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Validation of the Cybervictimization Questionnaire (CYVIC) for adolescents

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ABSTRACT

The Cybervictimization Questionnaire (CYVIC) for adolescents was designed to assess the extent to which the informant is a victim of aggression by mobile phone or Internet. The goal of this study is to analyze its factor and criterion validity and reliability in a sample of adolescents of Asturias (Spain). For this purpose, the CYVIC was applied to 3159 young people, aged 12 to 18, along with three scales to measure Internet Risk Behaviors, Offline School Victimization, and Self-esteem. Regarding factor validity, the model that best represents the internal structure of the CYVIC has four factors (Impersonation, Visual-Sexual Cybervictimization, Written-Verbal Cybervictimization, and Online Exclusion) and four additional indicators of Visual Cybervictimization-Teasing/Happy slapping. Regarding criterion validity, the CYVIC scores correlate positively with Internet Risk Behaviors and Offline School Victimization, and negatively with Self-esteem, three variables that previous empirical evidence indicates correlate with cybervictimization. The reliability of the CYVIC factors and items are both adequate. Therefore, it is concluded that the CYVIC is a valid and reliable self-report measure of cybervictimization in adolescents.

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1. Introduction

Adolescents' way of relating socially has changed enormously in recent years, with the popularization of the mobile phone and the internet. The development of electronic devices and software applications offer new possibilities to establish new friendships or keep in touch with acquaintances. However, despite their many advantages, their inappropriate use can also give rise to serious problems (Gámez-Guadix, Orue, & Calvete, 2013). One of them is the possibility of using these means to intentionally harm or injure others (Ortega-Ruiz & Núñez, 2012).

1.1. Definition and types of cybervictimization in adolescence

The term *cybervictimization* is usually used to refer to aggressions by means of electronic devices, mainly mobile phones and the Internet (Del Rey, Elipe, & Ortega-Ruiz, 2012). These attacks can take on various forms in adolescence. Nocentini et al. (2010) distinguish four types: visual, written-verbal, online exclusion,

and impersonation. *Visual cybervictimization* consists of images—generally photos or videos—that have been taken or disseminated by electronic means and that are offensive, harmful, or injurious to the victim. *Written-verbal cybervictimization* refers to being the target of annoying, threatening, or offensive calls, messages, or written comments, through mobile phone or the Internet. *Online exclusion* implies not being accepted or being expelled from a group, usually a social network or an instant messaging program. *Impersonation* refers to situations in which someone impersonates the victim over the mobile phone or Internet, to make fun of or get him/her into trouble. Previous research, using both qualitative and quantitative approaches, supports the relevance of this classification (Nocentini et al., 2010; Palladino, Nocentini, & Menesini, 2015).

Each of these four types of cybervictimization can manifest in different ways. For example, because of its seriousness, we can highlight two specific types of visual cybervictimization, associated with different risk factors and dynamics. On the one hand are images—mainly photos or videos—that have been taken or disseminated by electronic means with the intention of making fun of or ridiculing the victim. In this work, the term *Visual cybervictimization—Teasing/Happy slapping* will be used to refer to this type of aggressions. *Happy slapping* is a particularly disturbing case of this type of visual cybervictimization. It typically consists of recording a physical aggression of an unsuspecting victim with a

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mobile phone and uploading the recording and disseminating it over the Internet (Palasinski, 2013). On the other hand, there is the dissemination of explicitly sexual or suggestive images of the victim, which, in this work, is called *Visual-sexual cybervictimization*. These can be images the victim shares with a trusted third party —*sexting* (Drouin, Ross, & Tobin, 2015; Morelli, Bianchi, Baiocco, Pezzuti, & Chirumbolo, 2016)—who then disseminates them without the victim's consent; or they can be images taken by the offender without the victim's consent. Sometimes, the person who has the images can blackmail the victim, threatening to disseminate them if the victim does not comply with their wishes —*sextortion* (Flores, 2015). On other occasions, it is an ex who uploads and shares the photos of his/her former couple on the Internet, which is done out of spite or a desire for revenge —*revenge porn* (Calvert, 2015). The *Visual-sexual cybervictimization* covers such events and is part, therefore, of what has been called *aggravated cases of youth-produced sexual images* (Wolak & Finkelhor, 2011). Despite of the severity of these cases, and the concern that this situation generates to families, schools and society in general, empiric research on this issue, as well as on the design of new assessment tools, is limited to date (Klettke, Hallford, & Mellor, 2014).

It may also be helpful to differentiate two different expressions of verbal cybervictimization. Oral cybervictimization usually occurs through voice calls on the mobile phone. Written cybervictimization currently takes place primarily through comments on social networks and text messages in instant messaging programs. It is commonly considered to be part of the same construct (within the same factor or even the same item). However, the use of a written means of communication may favor an individual's disinhibition, as well as the rapid and massive spreading of the message (Hinduja & Patchin, 2015). Oral and written cybervictimization may differ, therefore, in the severity of their effects. Hence the utility of having specific measures of both forms of verbal cybervictimization.

1.2. Prevalence and effects of cybervictimization in adolescence

Cybervictimization among adolescents is a serious problem that, due to its prevalence and negative effects, warrants analysis and treatment. Although there are differences as a function of the sample analyzed and the methodology used, it is currently estimated that between 20 and 40% of children and adolescents have at some time been victims of aggression through electronic means (Aboujaoude, Savage, Starcevic, & Salame, 2015) and between 2 and 7% have been victims of severe aggression (Garaigordobil, 2011).

Cybervictimization can have very important effects on the victim, especially in severe cases. Mainly, it has been associated with an increase in internalizing problems such as anxiety (Rose & Tynes, 2015), low self-esteem (Chang et al., 2013), social anxiety (Juvonen & Gross, 2008), depressive symptomatology (Bonanno & Hymel, 2013) and suicidal ideation (Van Geel, Vedder, & Tanilon, 2014). In turn, these internalizing problems can have negative consequences for adolescents in other areas, such as the academic area. Cybervictimization has been associated with an increase in concentration problems, poor performance, and truancy (Beran & Li, 2007; Tsitsika et al., 2015). Cybervictimization has also been associated with an increase in externalizing problems, although to a lesser extent. Some studies suggest that cybervictimization in adolescence predicts cyberaggression some months later, although this relationship is mediated by other variables, such as the level of rejection or of social support from peers (Wright & Li, 2013).

2. Measures of cybervictimization in adolescence

For adequate identification and analysis of the problem, it is essential to have assessment instruments with adequate and rigorous contents and metric properties. In recent years, different instruments for the assessment of cybervictimization among adolescents have been published. The most complete and current review is the one by Berne et al. (2013) which includes assessment instruments published up to October of 2010. The absence of updated systematic reviews is a drawback to identify potential gaps and controversies in the previous proposals. Therefore, we present below a brief review of the instruments published in recent years (Table 1). All of them are self-reports, with multiple-choice response formats on which the evaluated adolescent rates the frequency with which he/she suffers the behavior described in the item. All the reviewed questionnaires have made some contribution to the study of cybervictimization. However, some common limitations suggest the need continue working on the design of an instrument to overcome them.

A first limitation of previously published questionnaires is that the vast majority of them only offer a general measure of cybervictimization, which makes it difficult to understand the problem. Having a single cybervictimization score hinders, for example, the analysis of possible differential effect of some variables on different types of cybervictimization. The case of gender may be illustrative. Despite the fact that boys and girls use mobile phones and the Internet in different ways (Fernández-Montalvo, Peñalva, & Irazabal, 2015) and of differences in offline victimization (Álvarez-García, Dobarro, Álvarez, Núñez, & Rodríguez, 2014), most studies find no differences between boys and girls in cybervictimization frequency (Tokunaga, 2010). A possibility is that, in most cases, this is due to the fact that the analyses are based on a general cybervictimization score, which may offset the differential effects of gender. As can be observed in Table 1, only 5 of the 16 revised questionnaires allow obtaining specific scores for different forms of cybervictimization. All the nonspecific cybervictimization questionnaires, with the exception of the MOOPV (Sumter, Valkenburg, Baumgartner, Peter, & Van der Hof, 2015), offer a single measure of cybervictimization; and five of the nine questionnaires specifically aimed at assessing cybervictimization present unifactorial models.

A second limitation of the reviewed self-reports is that the few that do provide specific measures of different types of cybervictimization do not offer measures of some types that are relevant due to their severity and current social relevance. Most of them focus on verbal cybervictimization: four of the five questionnaires that provide specific scores of different types of cybervictimization offer, using different terms, a score of verbal cybervictimization. However, only two of the five questionnaires include a specific measure of online exclusion, two of the five include a specific measure of impersonation, and any of them offers neither a specific visual cybervictimization score that involves teasing or *happy slapping*, nor a visual cybervictimization score related to *sexting* and *sextortion*.

