



# Comunicar

Media Education Research Journal, n. 56, vol. XXVI  
[www.comunicarjournal.com](http://www.comunicarjournal.com)

## Cyberbullying: The threat without a face

Ciberacoso: La amenaza sin rostro



English Edition





© COMUNICAR, 56, XXVI

MEDIA EDUCATION RESEARCH JOURNAL  
REVISTA CIENTÍFICA DE COMUNICACIÓN Y EDUCACIÓN

ISSN: 1134-3478 / DL: H-189-93 / e-ISSN: 1988-3293  
n. 56, vol. XXVI (2018-3), 3<sup>rd</sup> Quarter, July, 1<sup>st</sup>, 2018

## INDEXED INTERNATIONAL SCIENTIFIC JOURNAL

<https://www.revistacomunicar.com/index.php?contenido=ranking-indexaciones>

### JOURNAL CITATION REPORTS



#### JOURNAL CITATION REPORTS (JCR)

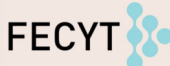
JCR 2016 (2017) (2017): Q1. Impact Factor: 2,212. 5 Year Impact Factor 2,165;. Immediacy Index: 0,425; Eigenfactor Score: 0,000650; Communication 2016: Q1 (12th position from 79, top Ibero-american journal; Education 2016 (2017): Q1 (29th position from 236, the first Iberoamerican journal). SOCIAL SCIENCES CITATION INDEX: the top journal in Spanish in Communication since 2007.

Scopus®

CiteScore™ metrics

#### SCOPUS

CITESCORE 2017 (2018): (2,49): Q1 in Cultural Studies (6th position from 771) (percentile 99). Q1 in Communication: 16th position from 285 (percentile 94). Q1 in Education (63th position from 979) (percentile 93). SCIMAGO JOURNAL RANK: SJR 2016 (2017) (1,162): Q1 in Cultural Studies: the top journal. Q1 in Communication: the top journal. Q1 in Education: the top journal.



#### RECYT (FECYT-MEC)

Seal of Quality FECYT 2016-2019 (12 indicators) (BOE 14-06-2016).



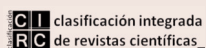
#### GOOGLE SCHOLAR

2017: Top 100 from Google: 1st position (from 100) in the Spanish ranking of all research journals areas. H5: 33. Mean H5: 45. In 2017-07-30: H: 51; H5: 47 (15,546 accumulated citations). H5 Index (2012-2016), according EC3 Reports, 2017 (UGR): 1st position in Education (out of 58; H5: 33); 1st position in Communication (out of 22; H5: 33).



#### JOURNAL SCHOLAR METRICS (EC3-UGR)

Q1 COMMUNICATION, 2016 (2017): 27th position (from 320).  
Q1 EDUCATION, 2016 (2017): 134th position (from 1,126).



#### CIRC

2017, Level A+ (highest rated)



#### REDIB (CSIC) (Ibero-American Innovation and Scientific Knowledge Network)

2018: 1st position among 943 select journals from all areas. Rating: 47.934



#### ERIH+

Level INT2 (2016).

### PUBLISHED BY: GRUPO COMUNICAR EDICIONES

- [www.comunicarjournal.com](http://www.comunicarjournal.com)
- [www.grupocomunicar.com](http://www.grupocomunicar.com)
- Administration: [info@grupocomunicar.com](mailto:info@grupocomunicar.com)
- Staff: [director@grupocomunicar.com](mailto:director@grupocomunicar.com)
- Mail box 527. 21080 Huelva (Spain)
- COMUNICAR is a member of CEDRO (Spanish Centre for Reprographic Rights).
- COMUNICAR is a quarterly cultural publication, published in January, April, July and October.
- COMUNICAR journal accepts and promotes institutional exchanges with other scientific journals.

© COMUNICAR is a patented trademark registered at the Spanish Patents and Trademarks Office, n. 1806709,

### INTERNATIONAL CO-EDITIONS

- **ENGLISH EDITION:** University of Chester, MIMU (Manchester) (United Kingdom). Tecnológico de Monterrey (Mexico)
- **PORTUGUESE EDITION:** University of Brasilia (Brazil)
- **CHINESE EDITION:** University of Southern California (USA) Hong Kong Baptist University (China), Monterrey Institute of Higher Education (ITESM) (Mexico)
- **LATIN-AMERICAN EDITION:** Technical University of Loja (UTPL) (Ecuador)

PRINTED BY: Estu Graf. Madrid (Spain)

© Reproduction of any text in COMUNICAR requires authorization from CEDRO or the editorial.

E-SHOP: [www.revistacomunicar.com/index.php?contenido=tienda](http://www.revistacomunicar.com/index.php?contenido=tienda)

# CONTENTS

Comunicar, 56, XXVI (2018-3)

## Cyberbullying: The threat without a face

Ciberacoso: La amenaza sin rostro



Comunicar, 56, XXVI, 2018

### DOSSIER

#### THEMATIC EDITORS

Dr. Pilar Arnaiz, University of Murcia (Spain)  
 Dr. Elaine Prodócimo, Universidade Estatal de Campinas (Brazil)  
 Dr. Fuensanta Cerezo, University of Murcia (Spain)

- |   |       |
|---|-------|
| 01. Emotional intelligence and peer cybervictimisation in adolescents: Gender as moderator                                | 09-18 |
| Inteligencia emocional y cibervictimización en adolescentes: El género como moderador                                     |       |
| <i>Lourdes Rey, Cirenía Quintana-Orts, Sergio Mérida-López and Natalio Extremera. Málaga (Spain)</i>                      |       |
| 02. Socio-cognitive and emotional factors on perpetration of cyberbullying  | 19-28 |
| Factores socio-cognitivos y emocionales en la agresión del ciberacoso   |       |
| <i>Elisa Larrañaga, Raúl Navarro and Santiago Yubero. Albacete (Spain)</i>  |       |
| 03. Teachers' and students' perception about cyberbullying. Intervention strategies in Primary and Secondary education    | 29-38 |
| Percepción de docentes y estudiantes sobre el ciberacoso. Estrategias de intervención en Primaria y Secundaria            |       |
| <i>Ana-M. Giménez-Gualdo, Pilar Arnaiz, Fuensanta Cerezo and Elaine Prodócimo. Murcia (Spain) and Campinas (Brazil)</i>   |       |
| 04. 'Asegúrate' Program: Effects on cyber-aggression and its risk factors   | 39-48 |
| Programa «Asegúrate»: Efectos en ciberagresión y sus factores de riesgo   |       |
| <i>Rosario Del Rey, Joaquín Mora, José-A. Casas, Rosario Ortega-Ruiz and Paz Elipe. Sevilla, Jaén and Córdoba (Spain)</i> |       |
| 05. Cyberbullying and problematic Internet use in Colombia, Uruguay and Spain: Cross-cultural study                       | 49-58 |
| Ciberacoso y uso problemático de Internet en Colombia, Uruguay y España: Un estudio transcultural                         |       |
| <i>Carolina Yudes-Gómez, Daniela Baridon-Chauvie and Joaquín-Manuel González-Cabrera. Logroño (Spain)</i>                 |       |

### KALEIDOSCOPE

- |  |         |
|--|---------|
| 06. Communication research in Spain: Weaknesses, threats, strengths and opportunities                          | 61-70   |
| La investigación en comunicación en España: Debilidades, amenazas, fortalezas y oportunidades                  |         |
| <i>Carmen Caffarel, Félix Ortega and Juan-Antonio Gaitán. Madrid and Salamanca (Spain)</i>                     |         |
| 07. Online risk perception in young people and its effects on digital behaviour                                | 71-79   |
| Percepción de riesgo online en jóvenes y su efecto en el comportamiento digital                                |         |
| <i>Irene Ramos-Soler, Carmen López-Sánchez and Teresa Torrecillas-Lacave. Alicante and Madrid (Spain)</i>      |         |
| 08. Spies and security: Assessing the impact of animated videos on intelligence services in school children    | 81-89   |
| Espías y seguridad: Evaluación del impacto de vídeos animados sobre los servicios de inteligencia en escolares |         |
| <i>Antonio M. Díaz-Fernández and Cristina del-Real-Castrillo. Cádiz (Spain)</i>                                |         |
| 09. Problematic uses of ICT among young people in their personal and school life                               | 91-100  |
| Usos problemáticos de las TIC entre jóvenes en su vida personal y escolar                                      |         |
| <i>David Rodríguez-Gómez, Diego Castro and Julio Meneses. Barcelona (Spain)</i>                                |         |
| 10. Excessive use of social networks: Psychosocial profile of Spanish adolescents                              | 101-109 |
| Uso excesivo de redes sociales: Perfil psicosocial de adolescentes españoles                                   |         |
| <i>Sara Malo-Cerrato, María-de-las-Mercedes Martín-Perpiñá and Ferran Viñas-Poch. Girona (Spain)</i>           |         |

## SUBMISSION GUIDELINES

### GENERAL INFORMATION

"Comunicar", Media Education Research Journal, is published by Grupo Comunicar Ediciones (VAT: G21116603). This established non-profit professional group, founded in 1988 in Spain, specialises in the field of media education. The journal has been in print continuously since 1994, published every three months of each year.

Contents are peer reviewed, in accordance with the publication standards established in the APA (American Psychological Association) manual. Compliance with these requirements facilitates indexation in the main databases of international journals in this field, which increases the dissemination of published papers and therefore raises the profile of the authors and their centres.

"Comunicar" is indexed in the Social Sciences Citation Index (SSCI), Journal Citation Reports (JCR), Scisearch, Scopus and over 618 databases, catalogues, search engines and international repertoires worldwide.

Each issue of the journal comes in a printed (ISSN:134-3478) and electronic format ([www.comunicarjournal.com](http://www.comunicarjournal.com)) (e-ISSN: 1988-3293), identifying each submission with a DOI (Digital Object Identifier System).

### SCOPE AND POLICY

**Subject Matter:** Fundamentally, research papers related to communication and education, and especially the intersection between the two fields: media education, educational media and resources, educational technology, IT and electronic resources, audiovisual, technologies... Reports, studies and experiments relating to these subjects are also accepted.

**Contributions:** "Comunicar" publishes research results, studies, state-of-the-art articles and bibliographic reviews especially in relation to Latin America and Europe and regarding the convergence between education and communication, preferably written in Spanish although submissions are also accepted in English. The contributions to this journal may be: Research papers, Reports, Studies and Proposals (5,000-6,500 words of text, references included), State-of-the-art articles: (6,000-7,000 words of text, including references).

Unsolicited manuscripts sent in by authors are initially placed in the Miscellaneous section of the journal. The Topics section is organized by an editor through a system of call for papers and specific commissions to experts in the field. If we receive manuscripts within the deadline for a particular topic, the journal editor can refer the manuscript to the Topics editor for assessment and possible publication in this monographic section. The deadline for each Topic section is at least nine months before publication.

### EDITORIAL PROCESS

"Comunicar" confirms receipt of all articles submitted by authors and keeps the authors informed of the acceptance/rejection process, as well as the editing process, in the event of acceptance. The webpage [www.comunicarjournal.com](http://www.comunicarjournal.com) also provides information about manuscript editing procedures, full guidelines for publication, as well as the Annexes: review protocol prior to submission, manuscript structure protocol, external review protocol...

In general, once the external reports have been seen, the criteria that justify the editors' decision to accept or reject submissions are as follows: a) Topical and new. b) Relevance: applicability of the results to the resolution of specific problems. c) Originality: valuable information, repetition of known results. d) Significance: advancement of scientific knowledge. e) Reliability and scientific validity: verified methodological quality. f) Organisation (logical coherence and material presentation). g) Presentation: good written style.

### PRESENTATION AND STRUCTURE OF ORIGINAL PAPERS

Manuscripts must be sent exclusively through the Journal Management Centre (<http://recyt.fecyt.es/index.php/comunicar/index>). These publication guidelines are based on the standards of the American Psychological Association (APA): (<http://goo.gl/1sS7Ax>).

**Structure:** The following two files must be sent together: manuscript (main text), and cover letter / title page.

### ETHICAL COMMITMENT AND RESPONSIBILITIES

Each author must submit a statement of authorship and text originality. Previously published material will not be accepted. The cover letter must specify the transfer of copyright ownership of the manuscript for its publication in "Comunicar".

[www.comunicarjournal.com](http://www.comunicarjournal.com)



# Comunicar<sup>®</sup>

MEDIA EDUCATION RESEARCH JOURNAL

XXV, 56

## EDITORIAL BOARD

### EDITOR IN CHIEF

- Dr. Ignacio Aguaded. University of Huelva, Spain

### ASSISTANT EDITORS

- Dr. Rosa García-Ruiz, University of Cantabria, Spain
- Dr. Rafael Repiso, UNIR / EC3, University of Granada, Spain
- Dr. M<sup>a</sup> Amor Pérez-Rodríguez, University of Huelva, Spain
- Dr. Ana Pérez-Escoda, UNIR, La Rioja, Spain
- Dr. Luis Miguel Romero-Rodríguez, University of Huelva, Spain
- Dr. Agueda Delgado-Ponce, University of Huelva, Spain
- Dr. Angel Hernando-Gómez, University of Huelva, Spain
- Dr. Enrique Martínez-Salanova, Comunicar, Almería, Spain

### THEMATIC EDITORS

- Dr. Pilar Amaiz, University of Murcia (Spain)
- Dr. Elaine Prodócimo, University of Campinas (Brazil)
- Dr. Fuensanta Cerezo, University of Murcia (Spain)

### INTERNATIONAL COEDITORS

- English: Dr. M. Gant, Univ. Chester and Dr. C. Herrero (MMU), UK
- Portuguese: Dr. Vânia Quintão, University of Brasília, Brazil
- Chinese: Dr. Yuechuan Ke (USA) and Dr. Alice Lee, Hong Kong
- Iberoamerican: M. Soledad Ramírez, TEC Monterrey, Mexico and Abel Suing, University T. Part. of Loja, Ecuador

## ADVISORY BOARD

- Dr. Ismar de-Oliveira, Universidade de São Paulo, Brazil
- Dr. Miguel de-Aguilera, University of Malaga, Spain
- Dr. Guillermo Orozco, University of Guadalajara, Mexico
- Dr. Manuel Ángel Vázquez-Medel, University of Seville, Spain
- Dr. Cecilia Von-Feilitzen, Nordicom, Sweden
- Dr. Joan Ferrés-i-Prats, Pompeu Fabra Univer., Barcelona, Spain
- Dr. Agustín García-Matilla, University of Valladolid, Spain
- Dr. Pier Cesare Rivoltella, Catholic University of Milano, Italy
- Dr. Javier Marzal, Jaume I University, Castellon, Spain
- Dr. Francisco García-García, Complutense Univer., Madrid, Spain
- Dr. Alberto Parola, MED, University of Torino, Italy
- Dr. Teresa Quiroz, University of Lima, Peru
- Dr. Concepción Medrano, University of País Vasco, Spain
- Dr. Claudio Avendaño, University Santiago of Chile, Chile
- Dr. María Luisa Sevillano, National Distance University, Spain
- Dr. Mar Fontcuberta, Catholic University, Chile
- Dr. Julio Cabero-Almenara, University of Seville, Spain
- Dr. Manuel Cebrián-de-la-Serna, University of Malaga, Spain
- Dr. Ana García-Valcárcel, University of Salamanca, Spain
- Dr. M. Soledad Ramírez-Montoya, Monterrey Institute, Mexico
- Dr. Jesús Arroyave, University of Norte, Colombia
- Dr. Donaciano Bartolomé, Complutense University, Madrid, Spain
- Dr. Samy Tayie, University of Cairo, Mentor Association, Egypt
- Dr. Vítor Reia, University of Algarve, Faro, Portugal
- Dr. Javier Tejedor-Tejedor, University of Salamanca, Spain
- Dr. Sara Pereira, University of Minho, Braga, Portugal
- Dr. Gloria Camarero, Carlos III University, Madrid, Spain
- Dr. Amanda Pinto, University of Coimbra, Portugal
- Dr. Pere Marquès, Autonomous University of Barcelona, Spain
- Dr. Xosé Soengas, University of Santiago, Spain

## ADVISORY BOARD

- Dr. Patrick Verniers, Conseil Sup. Medis Education, Belgium
- Dr. Domingo Gallego, National Distance University, Spain
- Dr. Manuel Area, La Laguna University, Tenerife, Spain
- Dr. Ramón Reig, University of Seville, Spain
- Dr. Gustavo Hernández, ININCO, Central University, Venezuela
- Dr. Isabel Cantón, University of Leon, Spain
- Dr. Juan de Pablos, University of Seville, Spain
- Dr. Gerardo Borroto, CUJAE, La Habana, Cuba
- Dr. Manuel Fandos-Igado, UNIR, Zaragoza, Spain
- Dr. J. Manuel Pérez-Tornero, Autonomous University, Barcelona
- Dr. Jorge Cortés-Montalvo, UACH/REDECA, Mexico
- Dr. Carmen Marta, University of Zaragoza, Spain
- Dr. Juan Antonio García-Galindo, University of Malaga, Spain
- Dr. Silvia Contín, National University of Patagonia, Argentina
- Dr. Begoña Gutiérrez, University of Salamanca, Spain
- Dr. Ramón Pérez-Pérez, University of Oviedo, Spain
- Dr. Carlos Muñoz, Autonomous University of Nuevo Leon, Mexico
- Dr. Carmen Echazarreta, University of Girona, Spain
- Dr. Evgeny Pashentsev, Lomonosov Moscow University, Russia
- Dr. Fahriye Altınay, Near East University, Turkey
- Dr. Jesús Valverde, University of Extremadura, Spain
- Dr. Yamile Sandoval, University of Santiago of Cali, Colombia
- Dr. Pilar Amaiz, University of Murcia, Spain
- M. Paolo Celot, EAVI, Brussels, Belgium
- Dr. Victoria Tur Viñes, University of Alicante, Spain
- Dr. José-María Morillas, University of Huelva, Spain
- Dr. Jorge Mora, California, USA
- M. Jordi Torrent, ONU, Alliance of Civilizations, NY, USA
- Ms. Kathleen Tyner, University of Texas, Austin, USA
- Ms. Marieli Rowe, National Telemedia Council, Madison, USA

## INTERNATIONAL REVIEWERS BOARD

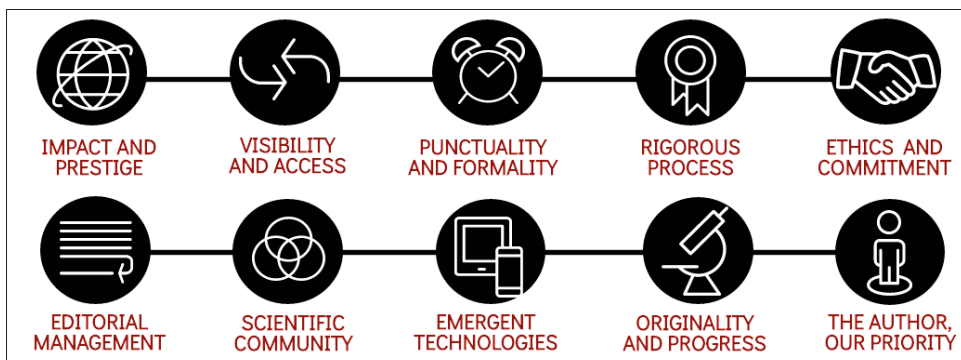
- 590 Reviewers of 45 countries (2018-06)
- [www.revistacomunicar.com/index.php?contenido=evaluadores](http://www.revistacomunicar.com/index.php?contenido=evaluadores)

## BOARD OF MANAGEMENT

- D. Francisco Casado-Mestre, University of Huelva, Spain
- Dra. Patricia de-Casas, Universidad Antonio de Nebrija, Spain
- Mgtr. Daniela Jaramillo-Dent, University of Huelva, Spain
- Dr. Isidro Marín-Gutiérrez, UTPL, Ecuador
- Dr. Mar Rodríguez-Rosell, UCAM, Murcia, Spain
- Dr. Ana Castro-Zubizarreta, University of Cantabria, Spain
- Dra. M. Carmen Caldeiro, University of Santiago, Spain
- Dr. Paloma Contreras-Pulido, University of Huelva, Spain
- Dr. Inmaculada Berlanga, UNIR, La Rioja, Spain
- COMMERCIAL MANAGER: Alejandro Ruiz, Spain



### QUALITY CRITERIA



Quality criteria of "Comunicar" Media Education Research Journal are the indicators of our commitment to a rigorous and professional publishing process. They constitute the endorsement for authors, reviewers, collaborators and readers that the final product offered meets the highest standards and academic rigour expected from a publication of national and international reputation.

