

Methodology

Development and Validation of a Brief Version of the European Bullying and Cyberbullying Intervention Project Questionnaires (EBIP-Q and ECIP-Q)

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ABSTRACT

Background: In order to prevent school bullying and cyberbullying, brief measurement instruments with adequate psychometric properties are required. The objective of this study was to develop a combined reduced version of the European Bullying Intervention Project Questionnaire (EBIP-Q) and the European Cyberbullying Intervention Project Questionnaire (ECIP-Q) for its use in the screening of bullying-related behaviors at school. **Method:** The sample consisted of 1777 students, between 14 and 18 years of age ($M = 15.71$; $SD = 1.26$), of which 54.1% were female. **Results:** The resulting reduced version presents adequate psychometric properties with reliability coefficients between $\omega = .72$ and $\omega = .82$. Factor analyses indicate that both bullying and cyberbullying are structured around two factors: victimization and aggression. The correlations between the scores of the original version and the reduced version were adequate. Bullying and cyberbullying was associated with different indicators of socioemotional adjustment. **Conclusions:** The European Bullying and Cyberbullying Intervention Project Questionnaire Brief version (EBCIP-QB) seems to be brief, useful, and have adequate psychometric properties for the assessment of bullying and cyberbullying in Spanish adolescents.

Desarrollo y Validación de una Versión Abreviada de los Cuestionarios European Bullying y Cyberbullying Intervention Project (EBIP-Q y ECIP-Q)

RESUMEN

Antecedentes: la prevención del acoso y ciberacoso escolar requiere disponer de instrumentos de medida breves y con adecuadas propiedades psicométricas. El objetivo del presente trabajo ha sido desarrollar una versión reducida conjunta de los instrumentos European Bullying Intervention Project Questionnaire (EBIP-Q) y European Cyberbullying Intervention Project Questionnaire (ECIP-Q) para su uso en el cribado de conductas relacionadas con el acoso escolar. **Método:** la muestra la integran 1,777 estudiantes, de entre 14 y 18 años ($M = 15.71$ años; $DT = 1.26$), de los que el 54.1% son mujeres. **Resultados:** la versión reducida presenta un comportamiento psicométrico adecuado. Los coeficientes de fiabilidad estimados oscilan entre $\omega = .72$ y $\omega = .82$. Los análisis factoriales indican que tanto el acoso como el ciberacoso escolar se articulan en torno a dos factores: victimización y agresión. Las correlaciones entre las puntuaciones de la versiones original y reducida fueron adecuadas. El acoso y ciberacoso escolar se asoció con diferentes indicadores de ajuste socioemocional. **Conclusiones:** el Cuestionario Proyecto Europeo de Intervención contra el Acoso y el Ciberacoso - Breve (EBCIP-QB) parece ser un instrumento breve, sencillo y con adecuadas propiedades psicométricas para la evaluación de las conductas de acoso y ciberacoso escolar en adolescentes españoles.

Palabras clave:

Acoso escolar
Ciberacoso escolar
Evaluación
Fiabilidad
Evidencias de validez

School bullying is defined as repeated and intentional mistreatment, which is exerted by one or more persons, toward a victim who can hardly defend him or herself (Olweus, 1998). It is a group event with a clear social character (Salmivalli et al., 1998). Initial studies on school bullying only considered physical and verbal aggression, with relational abuse or the spread of rumors included some time later (Buelga et al., 2009; Furlong et al., 2005; Lucas-Molina et al., 2011). When bullying is carried out online, that is, through the use of digital technologies, it is called cyberbullying (Berne et al., 2020; Calvete et al., 2021; Kowalski et al., 2019; Smith et al., 2008). Face-to-face and online bullying share characteristics such as intentionality, power imbalance, or repetition, although the latter two manifest themselves in different ways. While face-to-face bullying power imbalance is based on the aggressor's physical strength or popularity, this imbalance in cyberbullying is related to digital technology skills (Casas et al., 2013; Menesini et al., 2012; Menin et al., 2021). In this regard, the repetitive behavior of cyberbullying can occur when a single publication of an offensive comment is shared with a large group of people (Garaigordobil et al., 2017). Furthermore, cyberbullying is timeless and exposes the behavior while allowing the aggressor to remain anonymous, which makes it difficult for the victim to escape (Garaigordobil, 2017; Smith, 2015), something that can be done in the case of face-to-face bullying. The most recent literature (Li and Hesketh, 2021; Pichel et al., 2021) shows the coexistence of both phenomena and underlines the need to address the different experiences of school bullying together, whether related to victimization or aggression, and whether they occur in person or online.