Lastly, a third limitation of the previously published self-reports has to do with certain methodological limitations (Table 1). One of them is that the questionnaires specifically aimed at assessing cybervictimization among adolescents have generally been validated with small samples: six of the nine questionnaires use samples of less than 500 subjects to conduct either exploratory or confirmatory factor analyses. Another limitation is that only two of the 16 questionnaires revised explicitly state that the analyses were based on the polychoric correlation matrix, which is the most adequate option for variables measured at the ordinal level and

Table 1
Questionnaires for measuring cybervictimization among adolescents.

Questionnaire	Authors	EFA or CFA?	Sample size	Are calculations based on the polychoric correlation matrix?	Factors	Fit indexes
<i>Nonspecific cybervictimization self-reports</i>						
European Cyberbullying Intervention Project Questionnaire (ECIPQ)	Del Rey et al. (2015)	EFA and CFA	EFA: 2820 CFA: 2859	Yes	- Cyber-aggression - Cyber-victimization	$\chi^2 = 1484.15$, $df = 208$ GFI = 0.986, CFI = 0.993, NNFI = 0.993 RMSEA = 0.030, SRMR = 0.080
Cyberbullying Questionnaire (CBQ)	Gómez-Guadix, Villa-George, and Calvete (2014)	CFA	1491	Not indicated	- Perpetration - Victimization	$\chi^2 = 293$, $df = 220$, $p < 0.001$ NNFI = 0.98, CFI = 0.99 RMSEA = 0.030 (0.027-0.034)
Cyberbullying Test	Garaigordobil (2015)	EFA and CFA	EFA: 1513 CFA: 1513	Not indicated	- Cyber observer - Cyber aggressor - Cyber victim	$\chi^2 = 4604.73$, $df = 942$, $p < 0.001$, $\chi^2/df = 4.88$, $SB\chi^2/df = 1.28$ CFI = 0.91, NNFI = 0.90, GFI = 0.92 RMSEA = 0.056 (0.056-0.063) SRMR = 0.050
Virtual Aggression subscale	Jiménez, Castillo, and Cisternas (2012)	EFA	675	Not indicated	- Perpetrated or observed virtual aggression. - Virtual aggression victimization.	- - -
Personal Experiences Checklist (PECK)	Hunt, Peters, and Rapee (2012)	EFA and CFA	EFA: 433 CFA: 432	Not indicated	Second-order factor: - Being bullied First-order factors: - Relational or verbal bullying - Cyber bullying - Physical bullying - Bullying based on culture	$\chi^2 = 1486.23$, $df = 460$ CFI = 0.88 RMSEA = 0.07 (0.07-0.08)
Multidimensional Peer Victimization Scale—Revised (MPVS-R)	Betts, Houston, and Steer (2015)	CFA	371	Not indicated	- Physical - Social manipulation - Verbal - Attacks on property - Electronic	$\chi^2 = 304.08$, $df = 160$, $p < 0.001$ CFI = 0.95, NFI = 0.90 RMSEA = 0.05
Multidimensional Offline and Online Peer Victimization Scale (MOOPV)	Sumter et al. (2015)	EFA and CFA	EFA: 325 CFA: 799	Not indicated	- Offline peer victimization: • Direct offline • Indirect offline - Online peer victimization: • Direct online • Indirect online	$\chi^2 = 1238.35$, $df = 170$, $p < 0.005$ CFI = 0.85 RMSEA = 0.10 Adding correlated errors: $\chi^2 = 613.02$, $df = 153$, $p < 0.005$ CFI = 0.94 RMSEA = 0.06
<i>Specific cybervictimization questionnaires</i>						
Cyber Victimization Survey (CVS)	Brown, Demaray, and Secord (2014)	EFA	106	Not indicated	- Cybervictimization	- - -
Cybervictimization scale of the Cyberbullying Scale (CS)	Menesini, Nocentini, and Calussi (2011)	CFA	1092	Not indicated	- Cybervictimization	Male: $\chi^2 = 20.59$, $df = 14$, $p = 0.11$; CFI = 0.98, RMSEA = 0.030 Female: $\chi^2 = 19.18$, $df = 11$, $p = 0.06$ CFI = 0.99, RMSEA = 0.037
E-Victimization Scale (E-VS)	Lam and Li (2013)	EFA and CFA	EFA: 231 CFA: 234	Not indicated	- Cybervictimization	$\chi^2 = 67.90$, $df = 5$, $p < 0.001$; $\chi^2/df = 13.58$ GFI = 0.92, AGFI = 0.75 RMSR = 0.034
Cyberbullying Scale (CBS)	Stewart, Drescher, Maack, Ebesutani, and Young (2014)	EFA and CFA	EFA: 368 CFA: 368	Yes	- Cybervictimization	CFI = 0.98, TLI = 0.98 RMSEA = 0.06.
Cybervictimization scale of the Revised Cyber-Bullying Inventory (RCBI)	Topcu and Erdur-Baker (2010)	EFA and CFA	EFA: 358 CFA: 339	Not indicated	- Cybervictimization	GFI = 0.82, AGFI = 0.76, CFI = 0.58, NFI = 0.54, TLI = 0.50 RMSEA = 0.13 Adding correlated errors:

Table 1 (continued)

Questionnaire	Authors	EFA or CFA?	Sample size	Are calculations based on the polychoric correlation matrix?	Factors	Fit indexes
Adolescent Victimization through Mobile Phone and Internet Scale (CYBVIC)	Buelga, Cava, and Musitu (2012)	EFA and CFA	EFA: 1934 CFA: 1483	Not indicated	- Cybervictimization through mobile phone - Cybervictimization through the Internet	GFI = 0.93, AGFI = 0.90, CFI = 0.89, NFI = 0.84, TLI = 0.86 RMSEA = 0.06 $S-B\chi^2 = 366.45$, $df = 131$, $p < 0.001$ CFI = 0.93 RMSEA = 0.03 (0.03–0.03)
Cybervictimization scale of the Cyber Victim and Bullying Scale (CVBS)	Çetin, Yaman, and Peker (2011)	EFA and CFA	404	Not indicated	- Cyber verbal bullying - Hiding identity - Cyber forgery	$\chi^2 = 482.33$, $df = 200$, $p < 0.001$, $\chi^2/df = 2.41$ NFI = 0.96, CFI = 0.96, IFI = 0.94, RFI = 0.93, GFI = 0.90, NNFI = 0.96 RMSEA = 0.058
Cybervictimization scale of the Florence CyberBullying-CyberVictimization Scales (FCBVSs)	Palladino et al. (2015)	CFA	1123	Not indicated	- Written-verbal - Visual - Impersonation - Exclusion	$\chi^2 = 127.02$, $df = 71$, $p < 0.001$ CFI = 0.92 RMSEA = 0.03 Adding correlated errors: $\chi^2 = 105.10$, $df = 70$, $p = 0.004$ CFI = 0.95 RMSEA = 0.02
Online Victimization Scale (OVS)	Tynes, Rose, and Williams (2010)	CFA	Study 1: 222 Study 2: 254	Not indicated	- General online victimization - Online sexual victimization - Individual online racial discrimination - Vicarious online racial discrimination	Study 1: $\chi^2 = 556.71$, $df = 183$, $p < 0.001$ CFI = 0.93, IFI = 0.93, TLI = 0.92 RMSEA = 0.096 (0.087–0.105) Study 2: $\chi^2 = 570.30$, $df = 183$, $p < 0.001$ CFI = 0.94, IFI = 0.94, NNFI = 0.93 RMSEA = 0.087 (0.079–0.095)

with nonnormal distributions (Lloret-Segura, Ferreres-Traver, Hernández-Baeza, & Tomás-Marco, 2014). The reviewed self-reports have a polytomous response format, and cybervictimization scores tend to concentrate at the lowest values of the scale. A third and final methodological limitation is that the models considered to be the most representative of its factor structure generally do not present acceptable fit indexes. Only 6 of the 16 reviewed questionnaires satisfy the criteria usually used to be considered a good fit (these criteria are mentioned Section 4.4). In the case of one of these six questionnaires, it has been necessary to include in the model the correlated measurement errors of a pair of items to obtain good fit indexes.

3. Objective

The goal of this study is to analyze the factor and criterion validity and reliability of the *Cybervictimization Questionnaire* (CYVIC) in a sample of adolescents from Asturias (Spain). The CYVIC was designed based on a previous instrument (CBV; Álvarez-García, Dobarro, & Núñez, 2015), to assess the extent to which the informant is a victim of aggression by mobile phone or Internet. With the CYVIC, we expect to overcome the main methodological and content limitations of the previously published questionnaires for the assessment of cybervictimization among adolescents. This is intended to contribute to the definition of the construct

cybervictimization, its types, and behavioral indicators, as well as to provide a valid and reliable measure for use in applied fields and research.

