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The family context in cybervictimisation: a systematic review and meta-analysis

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3 **The family context in cybervictimisation:**
4 **a systematic review and meta-analysis**
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7 **Abstract**
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10 The use of Information and Communication Technologies is clearly widespread
11 among adolescents from young ages. Although it poses a significant contribution at the
12 academic, social and emotional level, it can also involve a set of important risks, including
13 cyberbullying and, therefore, cybervictimisation. Previous studies have pointed out the
14 importance of family context, since parental control and family communication emerge as
15 contributors to this phenomenon. Therefore, the aim of the present study was to analyse the
16 influence of family communication in cybervictims and the moderating role of different
17 sociodemographic variables (age, gender, nationality and culture), as well as social,
18 emotional and personality variables. In this context, a meta-analysis was performed with a
19 random effects model, using a total meta-sample of 29,093 adolescents (mean age: 14.50
20 years) distributed in k=20 samples belonging to 9 studies on cybervictimisation published in
21 English in Q1 journals between 2015 and 2020. The results showed that family offensive
22 communication is related to cybervictimisation. This could be due to the fact that the affected
23 individuals often use social media to compensate for the deficiencies they perceive within
24 their families, as well as to obtain support, which increases their time spent on the Internet
25 and their exposure to this phenomenon. These findings highlight the need for family and
26 community interventions, not only school-based or individual interventions.
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50 **Keywords:** Bullying, family issues and mediators, Internet and abuse, Youth violence,
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Introduction

Cyberaggression and cyberbullying: definition, characteristics and prevalence

The social use of Information and Communication Technologies (ICT) implies an increase of communication and relational processes in the virtual scope. However, in the online world, as in the analogical world, there are also risks and aggressions (Álvarez-García et al., 2018). Cyberaggression and cyberbullying are two types of online violence carried out with the aim of harming a person or a group of persons through the use of ICT (Corcoran et al., 2015; Grigg, 2010; Pyżalski, 2012; Wachs et al., 2019). Nevertheless, while these terms are often used interchangeably in academic research, they represent distinct concepts (Kofoed & Staksrud, 2019; Rudnicki et al., 2022). Both concepts are somewhat vague, serving as an overarching label to encompass any online phenomena involving racial hate, aggression, and prejudice (Bliuc et al., 2018). Specifically, cyberbullying is commonly understood as encompassing repetitive, intentional acts of aggression carried out through electronic means against a victim who may have limited means to defend themselves (Aparisi et al., 2021). On the other hand, cyberaggression is a broader term that may include cyberbullying but is not limited to it. In fact, various other forms of cyber aggressive behaviours, such as impersonation, visual-sexuality, happy slapping and online exclusion, fall under the scope of cyberaggression (Rudnicki et al., 2022). Consequently, this study was specifically focused on cyberbullying.

In the cyberbullying phenomenon, victimisation of other people takes place from the anonymity and emotional distance provided by the screens (Dennehy et al., 2020), and it can happen any time. These risks can occur either as a one-time occurrence or persistently over

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3 time. In both cases, the victim becomes involved in a situation with multiple consequences in
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5 different areas of their life. These two realities, cyberbullying and cybervictimisation, pose
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7 an increasing worldwide problem that affects a considerable number of children and
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9 adolescents of increasingly younger ages (Aboujaoude et al., 2015; Betts et al., 2017; Baldry
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11 et al., 2018).
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15 Such behaviours have a negative psychological impact on their peers, affecting or
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17 destructing their social networks, which is a very important element at these ages. Degrading
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19 videos in WhatsApp, threats in Twitter, dissemination of images shared without consent and
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21 offensive comments in forums and social networks such as Instagram and TikTok are some
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23 examples of this cyberbullying (Boniel-Nissim & Sasson, 2018; González-Cabrera et al.,
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25 2020). As a response to these attacks, the victim may choose to reduce the use they make of
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27 such devices and/or close their social networks, in order to avoid the problem (Myers &
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29 Cowie, 2019). The victim may also continue using these devices/networks as they did before
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31 suffering cyberbullying or increase the time of exposure as an emotional refuge
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33 (Machimbarrena et al., 2019). It is important to take into account that youth, already known
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35 as digital natives (or born in the digital era), use social networks not only as mere
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37 communication tools, but also as cultural, leisure or entertainment elements (Ren et al.,
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39 2022). In this sense, cybervictims can focus on online dynamics as a means of evasion from
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41 or reduction of the discomfort caused by the cyberattack (Boniel-Nissim & Sasson, 2018;
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43 Sharif & Hoque, 2022). Similarly, social networks can favour the creation of profiles adjusted
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45 to their idealised self, allowing them to present themselves to the community as they wish to
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47 be perceived (Buelga et al., 2017).
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55 Regarding the prevalence of cybervictimisation, it is difficult to specify it, due to the
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57 great heterogeneity of results. For instance, rates ranging from 1.9% to 84% and from 14% to
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3 57.7% have been reported by Camerini et al. (2020) and Zhu et al. (2021), respectively.
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5 However, the results show a higher rate of cybervictims than cyberbullies, which appears to
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7 be a common element in numerous studies (Henares-Montiel et al., 2022; Larrañaga et al.,
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9 2018; Quintana-Orts & Rey, 2018; Vale et al., 2018).
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13 **Factors involved in cybervictimisation**