Studies on the prevalence rates of bullying and cyberbullying in Spain show different data. Frequent victimization of bullying behaviors ranges from 2 to 16%, while some studies report occasional victimization of up to 80%. Regarding the rate of frequent aggression, data are found ranging from 2 to 12%, values that in the case of occasional bullying can be seen increased to 45% (Esteller-Cano et al., 2021; Feijóo, O'Higgins-Norman, et al., 2021; Garaigordobil and Martínez-Valderrey, 2018; León-Pérez et al., 2019). For example, the review of studies by Zych et al. (2016) on school cyberbullying reported an average percentage of cybervictimization of 26.65% and cyberaggression of 24.64%. However, other research has found cybervictimization percentages of over 50% (Molero et al., 2022) or close to 30% for cyberaggression (Guerra Bustamante et al., 2021).

According to the data observed on the prevalence of school bullying and cyberbullying, as well as on the consequences associated with being a victim of these, among which depressive symptoms (Baier et al., 2019; Brunstein Klomek et al., 2010; Kowalski and Limber, 2013), low self-esteem (Schoeler et al., 2018), greater presence of socioemotional and behavioral problems (Llorent et al., 2021; Navarro et al., 2019; Yang et al., 2021) and even higher prevalence of suicidal behavior (Lucas-Molina et al., 2018) can be found, it is essential to have fast detection tools that are reliable and valid. To assess face-to-face and online bullying, there is a wide variety of self-reports with a number of heterogeneous items, from those that include a single item for each type of abuse and each role (victim or aggressor) (Buelga et al., 2010; Calvete et al., 2010, 2021; García Fernández et al., 2015; Lucas-Molina et al., 2016) to instruments composed of

too many items (Twardowska-Staszek et al., 2018). On the other hand, most of the questionnaires measure only one of the two phenomena (bullying/cyberbullying) or do not report on all their psychometric properties or on the substantive-theoretical process followed for the development or selection of their items when they are administered (Ngo et al., 2021). Taking into account that there are numerous instruments aimed at measuring bullying and cyberbullying at school with psychometric guarantees of reliability and evidence of validity, it seems logical to use them to make adaptations, instead of designing new ones (Lucas-Molina et al., 2016). In addition, the motivational and attentional aspects of the participants in this type of study and the negative implications when the time to complete these instruments is long must be taken into account. Following this line of thought, authors such as MacCallum and Austin (2000) state that when a clear factorial structure is confirmed, the development of shorter forms of the instruments can be considered (Andrade et al., 2013).

Two of the instruments which have been validated within the Spanish context (Benítez-Sillero et al., 2021; Feijóo, Foody, et al., 2021; Feijóo, O'Higgins-Norman, et al., 2021; Lázaro-Visa et al., 2019) and designed to measure both phenomena are: a) the European Bullying Intervention Project Questionnaire (EBIP-Q) (Brighi, Ortega, Pyzalski, et al., 2012; Spanish version Ortega-Ruiz et al., 2016); and b) the European Cyberbullying Intervention Project Questionnaire (ECIP-Q) (Brighi, Ortega, Scheitauer, et al., 2012; Spanish version Ortega-Ruiz et al., 2016). Both the EBIP-Q [14 items] and the ECIP-Q [22 items] are self-reports structured into two related factors that measure victimization and aggression (Corral-Pernía et al., 2018; Ortega-Ruiz et al., 2016; Rey et al., 2019). The combined administration of the instruments requires a long time that could be reduced with the development of a reduced version of both scales.

In general, the EBIP-Q and the ECIP-Q seem to show adequate psychometric properties. These are two questionnaires that add up to a total of 36 items, which makes them difficult to use due to the time it takes to complete them, and as noted above, come with the consequent possible negative effects on participant motivation. In this sense, given that the ultimate purpose of these self-reports is the evaluation of bullying behaviors for different purposes (epidemiological, prevention, screening, etc.), it becomes relevant to develop a reduced version that is effective, simple, and can be administered quickly (Muñiz and Fonseca-Pedrero, 2019). Taking this into account, the main objective of this study is to develop and validate the combined abbreviated version of the EBIP-Q and the ECIP-Q. The specific objectives are: a) analyze the internal structure of the scores of the abbreviated version of the EBIP-Q and the ECIP-Q; b) study the measurement invariance of the scores according to gender; c) examine the internal consistency of the scores; d) analyze the relationship of the scores of the new European Bullying and Cyberbullying Intervention Project Questionnaire Brief (EBCIP-QB) with other psychometric indicators of psychological adjustment; and e) analyze the relationship between the scores of the extended and abbreviated versions. It is hypothesized that this new brief version will maintain the same dimensional structure as the original versions in both victims and aggressors. Acceptable levels of reliability as well as negative relationships between bullying behaviors and self-esteem and positive relationships with different indicators of

mental health adjustment (symptoms of depression or emotional and/or behavioral problems) are also expected.