Concerning this issue, as it was stated before in Section 1.2, cybervictimization may have a negative impact on the psychosocial wellbeing and academic performance of the adolescent. Thus, it is important to have instruments that allow assessing this problem with the greatest validity and reliability possible. The CYVIC is expected to contribute to improving practice in educational and clinical contexts in different ways. Firstly, it is expected to be a useful instrument to identify adolescents being victims of cyber-aggression. Collectively administered, the CYVIC would serve as a screening measure. Individually applied, it would serve as a guide about the observable indicators of each type of cybervictimization. Secondly, it is expected that the CYVIC will be useful for analyzing the prevalence of the different forms of cybervictimization, as well as the risk factors and consequences associated with them. This information is decisive for the design of effective intervention programs. Lastly, the CYVIC is expected to be useful for measuring the impact of intervention programs.

The initial hypothesis of this study is that the model that best represents the response of the assessed adolescents to the CYVIC is the one purposed by Nocentini et al. (2010), made up of four types of cybervictimization correlated to each other: written-verbal, visual, online exclusion, and impersonation (Fig. 1).

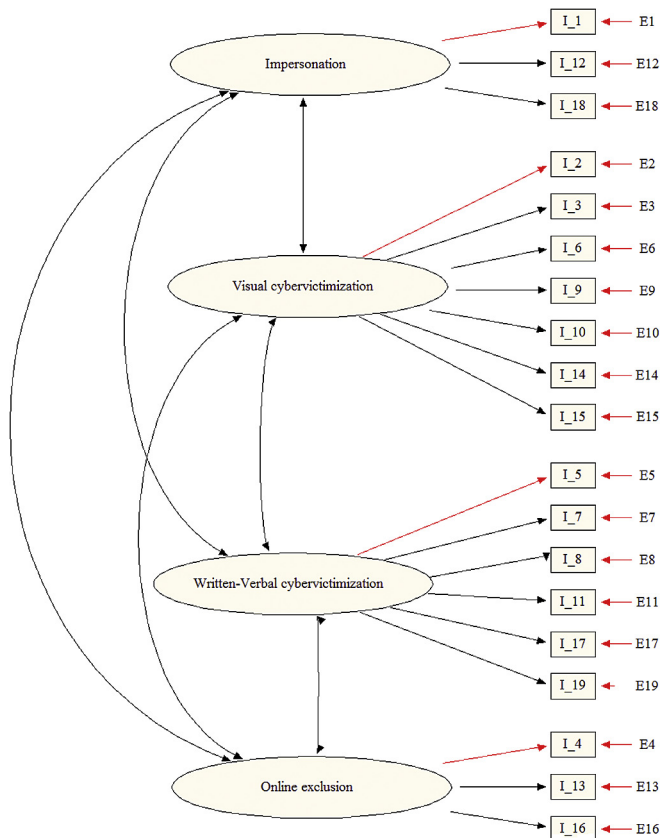


Fig. 1. Theoretical model of the Cybervictimization Questionnaire (CYVIC) for adolescents (based on Nocentini et al., 2010).

4. Material and methods

4.1. Participants

The responses of 3159 teenagers from Asturias (Spain) were analyzed. Regarding sex and age, 52.0% are boys and 48.0% are girls, aged between 12 and 18 years ($M = 14.01$; $SD = 1.39$). Of them, 95.1% have their own mobile phone, 84.1% surf the Internet in their free time for non-academic tasks, 93.5% use instant messaging programs (Messenger, Whatsapp, or others), and 77.8% participate in social networks (Tuenti, Facebook, or others) in their free time.

The assessed adolescents belong to 19 schools, selected randomly through stratified sampling from among the total of publicly funded schools of Asturias in which Compulsory Secondary Education (CSE) is taught. Publicly funded schools make up 95.9% of the total number of schools in which CSE is taught in Asturias. To select the sample, we divided the population of schools according to their ownership (public or private-concerted) and selected in each stratum a number of schools proportional to the population. In Spain, public schools are those in which both their management and their financing are entirely public, and private-concerted schools are those whose management is private, but their financing is partially public. As a result, 11 public schools and 8 private-concerted schools were selected. Although the sample is diverse, the selected schools were predominantly located in urban areas and from the middle socio-economic class, as in the population from which they were extracted. In each selected school, all the groups were assessed. Of these adolescents, 28.3% study 1st grade, 25.4% are in 2nd grade, 24.3% are studying 3rd grade, and 22.0% study 4th grade of CSE.

4.2. Measures

4.2.1. Cybervictimization Questionnaire for adolescents (CYVIC)

The CYVIC (Appendix A), designed and tested in this study, is a self-report composed of 19 items, each one of which presents an aggression suffered through mobile phone or the Internet. The students should mark the frequency with which they were the victim of each one of these situations in the past three months, on a 4-point Likert-type scale (1 = *Never*, 2 = *Rarely*, 3 = *Often*, and 4 = *Always*).

The CYVIC was designed based on the model proposed by Nocentini et al. (2010), and the validation of a previously published questionnaire, the *Cybervictimization Questionnaire* (CBV; Álvarez-García et al., 2015). For the final construction of the CYVIC, ten items were removed from the CBV, on statistical and content grounds, and three new items were added, referring to visual cybervictimization with sexual connotation, an important kind of cybervictimization that has not been assessed in the reviewed self-reports.

The original CBV has 26 items, also based on the model of Nocentini et al. (2010), with four types of cybervictimization. Confirmatory factor analyses yielded very similar fit indexes for the three models compared (unifactorial, simple multifactorial, and hierarchical multifactorial), so they did not strongly support any of the positions on the dimensionality of the construct. We finally chose the one-factor model, due to its more parsimonious nature, although the fit indexes were not good for any of the three models considered a priori. To achieve an acceptable fit, we included in the one-factor model the main correlations between the measurement errors of the items (a total of 13 correlations). The inclusion in a model of so many correlations leads to two problems. Firstly, the possibility that the relation between the pairs of items may be due to variables other than those considered in the model. Secondly, there is a greater probability that the resulting model will be unstable when replicated in other samples. To try to solve both problems, when designing the CYVIC, we removed 10 items from the CBV that were involved in these measurement error correlations, also taking into account their factor loadings in the analyzed models.

To construct the CYVIC, besides eliminating these 10 items, we included 3 new items of visual cybervictimization of a sexual nature. This was done to analyze the possibility of obtaining a specific measure of visual-sexual cybervictimization, differentiated from other types of visual violence more related to teasing and happy slapping. They are different phenomena, with different risk factors and concomitant variables. As shown in Section 2, none of the reviewed questionnaires of cybervictimization among adolescents offer a specific score of visual cybervictimization that involves teasing or happy slapping or of visual cybervictimization related to sexting and sextortion, in spite of their severity and the relevance of identifying and analyzing them.

4.2.2. internet risk behaviors

An *ad hoc* adaptation of the Internet Risk Behaviors scale of the *Cybervictimization Risk Factors Questionnaire* (Álvarez-García, Núñez, Dobarro, & Rodríguez, 2015) was used. The scale used in the present study is a self-report measure consisting of 8 items describing Internet risk behaviors, that is, potentially harmful behaviors related to the use of the Internet: "I allow others to upload my photos or videos to Internet", "I add people I do not know personally to my social networks", "Sometimes, I've communicated online with strangers (for example, chatting)", "I usually publish personal information on my social network: what am I going to do, where and with whom, personal or family photos or videos..", "Sometimes, I've made a date with someone in person whom I only

knew from Internet”, “I give my phone number to boys or girls whom I just met or hardly know”, “I have sent a compromising picture of me to other people via mobile phone or Internet”, and “I have exchanged personal information with people whom I only know through the Internet”. The items are rated on a 4-point Likert-type scale (1 = *Totally False*, 2 = *Rather false*, 3 = *Mostly true*, 4 = *Completely true*). The internal consistency of the scale in the sample for this study is high (Raykov's $\rho = 0.878$).

4.2.3. Offline school victimization

We used the Offline School Victimization scale of the *Cybervictimization Risk Factors Questionnaire* (Álvarez-García, Núñez, et al., 2015). This self-report scale is comprised of six items referring to the frequency with which the respondent reports having suffered offline school victimization; that is, aggression in the physical environment at school: “Some classmates reject me in games, on walks, or in recess activities”, “My classmates avoid me when they do homework in a group in the class”, “My classmates mock me or laugh at me”, “My classmates speak ill of me behind my back”, “I have been insulted face-to-face by some classmate”, and “Some classmate has hit me, either in the school or outside of the school grounds”. The items are rated on a 4-point Likert-type scale (1 = *Never*, 2 = *Rarely*, 3 = *Often*, 4 = *Always*). The internal consistency of the scale in the sample for this study is high (Raykov's $\rho = 0.883$).

4.2.4. Self-esteem

We used the Self-esteem scale of the *Cybervictimization Risk Factors Questionnaire* (Álvarez-García, Núñez, et al., 2015). This self-report scale is made up of five items related to the respondent's self-assessment: “I'm content about my physical appearance”, “I am proud of what I do”, “I can do things at least as well as most of my classmates”, “I like the way I am” and “I consider myself a good person”. The items are rated on a 4-point Likert-type scale (1 = *Totally false*, 2 = *Rather false*, 3 = *Mostly true*, 4 = *Completely true*). The internal consistency of the scale in the sample for this study is high (Raykov's $\rho = 0.829$).

