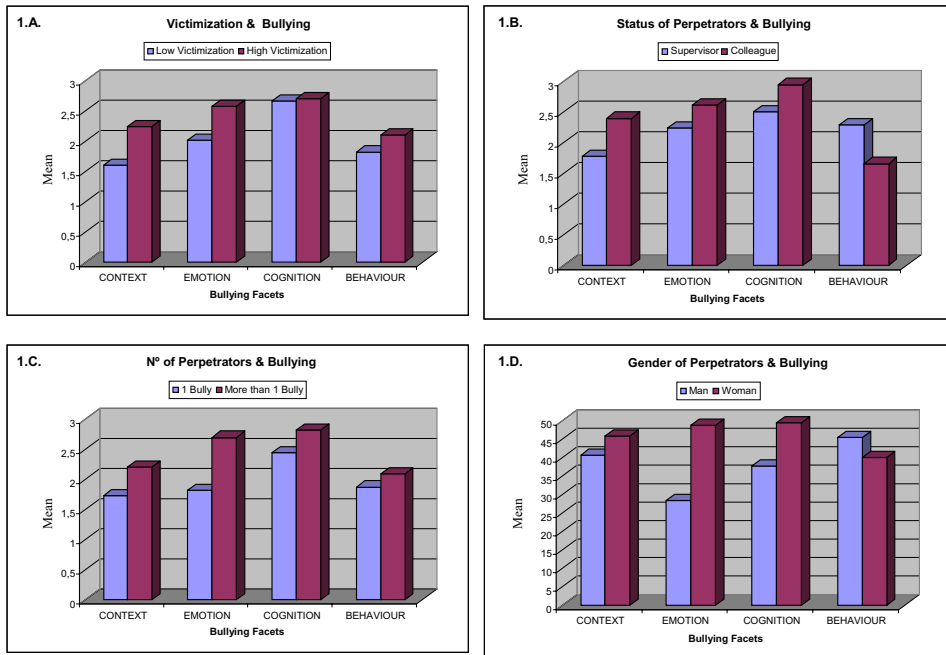
TABLE 6. Correlation matrix of validation scales, EAPA-T subscales and full scale ($N = 85$).

Scales	2	3	4	5	6	7	8	9	10
1. Work Tension	.39**	.17	.22*	.38**	.18	.39*	.12	.05	.30**
2. Intention to quit	---	-.03	.16	.30**	.16	.40**	.28*	.16	.39**
3. HAD	---	---	.72**	.32**	.17	.20	.13	.07	.23*
4. DTS	---	---	---	.36**	.24*	.22*	.20	.15	.32**
5. LIPT60	---	---	---	---	.67**	.56**	.63**	.22*	.82**
6. EAPA-T Control-manipulation work context'	---	---	---	---	---	.34**	.43**	.13	.76**
7. EAPA-T Emotional abuse'	---	---	---	---	---	---	.36**	.05	.67**
8. EAPA-T Professional discredit'	---	---	---	---	---	---	---	-.08	.67**
9. EAPA-T Professional devaluation'	---	---	---	---	---	---	---	---	.43**
10. Total EAPA-T	---	---	---	---	---	---	---	---	---

Note. 'Intercorrelations among EAPA-T subscales after corrected subscale-total scale correction.

* $p < .05$ (two-tailed), ** $p < .01$ (two-tailed).

Finally, using the *U* Mann-Whitney Test and the Kruskal-Wallis Test, significant effects were found between the EAPA-T and its different categories and the level of victimization (see Figure 1.A), the professional category of perpetrators (see Figure 1.B), the number of perpetrators (see Figure 1.C) and the gender of perpetrators (see Figure 1.D). Therefore, the Hypothesis 3 was also confirmed. For Hypothesis 3a, the participants with the highest levels of victimization were higher in the four different categories, especially in *Emotional abuse* and *Control and manipulation of the work context* ($M = 2.01$ and $M = 1.60$ for «high» victimization vs. $M = 2.57$ and $M = 2.24$ for «very high» victimization, respectively; $z = -2.14$ and -2.13 ; $p < .05$). With regard to the professional status of the perpetrators (Hypothesis 3b), supervisors used more often *Role devaluation* than colleagues ($M = 2.29$ for supervisors vs. $M = 1.65$ for colleagues; $z = -2.35$; $p < .01$), who instead, more often used *Control and manipulation of the work context* ($M = 1.77$ for superiors vs. $M = 2.39$ for colleagues; $z = -2.18$; $p < .01$). Related to Hypothesis 3c, the data showed that when more perpetrators were involved, then more bullying strategies were used, specially *Emotional abuse* ($M = 1.80$ with one bully vs. $M = 2.69$ for more than 1 bully; $\chi^2 = 8.42$; $p < .01$; $df = 1$). Finally, for the gender of perpetrators and bullying (Hypothesis 3d), data suggested that women used more often *Emotional abuse* and *Professional discredit* than men ($M = 48.79$ and $M = 49.46$ for women vs. $M = 38.32$ and $M = 37.78$ for men; $\chi^2 = 3.82$ and $\chi^2 = 4.78$; $p < .01$; $df = 1$). See figure 1 for a graphic representation of the mean values.