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16 Many variables are evaluated when analysing cybervictimisation. Some studies
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18 (Aboujaoude et al., 2015; Buelga et al., 2015) report that, with increasing age and autonomy,
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20 the rates of cyberbullying increase and, consequently, the risk of being a cybervictim also
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22 increases. This phenomenon seems to be related to the effects of disinhibition and empathy
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24 (Wang et al., 2021), which strengthen the emotional detachment and indifference between the
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26 aggressor and the victim (Kowalski et al., 2014; Zych et al., 2016). However, other studies
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28 concluded that age was not relevant (Hood & Duffy, 2018; Katz et al., 2019; Livazovic &
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30 Ham, 2019), with some authors even stating that cyberbullying decreases with increasing age
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32 (Giménez-Gualdo et al., 2015; Myers & Cowie, 2019; Slonje et al., 2013). Another study
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34 variable is gender, where, once again, heterogeneous results are found. Most studies indicate
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36 that the rate of cybervictims is higher in women than in men (Evangelio et al., 2022;
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38 Larrañaga et al., 2016; Mishna et al., 2012; Zych et al., 2016). This could be due to the fact
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40 that men present greater impulsiveness and lower empathy, whereas women are less likely to
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42 perpetrate violent acts (Christov-Moore et al. 2014; Mestre-Escriva et al., 2009). Moreover, a
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44 recent study has demonstrated that girls show poor self-concept clarity, stronger fatalism, and
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46 low levels of presence of meaning in life, which are all related to cybervictimisation (Geng et
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48 al., 2022). However, other studies point out that gender is an irrelevant variable (Álvarez-
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50 García et al., 2018; Katz et al., 2019; Tokunaga, 2010; Smith et al., 2008).
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59 **Consequences**

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There are a set of personal, school (peer relationships), peer coexistence and family relation factors that are postulated as differential factors (Álvarez-García et al., 2018; Fulantelli et al., 2022). The social and affective consequences that cybervictims encounter increase the complexity of the intervention. In fact, the scientific evidence shows the difficulty of carrying out effective educational interventions (Ng et al., 2022) and the seriousness of the emotional and social aftereffects for the victims, and even for their families (Álvarez-García et al., 2018; Buelga et al., 2017). Cybervictims present rates of internalising psychological and psychosocial problems that affect their well-being, their psychological adjustment and their quality of life (Boniel-Nissim & Sasson, 2018; Gonzalez-Cabrera et al., 2020). The most frequent consequences include rage, frustration, academic problems, social anxiety, sadness and/or depression and emotional problems (Baier et al., 2019; Copp et al., 2021; Ivazovic & Ham, 2019; Yang et al., 2021).

Importance of family context

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In this line, there are a set of precipitating factors to suffer cyberbullying, such as difficulties in socioemotional skills (Hemphill et al., 2012; Livazovic & Ham, 2019) and living in stressful environments (Boniel-Nissim & Sasson, 2018). Another essential element, both protective and catalytic, is family. A positive intrafamily communication, based on assertiveness and understanding, has shown to be a protective element in the victim (Boniel-Nissim & Sasson, 2018; Larrañaga et al., 2016; Soh et al., 2017). Similarly, an upbringing based on reflective and empathetic behaviour is regarded as a protective element (Álvarez-García et al., 2018), whereas an authoritarian style is related to high rates of cybervictimisation (Garaidordobil & Navarro, 2022; Moreno-Ruiz et al., 2019). Furthermore, some studies point out both its irrelevance and the opposite (Hood & Duffy, 2018; Kokkinos et al., 2016; Rajendran et al., 2016), and other studies associate the *laissez faire* style with

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3 high victimisation rates (Baldry & Farrington, 2007; Gómez-Ortiz et al., 2014; Kaufmann &
4 Charney, 2000). In line with the above mentioned, permissive and overprotective parents may
5 prevent their children from developing basic social skills or even their capacity to set
6 boundaries and defend themselves (Charalampou et al., 2018; Dehue et al., 2012).
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14 Lastly, it is important to highlight the relevance of parental control over the use of the
15 Internet, which is considered to be a key variable when interacting in digital media (Katz et
16 al., 2019; Laurin et al., 2015). Thus, there is a strong relationship between the application of
17 restrictive and punitive behaviours on ICT and a high rate of cyberbullying (Boniel-Nissim &
18 Sasson, 2018; Li et al., 2016). Likewise, an irresponsible control is also associated with a
19 high rate of cyberbullying (Katz et al., 2019), whereas the knowledge of the parents about the
20 activities of their children on the Internet and their support in the resolution of conflicts
21 reduces the rates of both cybervictimisation and cyberbullying (Elsaesser et al. 2017; Hood &
22 Duffy, 2018; Katz et al., 2019).
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34 35 **Research objective** 36

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38 In this context, the mentioned variables are of vital importance, as the consequences
39 derived from bullying situations can be partially alleviated through the development of
40 actions that promote proper emotional and social development, fostering positive
41 relationships at both the intrapersonal and interpersonal levels.
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49 Particularly, it is essential to highlight the crucial role played by these variables and
50 the influence of families in cyber victimization situations, as well as to investigate whether
51 family relationships, communication patterns, and parental control can mitigate or exacerbate
52 the risk of cyber victimisation and the potential psychological, emotional, and social effects
53 that may arise from it.
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3 Therefore, the aim of this study was to analyse the influence of family communication
4 in victims of cyberbullying through ICT and the moderating role of different
5 sociodemographic, social, emotional and personality variables previously identified in
6 scientific literature.
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13 Consequently, the following hypotheses were established:
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16 H1. There is a significant relationship between the role of family communication and
17 the role of cyberbullying victims.
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22 H2. Sociodemographic variables are of small relevance.
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25 **Method**

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28 The meta-analysis was conducted following the manual for systematic reviews of
29 Cochrane in Higgins & Green (2011) and PRISMA (2021). The inclusion and exclusion
30 criteria were established following the guidelines of Botella & Sánchez (2015) and Moreau &
31 Gamble (2020). The following inclusion criteria were set:
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38 - Sample age: adolescents aged between 11.5 and 18 years. The reason
39 for selecting this age range is that, according to meta-analyses on the age variable in
40 cyberbullying, the onset of cyberbullying begins at 11-12 years of age and decreases
41 significantly around the age of 18 years (Holfeld & Mishna, 2019).
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46 - Methodological nature of the articles: empirical and quantitative
47 (Izquierdo-Martínez, 2007).
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52 - Publication date: The search was performed in 2020 and the last five
53 years were searched in order to obtain the most recent published papers (between
54 2015 and 2020), according to recommendations from Borestein et al. (2009).
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- Methodological rigour. This review gathered studies with recognised prestige, published in Q1 and Q2 journals (Scimago Journal & Country Rank) or journals indexed in JCR (Egger et al., 2001).
- Psychometric tests assessed through academic publications (Izquierdo-Martínez, 2007).
- Language: studies published in English.