4.3. Procedure

Firstly, the CYVIC questionnaire was designed and the schools were selected. After selecting the schools, permission was sought from their respective management teams to apply the questionnaire. Each board of directors was informed of the goals and procedures of the study, its voluntary and anonymous nature, and the confidential treatment of the results. Once the school management had agreed to participate, informed consent was sought from the parents or guardians of the students, given their status as minors. The questionnaire was applied in all the centers during the second and third trimester of the 2014–2015 academic course. Before completing the questionnaire, students were also informed of the anonymous, confidential, and voluntary nature of their participation. In general, the students had 20 min to complete the questionnaires, although this was flexible depending on the students' age and characteristics. The test was applied by the research team to all the groups in each of the schools, during the regular school schedule.

4.4. Data analysis

Initially, the presence of missing values or outliers in the data matrix was analyzed. All the items were completed validly by more than 90% of the participants, so none were eliminated for this reason for the final analysis of the test. Of the 3233 students who completed the CYVIC, 74 responded validly to less than 90% of the items, so they were eliminated from the data matrix. After their

data were deleted, the number of missing values in the CYVIC matrix dropped to 125 (0.2% of the total).

We used the statistical program EQS 6.2 (Bentler, 2014) to analyze the normality and the dimensionality of the test. As there are sufficient theoretical grounds to hypothesize a priori about the dimensions that make up the cybervictimization construct, we chose confirmatory factor analysis to examine the dimensionality of the scale and, thereby, to test the theory (Izquierdo, Olea, & Abad, 2014; Rios & Wells, 2014). Multivariate kurtosis indicated the non-normality of the scale (Mardia's coefficient = 2002.94), so we used Arbitrary Generalized Least Squares (AGLS) as estimation method. Given the ordinal nature of the scale, analyses were conducted using the polychoric correlation matrix. As AGLS requires extensive sample sizes and, in order not to eliminate more subjects and to be able to use all the available data, missing values were treated by computing the pairwise covariance matrix.

To determine the degree of fit of the tested models, we used the chi-square (χ^2)/degrees of freedom (*df*) ratio, the Comparative Fit Index (CFI), the Bentler-Bonett Non-Normed Fit Index (NNFI), the Standardized Root Mean Square Residual (SRMR), the Root Mean Square Error of Approximation (RMSEA) and the Akaike Information Criterion (AIC). Usually, it is considered that the fit is good when CFI = 0.95, NNFI = 0.95, SRMR \leq 0.08 and RMSEA \leq 0.06 (Hu & Bentler, 1999), and $\chi^2/df < 3$ (Ruiz, Pardo, & San Martín, 2010). The AIC allows comparing the models, and the lowest value is preferable. Model fit differences were also determined using the chi-square difference test (Bollen, 1989).

We studied the discriminant validity of the model with the best fit, analyzing the correlation between its factors. Very high correlations ($r \geq .85$) suggest possible collinearity, redundancy between factors and, therefore, poor discriminant validity (Brown, 2015). Given that we actually found a very high correlation between some factors, the model was respecified *post-hoc*.

The fit indexes and correlations between the factors of the three respecified models were analyzed. After identifying the model with the most adequate discriminant validity and fit to the data, factor loadings and standard errors of each item for that model were found. Factor loadings higher than 0.30 are usually considered acceptable (Izquierdo et al., 2014).

Subsequently, the reliability of the test was analyzed. The reliability of each subscale was analyzed, in terms of internal consistency, finding their respective Raykov rho coefficient (composite reliability) from the polychoric correlation matrix. This coefficient is currently proposed as an alternative to the weaknesses of the Cronbach alpha coefficient, highlighted by authors like Sijtsma (2009). In general, the Raykov rho coefficient is considered acceptable if its value is above 0.70, high if it is greater than 0.80, and very high if it is higher than 0.90. We also found the multiple squared correlation of each item, an indicator of the proportion of the item's variance explained by the latent variable and, therefore, the item's reliability to measure this variable (Bollen, 1989).

We used the statistical software SPSS 21 (IBM Corp., 2012) to analyze the criterion validity of the test. We calculated Spearman's rank correlation coefficient between the score in each of the four factors of the CYVIC and three external criteria, about whose association with cybervictimization there is prior evidence (Álvarez-García, Núñez, et al., 2015): internet risk behaviors, offline school victimization, and self-esteem.

5. Results

5.1. Analysis of the initial theoretical model

5.1.1. Factor validity

We compared the fit of the data to the theoretical model,

Table 2
Models proposed for the analysis of the dimensionality of the CYVIC.

Model	Factors		Items
	Second-order	First-order	
1FM	–	Cybervictimization	All (1–19)
4FM	–	Impersonation	1, 12, and 18
		Visual cybervictimization	2, 3, 6, 9, 10, 14, and 15
		Written-Verbal cybervictimization	5, 7, 8, 11, 17, and 19
4FM2	Cybervictimization	Online exclusion	4, 13, and 16
		Impersonation	1, 12, and 18
		Visual cybervictimization	2, 3, 6, 9, 10, 14, and 15
		Written-Verbal cybervictimization	5, 7, 8, 11, 17, and 19
		Online exclusion	4, 13, and 16
6FM	–	Impersonation	1, 12, and 18
		Visual-Sexual cybervictimization	2, 9, and 14
		Visual cybervictimization -Teasing/Happy slapping	3, 6, 10, and 15
		Verbal-written cybervictimization	8, 11, and 19
		Verbal-oral cybervictimization	5, 7, and 17
		Online exclusion	4, 13, and 16
6FM2	Cybervictimization	Impersonation	1, 12, and 18
		Visual-Sexual cybervictimization	2, 9, and 14
		Visual cybervictimization -teasing/Happy slapping	3, 6, 10, and 15
		Verbal-written cybervictimization	8, 11, and 19
		Verbal-Oral cybervictimization	5, 7, and 17
		Online exclusion	4, 13, and 16

1FM = One-factor model; 4FM = Four-factor model; 4FM2 = Hierarchical model with four first-order factors and one second-order factor; 6FM = Six-factor model; 6FM2 = Hierarchical model with six first-order factors and one second-order factor.

Table 3
Goodness-of-fit indexes of the five tested models for the CYVIC, with the total sample ($N = 3159$).

Model	χ^2	df	p	χ^2/df	CFI	NNFI	SRMR	RMSEA [CI 90%]	AIC
1FM	863.34	152	<0.001	5.68	0.921	0.911	0.159	0.038 (0.036–0.041)	559.34
4FM	451.95	146	<0.001	3.10	0.966	0.960	0.106	0.026 (0.023–0.028)	159.95
4FM2	464.30	148	<0.001	3.14	0.965	0.959	0.109	0.026 (0.023–0.029)	168.30
6FM	356.75	137	<0.001	2.60	0.976	0.969	0.090	0.023 (0.020–0.025)	82.75
6FM2	551.24	146	<0.001	3.78	0.955	0.947	0.114	0.030 (0.027–0.032)	259.24

1FM = One-factor model; 4FM = Four-factor model; 4FM2 = Hierarchical model with four first-order factors and one second-order factor; 6FM = Six-factor model; 6FM2 = Hierarchical model with six first-order factors and one second-order factor.

CFI = Comparative Fit Index; NNFI = Non-Normed Fit Index; SRMR = Standardized Root Mean Square Residual; RMSEA = Root Mean Square Error of Approximation; CI = Confidence interval; AIC = Akaike Information Criterion.

Table 4
Correlation matrix between the components of the Six-factor model ($N = 3159$).

	Impersonation	Visual-Sexual	Visual-Teasing/Happy slapping	Verbal-Written	Verbal-Oral	Online Exclusion
Impersonation	1.00					
Visual-Sexual	0.78	1.00				
Visual-Teasing/Happy slapping	0.82	0.98	1.00			
Verbal-Written	0.73	0.79	0.72	1.00		
Verbal-Oral	0.75	0.66	0.70	0.86	1.00	
Online Exclusion	0.71	0.69	0.73	0.82	0.68	1.00

consisting of four factors (4FM), with that of four other models that were also plausible from a theoretical point of view (Table 2). On the one hand, a model with six factors was tested (6FM), which, unlike the 4FM, makes the distinction between two types of visual cybervictimization (sexual and teasing/happy slapping), and between two types of verbal cybervictimization (oral and written). On the other hand, all the items from the questionnaire refer to the same construct (cybervictimization). Hence, it makes sense to also test a one-factor model (1FM), as well as hierarchical versions of the four- and six-factor models, with the cybervictimization factor as a second-order factor (4FM2 and 6FM2). In the case of the non-hierarchical models tested (M4F and M6F), the factors are latent variables significantly related to each other and free of measurement error; each item (observable indicator) is only explained by

one factor, and is associated with a certain measurement error. The results (Table 3) indicate that it is not the 4FM, but the 6FM, the one that best fit indexes presents. Goodness of fit of the 6FM is better, in a statistically significant way, than that of the 1FM ($\Delta\chi^2 = 506.59$; $\Delta df = 15$; $p < 0.001$), the 4FM ($\Delta\chi^2 = 95.20$; $\Delta df = 9$; $p < 0.001$), the 4FM2 ($\Delta\chi^2 = 107.55$; $\Delta df = 11$; $p < 0.001$) and the 6FM2 ($\Delta\chi^2 = 194.49$; $\Delta df = 9$; $p < 0.001$).