Method

Participants

The sample was selected by random stratified cluster sampling using classroom-level clusters from a population composed of approximately fifteen thousand students from the Autonomous Community of La Rioja. The strata were created using criteria such as the type of center (public or private-subsidized), the school stage (Compulsory Secondary Education, High School, and Vocational Training), and the geographical area of the center (Low, Middle, and High Rioja). The questionnaires were answered by 1,972 students aged between 14 and 30 years. Participants over 18 years of age and those with high scores on the INF-OV revised random or pseudo-random response detection scale (Fonseca-Pedrero et al., 2019) were excluded from the sample. The final sample consisted of 1,777 students, between 14 and 18 years old ($M = 15.71$ years old; $SD = 1.26$), of which 54.1% were female; 89.42% were students born in Spain, while 10.58% came from other countries (Romania, South America, or Morocco, among others).

Instruments

European Bullying Intervention Project Questionnaire (EBIP-Q) (Brighi, Ortega, Pyzalski, et al., 2012; Spanish version Ortega-Ruiz et al., 2016). The EBIP-Q measures the frequency of face-to-face bullying through 14 items with five response options in Likert format (0 = never, 1 = once or twice, 2 = once or twice a month, 3 = about once a week, and 4 = more than once a week). The first seven items evaluate victimization and the next seven, aggression. The students indicate the frequency with which they have participated in and/or experienced each of the described situations in the last two months. Adequate psychometric properties have been found in previous research with Spanish adolescents (Lázaro-Visa et al., 2019; Llorent et al., 2021).

European Cyberbullying Intervention Project Questionnaire (ECIP-Q) (Brighi, Ortega, Scheitauer et al., 2012; Spanish version by Ortega-Ruiz et al., 2016). The ECIP-Q evaluates school cyberbullying through 22 items with five response options in Likert format (0 = never, 1 = once or twice, 2 = once or twice a month, 3 = about once a week, and 4 = more than once a week). The first eleven items assess victimization, while the next eleven assess aggression. The students indicate the frequency with which they have experienced and/or participated in the described situations in the last two months. Adequate psychometric properties have been found in previous studies (Benítez-Sillero et al., 2021; Feijóo, Foody, O'Higgins Norman, et al., 2021; Ortega-Ruiz et al., 2016; Sidera et al., 2021).

Rosenberg Self-Esteem Scale (RSE) (Rosenberg, 1965; Spanish version Vázquez Morejón et al., 2004). It is a self-report that measures self-esteem with 10 items on a Likert-type response scale (1 = almost never; 4 = almost always) in which higher scores indicate better self-esteem or positive self-esteem. The Spanish version was administered, its psychometric properties having been tested by previous studies (Oliva et al., 2011; Rosenberg and Owens, 2001).

Reynolds Adolescent Depression Scale-Short Form (RADSF) (Reynolds, 2004; Spanish version Figueras-Masip et al., 2008). This is a self-report that assesses depressive symptomatology in adolescents. It consists of 10 Likert-type items with four response options (1 = almost never; 4 = almost always) selected from the four scales of the original version: anhedonia (item 1), somatic complaints (item 22 and 28), negative self-evaluation (items 14, 19, 20 and 30), and dysphoria (items 3, 6 and 7). The final score on the scale is equal to the sum of the scores on each of the items. The RADSF has shown adequate psychometric properties in Spanish adolescents (Fonseca-Pedrero et al., 2010; Ortuño-Sierra et al., 2017).

Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997; Spanish version Ortuño-Sierra et al., 2016). The SDQ assesses behavioral and emotional difficulties, as well as abilities in the social sphere. It consists of 25 Likert-type items with three possible response options (0 = no, never, 1 = sometimes, 2 = yes, always). It has five subscales with five items each that measure emotional problems, behavioral problems, hyperactivity, problems with peers, and prosocial behavior. The sum of the scores on the first four subscales equals the total difficulties score. In this study, the version adapted and validated for Spanish adolescents was used (Fonseca-Pedrero et al., 2010; Ortuño-Sierra et al., 2017).