- **Impact and prestige** is guaranteed by being in the first quartile among the most recognised journals: Q1 in Journal Citation Reports (JCR) in Communication and Education; Q1 in Scopus (SJ) in Cultural Studies and Q1 in Scopus (CiteScore) in Communication and Education.

- **Visibility and access** are safeguarded by an open and shared access policy that makes all published manuscripts available to any reader in a bilingual version: Spanish and English.

- **Punctuality and formality**: this standard contributes to an efficient flow of manuscripts within established timeframes, facilitating quarterly publication thanks to highly effective schedule compliance.

- **A rigorous process** is supported by an International Reviewers Board of nearly 500 highly qualified researchers in the fields of education and communication from almost 50 countries all over the world.

- **Ethics and commitment** that ensure the upholding of rights and duties that protect the whole academic community: authors, reviewers, readers and editors. Our Code of Ethics is based on the International Committee on Publication Ethics (COPE), ensuring guidance for authors.

- **High quality Editorial Management** is accomplished throughout the OJS Platform, from the Science and Technology Foundation (FECYT), complemented by reviewers' contributions and stylistic department work in English and Spanish languages.

- Our **Academic Community** is fostered and increased by an influential academic community of authors (1,524), reviewers (508) and readers all over the world. This Community is supported by a committed editorial group composed of: an Editorial Board, an Academic Committee, an International Reviewers Board, an Advisory Board and a Technical Board.

- Use and development of **emergent technologies** encourages the diffusion and impact of the journal, continuously adjusting the access formats, communication models and academic platforms for academic diffusion (ResearchGate, AcademiaEdu...).

- The **Originality and Progress** of the outstanding research contributions from the research areas of communication and education are guaranteed by plagiarism controls (CrossCheck), applied to all manuscripts accepted before being published to preserve the originality and progress of research.

- At last but not least the **Author is our priority**, since after all, authors uphold and give sense to all the process. Every manuscript is available in the Journal website with accurate information about citation, statistical data, references, impact metrics and interaction in social media.

Quality criteria are, in summary, a set of standards that guarantee the whole process, ensuring a professional treatment for every person involved in the publishing, reviewing, editing and spreading processes of the manuscripts.

### Information on evaluators, acceptance/rejection rates and internationalisation in Comunicar 56

- Number of research works received: 181; Number of research works accepted: 10.
- Percent of manuscripts accepted: 5,52%; Percent of manuscript rejected: 94,48%.
- Received manuscripts internationalisation: 23 countries.
- Numbers of Reviews: 249 (update: [www.comunicarjournal.com](http://www.comunicarjournal.com)).
- Scientific Reviewers internationalisation: 12 countries.
- Country of origin: 2 countries (Brazil, and Spain).
- International databases in COMUNICAR 56: 622 (2018-06) (update: [www.comunicarjournal.com](http://www.comunicarjournal.com)).





# Comunicar 56

## Special Topic Issue

---

### Cyberbullying: The threat without a face

Ciberacoso: La amenaza sin rostro



COMUNICAR GROUP

30 Years

Fostering Media Education

www.grupocomunicar.com

Facebook, Google+, Twitter, YouTube, LinkedIn icons





# Emotional intelligence and peer cyber-victimisation in adolescents: Gender as moderator

Inteligencia emocional y cibervictimización en adolescentes: El género como moderador

- ID** Dr. Lourdes Rey is Full Professor in the Department of Personality, Evaluation and Psychological Treatment at the University of Malaga (Spain) (lrey@uma.es) (<https://orcid.org/0000-0003-1394-1646>)
- ID** Cirenía Quintana-Orts is Ph.D. Candidate in the Department of Personality, Evaluation and Psychological Treatment at the University of Málaga (Spain) (cquintana@uma.es) (<https://orcid.org/0000-0001-7470-2345>)
- ID** Sergio Mérida-López is Ph.D. Candidate in the Department of Social Psychology at the University of Málaga (Spain) (sergioml@uma.es) (<https://orcid.org/0000-0003-2262-4546>)
- ID** Dr. Natalio Extremera is Full Professor in the Department of Social Psychology at University of Málaga (Spain) (nextremera@uma.es) (<https://orcid.org/0000-0002-8874-7912>)

## ABSTRACT

Elucidating personal factors that may protect against the adverse psychological outcomes of cyberbullying victimisation might help guide more effective screening and school intervention. No studies have yet examined the role of emotional intelligence (EI) and gender in adolescent victims of cyberbullying and how these dimensions might interact in explaining cybervictimisation experiences. The main aim of this study was to examine the relationship between EI and cybervictimisation, and the interactive link involving EI skills and gender as predictors of cyberbullying victimisation in a sample of 1,645 Spanish adolescents (50.6% female), aged between 12 and 18 years. Regarding the prevalence of cybervictimisation, our results indicated that over 83.95% of the sample were considered non-cybervictims, while 16.05% experienced occasional or severe cybervictimisation. Additionally, findings indicated that deficits in EI and its dimensions were positively associated with cybervictimisation in both genders, but were stronger in females. Besides, a significant emotion regulation x gender association was found in explaining cyber-victimisation experiences. While no interaction was found for males, for females the deficits of emotion regulation were significantly associated with greater victimisation. Our findings provide empirical support for theoretical work connecting EI skills, gender and cybervictimisation, suggesting emotion regulation skills might be considered as valuable resources, as well as their inclusion in new gender-tailored cybervictimisation prevention programmes.

## RESUMEN

Dilucidar los factores personales que protegen contra las consecuencias psicológicas de la cibervictimización podría ayudar a una detección e intervención escolar más eficaz. Ningún estudio ha examinado el papel de la inteligencia emocional (IE) y el género en adolescentes víctimas de ciberacoso y cómo estas dimensiones interactúan para explicar la cibervictimización. El objetivo de este estudio fue examinar la relación entre IE y cibervictimización, y el papel moderador de las habilidades de IE y el género como predictores de la cibervictimización en una muestra de 1.645 adolescentes españoles (50,6% mujeres) de edades entre 12 y 18 años. Con respecto a la prevalencia, nuestros resultados indicaron que el 83,95% de la muestra no eran cibervíctimas mientras que un 16,05% eran cibervíctimas ocasionales o severas. Los resultados mostraron que los déficits en IE y sus dimensiones se asociaron positivamente con la cibervictimización en ambos géneros, pero más en mujeres. Además, se encontró una interacción significativa entre regulación emocional y género explicando las experiencias de cibervictimización. Aunque no hubo interacción para los hombres, para las mujeres el déficit en regulación emocional se asoció significativamente a mayor cibervictimización. Nuestros hallazgos proporcionan apoyo empírico para el corpus teórico que conecta las habilidades de IE, el género y la cibervictimización, sugiriendo que la regulación emocional puede ser considerada un recurso valioso, así como de inclusión en futuros programas de prevención de cibervictimización ajustados por géneros.

## KEYWORDS | PALABRAS CLAVE

Emotional intelligence, cyberbullying, victimisation, adolescents, emotional regulation, gender, cybervictimisation, socio-emotional abilities.

Inteligencia emocional, ciberacoso, victimización, adolescentes, regulación emocional, género, cibervictimización, habilidades socio-emocionales.

## 1. Introduction

School bullying is recognised as a serious psychosocial problem commonly seen during adolescence in school settings worldwide (Book, Volk, & Hosker, 2012; Casas, Del Rey, & Ortega-Ruiz, 2013). Resulting from the growing use of new technologies and social media, cyberbullying has emerged as a new kind of abuse in cyberspace, which is related to school bullying (Kowalski, Giumetti, Schroeder, & Lattanner, 2014). Cyberbullying, also known as digital bullying, is defined as repeated aggressive and hostile messages sent through the use of electronic media against a victim who cannot easily defend him- or herself (Hinduja & Patchin, 2009). According to a recent meta-analysis, prevalence rates of cyberbullying and victimisation vary depending on the definitions of the phenomenon. In general, most of the studies that have addressed cyberbullying show prevalence rates of between 10 and 40% of adolescents involved, finding incidences of 15% for adolescent cybervictimisation (Zych, Ortega-Ruiz, & Del Rey, 2015). In contrast to traditional bullying, the use of electronic devices provides new challenges for intervention due to unique features such as anonymity, rapid social dissemination and increased access to the victims (Alvarez-Garcia, Nuñez, Dobarro, & Rodriguez, 2015; Tokunaga, 2010). Thus, cyberbullying experiences are consistently associated with a wide range of negative outcomes. For instance, youths who encounter cyberbullying report significantly higher levels of psychosomatic problems than non-involved youths (Beckman, Hagquist, & Hellström, 2012), higher levels of depressive symptoms (Nixon, 2014), greater levels of anxiety symptoms (Sontag, Clemans, Graber, & Lyndon, 2011), lower self-esteem (O'Brien & Moules, 2013) and even higher rates of suicide ideation and attempts (Gini & Espelage, 2014). Furthermore, being the victim of cyberbullying negatively affects the victims' emotional and social adjustment (Elípe, Mora-Merchan, Ortega-Ruiz, & Casas, 2015). In particular, cybervictimisation has been linked with negative feelings such as anger, upset, sadness, helplessness, fear, shame, guilt or loneliness (Elípe & al., 2015; Ortega & al., 2012).

When peer victimisation is not handled appropriately, it can have a huge influence on the development of internal and external problems that lead to reduced levels of well-being (Zych & al., 2015). However, all cybervictims do not develop the same negative outcomes or to the same grade of intensity (Dredge, Gleeson, & Garcia, 2014; Elípe & al., 2015). Certain risk and protective factors are considered contributors to important aspects of cognitive and emotional adjustment (Gini, Pozzoli, & Hymel, 2014; Kowalski & al., 2014). Research suggests that certain cognitive and socio-emotional variables might determine the impact of cybervictimisation on mental health such as social abilities, empathy or personality traits, among others (Perren & al., 2012; Ttofi, Farrington, & Lösel, 2014). Over the last two decades, one variable that has shown growing evidence regarding its potential role as a buffer against negative effects of cyberbullying is emotional intelligence (EI) (Baroncelli & Ciucci, 2014; Elípe & al., 2015; Extremera, Quintana-Orts, Mérida-López, & Rey, 2018).

The literature has shown that the way in which people process the emotionally relevant information during stressful events is relevant for healthy functioning and positive relationships (Rey & Extremera, 2014). From an ability model, EI is conceptualised as a group of abilities to perceive emotions, to access emotions, to enhance thoughts, to understand emotions and emotional knowledge, and to regulate emotions to promote emotional and intellectual growth (Mayer & Salovey, 1997). Several studies have revealed that adolescents with EI are able to use and regulate their emotions and others' negative emotions for improving happiness and psychological well-being, and preventing psychological maladjustment (Fernandez-Berrocal & Extremera, 2016; Hill, Heffernan, & Allemand, 2015; Tucker, Bitman, Wade, & Cornish, 2015).

Previous research, in both traditional bullying and cybervictimisation, has pointed out that students with higher levels of EI are less peer victimised and even experience more positive social behaviors (Elípe & al. 2015; Garaigordobil & Oñederra, 2010; Lomas, Stough, Hansen, & Downey, 2012). Recently, Elípe and al. (2015) found that high levels of emotional clarity but low levels of emotional repair in cybervictims contribute to manifestations of negative emotional impact, while high levels of attention together with high repair ability tend to reduce anger and depression among undergraduate students. These results suggest the crucial role of the EI variable in cyberbullying, specifically in the emotion regulation dimension.

Gender differences are key variables related to cyberbullying and EI, which have demonstrated a relevant impact on health outcomes and social adaptation. Despite the mixed nature of the results of studies on the prevalence of cybervictimisation (Del Rey, Elípe, & Ortega-Ruiz, 2012), most have found that females are more victimised than males (Kowalski & al., 2014; Li, 2006; Palermi, Servidio, Bartolo, & Costabile, 2017). Besides, focusing on emotions, cybervictims have a higher ability to attend emotions and a lower ability to understand and regulate emotions (Elípe & al., 2015; Ortega & al., 2012).



However, few studies have paid attention to examining the gender differences in EI skills in the context of cyberbullying in a Spanish high school sample. The aim of this study is to make progress in this direction, specifically, by examining the interplay between EI and cybervictimisation experiences and the potential role of gender in moderating this relationship in a large sample of Spanish adolescents.

Taking into account the above considerations, the objective of this study was threefold: on the one hand, to analyse the role of EI related to the gender differences of the victims of cyberbullying among Spanish adolescents. Thus, we examine the predictive validity of EI dimensions in relation to cybervictimisation. Finally, we sought to examine whether there was a significant interactive model involving EI and gender as concurrent predictors of cybervictimisation beyond what is accounted for by direct effects of socio-demographic variables and EI. Consistent with the literature, we hypothesise differences between males and females and we expected to find evidence for an EI x gender interaction for explaining cybervictimisation.

## 2. Material and methods

### 2.1. Participants

The sample comprises a total of 1 645 adolescents (50.6% female), aged between 12 and 18 years ( $M=14.08$ ;  $SD=1.53$ ) from six public schools in Málaga province (Spain). The sample of schools was selected according to their availability for participating in the study, and there was a similar percentage of adolescents from the different educational centers. Regarding the level taught, 29.1% attended classes of the first course of compulsory secondary education; 27.7% attended second course; 21.8% third course and 12.6% the final course of compulsory secondary education. The remainder of the sample attended classes at A level (8.8%).

### 2.2. Measures

**Cybervictimisation.** Cybervictimisation was measured with the cybervictimisation dimension of the European Cyberbullying Intervention Project Questionnaire (ECIPQ) (Brighi, Guarini, Melotti, Galli, & Genta, 2012; Del Rey & al., 2015). It consists of 11 Likert type items (i.e., Someone posted embarrassing videos or pictures of me online) with five response options for frequency of behaviors towards them during the last two months, (from 0=None to 4=More than once a week). This subscale has shown good psychometric properties (Casas & al., 2013; Ortega-Ruiz, Del Rey, & Casas, 2012). In the present sample, the Cronbach's Alpha was adequate ( $\alpha=0.86$ ). Following the criteria used by Elípe, De-la-Oliva and Del Rey (2017), we considered 'non-cybervictims' as those adolescents who marked option 'none' or the 'once or twice' option in all items; 'occasional cybervictims' as those students who indicated that at least one of the behaviours had happened to them with a frequency of 'once or twice a month'; and 'severe cybervictims' as those who indicated that at least one of the behaviours had happened 'about once a week or more'.

**Emotional intelligence.** EI was evaluated using the 'Wong and Law Emotional Intelligence Scale' (WLEIS) (Law, Wong, & Song, 2004), a questionnaire composed of four dimensions: self-emotion appraisal (SEA), other-emotion appraisal (OEA), use of emotion (UOE) and regulation of emotion (ROE). The scale comprises a total of 16 Likert type items with seven options ranging from 1 (totally disagree) to 7 (totally agree). This scale has shown satisfactory reliability in Spanish samples (Rey, Extremera, & Pena, 2016). In this study, Cronbach's Alpha was 0.88 for the overall scale, 0.75 for SEA, 0.72 for OEA, 0.77 for UOE and 0.80 for ROE.

The cyberbullying phenomenon has been recognised as a severe problem that affects the mental health of adolescents. Research has shown that there are several positive personal resources that buffer against negative psychological outcomes. One of these may be EI, but its role in the cyberbullying experience has scarcely been examined. The aim of this study is to analyse the interplay between EI and cybervictimisation and explore the role of gender in a large sample of Spanish adolescents.

### 2.3. Procedure

This study was part of a larger project that examined the relationship between strengths and health correlates of adolescents. Prior to data collection, head teachers and principals of the different schools selected randomly received an explanation about the research and a request for their collaboration accompanied by consent letters. The study respected the ethical values required in research with human beings having been approved by the Ethics Committee of the University of Málaga, Spain (62-2016-H). The questionnaires were completed by adolescents during the second trimester of the 2016/2017 academic year during a tutorial lesson. A teacher from the school with a research assistant was presented in class to assist with any questions. The adolescents were also informed of the study's objectives and its voluntary and confidential nature. They had one hour to answer all questionnaires.

## 3. Results

### 3.1. Descriptive analyses

Descriptive statistics (Table 1) and prevalence analyses were conducted to examine all variables included in the study and the percentage of cybervictimisation presented in our sample. Regarding the prevalence of cybervictimisation, 16.05% of participants reported that at least one of the behaviors in the survey had happened to them 'once or twice a month' or 'once or twice a week or more frequently' (7.78% occasional and 8.27% severe, respectively).