5.1.2. Discriminant validity

The factors of the 6FM present positive and statistically significant correlations with each other (Table 4). The two factors referring to verbal violence (written and oral) and, even more so, the two factors referring to visual violence (Sexual and Teasing/Happy slapping) have very high correlations with each other ($r > 0.85$).

Table 5
Goodness of fit indexes of the three post-hoc models, with the total sample (N = 3159).

Model	χ^2	df	p	χ^2/df	CFI	NNFI	SRMR	RMSEA [CI 90%]	AIC
ph5FM	175.75	80	<0.001	2.20	0.982	0.976	0.061	0.019 [0.016, 0.023]	15.75
ph4FM	247.05	84	<0.001	2.94	0.969	0.961	0.083	0.025 [0.021, 0.028]	79.05
ph3FM	305.17	87	<0.001	3.51	0.958	0.949	0.092	0.028 [0.025, 0.032]	131.17

ph5FM = Post hoc five-factor model; ph4FM = Post hoc four-factor model; ph3FM = Post hoc three-factor model.
CFI = Comparative Fit Index; NNFI = Non-Normed Fit Index; SRMR = Standardized Root Mean Square Residual; RMSEA = Root Mean Square Error of Approximation; CI = Confidence interval; AIC = Akaike Information Criterion.

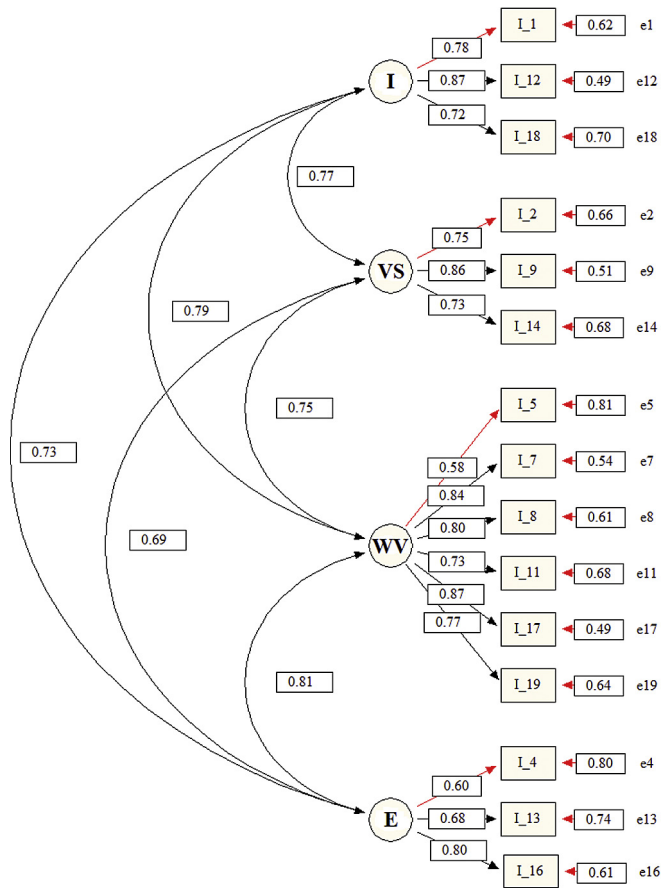


Fig. 2. Factorial structure of the CYVIC (I = Impersonation; VS = Visual-Sexual Cybervictimization; WV = Written-Verbal Cybervictimization; E = Online exclusion).

5.2. Post-hoc modifications

In view of the very high correlation between the two factors of Visual cybervictimization, we decided to extract the four items referring to Teasing/Happy slapping from the model and retain them in the questionnaire as additional indicators. We decided to remove them from the model and not to merge both factors for the practical use of the questionnaire. It is interesting to have a specific measure of visual cybervictimization of a sexual nature, distinguished from other types of visual cybervictimization.

Thus, three models were tested *post-hoc*. First, we analyzed the fit indexes and correlations between factors of a five-factor model (ph5FM), made up of the same factors as the 6FM except for the factor of Visual Cybervictimization-Teasing/Happy slapping. This model presents good fit indexes (Table 5). However, the two factors of Verbal cybervictimization (Oral and Written) still present a

Table 6
Reliability of each item and factor of the CYVIC (N = 3159).

Factor	Item	ρ	R^2
Impersonation	1	0.816	0.610
	12		0.765
	18		0.514
Visual-Sexual Cybervictimization	2	0.795	0.561
	9		0.738
	14		0.540
Written-Verbal Cybervictimization	5	0.890	0.339
	7		0.709
	8		0.633
	11		0.533
	17		0.760
	19		0.590
Online exclusion	4	0.741	0.357
	13		0.458
	16		0.633

ρ : Raykov's rho coefficient (composite reliability); R^2 : Squared multiple correlation.

Table 7
Spearman's rank correlation coefficients between the score on each factor of the CYVIC and the scores on the Internet Risk Behaviors, Offline School Victimization, and Self-esteem scales (N = 3159).

	Internet Risk Behaviors	Offline School Victimization	Self-esteem
I	0.181*	0.163*	-0.063*
VS	0.191*	0.186*	-0.101*
WV	0.377*	0.369*	-0.184*
E	0.148*	0.326*	-0.140*

I = Impersonation; VS = Visual-Sexual Cybervictimization; WV = Written-Verbal Cybervictimization; E = Online exclusion.
* $p \leq 0.001$.

correlation of 0.86. For this reason, a second model was tested *post-hoc*, with four factors, in which the two verbal factors are combined into a single factor. In this way, the post hoc four-factor model (ph4FM) consists of Impersonation, Online exclusion, Verbal Cybervictimization, and Visual-Sexual Cybervictimization. The fit of the ph4FM is good — although worse than that of the ph5FM ($\Delta\chi^2 = 71.30$; $\Delta df = 4$; $p < 0.001$)— and the correlations between its factors are lower than 0.85 (Fig. 2). We finally tested a third *post-hoc* model, in which we merged the items referring to Verbal cybervictimization and Exclusion into a single factor. Thus, the post hoc three-factor model (ph3FM) is made up of the factors “Impersonation”, “Visual-sexual cybervictimization”, and “Verbal cybervictimization and exclusion”. The correlation between each pair of factors is lower than 0.80, but its level of fit to the data is the worst of the three *post-hoc* models tested (Table 5). The fit of the ph3FM is worse, in a statistically significant way, than that of the ph4FM ($\Delta\chi^2 = 58.12$; $\Delta df = 3$; $p < 0.001$) and the ph5FM ($\Delta\chi^2 = 129.42$; $\Delta df = 7$; $p < 0.001$).

5.3. Analysis of the post-hoc four-factor model

5.3.1. Factor loadings and standard errors

In the ph4FM, the standardized factor loadings of the items presented moderate or high values (Fig. 2). All the items have a standardized regression coefficient equal to or higher than 0.60, except Item 5 ($\lambda = .58$). However, some items have high standard errors.

5.3.2. Reliability of items and subscales

The reliability of the CYVIC subscales and of each of their items can be considered moderate or high (Table 6). The Raykov rho composite reliability coefficient of each of its four factors has values between 0.74 and 0.89. The proportion of variance in an item explained by the latent variable (R^2) ranges between 34 and 77%.

5.3.3. Criterion validity

The four CYVIC factors correlated statistically and significantly with the three analyzed external criteria. There was a positive correlation with participants' reported Internet Risk Behaviors and Offline School Victimization; and a negative one with Self-esteem (Table 7).

6. Discussion

The Cybervictimization Questionnaire (CYVIC) for adolescents was designed to assess the extent to which the informant is a victim of aggression by mobile phone or Internet. The goal of the present study was to analyze its factor and criterion validity and reliability in a sample of adolescents of Asturias (Spain). The results show that the CYVIC offers adequate statistical guarantees for the purpose for which it was designed. The initial hypothesis, according to which the model that best represents the structure of the test is the one proposed by Nocentini et al. (2010), made up of four types of cybervictimization (written-verbal, visual, online exclusion, and impersonation), was confirmed, but with nuances.