FIGURE 1. Relationship between bullying and other variables¹.

Note. 1 Context (Control-manipulation work context), Emotion (Emotional abuse), Cognition (Professional discredit), and Behaviour (Role devaluation).

Discussion

The principal aim of the present study was to develop and validate a new workplace bullying scale, the EAPA-T. Based on the concept of Rodríguez-Carballeira *et al.* (2010) four different bullying categories were differentiated: *Control and manipulation of the work context*, *Emotional abuse*, *Professional discredit* and *Role devaluation*. The dimensionality, internal consistency and relation to other scales of the newly developed instrument were assessed. Results indicated that the EAPA-T four factors and one second-order factor model provided the best fit to the data. Confirmatory factor analyses resulted in 12 items equally distributed across four categories: context-directed (*Control and manipulation of the work context*); emotion-directed (*Emotional abuse*); cognition-directed (*Professional discredit*); and behaviour-directed (*Role devaluation*) workplace bullying categories.

The results of this study are in accordance with previous empirical and theoretical research (*i.e.*, Coyne, Seigne, and Randall, 2000; Escartín *et al.*, 2010; Jennifer, Cowie, and Ananiadou, 2003). The categories found in the present study are similar to the ones found by Fornés *et al.* (2008) through an exploratory analysis. Humiliation and personal derogation is partially comparable with emotional abuse. Professional demeaning should

be similar to professional discredit. Professional rejection and privacy invasion and professional isolation are both comparable with control and manipulation of the work context. Finally, professional demotion is similar to role devaluation. Similarly, the categories of this study are comparable with the work-related and personal-related bullying strategies of Moreno-Jiménez *et al.* (2007). Thus, control and manipulation of the work context, professional discredit and role devaluation are partially comparable with work-related bullying, and emotional abuse is similar to personal-related bullying. Furthermore, the present study adds support to the Delphi study conducted by Rodríguez-Carballeira *et al.* (2010) and the Escartín, Rodríguez-Carballeira *et al.* (2009) study about the severity of bullying behaviours at work, adding empirical support to the four different categories of workplace.

The EAPA-T and its subscales have acceptable Cronbach's alphas. The coefficients exceed the generally accepted minimum of .70 with one scale having an alpha of .69, indicating acceptable internal consistency of the scales given the low number of items for each subscale. The fact that the four bullying factors are moderately correlated suggests that if people are bullied they tend to experience a large number of bullying behaviours from different behavioural categories (Zapf, Escartín, Einarsen, Hoel, and Vartia, 2010). The exception is the factor *Professional devaluation* which is not significantly correlated with the other three factors (see Table 5). Furthermore, the different validation scales were correlated with the EAPA-T scale, and in the expected direction. The correlations between the EAPA-T and the LIPT-60 ranged from .22 to .67, suggesting that the two measures were conceptually related but not entirely redundant. When the relationship between the EAPA-T and the HAD and DTS scales was examined, the results were coherent with several studies that showed that anxiety, depression and PTSD are psychiatric diseases frequently related to bullying (*e.g.*, Einarsen and Mikkelsen, 2003; Høgh, Mikkelsen, and Hansen, 2010). The correlations are also as expected, with a range from .22 to .31, suggesting that the scale is a valid predictor for the outcome variables included in this study. The analysis also reveals that some EAPA-T subscales are significantly associated with work tension and intention to quit. These results support the findings from other studies (*i.e.*, Einarsen and Mikkelsen, 2003; Høgh *et al.*, 2010) that show that different types of workplace bullying strategies may lead to different types of negative outcomes for workers.