The following exclusion criteria were set:

- Adolescent population with special educational needs (SEN) as their main trait. However, this review accepted those studies in which the SEN students posed a standard measure according to the normal curve, since students with educational needs may experience higher rates of cyberbullying, which can bias the results (Humphrey & Symes, 2010).
- Studies without quantitative data and with methodological errors and instruments that were either inadequately assessed or not adapted to the participating population (Hunter & Schmidt, 2004; Friese & Frankenbach, 2020).

The search strategy followed the parameters of Botella & Gambara (2002) and was carried out from three databases: PsychINFO, WOS and Science Direct. The search was conducted in April and May 2021. After successive search strategies, it was concluded that the Boolean action that best comprised the terminology related to the research question was: “cyberbullying AND family style OR parental style OR family communication” (see Figure 1). These searches produced a large number of studies. With the aim of narrowing down the results, the following measures were established.

- PsychINFO: “keywords”, “peer reviewed journal”, “human”, “English”, “test and measurement”, 2015-2020.

- WOS: “title,” and type of “article”, “open Access”, 2015-2020.
- Science Direct: “title, abstract, keywords”, “article”, “open Access”, 2015-2020

FIGURE 1 ABOUT HERE

The selection of studies was conducted according to the criteria established by the manual of systematic reviews of Cochrane in Higgins & Green (2011) and PRISMA (2021), which describe the criteria for the eligibility of the studies that make up the sample.

The coding of the studies was performed manually. All the articles produced by the search were systematically reviewed, and those that met the abovementioned inclusion criteria were selected. A determinant aspect that significantly reduced the sample was the criterion of psychometric test assessment, since numerous studies did not show clear references to the authorship of the instrument or used ad-hoc questionnaires. Furthermore, the criterion of methodological rigour led to the rejection of a large number of studies, since unacceptable errors were detected in the measurement of the instruments, with the most frequent case being the fact that the means and standard deviations of the total scores were not properly provided.

The statistical transformation to Fisher’s Z values (Martin-Andrés & Luna del Castillo, 2004) was carried out using the statistical software CMA. This programme was used to perform publication bias tests (Egger) to guarantee the quality and reliability of the data. We also calculated statistics about heterogeneity, meta-regressions and comparison of models, and obtained figures such as Forest Plots, Funnel Plots and meta-regression Fisher’s Z graphs.

Results

Demographic description

This study included a total of 29,093 participants distributed in $k=20$ samples belonging to 9 studies. Regarding gender, 14,342 of the participants were women, 14,161 were men, and 72 adolescents did not indicate their sex or gender (Gonzalez-Cabrera et al., 2020). The average age of the sample was 14.50 years.

It is important to highlight the heterogeneity in the sample sizes. The smallest sample size was 175 participants (Hood & Duffy, 2018; Katz et al., 2019), whereas the largest sample size was 12,285 participants (Gonzalez-Cabrera et al., 2020). With regard to culture, social anthropology highlights the need to attend to cultural diversity (Molano, 2007). With respect to geographic dispersion, (about the total samples) 0.6% were from Australia, 1.78% from Croatia, 5.62% from Cyprus, 11.51% from Israel, and 80.48% from Spain. That is, the major culture was European, with 87.89% of the total sample, followed by Euro-Asian culture (11.51%) and Australian culture (0.6%). The information obtained was self-reported by the adolescents, thereby representing their perception of family communication and of the rest of the variables assessed.

TABLE 1 ABOUT HERE

Statistical analyses

Due to their diversity, the statistics and measures had to be converted to Fisher's Z -values (Martin-Andrés & Luna del Castillo, 2004), to ensure that they could all be compared.

The Forest plot in Figure 2 shows a small effect size ($r=.16$, $p<.000$, 99% CI: lower limit=.14; upper limit=.18). It should be noted that approximately half of the sample has negative values, while the other half of the meta-sample has positive values. In other words,

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3 we are faced with a difficult duality to answer, since the samples with a negative view of the
4 situation are very similar to those with a positive view. Consequently, it is necessary to
5 explore the causes of this duality. Presenting these conversations responds to the “open
6 materials” criterion of Moreau & Gamble (2020).
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13 FIGURE 2 ABOUT HERE
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16 Regarding the heterogeneity of the sample, according to Cochrane in Higgins &
17 Green (2011), there is high diversity (Table 2). The Q statistic of DerSimonian and Laird
18 (1986) ($Q=33.83$, $df=19$, $p=.001$) produced high variability, which posed the rejection of the
19 homogeneity hypothesis. Consequently, there is a high sample variability among the analysed
20 studies, which could be due to the origin of the samples, the assessment instrument used,
21 gender, etc.
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31 TABLE 2 ABOUT HERE
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34 Statistic $I^2=43.84\%$ explains that 43.84% of the variability is caused by the
35 heterogeneity of the sample and the diversity of methodologies and procedures used, as well
36 as the sociodemographic characteristics of the participants (Sterne et al., 2011). Therefore, it
37 is necessary to perform a meta-regression and a comparative study of models, since there is
38 evidence of moderating variables with high statistical values. This supports the hypothesis of
39 high heterogeneity, which is characteristic of studies conducted in human populations
40 (Higgins et al., 2003). Moreover, it is necessary to follow the Random Effects model (Bonett
41 & Price, 2015; Martín-Andrés & Luna del Castillo, 2004). Although one of the inclusion and
42 exclusion criteria was to guarantee the quality and reliability of the data, it was considered
43 necessary to carry out an Egger’s test, with 99% reliability, in order to analyse the bias effect
44 (Botella & Sánchez, 2015; Botella & Gambará 2002). The results showed the absence of
45 publication bias, with 99% confidence interval (p -value 1 tailed=.06; p -value 2 tailed=.12)
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3 (Egger et al., 1997) (Table 3). Moreover, it is necessary to point out that the standard error
4 was not high ($SE = .53$), indicating proximity to the regression line and confirming the
5 absence of publication bias (Martín-Andrés & Luna del Castillo, 2004).
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13 Although the diversity and heterogeneity evidenced in the Q and I^2 statistics (Table 2)
14 could pose the existence of extreme data, the narrow confidence interval (.14 - .18) should
15 narrow down such heterogeneity. These data are in line with the Funnel Plot (Figure 3),
16 which confirms the analysed variability and heterogeneity. In this sense, it is necessary to
17 highlight an aspect that could explain the existence of extreme data, in addition to the
18 diversity of the data. Conversion to Fisher's Z values, despite being accepted in this type of
19 methodology (Martin-Andrés & Luna del Castillo, 2004), poses a risk to the values of $x > 0.5$.
20 This is due to the use of Student's T curve, which implies that these measures can be
21 distorted, moving away from the mean values, compared to the normal curve. Therefore,
22 despite the methodological quality, the studies of Katz et al. (2019) and Charalamopoulos et al.
23 (2018) are far from the inside of the cone.
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41 42 **Moderating variables and meta-regression analysis** 43