As it can be seen in Figure 1, the most frequently experienced types of cybervictimisation were 'insults about me said to others via the Internet or SMS messages' (10.21%), followed by 'direct personal insults via email or SMS messages' (6.99%). On the contrary, only 1.64% said that 'somebody had created a fake account to pretend to steal their identity.' Finally, in the cases of 'receiving threats through texts or online messages,' this happened about once a week or more frequently (2.13%).

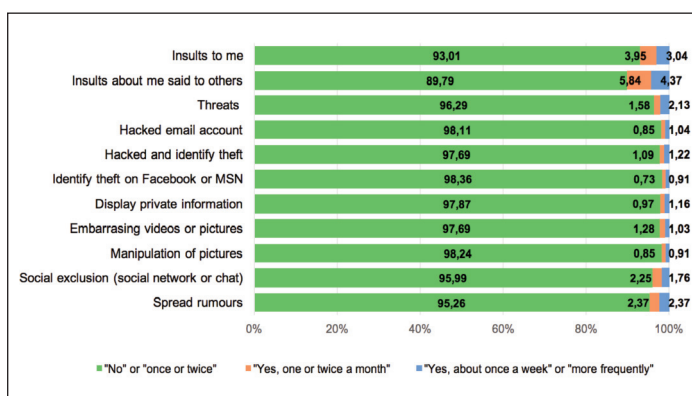


Figure 1. Percentage of students who reported having experienced the different types of cybervictimisation.

### 3.2. Gender differences in relation to EI and cybervictimisation

One-way analysis of variance (ANOVA) was conducted to examine gender differences. We followed Cohen's convention (1988) to estimate the effect size of differences by gender. The results are shown in Table 1. We found that males scored higher in self-emotion appraisal, use of emotion, regulation of emotion and total EI, whereas females reported higher scores in other-emotion appraisal and cybervictimisation.

Pearson correlations were conducted to examine the associations between EI dimensions and cybervictimisation separately for females and males. As seen in Table 2, self-emotion appraisal was negatively related to cybervictimisation for both females and males. More interestingly, the use of emotion and regulation of emotion were negatively related to cybervictimisation only for females. According to Cohen's convention (1988), the effect sizes of the correlations were small.

### 3.3. Predictive value of EI dimensions in cybervictimisation

We tested the predictive validity of EI dimensions in predicting cybervictimisation scores along with the potential moderating role of gender in these relationships. We conducted hierarchical regression analyses in which we took cybervictimisation as the dependent variable. In the first step, age, gender, and grade were entered as covariates. EI dimension scores were entered in the second step. The EI dimensions x gender interactions were included in the third step. All continuous predictors were centered in order to reduce potential problems of multicollinearity (Aiken & West, 1991). The main results of these analyses are displayed in Table 3.

For predicting cybervictimisation, a total of 5% of the variance was explained by the final model. First, we found that age was positively related to cybervictimisation scores and significantly contributed to the prediction of this varia-



ble. Second, we found that self-emotion appraisal was the only dimension that accounted for a significant amount of the variance in cybervictimisation, even after controlling the variance attributable to our covariates. Finally, we found that the regulation of the emotion x gender interaction was significant in the prediction of cybervictimisation scores beyond the main effects of the covariates and EI dimensions.

As a final point, we used PROCESS to graphically represent the moderating effects. Following standard procedures, we used a bootstrapping procedure based on 5,000 bootstrapped resamples and a 95% confidence interval. Figure 2 shows the relationship between regulation of emotion and cybervictimisation scores by gender. We found a negative association between regulation of emotion and cybervictimisation for females ( $b=-0.06$ ,  $t(832)=-6.11$ ,  $p<0.001$ ). In particular, it was at the low emotion regulation level where female adolescents showed higher cybervictimisation. On the contrary, we did not find interaction effects between regulation of emotion and cybervictimisation in males ( $b=-0.012$ ,  $t(813)=-1.27$ ).

#### 4. Discussion and conclusion

The current study was designed to examine how EI dimensions and cybervictimisation are related in high school students and to analyse the moderating role of gender in this association. Our study replicated previous EI

**Table 1. Descriptive analyses and differences between females and males in study variables** (\*\* $p<.01$ ; \*\*\* $p<.001$ )

	Total (N= 1645)		Female (N=832)		Male (N=813)		F	d
	M	DT	M	DT	M	DT		
EI	4.83	0.98	4.73	1.00	4.93	0.95	18.06***	-0.21
SEA	5.04	1.22	4.84	1.28	5.25	1.13	49.25***	-0.34
OEA	5.13	1.11	5.29	1.09	4.96	1.11	37.43***	0.30
UOE	4.78	1.32	4.69	1.35	4.86	1.29	7.14**	-0.13
ROE	4.36	1.41	4.09	1.42	4.65	1.34	67.39***	-0.41
Cyber victimisation	0.20	0.38	0.23	0.40	0.17	0.35	7.52**	0.16

Note: EI=Emotional Intelligence, SEA=Self-emotion appraisal; OEA=Other-emotion appraisal; UOE=Use of emotion; ROE=Regulation of emotion.

**Table 2. Intercorrelations separately by gender (\*\* $p<.01$ )**

	1	2	3	4	5
1. SEA	-	0.39**	0.56**	0.61**	-0.15**
2. OEA	0.51**	-	0.38**	0.28**	0.02
3. UOE	0.50**	0.41**	-	0.58**	-0.16**
4. ROE	0.60**	0.32**	0.50**	-	-0.21**
5. Cybervictimisation	-0.12**	-0.02	-0.04	-0.05	-

Note: Correlations above the diagonal are for females (N= 832), those below the diagonal are for males (N= 813). SEA=Self-emotion appraisal; OEA=Other-emotion appraisal; UOE=Use of emotion; ROE=Regulation of emotion.

**Table 3. Results for the hierarchical regression analyses using cyber victimisation as the criterion variable (\* $p<.05$ ; \*\* $p<.01$ ; \*\*\* $p<.001$ )**

	$R^2$	F	Unstandardised coefficients		Standardised coefficients	95% Confidence interval		$\Delta R^2$
			B	Standard error	$\beta$	Lower limit	Upper limit	
<b>Cyber victimisation</b>								
<b>Step 1</b>	0.01	7.52						0.01***
Age			0.03	0.01	0.13**	0.01	0.05	
Gender			0.02	0.02	0.02	-0.02	0.06	
Grade			-0.02	0.01	-0.08	-0.05	0.00	
<b>Step 2</b>	0.04	9.67						0.03***
SEA			-0.08	0.04	-0.26*	-0.15	-0.01	
OEA			-0.01	0.03	-0.02	-0.07	0.05	
UOE			0.03	0.03	0.11	-0.02	0.09	
ROE			0.05	0.03	0.20	-0.01	0.11	
<b>Step 3</b>	0.05	7.58						0.01**
SEA x Gender			0.04	0.03	0.17	-0.01	0.09	
OEA x Gender			0.03	0.02	0.11	-0.02	0.07	
UOE x Gender			-0.04	0.02	-0.15	-0.08	0.01	
ROE x Gender			-0.07	0.03	-0.29**	-0.12	-0.02	

Note: SEA=Self-emotion appraisal; OEA=Other-emotion appraisal; UOE=Use of emotion; ROE=Regulation of emotion. The beta reported are standardised coefficients for the final equation (step 3).

findings (Elípe & al., 2015), confirming the positive role of these emotional skills on the levels of cybervictimisation in a large sample of Spanish adolescents. Besides, our findings extend those of earlier studies by finding evidence that gender might be an underlying mechanism that could moderate the relationship between certain EI dimensions and cybervictimisation experiences.

Regarding the prevalence of cybervictimisation, our results show similar percentages to those reported by a recent systematic review (Zych & al., 2015). Following the criteria used by Elípe and al. (2017), over 83.95% of the sample was considered as non-cybervictims. Inversely, 16.05% were considered occasional or severe cybervictims. The most frequent forms of cyberbullying in this study were 'insults about me said to others via the Internet or SMS messages,' similar to results of previous studies carried out with adolescents (Katzner, Fetchenhauer, & Belschack, 2009).

Consistent with previous research regarding both traditional victimisation and cybervictimisation (Elípe & al., 2015; Lomas & al., 2012), our study found that higher levels of total EI were significantly and negatively associated with lower scores in cybervictimisation both in males and females. Our findings are in line with the approach suggesting that the propensity of being cybervictimised by peers is, to some extent, related to the victim's emotional abilities. Interestingly, compared to male victims, the relationship between total and specific emotional abilities and cybervictimisation experiences of female victims was stronger. In short, all subscales except one (interpersonal perception) showed small but still negative and significant associations with cybervictimisation for females. On the contrary, only global EI and intrapersonal perception showed a significant and negative association with cybervictimisation for males.

With respect to examining the gender differences in EI skills and cybervictimisation experiences, gender analyses showed that males reported higher self-reported global EI along with higher intrapersonal perception, assimilation and emotional regulation than females. Some authors have found that males tend to report higher ability to regulate own emotions compared with female adolescents (Extremera, Duran, & Rey, 2007). Since the male gender role is to be more agentic and active, it is possible that male adolescents might use more frequent problem-solving strategies and positive reappraisal in attempts to change the negative daily experiences that they believe are driving their mood states (Tamres, Janicki, & Helgeson, 2002). These are in line with literature findings that male adolescents typically reported less psychological symptoms than female ones (Nolen-Hoeksema & Hilt, 2009). On the other hand, another potential reason is that male adolescents typically tend to overestimate their emotional skills compared to females when using self-report measures (Brackett, Rivers, Shiffman, Lerner, & Salovey, 2006), therefore, depending on the EI measures used, gender difference results might be different. Further research should examine this issue carefully, using EI ability measures to generalise our findings. Regarding female adolescents, some researchers have shown that women typically report a greater tendency to be attentive to moods and regulate emotions compared with men, both in adult and adolescent populations (Fernandez-Berrocal & Extremera, 2008; Salguero, Fernandez-Berrocal, Balluerka, & Aritzeta, 2010; Thayer, Rossy, Ruiz-Padial, & Johnsen, 2003). Furthermore, women tend to be more vulnerable to the impact of stressful life events (Kessler & McLeod, 1984). It may be that differences in the emotional regulation process between men and women might form the basis of the higher prevalence rate in women of emotional maladjustment and the use of maladaptive coping strategies (Nolen-Hoeksema, 2003; Thayer et al., 2003). Finally, the analysis indicated that, compared to male adolescents, female students were more likely to be victims of cyberbullying (Kowalski & al., 2014). While this gender difference in cybervictimisation demands further research, one plausible explanation is that female adolescents tend to be more likely to experience indirect forms of bullying than their male counterparts, and the negative impact of these expe-

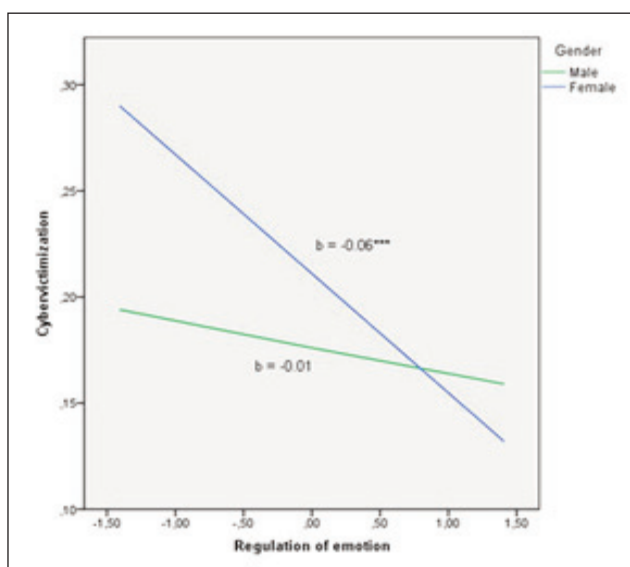


Figure 2. The relationship between regulation of emotion and cybervictimisation scores separately by gender. Note: \*\*\* $p < .001$ .

periences is stronger in females (Carbone-Lopez, Esbensen, & Brick, 2010).

Moreover, we found that emotion regulation interacted differently as a function of gender, extending previous literature regarding gender differences on the influence of EI in other areas of psychology such as interpersonal relationships (Brackett & al., 2006) or psychological adjustment (Merida-Lopez, Extremera, & Rey, 2017). Expanding on previous research, our study revealed an interesting finding substantiating evidence for the moderating effect of gender with deficits in emotion regulation as a risk factor for cybervictimisation experiences. In this research, mood regulation was the only EI ability which interacted significantly with gender in predicting cybervictimisation experiences in line with similar studies (Lomas & al., 2012; Schokman & al., 2014). In short, we found significant differences in the associations between emotion regulation and cybervictimisation for females, but not for males. While no interaction effect was found for males between mood regulation and cybervictimisation, in female adolescents the relationship with cybervictimisation was more negative at higher levels of emotion regulation. In line with our correlational findings, it is tentative to assume that emotion regulation skills may be more associated with cybervictimisation for

female adolescents. By contrast, it might be that, for males, these regulation abilities may not be so important or may imply different socio-educational or psychological factors associated with men other than emotion regulation to explain cybervictimisation. Further research should examine this issue.

Therefore, the future implementation of anti-bullying programmes aimed at reducing cybervictimisation might take into account these

**The results of this study provide some empirical evidence that EI is related to cybervictimisation in adolescence, thus, having poor mood regulation in females increased cybervictimisation experiences. These findings provide preliminary evidence for including EI aspects in anti-cyberbullying programmes including a gender-tailored approach.**

gender differences in mood regulation to develop more effective training by specifically focusing on the emotional deficits/strengths characteristically present in females and males. Several authors have underlined that specific prevention and intervention strategies need to be developed tailored to the special needs of each gender (Kowalski & al., 2014). In addition, our findings raise questions about the role of gender in strategies used in cybervictimisation experiences and asks for further exploration to examine the specific mechanisms that link differences in EI and cybervictimisation between males and females.

Even though the present study makes a novel contribution to the existing literature, there are several limitations that should be addressed by further research. First, although our data provide preliminary evidence for a moderating role of gender in predicting cybervictimisation experiences, the cross-sectional nature of our design makes it impossible to determine the directionality of any causal relationships. Further prospective follow-up studies or a longitudinal design would help to untangle the causal direction. In addition, it is important to underline that the adolescent sample is based on a convenience sample, so the results of this study cannot be generalised. Future work should apply a random design or use adolescent samples with clinically diagnosed psychiatric problems associated with cybervictimisation experiences, which would increase the degree of generalisation of the findings. Another potential limitation was the use of self-report measures which might be subject to social desirability. Future studies should replicate our findings using a wider array of assessment approaches with multiple sources (i.e., parents, school practitioners, peers), as well as other measures of cybervictimisation (e.g., the Cybervictimization questionnaire (CBV) by Alvarez, Dobarro, & Nuñez, 2015). Besides, we used an EI self-report measure. Although tools of this type are widely used in the scientific literature, their combined use with newer ability-based measures based on performance criteria would increase our knowledge beyond what the WLEIS data allows, not only about the independent and interactive effect of perceived and actual EI but also about insights into the design of professionally guided interventions focusing on emotional knowledge, emotional self-efficacy, and EI abilities aimed at reducing the negative consequences of cybervictimisation. Finally, the inclusion of measures of personality (i.e., big five) and



social abilities would provide a comprehensive perspective and would generate some new insights into the interactive role that EI, personality traits, and social skills play in reducing the negative symptoms associated to cybervictimisation.

Despite these limitations, our study has provided some empirical evidence that EI is associated with cybervictimisation experiences in life. As practical implications, given that extensive evidence has shown that the emotional skills grouped into the EI construct can be learned and are susceptible to being developed through school programmes in children and adolescents (Ruiz-Aranda, & al., 2013), the present findings might serve as a good starting point for inclusion of training in EI skills as an additional intervention strategy to complement current anti-bullying approaches to reduce cybervictimisation experiences in adolescents at risk. If these findings can be replicated, psychological service providers should include EI abilities while working with adolescent females to prevent cyberbullying since our findings suggest that a deficiency in mood regulation in female adolescents has a combined effect in increasing cybervictimisation experiences. Additionally, other implications for school officials and counselors are that evaluating the interactive association between EI and gender in explaining cybervictimisation might be fundamental as these variables may potentially be used as a screening assessment to identify potential high school students who might be at risk of cybervictimisation after experiencing cyberbullying behaviors. Also, as Lomas and al. (2012) have argued, detection and identification of risk factors related to victims of cyberbullying would help to change the role of school practitioners, moving from a 'policing' role to inhibit disruptive behaviours and securely engage cyber behaviours of bullies, to a more active role in developing emotional skills and mood regulation strategies of cyberbullies and their victims. Nevertheless, since prevention and intervention programmes aimed at increasing EI skills have only been implemented in a normal sample of high school students, further research should specifically examine the efficacy of these EI prevention programmes for adolescents at risk of peer cybervictimisation. Some preliminary work has shown the effectiveness of EI interventions in Spanish high school settings to reduce physical/verbal aggression and hostility and increase empathy and mental health (Castillo, Salguero, Fernandez-Berrocal, & Balluerka, 2013). It is tentative to assume that similar intervention programmes might be used to reduce psychological distress and negative symptoms in those adolescents who are at a greater risk of being subjected to peer cybervictimisation.

In conclusion, our findings shed some light on the importance of considering EI skills for the preventative design of anti-bullying programmes and provide preliminary evidence for using a gender-tailored cybervictimisation approach as a potentially efficient way of coping with the associated distress caused by cyberbullying experiences.

### Funding Agency

This research has been carried out within the framework of the Research Project «Forgiveness as a protective factor against suicide and psychological maladjustment among bullied adolescents» (PPIT.UMA.B1.2017/23) supported by the University of Málaga.