The model that best represents the data obtained, with adequate discriminant validity, is the one made up of four factors (written-verbal, visual-sexual, online exclusion, and impersonation) and in which the four items of Visual Cybervictimization - Teasing/Happy slapping are removed from the model and maintained as complementary indicators. These results suggest that the cybervictimization construct consists of different, significantly interrelated types. As indicated in Section 2, the previously published questionnaires to assess cybervictimization in adolescence differ in terms of the univariate or multifactorial nature of the construct, although most of them show a unifactorial structure. Conversely, the results obtained in this study support the multifactorial perspective of the construct, in the line of other questionnaires such as CYBVIC (Buelga et al., 2012), CVBS (Çetin et al., 2011), FCBVSS (Palladino et al., 2015), MOOPV (Sumter et al., 2015), and OVS (Tynes et al., 2010). The CYVIC, however, differs from these multifactorial scales in the specific types of cybervictimization that it assesses and in the observable indicators used. The results do not justify the division of the two factors of Verbal cybervictimization and the two factors of Visual cybervictimization, which was considered in two of the models tested in the present study. These two divisions could be of practical interest. However, from a psychometric perspective, the results suggest that the response of the evaluated adolescents does not differentiate the observable indicators of these factors sufficiently to consider two different types of visual violence and two different types of verbal violence.

Regarding the criterion validity of the test, the CYVIC scores correlate statistically and significantly with three external variables

that previous evidence indicates correlate with cybervictimization in adolescence. In accordance with our expectations (Álvarez-García, Núñez, et al., 2015), the CYVIC scores correlated positively with Offline school victimization and Internet risk behaviors, and negatively with Self-esteem. The CYVIC subscales differ from one another in the strength of the correlation, which supports the multidimensional nature of the construct.

The reliability of the subscales, evaluated in terms of internal consistency, is moderate-high. The reliability of the items can be considered acceptable. Some of the items present high standard errors. Although this may be due to the influence of exogenous variables that are not considered in this study, it may also be due, at least partially, to the correlation between the scale factors. For example, the variance of the scores on Item 4 can be explained by the latent variable Online exclusion, but also partially by the variable Verbal Cybervictimization.

6.1. Implications

The present work represents a contribution to the study of cybervictimization among adolescents. The CYVIC overcomes some methodological and content limitations of the previously published questionnaires described in Section 2. Regarding the methodological aspects, the CYVIC has been validated with a broad sample of randomly selected adolescents; the analyses were based on the polychoric correlation matrix; and the model finally identified as representative of the internal structure of the questionnaire shows a good fit to the empirical data obtained. With regard to the contents, the CYVIC provides a measure of four types of cybervictimization and four additional indicators, which allows a more accurate analysis of the problem, its prevalence, risk factors, and the effect of interventions, in comparison with most questionnaires, which offer a single general cybervictimization score. In comparison with the few questionnaires that provide specific measures of different types of cybervictimization, the CYVIC offers some new features. The CYVIC provides a specific measure of visual cybervictimization with a sexual component, related to *sexting* and *sexortion*, separate from other forms of visual cybervictimization related to teasing and happy slapping. None of the reviewed questionnaires offers this possibility. In addition, the CYVIC offers a measure of online exclusion and another of impersonation, not very common in the reviewed questionnaires. These contributions, along with the possibility of obtaining score of verbal cybervictimization, more commonly included in this type of questionnaires, makes the CYVIC a complete, useful tool to identify and understand the problem.

In comparison with the CBV—the source of the final version of the CYVIC—, the removal of 10 items and the addition of 3 items allowed us to more clearly identify the model that best represents the internal structure of the questionnaire, to notably improve the fit of the model to the empirical data obtained, and the internal consistency of the factors, and, hence, to more clearly support the multidimensional nature of the construct.

This work has various theoretical and practical implications. From the theoretical point of view, it contributes to the conceptual delimitation of the construct: its subtypes and observable indicators. The results support the hypothesis of the multifactorial nature of cybervictimization, the relevance of the model proposed by Nocentini et al. (2010), and the suitability of the observable indicators included in the CYVIC. From the practical viewpoint, researchers, educators, and clinicians now have available a brief assessment tool, easy to apply, encode and analyze, economical in terms of time and cost when compared to other assessment methods, and with adequate metric guarantees. As it has been stated in Section 3, it is expected that this instrument will be useful

for the identification of adolescents being victims of cyberaggression; the estimation of cybervictimization prevalence; the analysis of risk factors and consequences associated with the problem; the design of intervention programs and the analysis of their effectiveness. To date, the CYVIC has been successfully used to determine prevalence rates and gender differences in cybervictimization (Álvarez-García, Barreiro-Collazo, & Núñez, 2017). Likewise, the relationship found in the present study between cybervictimization and the three external criteria analyzed suggests the desirability for intervention programs for the prevention and treatment of the cybervictimization in adolescence to include the prevention of internet risk behaviors and offline school victimization, as well as the development of self-esteem, from early stages.

6.2. Limitations and future directions

Therefore, this work is a contribution to the study of cybervictimization in adolescence. However, it has some limitations. We note mainly three. Firstly, the CYVIC is a self-report instrument, so the results may be affected by response bias such as distortions or social desirability (Navarro-González, Lorenzo-Seva, & Vigil-Colet, 2016). In the future, a sincerity scale could be included, or the results could be complemented with hetero-reports completed by peers or adults. Secondly, the questionnaire has been tested with a broad and randomly selected sample, but it was extracted from a specific population, limited to certain ages and geographical areas. Although we do not expect that the sample used in this study will differ significantly from others drawn from contexts similar to the one described in Subsection 4.1, any generalization of the findings of this study to other age groups or regions should be made with caution (Muñiz, Elosua, & Hambleton, 2013). With a view to the future, the validation of the test in other ages and cultural contexts would be of interest. Third and lastly, the convergent validity of the questionnaire was not analyzed in the present study. In future applications of the instrument, the correlation between the CYVIC scores and those from other tests designed to measure the same variables should be examined.

7. Conclusions

In recent years, different questionnaires for the assessment of cybervictimization in adolescence have been published. All the reviewed questionnaires have made a contribution to the study of cybervictimization. However, they present some significant methodological and content-related limitations that we have attempted

to overcome with the design and validation of the CYVIC. The instrument was validated in a wide sample of adolescents, greater than in most of the previously published questionnaires. The polychoric correlation matrix has been used to perform the analysis, as required by the characteristics of the analyzed data. Unlikely most of the previously published questionnaires, the CYVIC shows a multifactorial structure, which allows obtaining individual scores for specific types of cybervictimization. This instrument provides a measure of verbal cybervictimization, which is common in the few multidimensional questionnaires published to date, but it also includes a measure of online exclusion, impersonation, visual cybervictimization-teasing/happy slapping, and visual-sexual cybervictimization. These dimensions are not included in most of the previously validated questionnaires, despite of their theoretical and practical relevance. Results from the present study indicate that the CYVIC shows better goodness of fit indexes than the most of the previously published instruments.

The validation of the CYVIC contributes to the theoretical development of the field of study, as it helps to define cybervictimization, its types and observable indicators. In this sense, our findings support the pertinence of the typology purposed by Nocentini et al. (2010), although the indicators used in the present study differ from those included by the authors in their recent questionnaire (Palladino et al., 2015). From a practical perspective, the CYVIC offers a valid and reliable measure of cybervictimization, suitable to be administered in both applied and research contexts. This instrument allows professionals to detect adolescent being victims of cyberaggression; to analyze the prevalence of different types of cybervictimization; to define risk factors and consequences associated with the problem; to design, on the basis of this information, effective intervention programs; and to measure the impact of these programs. Regarding the design of intervention programs, results from the present study suggest that, for the prevention and treatment of cybervictimization, it is necessary to take into account, among other variables, those related to Internet risk behaviors, offline school victimization and self-esteem.

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Appendix A

Indicate how often you've been victim of the following situations, in the last **3 months**:

	1	2	3	4
1. Se han hecho pasar por mí en Internet publicando comentarios a mi nombre, como si fuese yo. [Someone has impersonated me on the Internet, posting comments under my name, as if they were me.]				
2. Me han hecho fotos o grabaciones de vídeo sin mi consentimiento con un contenido sexual o sugerente (por ej., en la playa, en un vestuario,...) y las han difundido a través del móvil o Internet. [Someone has taken pictures or video recordings of me with a sexual or suggestive content (e.g., on the beach, in a locker room,...) without my consent and they have disseminated them over the mobile phone or the Internet.]				
3. Han colgado en Internet fotos mías trucadas (modificadas), para hacerme daño o reírse de mí. [Someone has hung doctored (modified) photos of me on the Internet to harm me or laugh at me.]				
4. Me han echado o no me han aceptado en la lista de contactos de algún chat, red social (por ej., Tuenti) o programa de mensajería instantánea (por ej., Messenger, WhatsApp), sin haber hecho nada, sólo por ser yo. [I was kicked out or not accepted on some chat list, social network contact list (e.g., Tuenti) or instant messaging program (e.g., Messenger, Whatsapp), without having done anything, just for being me.]				
5. He recibido llamadas a mi móvil, que no contestan, supongo que para fastidiar. [I have received calls on my mobile that are not answered, I guess to annoy me.]				