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45 The articles that make up the sample show the existence of moderating variables. A
46 meta-regression (Jak & Cheung, 2019) and a comparison of models could explain the high
47 variability of results (Botella & Sánchez, 2015). However, most of the articles do not address,
48 as the main topic, family communication and cyberbullying in victims. Consequently, the
49 amount of moderating variables that can be statistically and quantitatively studied is reduced.
50 Moreover, it is worth indicating that, in the entire sample, the data about communication
51 between parents and children are provided through the perspective of the children, whereas
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3 communication is addressed as a means of parental control through which the parents
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5 establish a communication channel with their children (cyberbullying victims) about new
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7 technologies.
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11 The model comparison test produced 8 models based on the moderating variables: age
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13 (model 2), gender (men, model 3), gender (women, model 4), country (model 5), culture
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15 (model 6), communication style (model 7) and family bonds (model 8), as well as the simple
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17 model to compare (model 1). Although, in this case, the communication begins from the
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19 mother, father or both, some studies report differences in the established communication.
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21 Therefore, according to Borestein et al. (2009) and Jak & Cheung, (2019), model meta-
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23 regression and comparison is based on the variable “general communication” (the category in
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25 which they are analysed in general) for model 7 (family communication) and on the variable
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27 “both parents” (the category in which the studies do not differentiate parent gender) to
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29 determine the existence of differences between fathers and mothers for model 8 (family
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31 bond). Of these, only model 7 (communication styles) was significant. In this case, the
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33 differences in communication (perceived by the children) explain 45% of the variance, with a
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35 strongly significant p-value.
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41 TABLE 4 ABOUT HERE

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45 Meta-regressions were carried out to explore the non-dichotomous variables: country
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47 (model 5), geographic area (model 6), family communication style (model 7) and family
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49 bonds (model 8). In this sense, there were no differences between countries (model 5) or
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51 geographic areas (model 6); similarly, no differences were detected between mother
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53 communication (coefficient =-.02, SE= .02; Z=-1.01, p=.31) and father communication
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55 (coefficient =-.02, SE= .02; Z=-1.28, p=.19), with SET values (Q=2.11; df=2; p=.34).
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57 However, there were significant differences in the family communication model (model 7). In
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3 this sense, we found an important difference with respect to offensive communication,
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5 finding a negative relationship that differentiates from the rest of the communication styles in
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7 the families with children who are victims of cyberbullying (coefficient =-.06, SE= .02;
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9 $Z=2.30$, $p=.02$). Thus, we found that not only the communication style as a means of parental
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11 control explains 45% of the variance, but offensive styles present a different relationship with
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13 respect to the rest. To sum up, with the increasing rate of cybervictimisation, offensive
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15 communication decreases significantly. Similarly, without significant values, it was found
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17 that authoritarian, evasive and poor styles decrease, whereas positive styles increase, although
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19 very slightly and non-significantly. Therefore, it is necessary to review the literature
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21 following the PICO parameters of PRISMA (2021) to explain these findings.
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27 TABLE 5 ABOUT HERE
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30 Discussion 31