Oviedo Infrequency Scale-Revised (INF-OV-R) (Fonseca-Pedrero, Paño, Lemos Giráldez, Villazón-García, García Cueto, et al., 2009; Fonseca-Pedrero et al., 2019). Its purpose is to detect pseudorandom or dishonest responses in measurement instruments. It is a self-report with 10 Likert-type items (1 = completely disagree to 5 = completely agree). Students who present two or more incorrect answers on the INF-OV-R scale are eliminated from the final sample.

Procedure

The selected centers were contacted, and the informed consent of the students' families was requested. The questionnaires were administered collectively in groups of 15 to 25 participants. The researchers who administered the questionnaires were trained in the protocol to follow throughout the whole process. The students were informed about the voluntary nature of their participation and the confidentiality of their answers. The study was approved by the Clinical Research Ethics Committee of La Rioja CEICLAR.

Data Analysis

First, a descriptive and reliability analysis of the EBIP-Q and ECIP-Q subscales was carried out. Second, substantive-theoretical and psychometric criteria were taken into account to select the items that make up the brief combined version of the questionnaires. Pairs of items were selected from a substantive-theoretical point of view (items that reflect the same behavior in victimization and aggression) which included the most common behaviors in bullying and cyberbullying (Gaete et al., 2021; Hogue et al., 2022; Mark et al., 2019). The three main types of bullying are physical (e.g., pushing, hitting, kicking), direct verbal (e.g., insults), and indirect verbal (e.g., spreading rumors or threats) (Beltrán-Catalan et al., 2018; Mishna et al., 2021). Regarding cyberbullying, the most used indicators in the different

instruments that evaluate it refer to insulting, speaking ill of another person, or threatening through text messages (Perret et al., 2020; Wright and Wachs, 2019). The items chosen from each questionnaire were structured into four dimensions: victimization, aggression, cybervictimization, and cyberaggression, as reported in previous literature (Benítez-Sillero et al., 2021; Del Rey et al., 2015; Gómez-Ortiz et al., 2017; González Laguna and Arrimada García, 2021; Herrera-López et al., 2017; Lázaro-Visa et al., 2019; Ortega-Ruiz et al., 2016). From an empirical point of view, and considering the aforementioned criteria, an Exploratory Factor Analysis (EFA) was conducted, using the Minimum Rank Factor Analysis method and subsequent Promin rotation (Lorenzo-Seva and Ferrando, 2019) to select those items that presented higher factor loadings. Likewise, through an iterative process, the discrimination indices of the items were analyzed.

Third, once the items were selected based on the substantive and empirical criteria, a Confirmatory Factor Analysis (CFA) was conducted. When the data fails to comply with multinormality (Mardia's coefficient = 660.21) it is suggested to use the Diagonally Weighted Least Squares (DWLS) estimation method from the polychoric correlation matrix (Ferrando et al., 2022). The fit of the data to the model was studied using the Comparative Fit Index (CFI), the Tucker-Lewis index (TLI), the Root Mean Square Error Approximation (RMSEA) and its 90% confidence interval, and the Standardized Root Mean Square Residual (SRMR). CFI and TLI values above .95 and RMSEA below .08 indicate an adequate fit (Hu and Bentler, 1999).

Measurement invariance based on gender for the hypothesized four-dimensional model was also analyzed. The existence of configural invariance implies that the factorial structure is the same in the groups of compared participants. For its part, structural invariance analyzes the latent variables and the homogeneity of factorial variances and covariances, while strict or strong invariance is the highest degree of agreement between the factorial structures and implies equality in the residuals (Dimitrov, 2010). When choosing the type of invariance of the data, if the change in the CFI index from a less restrictive model to a more restrictive one is equal to or less than .01, the new restrictions are admitted, and the next invariance level is analyzed.

Fourth, the reliability of the scores was estimated by calculating Cronbach's Alpha and McDonald's Omega coefficients (Dunn et al., 2014), the composite reliability, and the mean variance extracted. Finally, evidence of the relationship of the EBCIP-QB with the extended versions and with external variables was

obtained through Pearson's linear correlation coefficient. The statistical programs used in this study were SPSS 24, Factor 12, and JASP 0.14.

Results

Descriptive Statistics and Reliability of the EBIP-Q and ECIP-Q Scores

Table 1 shows the descriptive statistics and the reliability of the EBIP-Q and ECIP-Q subscales. The means are higher in victimization than in aggression in both questionnaires.