### References

- Aiken, L.S., & West, S.G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Alvarez-Garcia, D., Nuñez, J.C., Dobarro, A., & Rodriguez, C. (2015). Risk factors associated with cybervictimization in adolescence. *International Journal of Clinical and Health Psychology*, 15(3), 226-235. <https://doi.org/10.1016/j.ijchp.2015.03.002>
- Alvarez-Garcia, D., Dobarro, A., & Nuñez, J.C. (2015). Validez y fiabilidad del cuestionario de cibervictimización en estudiantes de Secundaria. *Aula Abierta*, 43(1), 32-38. <https://doi.org/10.1016/j.aula.2014.11.001>
- Baroncelli, A., & Ciucci, E. (2014). Unique effects of different components of trait emotional intelligence in traditional bullying and cyberbullying. *Journal of Adolescence*, 37(6), 807-815. doi: 10.1016/j.adolescence.2014.05.009
- Beckman, L., Hagquist, C., & Hellström, L. (2012). Does the association with psychosomatic health problems differ between cyberbullying and traditional bullying? *Emotional and Behavioural Difficulties*, 17, 421-434. <https://doi.org/10.1080/13632752.2012.704228>
- Book, A.S., Volk, A.A., & Hosker, A. (2012). Adolescent bullying and personality: An adaptive approach. *Personality and Individual Differences*, 52(2), 218-223. doi: 10.1016/j.paid.2011.10.028
- Brackett, M.A., Rivers, S.E., Shiffman, S., Lerner, N., & Salovey, P. (2006). Relating emotional abilities to social functioning: A comparison of self-report and performance measures of Emotional Intelligence. *Journal of Personality and Social Psychology*, 91(4), 780-795. <https://doi.org/10.1037/0022-3514.91.4.780>
- Brighi, A., Guarini, A., Melotti, G., Galli, S., & Genta, M.L. (2012). Predictors of victimisation across direct bullying, indirect bullying and cyberbullying. *Emotional and Behavioural Difficulties*, 17(3-4), 375-388.
- Carbone-Lopez, K., Esbensen, F., & Brick, B.T. (2010). Correlates and consequences of peer victimization: Gender differences in direct and indirect forms of bullying. *Youth Violence and Juvenile Justice*, 8, 332-350. <https://doi.org/10.1177/1541204010362954>
- Casas, J.A., Del Rey, R., & Ortega-Ruiz, R. (2013). Bullying and cyberbullying: Convergent and divergent predictor variables. *Computers in Human Behavior*, 29(3), 580-587. <https://doi.org/10.1016/j.chb.2012.11.015>
- Castillo, R., Salguero, J.M., Fernandez-Berrocal, P., & Balluerka, N. (2013). Effects of an emotional intelligence intervention on aggression

- and empathy among adolescents. *Journal of Adolescence*, 36, 883-892. <https://doi.org/10.1016/j.adolescence.2013.07.001>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd Ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Del Rey, R., Casas, J.A., Ortega-Ruiz, R., Schultze-Krumbholz, A., Scheithauer, H., Smith, P., ... Plichta, P. (2015). Structural validation and cross-cultural robustness of the European Cyberbullying Intervention Project Questionnaire. *Computers in Human Behavior*, 50, 141-147. <https://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, 608-613.
- Dredge, R., Gleeson, J., & Garcia, X.P. (2014). Cyberbullying in social networking sites: an adolescent victim's perspective. *Computer and Human Behaviour*, 36, 13-20. doi: 10.1016/j.chb.2014.03.026
- Elípe, P., De-la-Oliva, M., & Del Rey, R. (2017). Homophobicbullying and cyberbullying: Study of a silenced problem. *Journal of Homosexuality*, 65(5), 672-686. <https://doi.org/10.1080/00918369.2017.1333809>
- Elípe, P., Mora-Merchan, J.A., Ortega-Ruiz, R., & Casas, J.A. (2015). Perceived emotional intelligence as a moderator variable between cybervictimization and its emotional impact. *Frontiers in Psychology*, 6, 486. <https://doi.org/10.3389/fpsyg.2015.00486>
- Extremera, N., Duran, A., & Rey, L. (2007). Perceived emotional intelligence and dispositional optimism-pessimism: Analyzing their role in predicting psychological adjustment among adolescents. *Personality and Individual Differences*, 42, 1069-1079. <https://doi.org/10.1016/j.paid.2006.09.014>
- Extremera, N., Quintana-Orts, C., Mérida-López, S., & Rey, L. (2018). Cyberbullying victimization, self-esteem and suicidal ideation in adolescence: Does emotional intelligence play a buffering role? *Frontiers in Psychology*, 9, 367. <https://doi.org/10.3389/fpsyg.2018.00367>
- Fernandez-Berrocá, P., & Extremera, N. (2008). A review of trait meta-mood research. In M.A. Columbus (Ed.), *Advances in Psychology Research* (pp.17-45). San Francisco: Nova Science.
- Fernandez-Berrocá, P., & Extremera, N. (2016). Ability Emotional Intelligence, Depression, and Well-Being. *Emotion Review*, 8(4), 311-315. <https://doi.org/10.1177/1754073916650494>
- Garaibordobil, M., & Oñederra, J.A. (2010). Inteligencia emocional en las víctimas de acoso escolar y en los agresores [Emotional intelligence in victims of school bullying and in aggressors]. *European Journal of Education and Psychology*, 3(2), 243-256.
- Gini, G., & Espelage, D.L. (2014). Peer victimization, cyberbullying, and suicide risk in children and adolescents. *The Journal of the American Medical Association*, 312, 545-546. doi:10.1001/jama.2014.3212
- Gini, G., Pozzoli, T., & Hymel, S. (2014). Moral disengagement among children and youth: A meta-analytic review of links to aggressive behavior. *Aggressive Behavior*, 40, 56-68. <https://doi.org/10.1002/ab.21502>
- Hill, P.L., Heffernan, M.E., & Allemand, M. (2015). Forgiveness and Subjective Well-Being: Discussing Mechanisms, Contexts, and Rationales. In L.L. Toussaint (Ed.), *Forgiveness and Health* (pp. 155-169). Dordrecht: Springer. [https://doi.org/10.1007/978-94-017-9993-5\\_11](https://doi.org/10.1007/978-94-017-9993-5_11)
- Hinduja, S., & Patchin, J.W. (2009). *Bullying beyond the schoolyard: Preventing and responding to cyberbullying*. Thousand Oaks, CA: Sage Publications.
- Katzner, C., Fetschenhauer, D., & Belschack, F. (2009). Cyberbullying: who are the victims? A comparison of victimization in Internet chatrooms and victimization in school. *Journal of Media Psychology*, 21(1), 25-36. <https://doi.org/10.1027/1864-1105.21.1.25>
- Kessler R.C., & McLeod J.D. (1984). Sex differences in vulnerability to undesirable life events. *American Sociological Review*, 49, 620-631. <https://doi.org/10.2307/2095420>
- Kowalski, R.M., Giumetti, G.W., Schroeder, A.N., & Lattanner, M.R. (2014). Bullying in the digital age: A critical review and meta-analysis of cyberbullying research among youth. *Psychological Bulletin*, 140(4), 1073-1137. <https://doi.org/10.1037/a0035618>
- Law, K.S., Wong, C.S., & Song, L.J. (2004). The construct and criterion validity of emotional intelligence and its potential utility for management studies. *Journal of Applied Psychology*, 89, 483-496. <https://doi.org/10.1037/0021-9010.89.3.483>
- Li, Q. (2006). Cyberbullying in schools: A research on gender differences. *School Psychology International*, 27, 157-170. <https://doi.org/10.1177/0143034306064547>
- Lomas, J., Stough, C., Hansen, K., & Downey, L.A. (2012). Brief report: Emotional intelligence, victimization and bullying in adolescents. *Journal of Adolescence*, 35, 207-211. <https://doi.org/10.1016/j.adolescence.2011.03.002>
- Mayer, J.D., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey, & D. Sluyter (Eds.), *Emotional development and emotional intelligence: Educational implication* (pp. 3-31). New York: Basic Books.
- Merida-Lopez, S., Extremera, N., & Rey, L. (2017). En busca del ajuste psicológico a través de la inteligencia emocional ¿es relevante el género de los docentes? *Behavioral Psychology/Psicología Conductual*, 25, 581-597.
- Nixon, C.L. (2014). Current perspectives: The impact of cyberbullying on adolescent health. *Adolescent Health, Medicine and Therapeutics*, 5, 143-158. <https://doi.org/10.2147/AHMT.S36456>
- Nolen-Hoeksema, S. (2003). The response styles theory. In C. Papageorgiou & A. Wells (Eds.), *Depressive rumination: Nature, theory and treatment of negative thinking in depression* (pp. 107- 123). New York: Wiley.
- Nolen-Hoeksema, S., & Hilt, L.M. (2009). Gender differences in depression. In I.H. Gotlib & C.L. Hammen (Eds.), *Handbook of Depression* (pp. 386-404). New York: Guilford.
- O'Brien, N., & Moules, T. (2013). Not sticks and stones but tweets and texts: Findings from a national cyberbullying project. *Pastoral Care in Education: International Journal of Psychology in Education*, 31, 53-65. <https://doi.org/10.1080/02643944.2012.747553>
- Ortega, R., Elípe, P., Mora-Merchan, J.A., Genta, M.L., Brighi, A., Guarini, A., ... Tippet, N. (2012). The emotional impact of bullying and cyberbullying on victims: a European cross-national study. *Aggressive Behavior*, 38, 342-356. <https://doi.org/10.1002/ab.21440>
- Ortega-Ruiz, R., Del Rey, R., & Casas, J.A. (2012). Knowing, building and living together on internet and social networks: The ConRed cyberbullying prevention program. *International Journal of Conflict and Violence*, 6(2), 302-312. <https://doi.org/10.4119/UNIBI/ijcv.250>

- Palermi, A.L., Servidio, R., Bartolo, M.G., & Costabile, A. (2017). Cyberbullying and self-esteem: An Italian study. *Computers in Human Behavior*, 69, 136-141. <https://doi.org/10.1016/j.chb.2016.12.026>
- Perren, S., Corcoran, L., Cowie, H., Dehue, F., Garcia, D.J., McGuckin, C., ... Völlink, T. (2012). Tackling cyberbullying: Review of empirical evidence regarding successful responses by students, parents, and schools. *International Journal of Conflict and Violence*, 6, 283-292.
- Rey, L., & Extremera, N. (2014). Positive psychological characteristics and interpersonal forgiveness: Identifying the unique contribution of emotional intelligence abilities, Big Five traits, gratitude and optimism. *Personality and Individual Differences*, 68, 199-204. <https://doi.org/10.1016/j.paid.2014.04.030>
- Rey, L., Extremera, N., & Pena, M. (2016). Emotional competence relating to perceived stress and burnout in Spanish teachers: a mediator model. *PeerJ*, 4:e2087. <https://doi.org/10.7717/peerj.2087>
- Ruiz-Aranda, D., Cabello, R., Salguero, J.M., Palomera, R., Extremera, N., & Fernandez-Berrocal, P. (2013). *Guía para mejorar la inteligencia emocional de los adolescentes. Programa INTEMO*. Madrid: Piramide.
- Salguero, J.M., Fernandez-Berrocal, P., Balluerka, N., & Aritzeta, A. (2010). Measuring perceived emotional intelligence in the adolescent population: psychometric properties of the Trait Meta-Mood scale. *Social Behavior and Personality*, 38(9), 1197-1210. <https://doi.org/10.2224/sbp.2010.38.9.1197>
- Schokman, C., Downey, L.A., Lomas, J., Wellham, D., Wheaton, A., Simmons, N., & Stough, C. (2014). Emotional intelligence, victimisation, bullying behaviours and attitudes. *Learning and Individual Differences*, 36, 194-200. doi: 10.1016/j.lindif.2014.10.013
- Sontag, L.M., Clemans, K.H., Graber, J.A., & Lyndon, S.T. (2011). Traditional and cyber aggressors and victims: a comparison of psychosocial characteristics. *Journal of Youth and Adolescence*, 40, 392-404. <https://doi.org/10.1007/s10964-010-9575-9>
- Tamres, L.K., Janicki, D., & Helgeson, V.S. (2002). Sex differences in coping behavior: a meta-analytic review and an examination of relative coping. *Personality and Social Psychology Review*, 6, 2-30. [https://doi.org/10.1207/S15327957PSPR0601\\_1](https://doi.org/10.1207/S15327957PSPR0601_1)
- 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. <https://doi.org/10.1016/j.chb.2009.11.014>
- Thayer, J.F., Rossy, L. A., Ruiz-Padial, E., & Johnsen, B.H. (2003). Gender differences in the relationship between emotional regulation and depressive symptoms. *Cognitive Therapy and Research*, 27, 349-364. <https://doi.org/10.1023/A:1023922618287>
- Ttofi, M.M., Farrington, D.P., & Lösel, F. (2014). Interrupting the continuity from school bullying to later internalizing and externalizing problems: findings from cross-national comparative studies. *Journal of School Violence*, 13, 1-4. <https://doi.org/10.1080/15388220.2013.857346>
- Tucker, J.R., Bitman, R.L., Wade, N.G., & Cornish, M.A. (2015). Defining forgiveness: Historical roots, contemporary research, and key considerations for health outcomes. In L. Toussaint, E. Worthington, & D. Williams (Eds.), *Forgiveness and Health Scientific Evidence and Theories Relating Forgiveness to Better Health* (pp. 13-28). Dordrecht: Springer. [https://doi.org/10.1007/978-94-017-9993-5\\_2](https://doi.org/10.1007/978-94-017-9993-5_2)
- Zych, I., Ortega-Ruiz, R., & Del Rey, R. (2015). Systematic review of theoretical studies on bullying and cyberbullying: Facts, knowledge, prevention, and intervention. *Aggression and Violent Behavior*, 23, 121. <https://doi.org/10.1016/j.avb.2015.10.001>





# Socio-cognitive and emotional factors on perpetration of cyberbullying

## Factores socio-cognitivos y emocionales en la agresión del ciberacoso

- Dr. Elisa Larrañaga is Senior Lecturer in the Department of Psychology at the University of Castilla-La Mancha (Spain) (elisa.larranaga@uclm.es) (<https://orcid.org/0000-0002-7183-1683>)
- Dr. Raúl Navarro is Associate Professor in the Department of Psychology at the University of Castilla-La Mancha (Spain) (raul.navarro@uclm.es) (<https://orcid.org/0000-0003-4284-4300>)
- Dr. Santiago Yubero is Full Professor EU in the Department of Psychology at the University of Castilla-La Mancha (Spain) (Santiago.yubero@uclm.es) (<https://orcid.org/0000-0002-7148-7958>)

### ABSTRACT

Research on the characteristics shown by children who cyberbully others is scarce. The objective of this research is to know the variables that predict the involvement of youngsters in cyberbullying perpetration. The current study examined the relation between socio-cognitive and emotional variables and cyberbullying perpetration. It examined the cyberbullies' beliefs about moral disengagement towards cyberbullying. It tested also the social support and emotional reactions to cyberbullying with the aim of understanding their association with cyberbullying perpetration. A number of 1,062 teenagers (54% girls) between 12 and 19 years old ( $M=15.20$ ,  $SD=1.91$ ), from six public secondary schools in Castilla-La Mancha (Spain), participated in the study. Results suggest that students who engage in cyberbullying perpetration have higher levels of cyberbullying victimization and bullying aggression when compared with their peers who do not engage in cyberbullying. The findings show that socio-cognitive and emotional variables are important to understand individual differences in engagement in cyberbullying. Result of regressions indicated that perpetration of cyberbullying was positively associated with cyberbullying victimization, bullying aggression, moral disengagement towards cyberbullying, social support and satisfaction expression. In contrast, perpetration of cyberbullying was not associated with negative emotions. Gender and age did not play a significant role in the prediction on perpetration of cyberbullying. Future research should continue to examine predictive factors associated with cyberbullying perpetration.

### RESUMEN

Las investigaciones sobre los ciberagresores son escasas. El objetivo de esta investigación ha sido conocer las variables que predicen la agresión de ciberacoso. El presente estudio examinó la relación entre las variables socio-cognitivas y emocionales con la agresión de ciberacoso. Se examinó la desconexión moral hacia el ciberacoso. Se midió también el apoyo social y las emocionales con el objetivo de conocer su relación con la participación en el ciberacoso. Participaron en el estudio 1.062 adolescentes (54% chicas) con edades entre los 12 y 19 años ( $M=15.20$ ;  $DT=1.91$ ), de seis Institutos de Enseñanza Secundaria de Castilla-La Mancha (España). Los resultados muestran que los estudiantes que participan en la agresión tienen niveles más elevados de ciber-victimización y acoso, en comparación con sus compañeros que no agreden a través de ciberacoso. Los resultados muestran que las variables socio-cognitivas y emocionales son relevantes para entender las diferencias individuales en la participación de ciberacoso. El resultado del análisis de regresión indicó que la ciberagresión estaba positivamente asociada con la cibervictimización, la agresión cara a cara, la desconexión moral hacia el ciberacoso, el apoyo social y la satisfacción por su comportamiento. En contraste, no se asoció con emociones negativas. El género y la edad no desempeñaron un papel significativo para la predicción de la ciberagresión. Por ello, investigaciones futuras deben continuar examinando los factores predictivos asociados a la agresión del ciberacoso.

### KEYWORDS | PALABRAS CLAVE

Cyberbullying, perpetration, bullying, moral disengagement, social support, emotional reactions, adolescence, victims. Ciberacoso, agresión, acoso, desconexión moral, apoyo social, emociones, adolescencia, víctimas.



## 1. Introduction and state of the art

In the last decade, we have heard news about many cases of bullying, humiliation, and violence involving schoolchildren who use the new communication technologies (Smith, Mahdavi, Carvalho, Fisher, Russell, & Tippett, 2008). By extending the traditional definition of bullying, cyberbullying is defined as an aggressive behavior among schoolchildren perpetrated repeatedly through electronic means by a group or individual against a victim who cannot defend himself/herself easily on his/her own (Smith & al., 2008).

Cyberbullying incidence is lower than traditional bullying (Herrera-López, Romera, & Ortega-Ruiz, 2017; Raskauskas & Stoltz, 2007). Slonje & Smith (2008) reported that 5.3% suffered cyberbullying victimization, and 2.8% suffered from it frequently. In Spain, Giménez-Gualdo, Hunter, Durkin, Arnaiz & Maquilón (2015) provide similar data. In a sample of 1,353 youngsters, 8% reported suffering cyberbullying experiences. Regarding gender, the results are not consistent (Garaigordobil, 2011). According to some studies, males are more frequently involved (Perren & Gutzwiller-Helfenfinger, 2012; Slonje & Smith, 2008). In other studies, females report higher levels of victimisation (Giménez-Gualdo & al., 2015; Ortega, Calmaestra, & Mora-Merchán, 2008; Ortega, Elípe, Mora-Merchán, Calmaestra, & Vega, 2009). Other studies do not show any gender differences (Giménez-Gualdo & al., 2015; Smith & al., 2008). Regarding age, some studies show that cyberbullying increases with age (Ortega & al., 2008). Other studies show a decrease in the number of schoolchildren involved (Moore, Huebner, & Hills, 2012), and others report a curvilinear relationship with an increase in the middle years of Secondary Education (Calvete, Orue, Estévez, Villardón, & Padilla, 2010; Ortega & al., 2009). Some studies do even show that there are no differences (Garaigordobil, 2015; Perren & Gutzwiller-Helfenfinger, 2012).