32 A large number of variables are analysed when addressing cybervictimisation. The
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34 main objective of this study was to analyse the influence of family communication on cyber-
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36 victims, controlling for potential moderating variables at the sociodemographic, social,
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38 emotional, and personality levels.
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42 Firstly, with regard to sociodemographic variables, one of the most widely studied is
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44 age. In the present study, no relationship was found between age and cyber-victims, while
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46 some studies have shown a positive association between age and cybervictimisation, with a
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48 greater proportion of victims in older ages (Kowalski & Limber, 2007). Nevertheless, other
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50 studies, such as those of Hood & Duffy (2018), Katz et al. (2019) and Livazovic & Ham
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52 (2019), did not find significant differences when evaluating the prevalence of victims,
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54 suggesting that age does not modulate this relationship. However, some authors have shown
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56 that, with increasing age, adolescents are more likely to engage in cyberbullying behaviour
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3 (Utomo, 2022). In this sense, in our sample, the average age was below 15 years, which could
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5 partially explain why no relationship was found, although it is important to note that new
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7 avenues of cyberbullying are emerging. Some countries regulate the use of social networks
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9 and do not allow children under 14 to register on them (European Union, 2016). However,
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11 many video games nowadays have a social networking component that can encourage
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13 cyberbullying and cyber victimisation (Makarova & Makarova, 2019; Przybylski, 2019).
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18 The relevance of gender in cyberbullying is unclear. In our study, gender has no
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20 influence on cyber-victimisation. However, a recent meta-analysis (Lozano-Blasco et al.,
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22 2023) points out that gender has a slight influence on cybervictimization, with women being
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24 the most affected. In this regard, some works report that women are more likely to be victims
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26 (Garaigordobil et al., 2016; Garaigordobil & Machimbarrena, 2019; Larrañaga et al., 2016;
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28 Zych et al., 2016; Buelga et al. 2017; Moreno-Ruiz, 2019; Gonzalez-Cabrera et al., 2020).
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30 Alternatively, other studies interpret that gender does not seem to be a statistically significant
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32 predictor of cybervictimisation (Katz et al., 2019; Álvarez-García et al., 2018; Tokunaga,
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34 2010). In our study, gender has no influence on cyber-victimisation, although the rise of
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36 technology promotes accessibility to electronic devices for both boys and girls. Therefore,
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38 these results may indicate a shift in the pattern of aggression, with a decrease in face-to-face
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40 interactions and an increase in relational aggression carried out online by boys, as social
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42 interactions are mostly mediated through technology (Bozzola, 2021). It is true that girls tend
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44 to exhibit indirect aggression, while boys conduct direct aggression (Card et al., 2008).
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46 However, there are other elements to consider. In this sense, although boys spend more hours
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48 on the Internet, girls are more aware of excessive use of the Internet (Liu et al., 2011). Liu et
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50 al. explain the importance of family communication, as parents should increase their
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52 involvement with their children, especially boys. More specifically, this author explains that
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3 the behaviours that should and should not be carried out ought to be reinforced at home
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5 (Willens et al., 2023).
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8 Regarding the geographical area, it was found that the variable is not related to the
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10 phenomenon. This fact may be due to the inclusion of zones that contain countries classified
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12 as High-Income countries, where continuous access to electronic devices and the Internet is
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14 expected. This undoubtedly contributes to the existence of cyber aggression. However, it is
15
16 important to highlight that the majority of studies conducted on this topic are carried out in
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18 middle and high-income countries, which can introduce a bias in the results they provide
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20 (Chudal et al., 2022; Zhu et al., 2021).
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25 With respect to the variables related to the time of use of the Internet, there is no
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27 consensus in the scientific evidence in terms of connection time and suffering from
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29 cyberbullying. In this sense, some studies point out that, with increasing time using the
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31 Internet, the exposure to cyberbullying, rejection and receiving offensive messages also
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33 increases (Festl & Quandt, 2014; Leung and Lee, 2012), whereas other studies do not find a
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35 direct relationship with cybervictimisation (Álvarez-García et al., 2018; Hood & Duffy,
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37 2018). However, there is consensus in the scientific evidence regarding the excessive use of
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39 the Internet by cybervictims as a means of evasion (Chaves-Álvarez et al., 2019; Lin, et al.,
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41 2020; Şimşek et al., 2019). Analogously, social networks allow adolescents to generate self-
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43 idealised profiles, hiding identity traits in an anonymity process that favours the appearance
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45 of a mixed role, where the role of cybervictim merges with that of cyberbully (Buelga et al.,
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47 2017).
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54 With respect to the family variables, the analysis was focused on two important
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56 factors: parental styles and parental control.
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3 In relation to the first factor, the results indicate that parental styles do not show a
4 significant relationship with cybervictimisation. However, there is a slight and nonsignificant
5 increase in positive parental styles and a decrease in evasive, authoritarian, or poor styles in
6 these situations. Previous research differs, as some studies showed that the authoritarian
7 parental style has been related to victimisation (Makri-Botsari & Karagianni, 2014;
8 Stavrinos, et al., 2015; Ortega-Baron et al., 2018), whereas other authors did not find a
9 relationship or even detected a lower probability of cybervictimisation when the parental
10 style was authoritarian (Hood & Duffy, 2018; Kokkinos et al., 2016; Rajendran et al., 2016).
11 On the other hand, the flexible style also predicts victimisation (Gómez-Ortiz et al., 2014),
12 since, by being more exposed to the cyberspace without supervision (Dehue et al., 2012),
13 they lack the strategies to defend themselves in cases of victimisation (Charalampou et al.,
14 2018). Nevertheless, the communication established within the family is a significant and
15 moderating variable. Although there are no differences in family communication based on
16 gender, i.e., between mothers and fathers, offensive family communication with children who
17 are victims of cyber aggression does play a determining role. Therefore, among all the
18 analysed variables, this style of communication by the family shows the strongest association
19 with cybervictimisation. This fact could be attributed to the association between a negative
20 family climate, characterised by offensive communication, and the perpetuation of
21 cybervictimisation behaviours. The affected individuals often use social media to compensate
22 for the deficiencies they perceive within their families, as well as to obtain support, which
23 increases their time spent on the Internet and their exposure to this phenomenon (Buelga et
24 al., 2017; Ortega et al., 2019).

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Lastly, some studies have found that the parents of cybervictims present lower
parental control over the use of the Internet, that is, the parents' knowledge about the
behaviour of their children in the Internet reduces the rates of cybervictimisation (Elsaesser et