Evidence of Internal Structure of the European Bullying and Cyberbullying Intervention Project Questionnaire Brief (EBCIP-QB)

The EFA revealed a Bartlett sphericity index of 19.565 ($p < .001$) and a KMO of .73. Measures of Sampling Adequacy (MSA) were greater than .60. The evaluation of the fit of the data to a one-dimensional solution was conducted using the indices offered by the Factor program: UniCo = .97, ECV = .84 and MIREAL = .303; the I-REAL index exceeded the value of .30 in 6 of the questionnaire items. These results allow us to conclude that the items do not conform to a one-dimensional pattern. The goodness of fit indexes integrated by four factors were CFI = .99, TLI = .96, RMSEA = .073 (90% CI = .050 - .080) and SRMR = .026.

The first extracted factor, called victimization, explained 57.81% of the variance (eigenvalue = 6.50), the second factor, called aggression, explained 11.20% (eigenvalue = 1.13), the third, cybervictimization, 9.68% (eigenvalue = 0.92) and the fourth, cyberaggression, 7.34% (eigenvalue = 0.67). The optimal implementation of the parallel analysis suggests extracting four factors that explain 86.03% of the total variance. Correlations between factors ranged from .40 to .72. The estimated factor loadings are shown in Table 2. As can be seen, some items reach factor loadings greater than .25 in more than one factor.

From the four factors yielded from the EFA, those pairs of items with higher factorial loadings and with discrimination indices greater than .30 were selected. However, some of the items of the selected pairs did not present the highest factorial loadings in the corresponding factors, but the final brief version still includes each item of victimization with its corresponding aggression one based on the theoretical criterion.

Table 1.
Descriptive Statistics and Reliability of the EBIP-Q and ECIP-Q Subscales.

Subscales	Number of items	Mean	SD	Asymmetry	Kurtosis	Alpha	Omega	CR	AVE
EBIP-Q Victimization	7	2.98	3.72	2.07	5.47	.78	.81	.80	.42
EBIP-Q Aggression	7	2.14	3.08	2.69	11.64	.78	.80	.80	.42
ECIP-Q Victimization	11	1.17	2.62	5.64	54.22	.81	.82	.82	.38
ECIP-Q Aggression	11	0.74	1.88	6.23	67.55	.73	.68	.74	.32

Note: EBIP-Q = European Bullying Intervention Project Questionnaire; ECIP-Q = European Cyberbullying Intervention Project Questionnaire. SD = Standard deviation; CR = Composite Reliability; AVE = Average Variance Extracted.

Table 2. Estimated Factor Loadings for the Exploratory Factor Analysis of the European Bullying and Cyberbullying Intervention Project Questionnaire Brief (EBCIP-QB).

Items	EFA			
	Factor Loadings			
	F I Victimization	F II Aggression	F III Cybervictimization	F IV Cyberaggression
1	.92	-.04	-.02	-.17
2	.89	-.17	.10	-.06
3	.52	.10	.49	-.39
4	.68	.61	-.31	-.11
5	.59	.25	-.11	.21
6	.20	.79	.03	-.07
7	.07	-.10	.84	.10
8	.05	-.14	.84	.14
9	-.11	.22	.96	-.25
10	.10	-.02	.35	.64
11	-.07	.08	.23	.79
12	-.15	.75	.19	.19
Eigenvalue	6.50	1.13	.92	.67
% Variance	57.81	11.20	9.68	7.34

Once the items were selected based on substantive and empirical criteria, a CFA was conducted to test the one-dimensional and four-dimensional models of Bullying and Cyberbullying. The goodness-of-fit indices for the one-dimensional model were: CFI

= .92, TLI = .91, RMSEA = .047 (90% CI = .041 - .052), and SRMR = .112. The four-factor model presented adequate goodness-of-fit indices: CFI = .99, TLI = .98, RMSEA = .020 (90% CI = .012 - .027), and SRMR = .066. Some items obtained factor loadings greater than .25 in more than one factor and two of them revealed loadings lower than .30 in the dimension in which they were included. However, the content and typology of these items suggest following the chosen classification. The resulting fully standardized factor loadings for this four-factor model are presented in Figure 1, all of which are statistically significant ($p < 0.01$).

The results of the invariance analysis according to gender for the three-dimensional model are presented in Table 3 and show strict invariance and, therefore, the requirement for the comparison of latent measures between the groups (Cheung and Rensvold, 2009).