Intervention programmes against bullying have had positive results regarding reduction of victimisation rates but not in terms of perpetration rates (Ttofi & Farrington, 2011). From the point of view of Psychology Groups, it is essential to understand the adversary to resolve any conflict (Gómez & Vázquez, 2015). In this line, in order to predict cyberbullying and to introduce preventive actions, it would be necessary to take into account personal and social variables of those adolescents who perpetrate cyberbullying. Most studies have been conducted from the victims' point of view, and just a few have focused on analysing cyberbullies. For this reason, we believe this study is relevant as it focuses on cyberbullies specifically.

### 1.1. The perpetrator's role

Previous research has shown a strong relationship between the victim's and perpetrator's roles in cyberbullying (Meter & Bauman, 2016). On the other hand, studies analysing face-to-face bullying and cyberbullying have found a correlation in the involvement in both forms of aggression. The results obtained in many studies suggest that both phenomena coexist (Cross, Lester, & Barnes, 2015; Herrera-López & al., 2017). Longitudinal studies show that involvement in bullying behaviors is a predictor of potentially being involved in episodes of cyberbullying (Cross & al., 2015; Sticca, Ruggieri, Alsaker, & Perren, 2013). Cyberbullies are thus prone to also attack their peers face-to-face (Perren & Gutzwiller-Helfenfinger, 2012). Therefore, students perpetrating traditional bullying can also perpetrate cyberbullying (Smith & al. 2008). It also turns out that victims may also be cyberbullies (Smith & al. 2008). Nevertheless, other studies do not support such findings totally (Raskauskas & Stoltz, 2007; Slonje & Smith, 2008).

The ecological model of bullying, adapted to Bronfenbrenner's Model (1977), shows that both individual and social variables may act as risk and protection factors. Indeed, peer relationships may become a risk factor for the involvement in negative interactions (Menesini, Nocentinni, & Paladino, 2012). For this reason, aggression may also be strengthened by group dynamics (Olthof, Goossens, Vermande, Aleva, & van-der-Meulen, 2011). Some studies show that those students who perpetrate bullying do not have any social support (Calvete & al., 2010). This situation is especially relevant in the bully-victim group (Cerezo, Sánchez, Ruiz, & Arense, 2015). Nevertheless, Twyman, Saylor, Taylor & Comeaux (2010) state that having a group of friends may also promote cyberbullying. Indeed, Olthof & al. (2011) stated that those students who use bullying to maintain their position within their respective groups are seen as socially popular and enjoy the support of their group.

Bandura's Social Cognitive Theory (1999) identifies moral disengagement as a cognitive process through which people justify their aggressive behavior or distort its potential impact on other people. In a longitudinal study, Williams & Guerra (2007) found that those students who seem to accept normative beliefs related with bullying are more involved in this type of behavior; this is also a predictor positively related with cyberbullying. Such relationship with cyberbullying was also verified in other studies (Almeida, Correia, Marinho, & Garcia, 2012;

Bauman, 2010; Meter & Bauman, 2016). Nevertheless, other studies did not find such relationship. For example, Perren & Gutzwiller-Helfenfinger (2012) reported that moral disengagement was only significant predicting traditional bullying.

In addition to moral disengagement, research is focused on the study of emotional reactions as potential indicators of moral and personal reasons for such aggressive behavior (Menesini, Palladino & Nocentini, 2015). The existing link between low levels of guilt and grief may legitimise negative behaviors (Perren & Gutzwiller-Helfenfinger, 2012). If aggressors feel proud of or indifferent to their behaviors, these emotions, in turn, contribute to an increase in moral disengagement (Menesini & al., 2003). Similarly, Menesini & al. (2015) reported that the absence of emotions for their victims and the positive emotions experienced by perpetrators are the positive feedback to them that strengthens their bullying behavior. Boulton & Underwood (1992) reported that victims of school bullying thought that their perpetrators felt well and happy about their behavior.

Taking into account the conflicting data collected in different research on the variables linked to cyberbullying perpetration, the need to conduct further research in this direction is evidenced. Getting to know the variables that may predict the continuation of face-to-face bullying by means of the new technologies would be a very important step forward to prevent it and take all necessary steps against it.

Given the relevance of the socio-cognitive and emotional variables in the perpetration role and the absence of

studies that analyse all these variables together, the objective of this study is to jointly analyse the link between cognition (moral disengagement), social support and personal variables (involvement in bullying and emotions) in cyberbullying perpetration.

The objective of this study is to identify the relationships between variables previously reviewed and cyberbullying perpetration. Therefore, we will study the correlation between cyberbullying perpetration and involvement in traditional bullying and cyberbullying victimisation, as well as social support perceived by perpetrators, social disengagement, and the emotions linked to their behavior. We will then establish the predictive value of the variables studied in cyberbullying perpetration.

Due to the inconsistency of the data collected from prior research, we do not hypothesize any relationship between cyberbullying and gender and age. The research question is: do gender and age have any impact on cyberbullying perpetration? Regarding bullying, we expect that traditional bullying and cyberbullying victimisation will be a significant predictor of cyberbullying perpetration (H1). Moral disengagement will be positively related to cyberbullying perpetration (H2). Regarding the social context, we expect that cyberbullies feel supported by their peers (H3). Based on previous literature, we expect that cyberbullies do not feel guilty and feel pleasant emotions as a result of their behaviour (H4).

## 2. Material and methods

### 2.1. Participants

The sample was incidental and made up of 1,062 students of Secondary Education, Vocational Education and Years 12 and 13. 46% were men and 54% were women, aged between 12 and 19 years old ( $M=15.20$ ,  $SD=1.91$ ). 47.8% were students of a lower cycle of secondary education ( $n=508$ ), 35.4% were students of a higher cycle of secondary education ( $n=376$ ), and 16.6% were students of Years 12 and 13 ( $n=178$ ). Six public Secondary Schools in the region of Castilla-La Mancha participated in this study: two from a rural environment and

**In order to predict cyberbullying and to introduce preventive actions, it would be necessary to take into account personal and social variables of those adolescents who perpetrate cyberbullying. Most studies have been conducted from the victims' point of view, and just a few have focused on analysing cyberbullies. For this reason, we believe this study is relevant as it focuses on cyberbullies specifically.**



two from the provincial capital. 91% was born in Spain. Concerning the immigrant students, more than 50% come from Eastern Europe ( $n=52$ ), from Romania mostly, and 17% come from Latin American countries.

## 2.2. Instruments

The Bullyharm (Hall, 2016) was used to measure cyberbullying. The scale comprises 14 Likert-type items for each subscale of perpetration and victimisation with a rating response that ranges from 0 to 3: 0=never happened to me; 1=it happened to me once or twice; 2=it happened to me at least once a week; and 3=it happened to me twice or more times a week. Students were asked to determine their frequency of participation in certain behaviors in the last month. The internal consistency of the scale is optimal, regarding traditional bullying for perpetration  $\alpha=.81$  and  $\alpha=.86$  for victimisation, to measure cyberbullying,  $\alpha=.79$  for victimisation and  $\alpha=.64$  for perpetration.

Social support was measured using the subscale of perceived social support by friends from the AFA-R scale (González & Landero, 2014). It consists of seven Likert-type items with five-point response options ranging from 1 to five: 1=never; 2=rarely; 3=sometimes; 4=often; 5=always. The consistency of the subscale was high,  $\alpha=.88$ .

Given the relevance of the socio-cognitive and emotional variables in the perpetration role and the absence of studies that analyse all these variables together, the objective of this study is to analyse jointly the link between cognition (moral disengagement), social support and personal variables (involvement in bullying and emotions) in the cyberbullying perpetration.

The questionnaire on moral disengagement towards cyberbullying by Bussey, Fitzpatrick & Raman (2015) was employed. It consists of eight Likert-type items regarding moral disengagement towards cyberbullying behaviours, with five options: 1=strongly disagree; 2=disagree; 3=not sure; 4=agree; 5=strongly agree. The consistency of the subscale was appropriate,  $\alpha=.68$ .

A scale was built to evaluate the emotional component of cyberbullies following the structure of previous research

(Giménez-Gualdo & al., 2015; Ortega & al., 2009). Students had to identify the emotional intensity of each of the emotions proposed according to their cyberbullying experience. It was measured using a Likert-type scale with five items ranging from 1=not at all to 5=very much. Following the theoretical review performed, guilt was included (Perren & Gutzwiller-Helfenfinger, 2012), as it had already been included in Ortega & al. (2009) and Caravita, Colombo, Stefanelli & Zigliani (2016). Sadness was also included considering that it is highlighted in most studies about the emotional component of bullying. Following the results obtained by Menesini & al. (2015), the absence of emotions (feel nothing) and positive emotions were included. No evaluation of emotions was found in prior research. Therefore, it was considered appropriate to include the opposite of negative emotions. In this line, fun was selected as opposite to sadness and satisfaction as opposite to guilt. Boulton and Underwood (1992) reported that bullies felt well, and we also included the well-being element and its opposite, discomfort. Discomfort had already been used by Ortega & al. (2009) and Horner, Asher, and Fireman (2015). A pilot study was conducted before using it in order to determine whether the students understand the terms proposed or not and no problems were detected. The reliability of pleasant emotions amounted to  $\alpha=.68$ , and the reliability of unpleasant emotions amounted to  $\alpha=.86$ .

## 2.3. Design

The research has a cross-sectional design, retrospective ex-post with multiple measurements.

## 2.4. Procedure

Attending to ethical considerations, in the first place we obtained the informed consent of the minors' parents. 1.5% of the families did not respond to our request, and their children did not participate in the study.

The questionnaire was distributed in the classrooms by agreement with the headmasters and the teachers of the

schools. The objective of the study was explained to the students, and they were informed that their participation was voluntary and that their answers would remain anonymous. The average time to fill in the battery of tests was 20 minutes.

## 2.5. Data analysis

Participant's categorization as victims or perpetrators was made considering answers equal or above 1 (it happened to me once or twice in the last month) in the bullying questionnaires. After setting the contrasting groups, the Pearson correlation coefficient was conducted to identify the relationships between cyberbullying perpetration and the study variables. Student t-tests were conducted to verify the existence of differences in such variables between cyberbullies and non-involved students. Finally, a logistic regression analysis was performed to analyse the predictive value of the variables included in this study. A step analysis was conducted, including gender and education cycle as control variables. Bullying variables were included in the first step; the cognitive variable of moral disengagement was included in the second step; then the variable of the social context related with the perception of support from their classmates was included. Emotions were included in the last step. All the analyses were conducted using the statistical package SPSS (version 23) at a significance level of .05.

## 3. Results

8.2% of boys and 5.1% of girls ( $\chi^2=4.23$ ,  $p<.05$ ) are involved in cyberbullying perpetration. Regarding the education cycle, 6.3% of students of the first cycle (Year 8 and 9) reported cyberbullying perpetration, 7.2% in the case of students of the second cycle (Year 10 and 11) and in Year 12 and 13, 5.6% ( $\chi^2=0.55$ ,  $p=.760$ ) reported being a cyberbully.

### 3.1. Relationship between the variables of this study

The Pearson correlation analyses show that there are statistically significant correlations between cyberbullying perpetration, cyberbullying victimization and bullying involvement as a perpetrator or a victim. Moral disengagement, pleasant emotions, and indifference are also significantly correlated to cyberbullying perpetration. However, the perception of support from friends and negative emotions are not significantly correlated (Table 1).

### 3.2. Differences according to involvement in cyberbullying perpetration

As shown in table 1, cyberbullies reported higher levels of bullying victimization, and perpetration, as well as cyberbullying victimization than non-involved students.

Moral disengagement is also significantly higher among cyberbullies. There is also a significant difference in perception of support from their friends, which is lower among cyberbullies. Regarding emotions, cyberbullies link their

**Table 1. Pearson correlations means and standard deviations according to cyberbullying perpetration, Student t-test**

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13
1. CP	--												
2. BV	.258***	--											
3. BP	.428***	.526***	--										
4. CV	.389***	.477***	.291***	--									
5. MD	.233***	.185***	.276***	.149***	--								
6. SF	-.059	-.152***	-.086**	-.118***	-.156***	--							
7. F	.130***	.135***	.116***	.084**	.154***	-.32	--						
8. W	.168***	.165***	.132***	.156***	.161***	-.018	.775***	--					
9. Sf	.214***	.179***	.198***	.106***	.193***	-.043	.615***	.648***	--				
10. Gu	.044	.140***	.146***	.110***	.061	.005	.026	.058	.093**	--			
11. Sa	-.007	.063*	-.054	.082**	-.152***	.043	-.140***	-.131***	-.114***	.300***	--		
12. Dis	-.003	.082**	.017	.088**	-.149***	.064*	-.168***	-.151***	-.145***	.357***	.571***	--	
13. If	.162***	.095**	.110***	.068*	.106***	-.032	.052	.045	.136***	.052	-.055	.008	--
M ca		1.16	1.43	1.15	2.60	3.10	2.63	2.90	3.09	2.18	2.91	2.72	2.54
SD ca		0.62	0.99	0.96	.095	1.44	1.68	1.57	1.75	1.60	1.64	1.55	1.97
M nipc		0.17	0.35	0.07	1.65	3.80	1.63	1.51	1.37	1.73	2.90	2.62	1.40
SD nipc		0.25	0.42	0.28	0.49	0.96	1.18	1.13	0.92	1.10	1.50	1.47	0.99
t		12.16***	7.99***	11.83***	6.34***	-2.38*	3.06**	4.02***	6.03***	1.31	0.02	0.23	3.74***

Note. CA=cyberbullying perpetration; BV=bullying victimisation; BP=bullying perpetration; CV=cyberbullying victimisation; MD=moral disengagement; SF=support from friends; F=fun; W=well-being; Sf=satisfaction; Gu=guilt; Sa=sadness; Dis=discomfort; If=indifference; M=mean; SD=standard deviation; t=Student t-test; cp=cyberbullying perpetration; nipc=not involved in cyberbullying perpetration.

Measuring scale: 1-4=from 0 to 3; 5-13=from 1 to 5

\* $p<.05$ ; \*\* $p<.01$ , \*\*\* $p<.001$

behavior with pleasant emotions. Cyberbullying perpetration is associated with fun, well-being, and satisfaction. They also feel indifference to a greater extent. On the contrary, there are no statistically significant differences between cyberbullies and uninvolved students in terms of unpleasant emotions (guilt, sadness, and discomfort).

### 3.3. Predictive value of the study variables

The regression analysis was performed to explain cyberbullying perpetration among youths. Gender and education cycle were included as control variables. The results obtained (table 2) confirm the predictive value of the variables analysed, which explain 21% of the cyberbullying perpetration.

<b>Table 2. Models predicting cyberbullying perpetration</b>								
<b>Variables</b>	<b>Model 1</b>		<b>Model 2</b>		<b>Model 3</b>		<b>Model 4</b>	
	<b>OR</b>	<b>CI 95%</b>	<b>OR</b>	<b>CI 95%</b>	<b>OR</b>	<b>CI 95%</b>	<b>OR</b>	<b>CI 95%</b>
Gender*	0.62	0.34-1.12	0.69	0.37-1.26	0.62	0.33-1.15	0.65	0.34-1.24
Cycle	1.29	0.87-1.91	1.40	0.93-2.10	1.36	0.91-2.05	1.38	0.90-2.12
CV	6.56***	2.51-17.14	5.46***	2.00-14.86	6.10***	2.19-16.99	6.96***	2.41-20.06
BV	1.53	0.78-3.03	1.54	0.78-3.04	1.53	0.76-3.05	1.19	0.57-2.52
BP	3.06***	1.54-6.05	2.53**	1.24-5.13	2.67**	1.29-5.50	2.99**	1.42-6.30
MD			3.44**	1.56-7.58	3.62**	1.62-8.07	3.30**	1.41-7.70
SF					2.08*	1.11-3.91	2.14*	1.12-4.10
Fun							1.98	0.65-6.05
Well-being							0.20	0.04-1.11
Satisfaction							6.85**	1.75-26.78
Guilt							2.05	0.61-6.94
Sadness							1.05	0.43-2.53
Discomfort							0.73	0.26-2.04
Indifference							2.35	0.86-6.42
-2LL	368.20		359.95		354.48		337.95	
Nagelkerke R <sup>2</sup>	.12		.14		.16		.21	
Model $\chi^2$	41.90***		50.15***		55.62***		72.15***	

Note. CV=cyberbullying victimisation; BV=bullying victimisation; BP=bullying perpetration; MD=moral disengagement; SF=support from friends / \* Gender (1)=male / \*p<.05; \*\*p<.01, \*\*\*p<.001

More specifically, cyberbullying victimisation ( $\beta=1.94$ ), bullying perpetration ( $\beta=1.10$ ), moral disengagement ( $\beta=1.19$ ), perception of support from friends ( $\beta=0.76$ ) and satisfaction ( $\beta=1.92$ ) are statistically significant variables associated with cyberbullying perpetration. On the other hand, bullying victimisation, indifference, fun, well-being and unpleasant emotions are not significant. Likewise, gender and education cycle were not significant in any model.

## 4. Discussion and conclusions

The objective of the present study was to analyse the relationship between cognitive variables (moral disengagement), social context variables (perceived social support) and personal variables (involvement in bullying and emotions) and cyberbullying perpetration. Most studies have focused on analysing the situation of victims, but we believed it was also important to know what variables may be determining perpetration in cyberbullying. In sum, we wanted to analyse what social, cognitive and emotional variables lead some youth to engage in bullying behaviours outside the school through the digital technologies.

Research on the prevalence of cyberbullying has shown different prevalence rates, which frequently depends on the measures used (Romera & al., 2016; Zych, Ortega-Ruiz, & Marín-López, 2016). The results of this research show that 8.2% of male and 5.1% of female youth are cyberbullies. Such percentages are in line with previous research (Slonje & Smith, 2008; Giménez-Gualdo & al., 2015). According to previous studies (Perren & Gutzwiller-Helfenfinger, 2012; Slonje & Smith, 2008), male youth are significantly more involved. However, there were no differences in involvement reported by the students according to their education cycle (Garaigordobil, 2015; Perren & Gutzwiller-Helfenfinger, 2012). Nevertheless, none of these two variables were included in the regression with a significant explanatory relevance on cyberbullying perpetration.