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2
3 al., 2017; Hood & Duffy, 2018). This contradicts other studies, such as those conducted by
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5 Livazovic & Ham (2019), who did not find any relationship. Therefore, it seems important to
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7 teach the parents to monitor the use that their children make of the Internet (Hood & Duffy,
8
9 2018). More specifically, the children receive help from their parents to solve social problems
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11 when they are involved in a case of cybervictimisation (Katz et al., 2019).
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16 Another variable that is related to cyberbullying and cybervictimization is peer
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18 relationships. Rejection from peers and the lack of friends who support them is associated
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20 with victimisation. That is, the negative perceptions of the children toward the relationships
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22 with their classmates increase the possibility of victimisation (Bacchini et al., 2009;
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24 Sukkyung et al., 2008), whereas friendship and support from classmates act as a protective
25
26 measure against victimisation (Charalampous et al., 2018). Similarly, those students who
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28 report feeling connected to their school are less likely to be cybervictims (Cross et al., 2015;
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30 Livazovic & Ham, 2019).
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35 Moreover, although these variables were not analysed in this meta-analysis, it is also
36
37 essential to study socio-affective variables. Numerous studies have analysed
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39 cybervictimisation and its significant relationship with internalising psychological and
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41 psychosocial problems (Boniel-Nissim & Sasson, 2018), which affects psychological well-
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43 being and adjustment, as well as quality of life (Gonzalez-Cabrera et al., 2020).
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48 Cybervictimisation is associated with negative experiences, such as rage, frustration,
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50 academic problems, social anxiety, sadness and/or depression and emotional problems
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52 (Tomsa et al., 2013; Zalaquett & Chatters, 2014).
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55 The studies of Livazovic & Ham (2019) indicate that an adequate management and a
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57 correct control of socioemotional skills is a protective factor against being a cybervictim
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59 (Cocine et al., 2010; Hemphill et al., 2012). On the other hand, having little social skills and
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3 low social competence is associated with being a cybervictim (Livazovic & Ham, 2019). In
4
5 this regard, the communication style exhibited by the child can be crucial, as children who
6
7 have a passive communication style and low social skills are often targets of bullies.
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10 Similarly, the use of the Internet allows these children to express themselves freely when
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12 lacking social skills and eliminates fear, thereby increasing the risk of being victims of
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14 bullying due to their increased time spent using the Internet (Antoniadou et al., 2019;
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16 Demaray et al., 2021; Ding et al., 2020).
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20 These socioemotional responses can be compared to those found in studies about
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22 traditional bullying (Hobbs, 2009).
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26 Furthermore, having been a victim of offline abuse or a cybervictim is also a risk
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28 factor for being a cyberbully (Álvarez et al., 2018). In this line, adolescents who have been
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30 victims of offline bullying are more likely to become victims of cyberbullying and, as a
31
32 result, they themselves develop more inadequate and violent behaviours (Boniel-Nissim &
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34 Sasson, 2018). Studies such as those of Hood & Duffy (2018) report that the strongest
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36 predictor of participation in cyberbullying is having experienced cybervictimisation in
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38 oneself. This can be attributed to the observational learning of aggression, which is advocated
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40 by Bandura's Social Learning Theory (1978). According to this theory, individuals can learn
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42 new behaviours and attitudes by observing and modelling the behaviour of others, especially
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44 when they identify with them. Even though this theory refers to the need to observe
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46 behaviours, some authors such as Kokkinos et al. (2016), Buelga et al. (2017) and Mishna et
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48 al. (2012) state that, due to the effect of disinhibition and concealment of identity,
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50 cybervictims may be predisposed to participating in online retaliation attacks, which could
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52 explain why this double role (cybervictim-cyberbullying) is much more common in the
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54 virtual environment than in traditional bullying (Garaigordobil et al., 2016; Betts et al., 2017;
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56 Baldry et al., 2018).
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3 As a conclusion, the parenting communication style is crucial in cybervictimisation,
4 surpassing other moderating variables such as age or gender. These findings highlight the
5 need for family and community interventions, not only school-based or individual
6 interventions.
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13 **Limitations, future research and practical applications**

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16 Although the present work represents an important contribution to the understanding
17 of the phenomenon of cybervictimisation, it is not without limitations. Firstly, the meta-
18 sample shows a scientific divide between first-world countries and developing countries.
19 Thus, all the studies that met the inclusion criteria were European and/or Australian. This
20 poses a handicap to study the reality in other geographic areas, such as Africa, Asia and
21 America. Furthermore, it is important to consider that our sample is normative, although
22 certain groups, such as students with special educational needs, appear to experience higher
23 rates of cyberbullying. Therefore, we propose conducting a new meta-analysis to examine the
24 relationship between having learning difficulties or special needs and being a victim of
25 cyberbullying. Moreover, 86% of the sample came from a single article, despite the fact that
26 the meta-sample was composed of 20 samples from 9 different studies. This indicates the
27 importance of conducting international longitudinal studies that allow covering large
28 populations, to ensure that the samples are as representative as possible. Finally, given that
29 the search for articles was carried out in 2020, it is necessary to update the review and include
30 papers that also analyse the important role of COVID-19.
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51 Furthermore, cybervictimisation can start at younger ages, and there may be
52 variability in the prevalence and influence of such variables at other ages. In this sense, it is
53 proposed for future research to analyse the role of the family in early childhood and its
54 relationship with the phenomenon of cybervictimisation. Another important aspect to take
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3 into account in future studies is the diversity of cybervictimisation. In line with the above
4 mentioned, it would be interesting to study the role of the family in processes such as sexting,
5 sextortion, couple violence in social networks and other types of situations. Similarly, it is
6 also necessary to study the diversity of methods used in their measurement.
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13 In practical terms, the findings of this study contribute to clarifying the variables
14 related to family communication and cybervictimisation in adolescents. These results are
15 useful for the design and implementation of programmes that aim to prevent this problem in
16 the most effective way possible. For that reason, some potential implications of the findings
17 are provided. It is well known that family has a strong influence and plays a key role in
18 preventing cybervictimisation. It is important to emphasise the significance of
19 communication based on reflective, empathetic, participatory, and mutually respectful
20 behaviours, where aggression and attitudes that promote aggression are not tolerated.
21 Similarly, it is necessary to work on digital literacy, especially in the appropriate use of social
22 networks, instant messaging programmes, and platforms. These media enable immediate and
23 impulsive actions, as well as a lack of empathy, since the consequences of one's actions on
24 the victims are not witnessed. Therefore, it is necessary to implement prevention programmes
25 in educational institutions to address overexposure to ICT (Information and Communication
26 Technologies) and their misuse from early educational stages and provide training on the
27 risks of misuse of ICT. Similarly, it is essential to implement programmes for emotional
28 education to promote proper management of intrapersonal and interpersonal skills, fostering
29 empathy, respect, positive communication, and effective conflict resolution. It is important to
30 teach adolescents how to cope with possible social pressures from their peer groups,
31 establishing parent-school partnerships to promote democratic parenting styles with clear
32 rules and boundaries (avoiding authoritarian control) and positive communication. The way
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3 parents emotionally relate to and communicate with their children is a crucial variable in this
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5 prevention and intervention process.
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11 **Critical findings**