Descriptive Statistics and Reliability of Scores from the European Bullying and Cyberbullying Intervention Project Questionnaire Brief (EBCIP-QB)

Table 4 presents the statements of the 12 items selected for the brief version with their descriptive statistics and the reliability of the subscales that comprise it. The values achieved by the alpha and omega coefficients can be considered satisfactory. The composite reliability and the mean variance extracted corroborate the reliability of the subscales. The descriptive characteristics of the items are maintained, compared to the questionnaires from which they come, and their discrimination indices are pertinent.

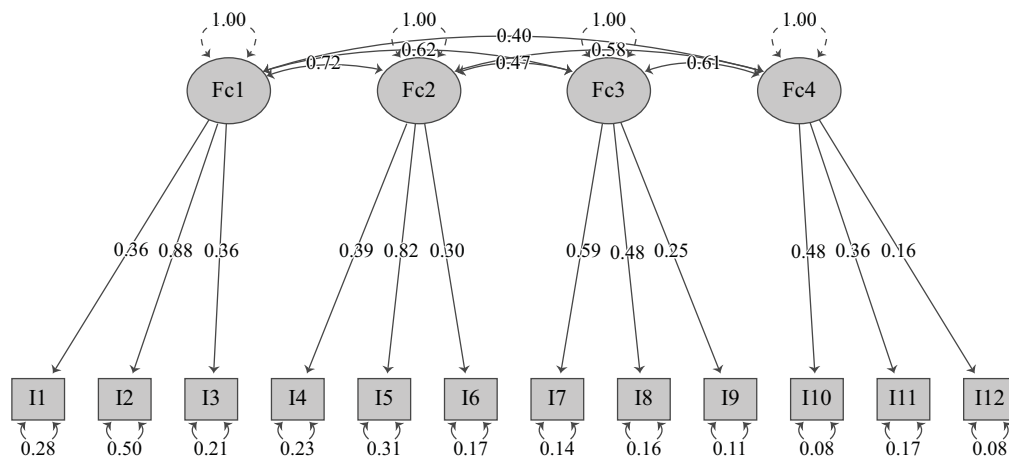


Figure 1. Factorial solution of the confirmatory factorial analysis for the model of four related factors of the EBCIP-QB. Note: EBCIP-QB: European Bullying and Cyberbullying Intervention Project Questionnaire Brief. All fully standardized factor loadings are statistically significant ($p < 0.01$)

Table 3. Measurement invariance as a function of gender for the three-dimensional model of the European Bullying and Cyberbullying Intervention Project Questionnaire Brief (EBCIP-QB).

Model	GFI	CFI	RMSEA	CI 90%	SB- χ^2	df	Δ SB- χ^2	Δ df	Δ CFI
Configural invariance	.954	.969	.031	.024 - .037	190.81	104			
Scalar invariance	.972	.961	.033	.027 - .039	220.36	112	29.55	8	.008
Strict invariance	.968	.953	.034	.028 - .040	254.29	124	33.93	12	.008

Evidence of Validity: Relationship Between School Bullying, School Cyberbullying, and Socioemotional and Behavioral Adjustment

Table 5 contains the Pearson correlations between the EBCIP-QB scores and the instruments that assess self-esteem, symptoms of depression, and emotional and behavioral difficulties. The EBCIP-QB scores are inversely associated with self-esteem and directly associated with self-reported symptoms of depression and emotional and behavioral difficulties. As can be seen, the highest correlations are those of the EBCIP-QB with its victimization ($r = .82$) and aggression subscales ($r = .80$). Self-

esteem scores correlate low and inversely with the rest of the variables (between $r = -.05$ and $r = -.22$).

Evidence of Validity: Relationship Between the Extended and Abbreviated Versions

Table 6 shows the correlations between the EBIP-Q, the ECIP-Q, and the EBCIP-QB scores. The highest value appears when correlating the EBIP-Q with the EBCIP-QB ($r = .81$) and the lowest appears between the EBIP-Q (Aggression) and the EBCIP-QB (Victimization) ($r = .23$).

Table 4. Descriptive statistics and reliability of the scores of the European Bullying and Cyberbullying Intervention Project Questionnaire Brief (EBCIP-QB).