(continued on next page)

(continued)

1 2 3 4

6. Han colgado en Internet fotos o vídeos reales comprometidos, sin mi permiso, para hacerme daño o reírse de mí. [Someone has hung real compromising photos or videos of me on the Internet without my permission, to harm me or make fun of me.]
7. He recibido llamadas para insultarme o burlarse de mí. [I have received calls insulting me or making fun of me.]
8. Se han burlado de mí con comentarios ofensivos o insultantes en las redes sociales. [Someone has made fun of me with offensive or insulting comments on social networks.]
9. Han difundido sin mi permiso a través del teléfono móvil o Internet imágenes o vídeos míos comprometidos (de tipo sexual, sugerente o insinuante), que yo mismo/a había hecho. [Someone has disseminated, without my permission, via mobile phone or Internet, compromising images or videos of me (of a sexual, suggestive, or insinuating nature) that I had taken.]
10. Me han pegado, lo han grabado y luego lo han difundido. [I have been beaten, and others have recorded it and then disseminated it.]
11. He recibido insultos a través de mensajes cortos de texto (sms) o programas de mensajería instantánea (por ej., *WhatsApp*). [I have received insults through short text messages (sms) or instant messaging programs (e.g., *WhatsApp*).]
12. Se han hecho pasar por mí en *Twitter*, *Tuenti*..., creando un falso perfil de usuario (foto, datos personales,...) con el que se me ha insultado o ridiculizado. [I have been impersonated in *Twitter*, *Tuenti*, ... creating a false user profile (photo, personal details,...) with which I was insulted or ridiculed.]
13. Se han hecho quejas falsas sobre mí en algún foro, red social o juego on-line, que han hecho que me expulsasen. [Someone has made false complaints about me in some forum, social network, or online game, which have caused me to be expelled.]
14. Me han presionado para hacer cosas que no quería (haya accedido finalmente a hacerlas o no), amenazándome con difundir conversaciones o imágenes íntimas mías. [I have been pressured to do things that I didn't want to (whether or not I finally agreed to do them), threatening me with disseminating my intimate conversations or images.]
15. Me han obligado a hacer algo humillante, lo han grabado y luego lo han difundido para burlarse de mí. [They have forced me to do something humiliating, they have recorded it, and then disseminated it to ridicule me.]
16. Se ponen de acuerdo para hacerme el vacío (ignorar me) en las redes sociales. [They agree to ignore me on the social networks.]
17. He recibido llamadas anónimas, para amenazarme o atemorizarme. [I have received anonymous phone calls, to threaten me or intimidate me.]
18. Alguien que ha conseguido mi contraseña ha enviado mensajes molestos a algún conocido, como si hubieses sido yo, para meterme en líos. [Someone who has gotten my password has sent annoying messages to someone I know, as if it were me, to get me into trouble.]
19. Se han publicado rumores falsos sobre mí en alguna red social. [There have been false rumors about me on some social network.]

1 = Never; 2 = Rarely; 3 = Often; 4 = Always.

References

- Aboujaoude, E., Savage, M. W., Starcevic, V., & Salame, W. O. (2015). Cyberbullying: Review of an old problem gone viral. *Journal of Adolescent Health, 57*(1), 10–18. <http://dx.doi.org/10.1016/j.jadohealth.2015.04.011>.
- Álvarez-García, D., Barreiro-Collazo, A., & Núñez, J. C. (2017). Cyberaggression among Adolescents: Prevalence and gender differences. *Comunicar, 50*, 89–97. <http://dx.doi.org/10.3916/C50-2017-08>.
- Álvarez-García, D., Dobarro, A., Álvarez, L., Núñez, J. C., & Rodríguez, C. (2014). La violencia escolar en los centros de Educación Secundaria de Asturias desde la perspectiva del alumnado [School Violence in Secondary Schools in Asturias from the Perspective of Students]. *Educación XXI, 17*(2), 337–360. <http://dx.doi.org/10.5944/educxx1.17.2.11494>.
- Álvarez-García, D., Dobarro, A., & Núñez, J. C. (2015). Validez y fiabilidad del Cuestionario de Cibervictimización en estudiantes de Secundaria [Validity and reliability of the Cybervictimization Questionnaire in Secondary students]. *Aula Abierta, 43*(1), 32–38. <http://dx.doi.org/10.1016/j.aula.2014.11.001>.
- Álvarez-García, D., Núñez, J. C., Dobarro, A., & Rodríguez, C. (2015). Risk factors associated with cybervictimization in adolescence. *International Journal of Clinical and Health Psychology, 15*, 226–235. <http://dx.doi.org/10.1016/j.ijchp.2015.03.002>.
- Bentler, P. M. (2014). *EQS 6.2 for windows (build 107)- structural equation modeling software*. Encino, CA: Multivariate Software.
- Beran, T., & Li, Q. (2007). The relationship between cyberbullying and school bullying. *The Journal of Student Wellbeing, 1*(2), 15–33.
- Berne, S., Frisén, A., Schultze-Krumbholz, A., Scheithauer, H., Naruskov, K., Luik, P., et al. (2013). Cyberbullying assessment instruments: A systematic review. *Aggression and Violent Behavior, 18*(2), 320–334. <http://dx.doi.org/10.1016/j.avb.2012.11.022>.
- Betts, L. R., Houston, J. E., & Steer, O. L. (2015). Development of the multidimensional peer victimization scale—revised (MPVS-R) and the multidimensional peer bullying scale (MPVS-RB). *The Journal of Genetic Psychology, 176*(2), 93–109. <http://dx.doi.org/10.1080/00221325.2015.1007915>.
- Bollen, K. A. (1989). *Structural equations with latent variables*. New York: John Wiley & Sons.
- Bonanno, R. A., & Hymel, S. (2013). Cyber bullying and internalizing difficulties: Above and beyond the impact of traditional forms of bullying. *Journal of Youth and Adolescence, 42*, 685–697. <http://dx.doi.org/10.1007/s10964-013-9937-1>.
- Brown, T. A. (2015). *Confirmatory factor analysis for applied research* (2nd ed.). New York, NY: Guilford Press.
- Brown, C. F., Demaray, M. K., & Secord, S. M. (2014). Cyber victimization in middle school and relations to social emotional outcomes. *Computers in Human Behavior, 35*, 12–21. <http://dx.doi.org/10.1016/j.chb.2014.02.014>.
- Buelga, S., Cava, M. J., & Musitu, G. (2012). Validación de la Escala de Victimización entre Adolescentes a través del Teléfono Móvil y de Internet [Validation of the Scale of Victimization among Adolescents through the Mobile Phone and the Internet]. *Revista Panamericana de Salud Pública, 32*(1), 36–42.
- Calvert, C. (2015). Revenge porn and freedom of Expression: Legislative pushback to an online weapon of emotional and reputational destruction. *Fordham Intellectual Property, Media and Entertainment Law Journal, 24*(3), 673–702.
- Çetin, B., Yaman, E., & Peker, A. (2011). Cyber victim and bullying scale: A study of validity and reliability. *Computers & Education, 57*, 2261–2271. <http://dx.doi.org/10.1016/j.compedu.2011.06.014>.
- Chang, F. C., Lee, C. M., Chiu, C. H., Hsi, W. Y., Huang, T. F., & Pan, Y. C. (2013). Relationships among cyberbullying, school bullying, and mental health in Taiwanese adolescents. *Journal of School Health, 83*(6), 454–462.
- IBM Corp. (2012). *SPSS statistics for windows, version 21.0*. Armonk, NY: IBM Corp.
- Del Rey, R., Casas, J. A., Ortega-Ruiz, R., Schultze-Krumbholz, A., Scheithauer, H., Smith, P., et al. (2015). Structural validation and cross-cultural robustness of the European cyberbullying intervention project questionnaire. *Computers in Human Behavior, 50*, 141–147. <http://dx.doi.org/10.1016/j.chb.2015.03.065>.
- Del Rey, R., Elípe, P., & Ortega-Ruiz, R. (2012). Bullying and cyberbullying: Overlapping and predictive value of the co-occurrence. *Psicothema, 24*(4), 608–613.
- Drouin, M., Ross, J., & Tobin, E. (2015). Sexting: A new, digital vehicle for intimate partner aggression? *Computers in Human Behavior, 50*, 197–204. <http://dx.doi.org/10.1016/j.chb.2015.04.001>.
- Fernández-Montalvo, J., Peñalva, A., & Irazabal, I. (2015). Internet use habits and risk behaviours in preadolescence. *Comunicar, 44*, 113–120. <http://dx.doi.org/10.3916/C44-2015-12>.
- Flores, J. (2015). Sexting: Teens, sex, smartphones and the rise of sextortion and gender based digital violence. In S. Cortesi, & U. Gasser (Eds.), *Digitally connected: Global perspectives on youth and digital media* (pp. 22–25). Cambridge, MA: Harvard University - Berkman Center for Internet & Society.
- Gómez-Guadix, M., Orue, I., & Calvete, E. (2013). Evaluation of the cognitive-behavioral model of generalized and problematic Internet use in Spanish adolescents. *Psicothema, 25*(3), 299–306. <http://dx.doi.org/10.7334/psicothema2012.274>.
- Gómez-Guadix, M., Villa-George, F., & Calvete, E. (2014). Psychometric properties of the cyberbullying questionnaire (CBQ) among Mexican adolescents. *Violence and Victims, 29*(2), 232–247. <http://dx.doi.org/10.1891/0886-6708.VV-D-12-00163R1>.
- Garaigordobil, M. (2011). Prevalence and consequences of cyberbullying: A review. *International Journal of Psychology and Psychological Therapy, 11*(2), 233–254.
- Garaigordobil, M. (2015). Psychometric properties of the cyberbullying test, a screening instrument to measure cybervictimization, cyberaggression, and cyberobservation. *Journal of Interpersonal Violence, 19*, 1–21. <http://dx.doi.org/10.1177/0886260515600165>.
- Hinduja, S., & Patchin, J. W. (2015). *Bullying beyond the schoolyard* (2nd ed.). Thousand Oaks, CA: Corwin.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal, 6*(1), 1–55. <http://dx.doi.org/10.1080/>