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14 1. The communication style as a means of parental control explains 45% of the variance,
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16 but offensive styles present a different relationship with respect to the rest. When the rate
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18 of cybervictimisation increases, offensive communication decreases significantly.
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21 2. Country or geographic area did not influence cybervictimisation
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24 3. Parental gender did not influence on cybervictimisation
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29 **Implications for practice, policy, and research**

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31 1. It is important to know what children are doing on the Internet.
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34 2. Family support is crucial in cyberbullying and cybervictimisation.
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37 3. It would be interesting to study the role of the family in processes such as sexting,
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39 sextortion, couple violence in social networks and other types of situations.
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51 **Authors biographies**

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Table 1.*Socio-demographic data of the sample.*

Authors	Age	SD Age	Sample	Men	Women	Country	Culture	Communication	Parental role
Álvarez-García et al. (2018)	14.01	1.39	3059	1556 *a	1503 *a	Spain	Europe	AAC = affection and communication as a measure of parenting control	Father and mother
Boniel-Nissim & Sasson (2018)a	14.19	1.34	1000	470 *c	530 *c	Israel	Euro-asia	Positive mother child communication	Father and mother
Boniel-Nissim & Sasson (2018)b	14.19	1.34	1000	470 *c	530 *c	Israel	Euro-asia	Positive father communication	Father and mother
Boniel-Nissim & Sasson (2018)c	14.19	1.34	1000	470 *c	530 *c	Israel	Euro-asia	Poor parent child communication	Father and mother
Charalampous et al. (2018)a	11.72	1.20	818	370 *c	448 *c	Cyprus	Euro-asia	Authoritarian style communication (part of authority-based educational style)	Father and mother
Charalampous et al. (2018)b	11.72	1.20	818	370 *c	448 *c	Cyprus	Euro-asia	Authoritarian style communication (part of authority-based educational style)	Father and mother
Gonzalez-Cabrera et al. (2020)*	14.69	1.73	12285	6032 *a	6181 *a	Spain	Europe	Autonomy and relationship with parents	Father and mother
Hood & Duffy (2018)	14.82	1.52	175	93 *a	82 *a	Australia	Oceania	Parenting control	Father and mother
Katz et al. (2019)a	13.25	0.81	175	86 *a	89 *a	Israel	Euro-asia	Perceived general parenting control style	Father and mother
Katz et al. (2019)b	13.25	0.81	175	86 *a	89 *a	Israel	Euro-asia	Perceived general parenting autonomy supportive style	Father and mother

Livazovic & Ham (2019)a	19	No data	259	57 *b	202 *b	Croatia	Europe	Quality of family relationships	Father and mother
Livazovic & Ham (2019)b	19	No data	259	57 *b	202 *b	Croatia	Europe	Parenting control	Father and mother
Buelga et al. (2017)a	14.52	1.62	1062	547 *a	515 *a	Spain	Europe	Open Communication mother (as a form of control of new technologies)	Mother
Buelga et al. (2017)b	14.52	1.62	1062	547 *a	515 *a	Spain	Europe	Offensive communication mother (as a form of control of new technologies)	Mother
Buelga et al. (2017)c	14.52	1.62	1062	547 *a	515 *a	Spain	Europe	Avoidant communication mother (as a form of control of new technologies)	Mother
Buelga et al. (2017)d	14.52	1.62	1062	547 *a	515 *a	Spain	Europe	Open Communication father (as a form of control of new technologies)	Father
Buelga et al. (2017)e	14.52	1.62	1062	547 *a	515 *a	Spain	Europe	Offensive communication father (as a form of control of new technologies)	Father
Buelga et al. (2017)f	14.52	1.62	1062	547 *a	515 *a	Spain	Europe	Avoidant communication father (as a form of control of new technologies)	Father
Ortega-Baron et al. (2018)a	14.5	1.62	849	438 *a	411 *a	Spain	Europe	Avoidant communication mother (as a form of control of new technologies)	Mother
Ortega-Baron et al. (2018)b	14.5	1.62	849	438 *a	411 *a	Spain	Europe	Avodiant communication father	Father

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3 All the studies present several samples. This is due to the fact that they are comparative, or longitudinal, studies. In order
4 to favour data transparency, a letter has been alphabetically assigned in order of appearance: a, b, c, etc., to each sample.
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6 *The sample presents 72 adolescents who did not provide their gender; 6032 were males and 6181 were females.
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8 *a. The research treated this variable as biological sex
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10 *b. The research treated this variable as cultural gender
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12 *c. The research talks about gender but uses terms such as male and female that refer to biological sex.
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For Peer Review

Table 2.*Heterogeneity statistics*

Model	Effect size and 99% interval			Test of null		Heterogeneity				Tau-squared		
				(2-Tailed)		Z-value	P-value	Q-value	Df (Q)	P-value	I-squared	Tau squared
Fixed	.17	.16	.18	30.06	<.00	33.83	19	.001	43.84	.001	.001	.000
Random	.16	.14	.18	17.46	<.00							

Table 3.*Egger's regression test*

Intercept	-.87
Standard error	.53
99% lower limit (2-tailed)	-1.99
99% upper limit (2-tailed)	.25
t-value	1.68
Df	18
P-value (1-tailed)	.06
P-value (2-tailed)	.12

Table 4.*Model comparison: Random effects (MM), Z-distribution, Fisher's Z*

Model name	TauSq	R ²	Q	df	p-value
Model 1 simple	.02	.00	.00	1	<.00
Model 2 age	.0007	.05	2.04	18	.15
Model 3 men	.0006	.12	.73	18	.39
Model 4 women	.0006	.09	.58	18	.44
Model 5 country	.0006	.17	3.02	18	.55
Model 6 culture	.0008	.18	1.43	17	.48
Model 7 communication	.004	.45	17.21	14	.01
Model 8 parental role	.0006	.21	2.11	17	.34