The correlational analysis confirms the existing relationship between bullying and cyberbullying behaviours. Such relationship had already been reported in previous studies (Cross & al., 2015; Herrea-López & al., 2017). Nevertheless, according to the regression analysis, only traditional bullying and cyberbullying victimisation are significant for cyberbullying perpetration. Therefore, H1 is partially supported.

Regarding social support, cyberbullies in this study were significantly less supported than non-perpetrators.

Nevertheless, they felt encouraged if we take into account that they were above the theoretical mean. In line with prior studies on school bullying (Salmivalli, 2010), perpetrators are directly or indirectly supported by their classmates (for example, by seeing it as something fun and unimportant, even by encouraging them). Additionally, the new technologies may also become a new source of online support (Caravita, Gini, & Pozzoli, 2012). Nevertheless, according to Romera & al. (2016), the fact that cyberbullies feel supported does not imply that they are liked by their classmates. They may be popular and accepted by their classmates but for fear of being victimised, not due to a relationship of sympathy towards them.

Social support has proven itself to be a relevant variable in cyberbullying perpetration (H3). This result may have relevant implications for intervention in the classroom. Working together would be an option, trying to find the best way to provide social support to students so that they ignore perpetrators. We should prevent the problem of two-way social relationships, understood as those situations where it is believed that support leads to an increased probability that the youngster perpetrates cyberbullying. It could also be the case that the lack of support to the perpetrator may lead him/her to increase bullying against those classmates who ignore him/her. Intervention efforts could create protection conditions through peer groups and adults available and ready to support them. Interventions aimed at enhancing relationships among students and between teachers and students may also be a useful way to reduce the incidence of cyberbullying. Particularly, the teacher's support intervention, combined with the assistance of classmates, invigorates the protective effect of social support and may reduce the support provided to cyberbullies without fear of being victimised. From this line of study, the objective of the intervention should focus on enhancing communication between education agents.

In line with prior research, cyberbullies justify violence (Calvete & al., 2010). Cyberbullies reported higher levels of moral disengagement (Bauman, 2010; Meter & Bauman, 2010), which is a relevant predictor of their behavior (H2). Nevertheless, moral disengagement towards cyberbullying is not related to guilt. Prior research had already reported that the distance between the perpetrator and the victim generated by cyberbullying could mitigate perpetrator's guilt (Slonje & Smith, 2008) and dissociates responsibility for their actions (Almeida & al., 2008). These facts are used by some authors to explain the absence of any relationship between cyberbullying and moral disengagement in their research (Perren & Gutzwiller-Helfenfinger, 2012). It should be noted that a moral disengagement scale specifically aimed at cyberbullying was applied (Bussey & al., 2015), and this may explain the results obtained.

Only satisfaction was significant in the regression analysis, which means that the study hypothesis (H4) was partially supported. This result should be interpreted with caution, as satisfaction may be derived –directly or indirectly– from support from peers. No significant differences were found in these variables between cyberbullies and participants not involved in cyberbullying. Caravita & al. (2012) already reported that bullies have a negative perception of their behavior; for this reason, they need to trigger the moral disengagement mechanism. It seems that this also happens to cyberbullies: there are no significant differences in terms of sorrow or unrest, nevertheless, they perpetrate the aggression. It seems that they need to justify their behavior, which they see negatively, and trigger cognitive mechanisms of moral disengagement to feel good about themselves (Raskauskas & Stoltz, 2007). As a matter of fact, they feel indifference, fun, well-being or satisfaction for their behavior, which makes them repeat this aggressive behavior (Giménez-Gualdo & al., 2015). It is essential to attach vital importance to prevention and intervention programmes in order to break the aggression/fun nexus once and for all. Nevertheless, we cannot forget the impact of socialisation in the acquisition of social values; therefore, we should ask ourselves about the role played by violence in conflict resolution in our society. We believe that it is also important to attach a critical analysis of fun and satisfaction linked to aggression in such programmes, beginning with an analysis of many of the videogames played by youngsters in their free time that generate fun as a result of the aggressions they contain. However, adolescents state that fun lies in online conversations held as they are playing (Muros, Aragón, & Bustos, 2013). Pérez-Latorre (2012, 128) stated that “videogames always say interesting things about ourselves, about our world and our relationship with it”. Therefore, it would be interesting to analyse the existing relationship between playing video games with violent behaviors and involvement in cyberbullying.

This study has several limitations that should be addressed in future research. One important limitation is the cross-sectional design, as we cannot draw any conclusions on the direction of the effects. It would be necessary to conduct longitudinal studies to confirm the data obtained. As the sample is Spanish, it is obvious that it has certain cultural biases that cannot be present in other international studies and that are determining the results found. Self-reporting makes us cautious when making any generalisation related to the weight of variables when determining to



cyberbullying. On the other hand, some studies have reported the existing link between social support and the emotional perception of fun in addition to the absence of guilt (Perren & Gutzwiller-Helfenfinger, 2012), and moral disengagement (Caravita & al., 2012). Moral disengagement is in turn related to the emotional factors of bullying (Menessi & al., 2003) and to the absence of guilt in cyberbullying (Perren & Gutzwiller-Helfenfinger, 2012). As we can see, these are complex relationships that should be further studied, and research about such interactions should be conducted using structural models. In last place, this study focuses on cyberbullies exclusively. Further research should analyse poly-aggressive students who perpetrate bullying and cyberbullying to harass their classmates, and the group of bully-victims.

Nevertheless, although this is an exploratory study, our results go in the direction of an interesting line of research that may establish an influence framework of socio-cognitive and emotional variables to determine cyberbullying, if such trends are confirmed in other studies. In line with previous research (Romera & al., 2016), the

results obtained allow for the conclusion that the way peer groups manage their emotional and social lives may explain the situation of cyberbullying among adolescents. Future research should identify the specific factors responsible for aggression through the new technologies to manage and mitigate the impact of such aggressions.

In this sense, analysing the way students construe and manage cognitive, social and emotional information and the way it is regulated could be particularly interesting for intervention. Nevertheless, these components have not been sufficiently addressed so far (Della-

**Social support has proven itself to be a relevant variable in cyberbullying perpetration. This result may have relevant implications for intervention in the classroom.**

**Working together would be an option, trying to find the best way to provide social support to students so that they ignore perpetrators. We should prevent the problem of two-way social relationships, understood as those situations where it is believed that support leads to an increased probability that the youngster perpetrates cyberbullying.**

Cioppa, O'Neil, & Craig, 2015). Preventive actions should focus on the permissive beliefs adolescents have towards aggression. The objective of this intervention should be trying to neutralise those cognitive and emotional aspects strengthening bullying that have been internalized or are in the process of development.

Despite the limitations indicated above, this is the first study that analyses the existing relationship between bullying, socio-cognitive and emotional variables, and more specifically, cyberbullying perpetration. We believe this study provides very significant facts on prediction of cyberbullying and may have very strong implications for intervention. In conclusion, perpetrating bullying against classmates in "real" space, face to face, being cyberbullied, feeling supported by friends, justifying aggressive behaviours through moral disengagement, combined with satisfaction for perpetrating aggression against peers explains a high proportion of aggressive behaviors in cyberspace.

### Funding Agency

This research has been conducted within the Framework of the I+D+i Project called "Protection of Cyberbullying Victims: A Study of Family and Gender Variables" (PSI2015-70822-R), funded by the Ministry of Economy and Competitiveness of the Government of Spain.

### References

- Almeida, A., Correia, I., Marinho, S., & Garcia, D. (2012). Virtual but not less real: A study of cyberbullying and its relations to moral disengagement and empathy. In Q. Li, D. Cross, & P.K. Smith (Eds.), *Cyberbullying in the global playground: Research from international perspectives* (pp. 223-244). Chichester, UK: Wiley-Blackwell.
- Bandura, A. (1999). Moral disengagement in the perpetration of inhumanities. *Personality and Social Psychology Review*, 3(3), 193-209. [https://doi.org/10.1207/s15327957pspr0303\\_3](https://doi.org/10.1207/s15327957pspr0303_3)
- Bauman, S. (2010). Cyberbullying in a rural intermediate school: An exploratory study. *Journal of Early Adolescence*, 30, 803-833. <https://doi.org/10.1177/0272431609350927>





- Boulton, M.J., & Underwood, K. (1992). Bully/victim problems among middle school children. *British Journal of Educational Psychology*, 62, 73-83.
- Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist*, 32, 513-531. <https://doi.org/10.1037/0003-066X.32.7.513>
- Bussey, K., Fitzpatrick, S., & Raman, A. (2015). The role of moral disengagement and self-efficacy in cyberbullying. *Journal of School Violence*, 14(1), 30-46. <https://doi.org/10.1080/15388220.2014.954045>
- Calvete, E., Orue, I., Estévez, A., Villardón, L., & Padilla, P. (2010). Cyberbullying in adolescents: Modalities and aggressors' pro-file. *Computers in Human Behavior*, 26, 1128-1135. <https://doi.org/10.1016/j.chb.2010.03.017>
- Caravita, S.C.S., Colombo, B., Stefanelli, S., & Zigliani, R. (2016). Emotional, psychophysiological and Behavioral responses elicited by the exposition to cyberbullying situations: Two experimental studies. *Psicología Educativa*, 21, 49-59. <https://doi.org/10.1016/j.pse.2016.02.003>
- Caravita, S.C.S., Gini, G., & Pozzoli, T. (2012). Main and moderated effects of moral cognition and status on bullying and defending. *Aggressive Behavior*, 38, 456-468. <https://doi.org/10.1002/ab.21447>
- Cerezo, F., Sánchez, C., Ruiz, C., & Areñse, J.J. (2015). Adolescents and preadolescents' roles on bullying, and its relation with social climate and parenting styles. *Psicodidáctica*, 20, 139-155. <https://doi.org/10.1387/RevPsicodidact.11097>
- Cross, D., Lester, L., & Barnes, A. (2015). A longitudinal study of the social and emotional predictors and consequences of cyber and traditional bullying victimization. *International Journal of Public Health*. <https://doi.org/10.1007/s00038-015-0655-1>
- Della-Cioppa, V., O'Neil, A., & Craig, W. (2015). Learning from traditional bullying interventions: A review of research on cyberbullying and best practice. *Aggression and Violent Behavior*, 23, 61-68. doi: 10.1016/j.avb.2015.05.009
- Garaigordobil, M. (2011). Prevalence and consequences of cyberbullying: A review. *International Journal of Psychology and Psychological Therapy*, 11, 233-254.
- Garaigordobil, M. (2015). Cyberbullying in adolescents and youth in the Basque Country: Changes with age. [Ciberbullying en adolescentes y jóvenes del País Vasco: Cambios con la edad]. *Anales de Psicología*, 31(3), 1069-1076. <https://doi.org/10.6018/analesps.31.3.179151>
- Giménez-Gualdo, A.M., Hunter, S.C., Durkin, K., Arnaiz, P., & Maquilón, J. (2015). The emotional impact of cyberbullying: Differences in perceptions and experiences as a function of role. *Computers & Education*, 82, 228-235. <https://doi.org/10.1016/j.compedu.2014.11.013>
- Gómez, A., & Vázquez, A. (2015). The power of 'feeling one' with a group. Identity fusion and extreme pro-group behaviors. *International Journal of Social Psychology*, 30, 481-511. <https://doi.org/10.1080/02134748.2015.1065089>
- González, M.T., & Landero, R. (2014). Psychometric properties of the Social Support From Parents and Friends Scale (AFA-R) in a student sample. [Propiedades psicométricas de la Escala de Apoyo Social Familiar y de Amigos (AFA-R) en una muestra de estudiantes]. *Acta de Investigación Psicológica*, 4(2), 1469-1480.
- Hall, W.J. (2016). Initial development and validation of the Bullyharm: The bullying, harassment, and aggression receipt measure. *Psychology in the Schools*, 53(9). <http://dx.doi.org/10.1002/pits.21957>
- Herrera-López, M., Romera, E., & Ortega-Ruiz, R. (2017). Bullying and cyberbullying in Colombia: co-occurrence in adolescent school-children. [Bullying y cyberbullying en Colombia; coocurrencia en adolescentes escolarizados]. *Revista Latinoamericana de Psicología*, 49(3), 163-172. <https://doi.org/10.1016/j.rlp.2016.08.001>
- Horne, S., Asher, Y., & Fireman, G.D. (2015). The impact and response to electronic bullying and traditional bullying among adolescents. *Computers in Human Behavior*, 49, 288-295. <https://doi.org/10.1016/j.chb.2015.03.007>
- Menesini, E., Nocentini, A., & Palladino, B.E. (2012). Empowering students against bullying and cyberbullying: Evaluation of an Italian peer-led model. *International Journal of Conflict and Violence*, 6(2), 313-320.
- Menesini, E., Palladino, B.E., & Nocentini, A. (2015). Emotions of moral disengagement, class norms, and bullying in adolescence: A multilevel approach. *Merrill-Palmer Quarterly*, 61(1), 124-143. <https://doi.org/10.13110/merrpalmquar1982.61.1.0124>
- Menesini, E., Sanchez, V., Fonzi, A., Ortega, R., Costabile, A., & Lo Feudo, G. (2003). Moral emotions and bullying: A cross-national comparison of differences between bullies, victims and outsiders. *Aggressive Behavior*, 29(6), 515-530. doi: 10.1002/ab.10060
- Meter, D.J., & Bauman, S. (2016). Moral disengagement about cyberbullying and parental monitoring: Effects on traditional bullying and victimization via cyberbullying involvement. *Journal of Early Adolescence*, 1-24. <https://doi.org/10.1177/0272431616670752>
- Moore, P.M., Huebner, E.S., & Hills, K.J. (2012). Electronic bullying and victimization and life satisfaction in middle school students. *Social Indicators Research*, 107(3), 429-447. <https://doi.org/10.1007/s11205-011-9856-z>
- Muros, B., Aragón, Y., & Bustos, A. (2013). Youth's usage of leisure time with video games and Social Networks. [La ocupación del tiempo libre de jóvenes en el uso de videojuegos y redes]. *Comunicar*, 40, 31-39. <https://doi.org/10.3916/C40-2013-02-03>
- Olthof, T., Goossens, F.A., Vermande, M.M., Aleva, E.A., & van-der-Meulen, M. (2011). Bullying as a strategic behavior: Relations with desired and acquired dominance in the peer group. *Journal of School Psychology*, 49, 339-359. <https://doi.org/10.1016/j.jsp.2011.03.003>
- Ortega, R., Calmaestra, J., & Mora-Merchán, J. (2008). Cyberbullying. *International Journal of Psychology and Psychological Therapy*, 8(2), 183-192.
- Ortega, R., Elípe, P., Mora-Merchán, A., Calmaestra, J., & Vega, E. (2009). The emotional impact on victims of traditional bullying and cyberbullying. A study of Spanish adolescents. *Journal of Psychology*, 217(4), 197-204. <https://doi.org/10.1027/0044-3409.217.4.197>
- Pérez-Latorre, O. (2012). From chess to StarCraft. A comparative analysis of traditional games and videogames. [Del ajedrez al StarCraft. Análisis comparativo de juegos tradicionales y videojuegos]. *Comunicar*, 38, 121-129. <https://doi.org/10.3916/C38-2012-03-03>
- Perren, S., & Gutzwiller-Helfenfinger, E. (2012). Cyberbullying and traditional bullying in adolescence: Differential roles of moral disengagement, moral emotions, and moral values. *European Journal of Developmental Psychology*, 9, 195-209. <https://doi.org/10.1080/17405629.2011.643168>
- Raskauskas, J., & Stoltz, A.D. (2007). Involvement in traditional and electronic bullying among adolescents. *Developmental Psychology*, 43(3), 564-575. doi: 10.1037/0012-1649.43.3.564
- Romera, E., Cano, J.J., García-Fernández, C., & Ortega-Ruiz, R. (2016). Cyberbullying: Social competence, motivation and peer relationships. [Cyberbullying: competencia social, motivación y relaciones entre iguales]. *Comunicar*, 48, 71-79. <https://doi.org/10.3916/C48-2016-07>

- Salmivalli, C. (2010). Bullying and the peer group: A review. *Aggression and Violent Behavior, 15*, 112-120. <https://doi.org/10.1016/j.avb.2009.08.007>
- Slonje, R., & Smith, P.K. (2008). Cyberbullying: Another main type of bullying? *Scandinavian Journal of Psychology, 49*, 147-154. <https://doi.org/10.1111/j.1467-9450.2007.00611.x>
- Smith, P., Mahdavi, J., Carvalho, M., Fisher, S., Russell, S., & Tippett, N. (2008). Cyberbullying: Its nature and impact in secondary school pupils. *Journal of Child Psychology and Psychiatry, 49*(4), 376-385. <https://doi.org/10.1111/j.1469-7610.2007.01846.x>
- Sticca, F., Ruggieri, S., Alsaker, F., & Perren, S. (2013). Longitudinal risk factors for cyberbullying in adolescence. *Journal of Community and Applied Social Psychology, 23*, 52-67. <https://doi.org/10.1002/casp.2136>
- Ttofi, M.M., & Farrington, D.P. (2011). Effectiveness of school-based programs to reduce bullying: A systematic and meta-analytic review. *Journal of Experimental Criminology, 7*(1), 27-56. <https://doi.org/10.1007/s11292-010-9109-1>
- Twyman, K., Saylor, C., Taylor, L.A., & Comeaux, C. (2010). Comparing children and adolescents engaged in cyberbullying to matched peers. *Cyberpsychology, Behavior, and Social Networking, 13*(2), 195-199. <https://doi.org/10.1089/cyber.2009.0137>
- Willians, K.R., & Guerra, N.G. (2007). Prevalence and predictors of internet bullying. *Journal of Adolescence Health, 41*(6 Suppl 1), 14-21. <https://doi.org/10.1016/j.jadohealth.2007.08.018>
- Zych, I., Ortega-Ruiz, R., & Marín-López, I. (2016). Cyberbullying: a systematic review of research, its prevalence and assessment issues in Spanish studies. *Psicología Educativa 22*(1), 5-18. doi: 10.1016/j.pse.2016.03.002



# Teachers' and students' perception about cyberbullying. Intervention strategies in Primary and Secondary education

Percepción de docentes y estudiantes sobre el ciberacoso. Estrategias de intervención en Primaria y Secundaria

-  Dr. Ana-M. Giménez-Gualdo is Associate Professor in the Social Sciences and Communication School at the Catholic University of Murcia (Spain) (amgimenez@ucam.edu) (<https://orcid.org/0000-0002-7606-2596>)
-  Dr. Pilar Arnaiz-Sánchez is Professor in the School of Education at the University of Murcia (Spain) (parnaiz@um.es) (<https://orcid.org/0000-0002-0839-891X>)
-  Dr. Fuensanta Cerezo-Ramírez is Emeritus Professor in the School of Psychology at the University of Murcia (Spain) (fcerezo@um.es) (<https://orcid.org/0000-0002-3160-9930>)
-  Dr. Elaine Prodócimo is Professor in the School of Physical Education at the State University of Campinas (Brazil) (elaine@fef.unicamp.br) (<https://orcid.org/0000-0002-2500-3668>)

## ABSTRACT

Currently, schools face the challenge of dealing with the phenomena of cyberbullying, which is increasingly present among teenagers. This study analyses teachers' and students' perception of the problem, as well as the strategies that both groups use to avoid it. Its findings will allow advances in prevention and intervention in the schools. The study was conducted on 1,704 primary and secondary school students and 238 teachers who completed questionnaires about cyberbullying. We used a cross-sectional descriptive method. Findings show significant differences in the motives teachers attributed to cyberbullying. These depend on the educational stage they work in, whereas, among students, it depends on the role they have in the cyberbullying situation: victim or aggressor. We also find differences in the intervention strategies used by teachers, depending on the type of school, educational stage, and gender. Those used the most are communicating, mediating and seeking help. For students, the predominant strategies are avoidance, protection, and reporting. Schoolchildren, in general, show little confidence in their teachers' ability to solve the problem of cyberbullying. The study highlights the importance of training teachers and providing them with action models when faced with this issue, and it points out the necessity of coordinating the efforts of both teachers and students.