Subscales	Alpha	Omega	CR	AVE	Item	M	SD	Asymmetry	Kurtosis	Discrimination Indexes	
EBCIP-QB Victimization	.65	.72	.72	.51	1	Someone has hit, kicked, or pushed me	0.23	0.64	3.52	14.04	0.47
					2	Someone has insulted me	0.84	1.13	1.36	1.11	0.59
					3	Someone has threatened me	0.19	0.58	3.87	17.50	0.52
EBCIP-QB Aggression	.70	.72	.76	.56	4	I have hit, kicked, or pushed someone	0.23	0.62	3.42	13.81	0.52
					5	I have insulted or said words to someone because I wanted to hurt them	0.68	0.99	1.64	2.40	0.61
					6	I have threatened someone	0.15	0.50	4.18	20.72	0.50
EBCIP-QB Cybervictimization	.77	.82	.81	.61	7	Someone has said bad words to me or has insulted me using email or SMS.	0.32	0.70	2.66	7.96	0.59
					8	Someone has said bad words about me to others using Internet or SMS.	0.26	0.63	2.92	9.65	0.56
					9	Someone has threatened me through Internet messages or SMS.	0.10	0.41	5.33	34.80	0.46
EBCIP-QB Cyberaggression	.71	.77	.75	.54	10	I have said bad words to someone or have insulted them using SMS or Internet messages.	0.19	0.55	3.62	15.48	0.56
					11	I have said bad words about someone to other people through Internet messages or SMS.	0.19	0.54	3.54	14.67	0.44
					12	I have threatened someone through SMS or Internet messages.	0.06	0.32	7.01	60.64	0.37

Note: EBCIP-QB: European Bullying and Cyberbullying Intervention Project Questionnaire Brief; CR: Composite reliability; AVE: Average variance extracted.

Table 5. Pearson Correlations Between the European Bullying and Cyberbullying Intervention Project Questionnaire Brief (EBCIP-QB) and Indicators of Emotional and Behavioral Adjustment.

Variable	EBCIP-QB	EBCIP-QB Victimization	EBCIP-QB Aggression	EBCIP-QB Cybervictimization	EBCIP-QB Cyberaggression
EBCIP-QB Victimization	.82 ***				
EBCIP-QB Aggression	.80 ***	.56 ***			
EBCIP-QB Cybervictimization	.75 ***	.49 ***	.37 ***		
EBCIP-QB Cyberaggression	.67 ***	.30 ***	.46 ***	.48 ***	
RSE	-.19 ***	-.21 ***	-.05 *	-.22 ***	-.10 ***
RADS-SF	.29 ***	.27 ***	.16 ***	.27 ***	.19 ***
SDQ total score Difficulties	.31 ***	.29 ***	.21 ***	.26 ***	.16 ***

Note: EBCIP-QB: European Bullying and Cyberbullying Intervention Project Questionnaire Brief; RSE: Rosenberg Self-Esteem Scale; RADS-SF: Reynolds Adolescent Depression Scale-Short Form; Total SDQ: Strengths and Difficulties Questionnaire.

* $p \leq .05$ *** $p \leq .001$

Table 6.

Pearson correlations between EBIP-Q, ECIP-Q and EBCIP-QB scores.

Variable	EBCIP-QB	EBCIP-QB <i>Victimization</i>	EBCIP-QB <i>Aggression</i>	EBCIP-QB <i>Cybervictimization</i>	EBCIP-QB <i>Cyberaggression</i>
EBIP-Q	.81 ***	.74 ***	.70 ***	.51 ***	.47 ***
ECIP-Q	.64 ***	.37 ***	.36 ***	.69 ***	.64 ***
EBIP-Q Victimization	.72 ***	.79 ***	.46 ***	.52 ***	.34 ***
EBIP-Q Aggression	.68 ***	.46 ***	.79 ***	.34 ***	.48 ***
ECIP-Q Victimization	.57 ***	.39 ***	.26 ***	.76 ***	.38 ***
ECIP-Q Aggression	.51 ***	.23 ***	.36 ***	.35 ***	.75 ***

Note: EBCIP-QB: European Bullying and Cyberbullying Intervention Project Questionnaire Brief; EBIP-Q: European Bullying Intervention Project Questionnaire; ECIP-Q: European Cyberbullying Intervention Project Questionnaire.