- 10705519909540118.
- Hunt, C., Peters, L., & Rapee, R. M. (2012). Development of a measure of the experience of being bullied in youth. *Psychological Assessment*, 24(1), 156–165.
- Izquierdo, I., Olea, J., & Abad, F. J. (2014). Exploratory factor analysis in validation studies: Uses and recommendations. *Psicothema*, 26(3), 395–400. <http://dx.doi.org/10.7334/psicothema2013.349>.
- Jiménez, A. E., Castillo, V. D., & Cisternas, L. C. (2012). Validación de la Escala de Agresión entre Pares, y subescala de Agresión Virtual en escolares chilenos [Validation of the Peer Aggression Scale and the Virtual Aggression subscale in Chilean students]. *Revista Latinoamericana de Ciencias Sociales, Niñez y Juventud*, 10(2), 825–840.
- Juvonen, J., & Gross, E. F. (2008). Extending the school grounds? - Bullying experiences in cyberspace. *Journal of School Health*, 78(9), 496–505. <http://dx.doi.org/10.1111/j.1746-1561.2008.00335.x>.
- Klettke, B., Hallford, D. J., & Mellor, D. J. (2014). Sexting prevalence and correlates: A systematic literature review. *Clinical Psychology Review*, 34(1), 44–53. <http://dx.doi.org/10.1016/j.cpr.2013.10.007>.
- Lam, L. T., & Li, Y. (2013). The validation of the E-Victimisation Scale (E-VS) and the E-Bullying Scale (E-BS) for adolescents. *Computers in Human Behavior*, 29, 3–7. <http://dx.doi.org/10.1016/j.chb.2012.06.021>.
- Lloret-Segura, S., Ferreres-Traver, A., Hernández-Baeza, A., & Tomás-Marco, I. (2014). El análisis factorial exploratorio de los ítems: Una guía práctica, revisada y actualizada [exploratory item factor analysis: A practical guide revised and updated]. *Anales de Psicología*, 30(3), 1151–1169. <http://dx.doi.org/10.6018/analesps.30.3.199361>.
- Menesini, E., Nocentini, A., & Calussi, P. (2011). The measurement of cyberbullying: Dimensional structure and relative item severity and discrimination. *Cyberpsychology, Behavior, and Social Networking*, 14(5), 267–274. <http://dx.doi.org/10.1089/cyber.2010.0002>.
- Morelli, M., Bianchi, D., Baiocco, R., Pezzuti, L., & Chirumbolo, A. (2016). Not-allowed sharing of sexts and dating violence from the perpetrator's perspective: The moderation role of sexism. *Computers in Human Behavior*, 56, 163–169. <http://dx.doi.org/10.1016/j.chb.2015.11.047>.
- Muñiz, J., Elosua, P., & Hambleton, R. K. (2013). International test commission guidelines for test translation and adaptation: Second edition. *Psicothema*, 25(2), 151–157. <http://dx.doi.org/10.7334/psicothema2013.24>.
- Navarro-González, D., Lorenzo-Seva, U., & Vigil-Colet, A. (2016). How response bias affects the factorial structure of personality self-reports. *Psicothema*, 28(4), 465–470. <http://dx.doi.org/10.7334/psicothema2016.113>.
- Nocentini, A., Calmaestra, J., Schultze-Krumbholz, A., Scheithauer, H., Ortega, R., & Menesini, E. (2010). Cyberbullying: Labels, behaviours and definition in three European countries. *Australian Journal of Guidance & Counselling*, 20(2), 129–142.
- Ortega-Ruiz, R., & Núñez, J. C. (2012). Bullying and cyberbullying: Research and intervention at school and social contexts. *Psicothema*, 24(4), 603–607.
- Palladino, B. E., Nocentini, A., & Menesini, E. (2015). Psychometric properties of the Florence cyberbullying-cybervictimization scales. *Cyberpsychology, Behavior, and Social Networking*, 18(2), 112–119. <http://dx.doi.org/10.1089/cyber.2014.0366>.
- Palasinski, M. (2013). Turning assault into a “harmless prank”—teenage perspectives on happy slapping. *Journal of Interpersonal Violence*, 28(9), 1909–1923. <http://dx.doi.org/10.1177/0886260512469107>.
- Rios, J., & Wells, C. (2014). Validity evidence based on internal structure. *Psicothema*, 26(1), 108–116. <http://dx.doi.org/10.7334/psicothema2013.260>.
- Rose, Ch A., & Tynes, B. M. (2015). Longitudinal associations between cybervictimization and mental health among U.S. adolescents. *Journal of Adolescent Health*, 57(3), 305–312. <http://dx.doi.org/10.1016/j.jadohealth.2015.05.002>.
- Ruiz, M. A., Pardo, A., & San Martín, R. (2010). Modelos de ecuaciones estructurales [Structural equation models]. *Papeles del Psicólogo*, 31(1), 34–45.
- Sijtsma, K. (2009). On the use, misuse, and the very limited usefulness of Cronbach's Alpha. *Psychometrika*, 74(1), 107–120. <http://dx.doi.org/10.1007/s11336-008-9101-0>.
- Stewart, R. W., Drescher, Ch F., Maack, D. J., Ebesutani, Ch, & Young, J. (2014). The development and psychometric investigation of the Cyberbullying Scale. *Journal of Interpersonal Violence*, 29(12), 2218–2238. <http://dx.doi.org/10.1177/0886260513517552>.
- Sumter, S. R., Valkenburg, P. M., Baumgartner, S. E., Peter, J., & Van der Hof, S. (2015). Development and validation of the multidimensional offline and online peer victimization scale. *Computers in Human Behavior*, 46, 114–122. <http://dx.doi.org/10.1016/j.chb.2014.12.042>.
- Tokunaga, R. S. (2010). Following you home from school: A critical review and synthesis of research on cyberbullying victimization. *Computers in Human Behavior*, 26, 277–287. <http://dx.doi.org/10.1016/j.chb.2009.11.014>.
- Topcu, Ç., & Erdur-Baker, Ö. (2010). The revised cyber bullying inventory (RCBI): Validity and reliability studies. *Procedia Social and Behavioral Sciences*, 5, 660–664. <http://dx.doi.org/10.1016/j.sbspro.2010.07.161>.
- Tsitsika, A., Janikian, M., Wójcik, S., Makaruk, K., Tzavela, E., Tzavara, C., et al. (2015). Cyberbullying victimization prevalence and associations with internalizing and externalizing problems among adolescents in six European countries. *Computers in Human Behavior*, 51, 1–7. <http://dx.doi.org/10.1016/j.chb.2015.04.048>.
- Tynes, B. M., Rose, Ch A., & Williams, D. R. (2010). The development and validation of the online victimization scale for adolescents. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 4(2), article 1 <http://cyberpsychology.eu/view.php?cisloclanku=2010112901&article=1>.
- Van Geel, M., Vedder, P., & Tanilon, J. (2014). Relationship between peer victimization, cyberbullying, and suicide in children and adolescents. A meta-analysis. *JAMA Pediatrics*, 168(5), 435–442. <http://dx.doi.org/10.1001/jamapediatrics.2013.4143>.
- Wolak, J., & Finkelhor, D. (2011). *Sexting: A typology*. Durham, NC: Crimes Against Children Research Center.
- Wright, M., & Li, Y. (2013). The association between cyber victimization and subsequent cyber aggression: The moderating effect of peer rejection. *Journal of Youth and Adolescence*, 42, 662–674. <http://dx.doi.org/10.1007/s10964-012-9903-3>.