## RESUMEN

Actualmente los centros educativos tienen el reto de enfrentarse al fenómeno del ciberacoso, cada vez más presente entre los adolescentes. El presente estudio analiza la percepción del profesorado y del alumnado y las estrategias que ambos colectivos utilizan para afrontarlo. Su conocimiento permitirá avanzar en su prevención e intervención en las aulas. El estudio se realizó con 1.704 estudiantes de educación primaria, secundaria y 238 profesores a los que se aplicaron sendos cuestionarios sobre ciberacoso. Se utilizó un método descriptivo y transversal. Los resultados muestran diferencias significativas en las causas que el profesorado atribuye al ciberacoso según la etapa educativa donde ejerza la docencia, apareciendo en el alumnado según el rol que adopta en la situación de acoso: víctima o acosador. También se encuentran diferencias en las estrategias de intervención utilizadas por el profesorado, según la titularidad del centro, la etapa educativa y el sexo, siendo las más empleadas comunicar, mediar y buscar ayuda; en el alumnado predominan las estrategias de evitación, protección y denuncia. Los escolares en general muestran escasa confianza en el profesorado para resolver el problema del ciberacoso. Se concluye exponiendo la importancia de dotar al profesorado de formación específica y de modelos de actuación ante este fenómeno, y señalando la necesidad de coordinar los esfuerzos de docentes y estudiantes.

## KEYWORDS | PALABRAS CLAVE

Cyberbullying, perception, teachers, students, intervention strategies, coping strategies, primary education, secondary education. Ciberacoso, percepción, profesorado, alumnado, estrategias de intervención, estrategias de afrontamiento, educación primaria, educación secundaria.



## 1. Introduction

The widespread use of ICT (information and communication technologies) among young people reveals risks such as cyberbullying, access to inappropriate content and internet addiction (Nocentini, Zambuto, & Menesini, 2015). Different investigations show the close relationship between behaviours of dependency to social networks and certain antisocial behaviours, such as cyberbullying (Martínez & Moreno, 2017; Muñoz & al., 2016). The latter is understood to be a type of abuse exercised through electronic means of communication (Olweus & Limber, 2018) characterized by its intention to harm, endurance over time and imbalance of power between the parties due to the greater technological competence of the aggressors. In addition, it presents its characteristics such as access to a wider audience, greater durability of the aggressions, the ability to generate exclusion of the victims and anonymity of the aggressor (Martínez-Otero, 2017).

In schools, cyberbullying is an important educational and social concern due to the serious consequences it has on mental (Estévez, Jiménez, & Moreno, 2018) and psychosocial health (Smith & al., 2008), as well as on the academic performance of those involved (Egeberg, Thorvaldsen, & Ronning, 2016), especially in students who simultaneously adopt the role of aggressor and victim (Arnaiz, Cerezo, Giménez, & Maquilón, 2016; Giménez, 2015; Giumetti & Kowalski, 2016). In Spain, studies indicate an average prevalence of around 15.5% (Garaigordobil, 2015; Zych, Ortega-Ruiz, & Del Rey, 2015). The data is still lower than in the United States and other Spanish-speaking countries (Kowalski, Giumetti, Schroeder, & Lattanner, 2014), though no less alarming. To provide an appropriate response to the problem, we must start with the opinions that both teachers and students have about this form of bullying and their behaviour when faced with it.

### 1.1. The Perception of teachers and students concerning cyberbullying

Studies on cyberbullying allow for an increasingly accurate view of its characteristics and prevalence (Zych & al., 2015). According to the testimony and opinion of the victims themselves, the reasons why they are being harassed are due to variables related to a personal characteristic, such as physical appearance, which make them an easy target, or the economic situation of their family. On the other hand, those associated with the aggressors are jealousy, envy or feelings of superiority (Jacobs, Goossens, Dehue, Völlink, & Lechner, 2015).

Regarding intervention, on the part of the teachers, some studies highlight the most common strategies: "offer support to the victims", "seek help from other colleagues", "involve the parents" or "talk with the students" (Desmet & al., 2015). Stauffer (2011) found that teachers principally inform the school's management team about the bullying and talk to the aggressors and victims themselves. Despite the strategies, which are implemented in some cases, the majority of the teachers point out the lack of specific intervention training (Cerezo & Rubio, 2017), and also training to detect cyberbullying even when it affects students in their classrooms (Montoro & Ballesteros, 2016). In this sense, what is required is greater involvement, specific training and intervention by teachers (Bevilacqua & al., 2017; Styron, Bonner, Styron, Bridgeforth, & Martin, 2016), as well as planned teacher training in order to be able to face cyberbullying (Nocentini & al., 2015).

However, it is important to recognize the efforts of teachers and institutions in preventing and intervening in bullying situations (Nocentini & al., 2015), even if the results are still limited. We should consider if we are applying programs that depart from the analysis of specific situations and do not take into account how schoolchildren confront bullying, as some studies suggest (Romera, Cano, García, & Ortega, 2016), since the way young people deal with these situations determines the extent of their seriousness (Jacobs, Dehue, Völlink, & Lechner, 2014). You can define coping strategies as the effort used to reduce or tolerate the demands that occur in a situation of stress. Among the strategies that influence the responses, the most frequently cited are age, the ability to express emotions and school policies (Jacobs & al., 2014).

Among the most effective responses which stand out are actions such as blocking the aggressor, confronting them or seeking help within the family, from teachers or other peers, were considered as being more effective than technical efforts (blocking contacts, increasing privacy in the network) (Orel, Campbell, Wozencroft, Leong, & Kimpton, 2017).

The coping strategies that are adopted emerge from the situation itself because inadequate responses are seen as determinants for the cyberbullying to increase its negative effects (Parris, Varjas, Meyers, & Cutts 2012). These reflections lead us to consider the importance of understanding how young people react to these situations.

It is therefore essential to investigate the perception that teachers and students have of the scope of the problem and of the intervention and coping strategies that are needed in schools in the fight against cyberbullying.

## 1.2. Purpose and objectives

This research, intending to cover this gap in understanding, analyses the perspective that teachers and primary and secondary students have on the causes that they attribute to cyberbullying and the strategies of intervention and coping that they employ. To achieve this general purpose, the following specific objectives are proposed:

- Analyse the perception teachers have about the causal attributions of cyberbullying, globally and by educational stage and the type of school.
- Analyse the causal attributions of the students involved in cyberbullying.
- Identify the intervention strategies used by teachers, and if there exist differences according to the educational stage, type of school, and gender.
- Identify the coping strategies of students facing cyberbullying.

## 2. Material and method

### 2.1. Participants

Taking into account that the at-risk age of cyberbullying is between 12 and 16 years old (Giumetti & Kowalski, 2016; Martínez-Otero, 2017), which coincides with the sixth grade of primary school and the whole of secondary education, a population of 96.524 students was evaluated distributed among the 6th grade of Primary ( $n=16.811$ , 17.4%), key stage 3 and 4 ( $n=65158$ , 67.5%), with an average age of 13.8 years ( $SD=2.03$ ), of

**In schools, cyberbullying among peers is an important educational and social concern due to its serious consequences on mental and psychosocial health. However, the teaching staff is not yet sufficiently prepared to intervene and, in many cases, they are not able to detect incidences of cyberbullying, even those affecting students from their classrooms.**

which 50.7% were boys. In the present study, 1.704 students from 38 state and private schools within the Region of Murcia (Spain) participated, consisting of the 6th year of primary education (29.3%) and compulsory secondary education (61.1%). Similarly, 238 educators (59.7% women) between the ages of 26 and 61 years old participated ( $M=43.58$ ,  $SD=9.12$ ), 35.7% being teachers in primary education and 64.3% in secondary education.

It was based on a multistage sampling. First, a selection of schools was made according to the population criteria and willingness to participate and according to the type of the school, state school and state-aided / private school. Secondly, the selection of the groups was made based on the judgment of the teaching staff at the school, trying to include all the educational stages under study.

### 2.2. Instruments

Studies on cyber-aggression among schoolchildren usually use self-report (Zych & al., 2015). This paper follows this practice. To identify the teachers' perception about cyberbullying, a self-report questionnaire validated by five university experts was designed. The reliability of the complete instrument was  $\alpha=.84$ . From this questionnaire, data were extracted from subscales referring to causes attributed to cyberbullying (11 items,  $\alpha=.65$ ), the perception of intervention strategies at the school level (12 items,  $\alpha=.69$ ), and intervention strategies developed by teachers (16 items,  $\alpha=.88$ ). The causes attributed to cyberbullying were assessed with a Likert-type scale with five response categories from the lowest to the highest level of agreement (1=in total disagreement, 5=totally agree). Some of the items included were: the aggressor is to blame; because the aggressor feels provoked; and because the aggressor enjoys it. The interventions of the school were assessed with the same Likert scale. The subscale on teacher intervention strategies was evaluated with a Likert scale of four categories (1=never and 4=always).

To identify the students' perception and their coping characteristics, the "Cyberbull" Questionnaire for students was used (Giménez, 2015) based on the Daphne de Calmaestra questionnaire (2011). Its elaboration required two Delphi rounds of expert judgment. The questionnaire consists of five aspects/measurements: the relationship of the students with TIC; experiences of school bullying; experiences of cyberbullying; student coping strategies and

bullying and cyberbullying bystanders. In this study, the questions used only referred to the causes of cyberbullying according to those involved as victims and aggressors and to coping strategies. To understand the causal attributions in cyber-victimization and cyber-aggression, those involved were asked about the reasons which led them to carry out the bullying (6 items,  $\alpha=.64$ ) or to receive it (6 items,  $\alpha=.43$ ), with answers evaluated with a Likert scale with five frequency categories (1=never and 5=always). Examples of questions for the aggressor: because it amuses me; because I like it; because I feel important; and for the victim: because they enjoy it; because I am weaker; and because they feel superior. Coping strategies were evaluated by the open question: What would you do to confront cyberbullying? The students were urged to specify all kinds of responses whether negative, positive, seeking help, etc. Finally, socio-demographic data (age, gender, and educational stage) were included.

### 2.3. Process

The participation of the schools was sought from the management teams by telephone. Those who gave their consent were sent the questionnaires by registered post for the teaching staff to complete anonymously. In the case of the students, authorization was obtained from their mother/father/guardian, and a session of between 20-30 minutes was established for its completion. During the sessions, a teacher and a member of the study's research team were always present.

### 2.4. Design and data analysis

This research follows a descriptive and transversal design. For the analysis of the data, descriptive statistics (percentages, mean, typical deviation) and inferential statistics (parametric and non-parametric) were used. Given the categorical nature of the variables and the measurement values of the agreement level, the Pearson Chi square statistic was chosen for the contrast of proportions and the level of statistical significance, using Cramer's V to assess the magnitude of the statistically significant associations.

With respect to the intervention strategies, the comparison of groups among teachers: type (state / private), educational level (primary /secondary) and gender (male/female), the Student's t-statistic was used to check the normality and homoscedasticity criteria. As for the students involved (aggressors and victims), the non-parametric Mann Whitney U test was applied for the comparison of two groups. The data were analysed with the statistical package SPSS 21.0.

For the qualitative analysis of coping strategies, the students' responses were codified and categorized, grouping them into positive (assertive and seeking help) and negative (confrontation with the aggressor and passivity) strategies. This categorical classification follows the proposal suggested by De-la-Caba and López (2013).

## 3. Results

### 3.1. Causes attributed by teachers to cyberbullying

Among the reasons that teachers attribute to the existence of cyberbullying (Table 1) stand out, with the highest level of agreement: the aggressor is to blame (44.1%); power imbalance between aggressors and victims (33.7%); and the enjoyment the aggressor gains in carrying out the harassment (22.6). Among the lesser considered causes ("in total disagreement"), we find the victim guilty (54.1%) and think that it happens because of the provocation of the victim (41.9%).

Analysis of the mean differences indicates that the teachers surveyed display

a certain lack of awareness in their attribution of the causes of cyberbullying ( $M=3.17$ ,  $SD=0.47$ ) since the maximum value of the scale is 5.00 points.

**Table 1. Causes attributed by the teachers for cyberbullying**

	Totally disagree	Disagree	Irrelevant	Agree	Totally agree
Victim guilty	54.1%	36.3%	7%	2.2%	0.4%
Aggressor guilty	3%	2.2%	7.8%	43%	44.1%
Victim provokes the aggressor	41.9%	38.5%	17%	1.5%	1.1%
Aggressor felt provoked	13%	18.5%	21.1%	35.2%	12.2%
Characteristics of the victim	7.4%	16.7%	20.7%	43%	12.2%
Characteristics of the aggressor	4.8%	10%	17.8%	45.6%	21.9%
Passivity of bystanders	4.4%	16.3%	23%	41.5%	14.8%
Fun	3%	4.8%	16.3%	53.3%	22.6%
Power Imbalance	3.3%	1.5%	9.6%	51.9%	33.7%
Racist motives	11.5%	26.3%	33.3%	26.7%	2.2%
Homophobic motives	14.1%	26.7%	31.1%	24.8%	3.3%

Significant differences were found in favour of teachers in state schools ( $M=3.23$ ,  $SD=0.43$ ) compared to those in private schools ( $M=3.08$ ,  $SD=0.51$ ) ( $t(236)=2.352$ ,  $p=.019$ ). By items, state school teachers are more likely to believe that cyberbullying is due to racist motives (36.7%), compared to private schools (18.2%) ( $X^2(2, n=238)=15.85$ ,  $p=.003$ ,  $V=.258$ ); and to homophobia (34.7%), compared to private (17%) ( $X^2(2, n=238)=13.28$ ,  $p=.010$ ,  $V=.236$ ).

The analyses also indicate differences by educational stage. Secondary school teachers show greater agreement that cyberbullying is due to the victim provoking the aggressor (85.7%) compared to 70.5% of primary school teachers (5.9%) ( $X^2(2, n=238)=11.95$ ,  $p=.018$ ,  $V=.224$ ). On the other hand, primary school teachers more strongly agree (61.2%) that cyberbullying is due to the victim's characteristics compared to their secondary school colleagues (49.6%) ( $X^2(2, n=238)=9.83$ ,  $p=.043$ ,  $V=.023$ ).

### 3.2. Causes attributed by the students involved in cyberbullying

For the analysis of the causes attributed to cyberbullying, responses were selected from those students who were previously identified as aggressors ( $n=51$ , 2.7%) and as victims ( $n=132$ , 6.9%), opting for basic descriptive analysis (Table 2). From the perspective of the victims, the main reasons for which they are harassed are due to the aggressor enjoying doing it ( $M=2.79$ ,  $SD=1.52$ ) and because they feel superior ( $M=2.70$ ,  $DT=1.63$ ).

Analysing the responses of the student victims, we found that there are significant differences by educational stage. Victims in secondary education attribute cyberbullying to a greater extent than primary schools, to the superiority of the aggressor ( $X^2(2, n=238)=34.48$ ,  $p=.000$ ), envy ( $X^2(2, n=238)=6.99$ ,  $p=.030$ ) and enjoyment ( $X^2(2, n=238)=16.20$ ,  $p=.000$ ). Primary students attribute it to a greater extent to revenge ( $X^2(2, n=238)=38.23$ ,  $p=.000$ ). Only statistically significant differences were found between men ( $M=1.53$ ,  $SD=0.78$ ) and women ( $M=1.27$ ,  $SD=0.61$ ) in envy ( $U=1749.50$ ,  $Z=-2.195$ ,  $p=.028$ ). Analysing the responses of the aggressor students, we found that the main reason for the harassment is the victim's weakness ( $M=2.92$ ,  $SD=1.60$ ) followed by retaliating to aggressions previously suffered ( $M=2.72$ ,  $DT=1.61$ ). Significant differences were also found by gender, with boys indicating to a greater extent the weakness of the victim ( $U=165.00$ ,  $(30, 19)$ ,  $Z=-2.767$ ,  $p=.006$ ), enjoyment ( $U=190.00$ ,  $(29, 20)$ ,  $Z=-2.174$ ,  $p=.030$ ) and superiority ( $U=182.00$ ,  $(29, 20)$ ,  $Z=-2.541$ ,  $p=.011$ ).

### 3.3. Intervention strategies of the teaching staff

#### 3.3.1. Intervention strategies in the school

The actions that offer the highest level of agreement among the entire teaching staff (Table 3) are: teachers and students working together on the subject (59.7%); establishing sanctions (59.3%) and implementing actions from the school coexistence plan (40.7%). Interesting data are those provided by the items "the teacher is trained" and "aware", which show the lowest levels of agreement, mainly in ongoing training.

Differences are evident in the type of the school. Teachers in private schools consider themselves to be more capable of dealing with cyberbullying than those in state schools [ $X^2(2, n=236)=26.67$ ,  $p<.000$ ,  $V=.336$ ]. However, those from state schools have a higher level of agreement that this problem is dealt with in the classroom ( $X^2(2, n=237)=12.66$ ,  $p=.002$ ,  $V=.231$ ). They also point out to a greater extent that the counselling department should take care of this issue ( $X^2(2, n=238)=6.59$ ,  $p=.037$ ,  $V=.166$ ).