Table 5.*Meta-regression by parental style*

Covariate	Coefficient	Standard Error	99%Lower	99%Upper	Z-value	2-sided p-value
Intercept	.1878	.0145	.1593	.2162	12.93	.0000
communication style: authoritarian	-.0109	.0311	-.0718	.0499	-.35	.7247
communication style: evasive	-.043	.0237	-.0894	.0034	-1.82	.0694
communication style: offensive	-.0672	.0293	-.1245	-.0098	-2.3	.0217
communication style: poor	-.0305	.0396	-.108	.0471	-.77	.441
communication style: positive	.0123	.0233	-.0579	.0333	.53	.5997

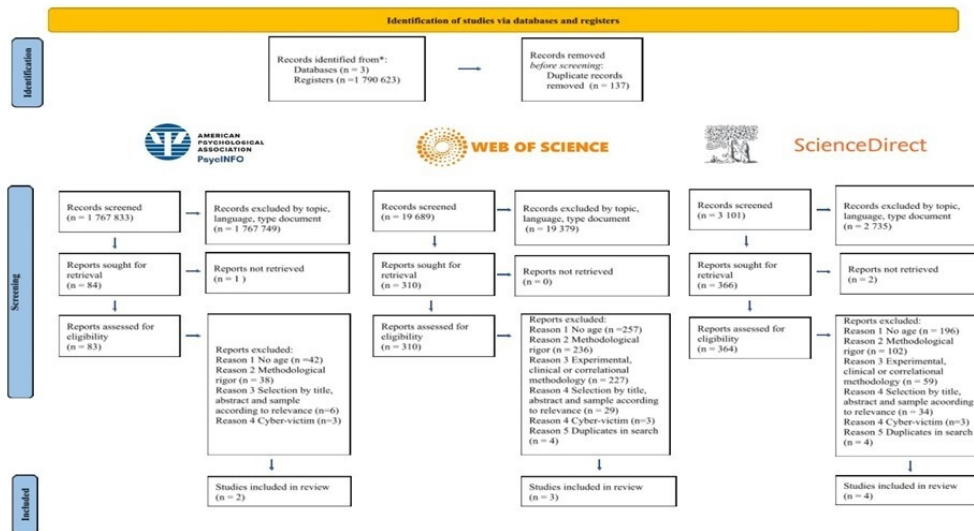


Figure 1. Flowchart

78x45mm (300 x 300 DPI)

Meta Analysis

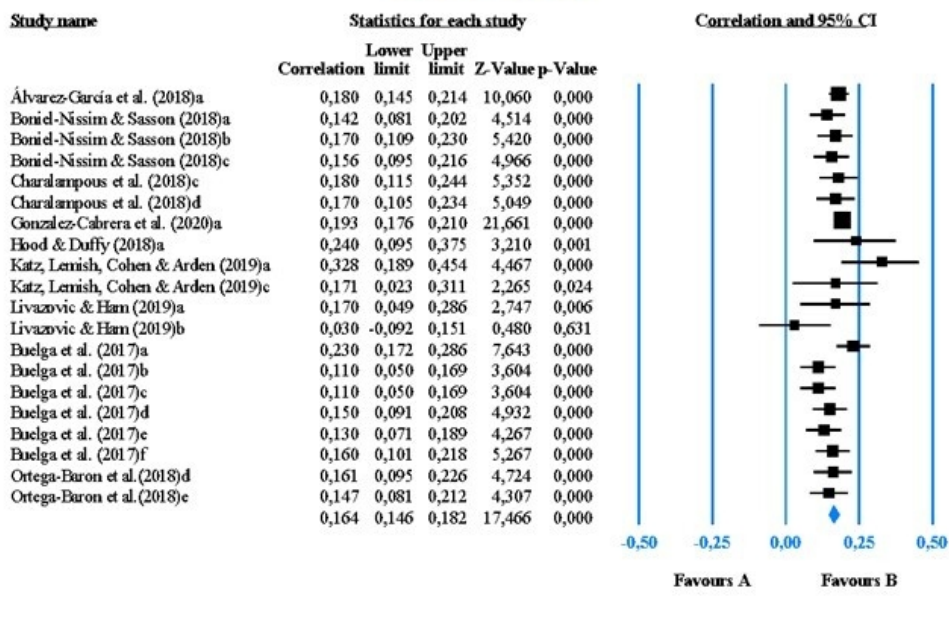


Figure 2.
Forest Plot

55x39mm (300 x 300 DPI)

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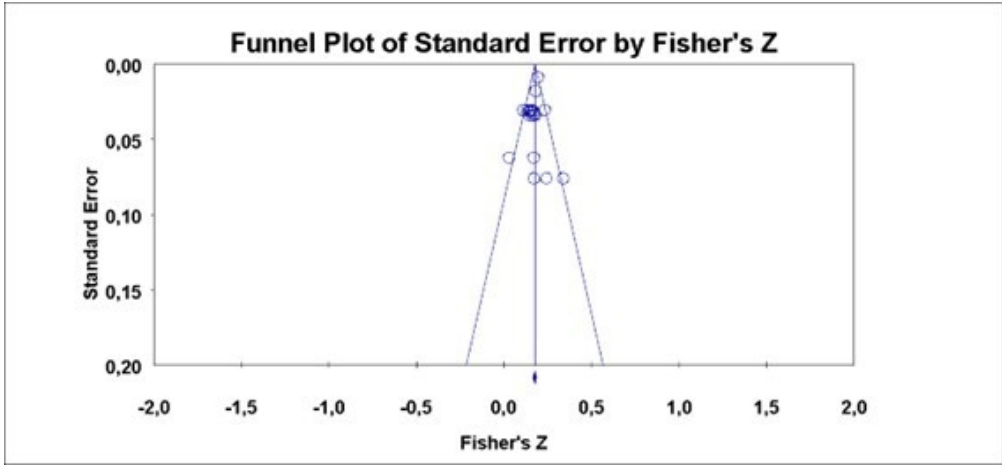


Figure 3.
Funnel Plot

48x22mm (300 x 300 DPI)