*** $p \leq .001$

Discussion

The main objective of this work was to develop a brief combined version of the instruments that measure bullying and cyberbullying: EBIP-Q and ECIP-Q. This abbreviated version has been named: European Bullying and Cyberbullying Intervention Project Questionnaire Brief (EBCIP-QB). The selection of the items included in the definitive self-report was carried out considering, on the one hand, the characteristics of the evaluated phenomena and the original questionnaires and, on the other, the discrimination indices, factor loadings, and proportion of variance explained of the obtained subscales. Previous studies have shown that both the EBIP-Q and the ECIP-Q have a two-factor structure (Benítez-Sillero et al., 2021; Corral-Pernía et al., 2018; Del Rey et al., 2015; Feijóo, Foody et al., 2021; González Laguna and Arrimada García, 2021; Herrera-López et al., 2017; Ortega-Ruiz et al., 2016; Rey et al., 2019) consisting of the victimization and aggression dimensions. After analyzing different groupings of items, three pairs of statements were chosen (victimization and aggression) for each of the scales (bullying and cyberbullying). These were associated with the types of abuse: physical, verbal, psychological, and relational. The EBCIP-QB internal structure conforms to the four-dimensional model, just like the instruments in their extended version. Four factors were obtained which correspond with the four foreseen dimensions, the first six items evaluate face-to-face bullying behaviors, and the following six assess cyberbullying. In both cases, the first three items are related to victimization and the next three to aggression. Previous studies have found similar dimensional models (Benítez-Sillero et al., 2021; Del Rey et al., 2015; Gómez-Ortiz et al., 2017; González Laguna and Arrimada García, 2021; Herrera-López et al., 2017; Lázaro-Visa et al., 2019; Ortega-Ruiz et al., 2016).

It was also possible to show compliance with strict invariance based on sex, which allows a differential approach to the study of bullying in boys and girls (Martínez-Ferrer et al., 2021). The EBCIP-QB and its four dimensions showed satisfactory reliability coefficients and its items reached adequate discrimination indices. There was also evidence of a significant association with other psychometric indicators of psychological adjustment, in accordance with the literature. Both victimization and aggression, face-to-face or online, are related to lower self-esteem (Estévez López et al., 2006; Martínez, Rodríguez-Hidalgo, & Zych, 2020), a higher degree of depression (Brunstein Klomek et al.,

2019), and behavioral and social difficulties (Chen et al., 2017; Marciano et al., 2020; Menesini and Salmivalli, 2017; Núñez et al., 2021; Twardowska-Staszek et al., 2018). The subscales related to victimization obtain higher correlations in self-esteem and depressive symptomatology than the subscales associated with aggression, as reported by previous studies (Brunstein Klomek et al., 2019; Volk et al., 2014). The scores on the scale that evaluates emotional and behavioral problems correlate significantly with the values achieved in the brief combined version by people who suffer abuse and those who exercise it (Menéndez Santurio et al., 2020). Studies such as those by Garaigordobil and Martínez-Valderrey (2015) and Rodríguez-Hidalgo (2021) have also verified the association between being an aggressor and presenting difficulties in developing prosocial behaviors and/or having low self-esteem. The results obtained with the new scale show few differences from those obtained when applying the questionnaires in their complete versions. Likewise, the EBCIP-QB and its subscales have reached significant correlation values with the extended versions, which can be considered indicative of its usefulness as a screening tool for bullying and cyberbullying.

The most relevant contribution of this study is the development of a brief questionnaire with 12 items that evaluates behaviors of both bullying and cyberbullying in schools. An instrument which is fast, and cheaper in terms of administration, scoring, and interpretation than the questionnaires from which it comes. These types of instruments are not only useful for epidemiological or screening purposes, but also for evaluating the effectiveness of psychological interventions in the adolescent school population (Fonseca-Pedrero et al., 2021). Currently, there is enough accumulated empirical evidence to use this type of instrument at a practical level for the early detection and intervention of school bullying (Fonseca-Pedrero, 2021).

Among its limitations, we can highlight the cross-sectional nature of the study, which prevents interpretations of causality, and the effect of social desirability, inherent in all self-reports. On the other hand, despite having worked on a large and randomly selected sample, this has been drawn from a single Spanish autonomous community, an aspect that conditions the generalization of the obtained results. Regarding the results, the decision to select pairs of items for the abbreviated version that reflect the same behavior in its two dimensions, victimization, and aggression, has led to the inclusion of some items with low factorial loadings.

Based on these findings, future studies should be conducted to check whether the scoring system in the original questionnaires can be compared to that of the short version. In addition, longitudinal research would make it possible to analyze the effect of bullying and cyberbullying on self-esteem, depression, or socio-emotional and behavioral problems.

In conclusion, the European Bullying and Cyberbullying Intervention Project Questionnaire Brief (EBCIP-QB) seems to be a concise, simple instrument with adequate psychometric properties for the evaluation of behaviors of bullying and cyberbullying in Spanish adolescents.

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