According to the level of victimization, professional category, number and gender of perpetrators, the results support previous research and arise new questions. Regarding Hypothesis 3a, Zapf *et al.* (2010) point out that bullying victims tend to experience a large number of bullying behaviours from different behavioural categories. Lutgen-Sandvik *et al.* (2007) found that when more workplace bullying behaviours take place, higher levels of victimization are found among targets. For the Hypothesis 3b, Zapf *et al.* (2010) point out that some strategies work only if many people are involved (so a single supervisor cannot isolate somebody but perhaps can give tasks with impossible targets or deadlines). Instead, co-workers use social isolation and attacking the private sphere more often than the supervisor or managers. For the Hypothesis 3c, Zapf *et al.* (2010) note that in pure victim samples, usually longer mean duration of bullying appears implying that it is more difficult to remain a neutral bystander the longer bullying lasts. Finally, for Hypothesis 3d, the results support other studies that have

found similar patterns of behaviour according to gender (*e.g.*, Mackensen Von Astfeld, 2000).

All in all, the results support the idea that the four types of workplace bullying tend to have different potential consequences. Thus using specific bullying scales rather than a general scale may provide to researchers and professionals working in the area of organizational psychology a valid instrument to identify which types of workplace bullying behaviours are prevalent in their organizations and develop more precisely targeted interventions to reduce them. Furthermore, according to the results obtained in several studies (Escartín, Rodríguez-Carballeira *et al.*, 2009; Escartín *et al.*, 2010; Rodríguez-Carballeira *et al.*, 2010), the subscales obtained here could be weighted according their severity. The resulting hierarchy of less and more severe bullying categories could contribute to other studies that merely sum items (*i.e.*, Keashly, 1998; Lutgen-Sandvik *et al.*, 2007).

The results of the present study should be interpreted considering some limitations. As a cross-sectional study built on self-report data has been carried out, the relations found in this paper cannot be interpreted in terms of cause and effect. Yet, this does not question the fact that EAPA-T showed the expected relationships with other relevant measures. In cross-sectional self-report studies, method variance is a threat (Spector, 1992). In the present study, the fact that the EAPA-T's items form separate factors with similar, but still unique patterns of relationships with other variables, question that the observed relationships may be substantially inflated by method variance. Third, regarding the use of convenience samples with targets recruited from support associations, it should be emphasized that there are other studies that have also used members of support associations for targets of bullying at work as well (Matthiesen and Einarsen, 2004). Moreover, because of the difficulties in approaching this kind of targets, other studies have used advertisements in newspapers to recruit respondents (*e.g.*, Zapf *et al.*, 1996). Recent studies suggested little evidence between different types of victim samples, arguing that victims of bullying represent a quite homogeneous group (Jenderek, Schwickerath, and Zapf, 2008). Fourth, the five criteria used to select the sample (*i.e.*, employees were or had been receiving psychological support and were or had been involved in legal claims, etc.), partially justify the moderate number of victims. Several studies have used similar samples across Europe, such as Austria ($N = 63$, Nield, 1995), Germany ($N = 46$; Minkel, 1996), Poland ($N = 66$; Varhama and Bjorkqvist, 2004), Spain ($N = 103$; Moreno-Jiménez, Rodríguez-Muñoz, Garrosa, Morante, and Rodríguez, 2005), Sweden ($N = 37$; Leymann *et al.*, in Leymann 1993) or United Kingdom ($N = 42$; Thomas, 2005). Furthermore, because bullying, theoretically, logically and empirically is considered to be an infrequent phenomenon (Zapf *et al.*, 2010), it is very difficult to draw random samples of victims. Though, generalizations from the results should be made with care, it would therefore be good for future studies to use a larger sample.

This study intends to add value to the previous existing literature in different ways. Firstly, it offers a short scale that should save time and resources at once. Secondly, it offers a scale developed for the Spanish context. Thirdly, it offers a multidimensional scale with four different subscales which are differentially related to health and organizational consequences and are correlated to different levels of victimization,

professional category, number and gender of perpetrators. Therefore, this study tries to contribute to the existing literature offering a scale for the assessment of workplace bullying, which could enable researchers and human resource managers to target interventions to detect and reduce workplace bullying more effectively.

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