The analysis by gender shows that men have a greater level of agreement in establishing sanctions against aggressors ( $X^2(2, n=232)=8.15$ ,  $p=.017$ ,  $V=.187$ ). The women believe that the management of cyberbullying is the responsibility of the counselling department

/ Education Welfare Service (EWS) [ $X^2(2, n=233)=9.09$ ,  $p=.011$ ,  $V=.197$ ], and that what is established in the School Coexistence Plan must be put in action ( $X^2(2, n=233)=10.67$ ,  $p=.005$ ,  $V=.214$ ). By educational stage, the differences were not significant in any case.

#### 3.3.2. Teacher intervention strategies

Among the strategies used by teachers (Table 4), communication strategies deserve special mention. With a frequency of "always", cyberbullying is reported to the management team (73.9%), and to a lesser extent, to the

**Table 2. Causes of cyberbullying according to victims and aggressors**

	Victims M(DT)	Aggressors M (DT)
Fun	2.79(1.52)	2.58(1.56)
Superiority	2.70(1.63)	2.35(1.56)
Weakness	1.97(1.28)	2.92(1.60)
Envy	1.99(1.26)	1.47(0.90)
Revenge	1.83(1.31)	2.72(1.61)
Intolerance	1.60(1.52)	2.33(1.41)



Counselling Department (49.2%). With somewhat lower percentages, they communicate with the family (48.1%) and talk to those involved (aggressors, 39.5%, victims, 47.1%). Conversely, a considerable percentage of teachers “never” contact the police (66.1%), and in no, or few cases do they use existing specific resources, implement the School Coexistence Plan or seek external help.

**Table 3. Intervention strategies at the school level**

	Totally disagree	Disagree	Indifferent	Agree	Totally agree
It's difficult to prevent and combat	6.7%	24.4%	15.9%	35.6%	17.4%
Implementation of School Coexistence Plan	-	3.3%	9.6%	46.3%	40.7%
Management training	1.1%	5.9%	16.3%	44.4%	32.2%
Training students in mediation	0.4%	0.7%	9.3%	43.7%	45.9%
Responsibility of EWS /Counselling department	3%	11.5%	26.7%	40%	18.9%
Establish sanctions	0.7%	0.4%	3.3%	35.9%	59.3%
Implement action protocols	7.8%	6.3%	14.8%	37.4%	33.7%
Deal with cyberbullying in tutorial sessions	10.7%	8.5%	13%	45.2%	22.6%
Deal with cyberbullying in class	10%	7.8%	20%	44.8%	17.4%
Teachers and students working together	-	0.7%	4.1%	35.2%	59.7%
Teachers are trained	6.7%	36.3%	19.3%	31.1%	6.3%
Teaching staff are mindful	1.1%	6.3%	12.2%	45.9%	34.4%

Differences were found according to the type of the school, gender, and educational stage. Private schools employ strategies such as: dialogue with the family ( $p=.016$ ), communication of the incident to the school counsellor or school coexistence team ( $p<.000$ ), self-education on the subject ( $p=.002$ ), implementation of the school coexistence plan ( $p=.025$ ), and the use of specific resources for the prevention of cyberbullying ( $p=.028$ ). Teachers in state schools more frequently seek support and help from other colleagues ( $p=.018$ ).

The analyses by gender indicate that males are more indifferent ( $p<.000$ ) compared to women who use other strategies, such as reorganizing the classroom ( $p<.000$ ), informing the management team of the incident ( $p=.043$ ), educating themselves about the subject ( $p=.030$ ), having discussions in class and during other activities ( $p=.046$ ), and implementing the school coexistence plan ( $p=.031$ ).

According to the educational stage, only significant differences appear in favour of secondary school teachers who, most frequently, report cyberbullying to the school counsellor ( $t(236)=-5.023$ ,  $p<.000$ ). Primary teachers use mediation more as a resource than secondary teachers ( $t(236)=3.368$ ,  $p<.001$ ).

### 3.4. Student coping strategies

The responses to the question about how to deal with cyberbullying were coded by frequency and percentage. The most notable was avoiding strangers (13.48%), followed by reporting to the police (10.56%). On the other hand, blocking the aggressor or communicating the harassment to the responsible counselor at the school is hardly mentioned (0.03%). For ease of reference, following De-la-Caba and López (2013) coping strategies were grouped into positive categories (assertive and seeking help) and negative (confronting the aggressor and passive).

#### 3.4.1. Positive strategies

As assertive strategies the students pointed out: reporting to the police (19.8%), helping / defending the victim (18.7%), talking to the aggressor (16.3%), preserving one's privacy (15.7%), do not retaliate (10.9%), restrict access to ICT (10.1%), make good use of ICT (4.5%), report (the harassment) to the social network (3%) and save the conversations (0.9%).

Differences were found by educational stage, with primary school students choosing to report to the police (23.91%), restricting access to ICT (20.4%) and reporting (the harassment) to the social network (5.1%). On the other hand, secondary students chose to defend the victim (18.5%) and talk to the aggressor (17.8%).

Among the help-seeking strategies, most students report it to their parents (41.4%), other trusted adults (36.1%), teachers (11.5%), and friends (2.3%) and the responsible school counselor (0.2%). Again differences appear by educational stage. Primary school students report cyberbullying first to parents (49.5%), second to other adults (35.6%) and lastly to teachers (8.5%). Secondary students communicate to other adults (37.7%), parents (37.6%) and teachers (12.9%).

**Table 4. Intervention strategies of the teaching staff (\*p≤.05; \*\*p≤.01)**

	Never (%)	Sometimes (%)	Often (%)	Always (%)	Type of school	Gender
					t <sub>(gl)</sub> .p	t <sub>(gl)</sub> .p
Contact with the police	66.4%	21%	8.4%	4.2%		
Use of specific resources	21%	29.4%	37.8%	11.8%	-2.213 <sub>(236)</sub> .p=.028*	
Use of school coexistence plan	13.9%	19.3%	43.6%	23.2%	-2.263 <sub>(236)</sub> .p=.025*	-2.168 <sub>(231)</sub> .p=.031*
Have discussions and activities	11.3%	28.2%	40.8%	19.7%		2.005 <sub>(231)</sub> .p=.046*
Seek external help	21%	23.5%	38.6%	16.9%		
Self-training	8%	21%	42.8%	28.2%	-3.163 <sub>(236)</sub> .p=.002*	-2.190 <sub>(231)</sub> .p=.030*
Seek help from other teachers	3.8%	7.6%	39.1%	49.5%	-3.253 <sub>(236)</sub> .p=.018*	
Inform EWS /Counselling Department	12.6%	10.1%	28.1%	49.2%	3.543 <sub>(236)</sub> .p≤.000**	
Inform the management team	-	1.7%	24.4%	73.9%		-2.030 <sub>(231)</sub> .p=.043*
Dialogue with the family	5.8%	12.9%	33.2%	48.1%	2.430 <sub>(236)</sub> .p=.016*	
Mediation	2.1%	5.5%	35.7%	56.7%		
Reorganisation of the classroom	12.6%	16.4%	50.4%	20.6%		3.544 <sub>(231)</sub> .p≤.000**
Establish sanctions	12.2%	16.9%	40.1%	30.8%		
Dialogue with the victim	2.9%	11.3%	38.7%	47.1%		
Dialogue with the aggressor	3.9%	17.6%	39%	39.5%		
Display indifference	90.3%	7.6%	0.8%	1.3%		3.735 <sub>(231)</sub> .p≤.000**

### 3.4.2. Negative strategies

Students differentiated between confrontation strategies and passive strategies. Among the first, the students mentioned: retaliate with cyber-bullying (69%); punishing the aggressors (33.8%); hitting the aggressor (30.4%) or excluding them (0.6%). Differences were observed by educational stage, with secondary students being the most likely to retaliate with cyber-bullying (64.1%), compared to primary school (56%).

Passive strategies include the following: avoiding strangers (46.4%); ignoring the aggressor (23.5%); restricting limit the use of TIC (28.8%); supporting anti-bullying rules protocols (13.5%); monitoring mobile phones and computers (10.3%) or doing nothing (11.4%). Again, differences appear by educational stage. Secondary students mention more the avoidance of strangers (53.7%) and doing nothing (8.7%), while those in primary school do not know what they would do, or if anything, eliminate their profile on the network (5.4%).

## 4. Discussion and conclusions

In the first place, it should be noted that the level of prevalence of cyberbullying found in the sample studied is similar to the averages found in other studies (Zynch & al., 2015).

As to the causes of cyberbullying, teachers consider the personal characteristics of the aggressor and the enjoyment of bullying as the main causes of this phenomenon (Martínez & Moreno, 2017; Monks, Mahdavi, & Rix, 2016). Likewise, the teaching staff as a whole highlight the importance of the imbalance of power between aggressors and victims (Romera & al., 2016). Differences were found according to the educational stage. Secondary teachers attribute, to a greater extent, the direct responsibility for harassment to the aggressors, while primary teachers point to the personal characteristics of the victim.

The results obtained show that most teachers attribute the causes to those involved, leaving out the classroom climate and relationship features. The differences by type of school are revealing: among teachers in state schools, racism and homophobia are identified as causes of cyberbullying, coinciding with the greater presence of foreign students. Previous research shows that students from minority groups (non-heterosexuals) and other ethnic groups are exposed to higher levels of cyberbullying when compared to those who are not involved and heterosexual students (Abreu & Kenny, 2017; Llorent, Ortega, & Zych, 2016).

Regarding the perception of the students, according to the aggressors and the victims, the main cause of cyberbullying is the enjoyment that the harassment arouses. To a lesser extent, attributing the blame to the aggressor and the victim, the results coincide with previous studies (Calmaestra, 2011; Giménez, 2015). Boys indicate envy more than girls. We find that when a student harasses another, they try to justify this act by also blaming the object of their bullying. On the other hand, from the perspective of the victim, the aggressors are responsible for the bullying (Jacobs & al., 2015). This data should be taken into account when initiating an intervention with those involved since it is necessary for the change of attitudes and cognitive attribution of the aggressors.

Relating to the strategies of intervention in the school, slightly more than half of the teachers emphasise teachers

and students working together on the problem, and also point out the necessity of implementing the school coexistence plan. This reflects the concern and lack of effective measures available, which strengthen the option of establishing sanctions. The latter is a response mentioned frequently. It is certainly necessary to create a regulation that facilitates the school coexistence framework, which cannot be limited to a list of offenses and sanctions (Cerezo & Rubio, 2017), but rather effective solution strategies are needed. These strategies need to be adapted to the needs detected in the schools. It is important to mention the differences found between teachers in state and private schools, the former being the ones that most indicate their need for training and the benefits of carrying out prevention in the classroom. Regarding intervention strategies used by teachers, in the private schools, communication with the school's management team, counsellors and the police is highlighted; and in state schools, the search for support from other colleagues stands out. Primary teachers intervene more than teachers in secondary schools, perhaps because of their closeness to the students. It has been found that women are more involved than men in finding solutions.

The victims usually communicate incidents to their families, and to a lesser extent to their teachers. This indicates distrust in their teachers' ability to resolve the problem. It is essential to consider how the teachers' attitudes, as well as specific actions in the organization of the classroom and improvements in school coexistence, can have a positive effect on the prevention and reduction of cyberbullying (Montoro & Ballesteros, 2016; Styron & al., 2016). However, the students do not see it that way. In this respect, Perren and others (2012) highlight parental mediation of Internet use, the support of peers, empowering the leadership skills of students and developing initiatives that embrace the entire educational community as more effective measures for preventing cyberbullying. Recent research confirms the need to unite the efforts of teachers and parents to ensure supervision and control of the Internet, which are key elements in reducing the risk of cyberbullying (Monks & al, 2016).

Regarding the strategies proposed by the students, those of avoidance / protection and reporting to the police stand out as the immediate steps taken. Intervention to defend the victim and the search for help are scarcely indicated, thus maintaining the victim's defencelessness (Estévez & al., 2018), remain priorities to combat it (Jacobs & al., 2014). In addition, communication facilitates the instigation of immediate action measures, either by alerting the family or the school (Perren & al., 2012). Schoolchildren point out the importance of parental help (Monks & al., 2016) and scarcely that of teachers and friends, which is different from other studies that position friends in the first place (De-la-Caba & López, 2013). It should be noted that the School Counselling Service is hardly taken into account. In this way, the field of Educational Guidance remains largely unaware of this problem, despite the importance of school counsellors and psychologists in the evaluation, prevention, and intervention in cyberbullying.

Comparing intervention strategies of the teachers with those of students, we find that both groups agree on seeking help (DeSmet & Bourdaudhuij, 2015), to communicate harassment (Perren & al., 2012) and to report it to the police; although to a very limited degree, which coincides with other studies which indicate that teachers are more inclined to refer cyberbullying to their management team, and to talk to the victim or the aggressor than to communicate with the family (Stauffer, 2011). Another point of coincidence is the option for sanctioning the aggressors; this can be caused by the lack of adequate resources for the improvement of school coexistence and the lack of specific attention to those affected. In the case of students, it is striking that teachers are an underused resource, which suggests the limited perception students have of the ability of their teachers to resolve conflicts, an essential element to be taken into account for the improvement of these situations (Abreu & Kenny, 2017).

Finally, we want to point out that although we are making progress in raising awareness of the consequences of cyberbullying (Egeberg & al., 2016; Giménez, 2015), it is necessary to provide teachers with action models to help with prevention and intervention in their classrooms (Bevilacqua & al., 2017). As Romera and others (2016) affirm, teachers and counsellors, require training and clear action models to manage groups of students, work on the improvement of the classroom atmosphere, the development of social activities, the analysis of classroom relations and in the establishment of interpersonal links. Only by understanding the teachers' and students' perception of the problem will it be possible to lay the foundations for its effective detection, prevention, and intervention. Acting on this problem and facilitating the students understanding of the risks of this phenomenon, so that they collaborate in its eradication, is the responsibility of the entire educational community. This study has highlighted the importance of this perspective.

This study presents some limitations. Thus, the number of participating teachers and the sample belonging to the same geographical area limits the generalization of results. Another limitation is related to the information collection instrument given that it is a self-report, it is difficult to control the social desirability bias. In future research,

these aspects will be taken into account, and not only will the students' coping strategies be analysed, but also their effectiveness in order to set out recommendations for intervention. In addition, we will look more deeply into the relationship between the measures adopted by the school and the teaching staff and the effective coping strategies of the students.

### Funding Agency

This manuscript is the result of the I+D+i Project "Inclusive education and improvement project in nursery, primary and secondary schools" (EDU2011-26765), and Ministry of Education, Culture and Sport.

### References

- Abreu, R.L., & Kenny, M.C. (2017). Cyberbullying and LGBTQ youth: A systematic literature review and recommendations for prevention and intervention. *Journal of Child & Adolescent Trauma*, 1-17. <https://doi.org/10.1007/s40653-017-0175-7>
- Arnaiz, P., Cerezo, F., Giménez, A.M., & Maquilón, J.J. (2016). Conductas de ciberadicción y experiencias de cyberbullying entre adolescentes. *Anales de Psicología*, 32(3), 761-769. <https://doi.org/10.6018/analesps.32.3.217461>
- Beer, P., Hallet, F., Hawkins, C., & Hewitson, D. (2017). Cyberbullying levels of impact in a special school setting. *The International Journal of Emotional Education*, 9(1), 121-124.
- Bevilacqua, L., Shackleton, N., Hale, D., Allen, E., Bond, L., Christie, D., & Viner, R.M. (2017). The role of family and school-level factors in bullying and cyberbullying: a cross-sectional study. *BMC Pediatrics*, 17. <https://doi.org/10.1186/s12887-017-0907-8>
- Calmaestra, J.A. (2011). *Cyberbullying: Prevalencia y características de un nuevo tipo de bullying indirecto*. Universidad de Córdoba: Tesis doctoral. <http://goo.gl/Sjkl8k>
- Cerezo, F., & Rubio, F.J. (2017). Medidas relativas al acoso escolar y ciberacoso en la normativa autonómica española. Un estudio comparativo. *Revista Electrónica Interuniversitaria de Formación del Profesorado*, 20(1), 113-126. <http://dx.doi.org/10.6018/reifop/20.1.253391>
- De-la-Caba, M.A., & López, R. (2013). La agresión entre iguales en la era digital: estrategias de afrontamiento de los estudiantes del último ciclo de Primaria y del primero de Secundaria. *Revista de Educación*, 362, 247-272. <https://doi.org/10.4438/1988-592X-RE-2011-362-160>
- DeSmet, A., & De-Bourdeaudhuij, I. (2015). Secondary school educators' perceptions and practices in handling cyberbullying among adolescents: A cluster analysis. *Computers & Education*, 88, 192-201. <https://doi.org/10.1016/j.compedu.2015.05.006>
- Egeberg, G., Thorvaldsen, S., & Ronning, J.A. (2016). The impact of cyberbullying and cyber harassment on academic achievement. In E. Elstad (Ed.), *Digital expectations and experiences in education* (pp. 183-204). The Netherlands: Sense Publishers. [https://doi.org/10.1007/978-94-6300-648-4\\_11](https://doi.org/10.1007/978-94-6300-648-4_11)
- Estévez, E., Jimenez, T., & Moreno, D. (2018). Aggressive behavior in adolescence as a predictor of personal, family, and school adjustment problems. *Psicothema*, 30(1) 66-73. <https://doi.org/10.7334/psicothema2016.294>
- Garaigordobil, M. (2015). Cyberbullying in adolescents and youth in the Basque Country: prevalence of cybervictims, cyberaggressors, and cyberobservers. *Journal of Youth Studies*, 18, 569-582. <https://doi.org/10.1080/13676261.2014.992324>
- Giménez, A.M. (2015). *Cyberbullying. Análisis de su incidencia entre estudiantes y percepciones del profesorado (Tesis doctoral)*. Universidad de Murcia. <http://goo.gl/5gQV4q>
- Giumetti, G. W., & Kowalski, R.M. (2016). Cyberbullying matters: Examining the incremental impact of cyberbullying on outcomes over and above traditional bullying in North America. In R. Navarro, S. Yubero, & E. Larrañaga (Eds.), *Cyberbullying across the Globe. Gender, family, and mental health*. Switzerland: Springer International Publishing.
- Jacobs, N., Dehue, F., Völlink, T., & Lechner, L. (2014). Determinants of adolescents' ineffective and improved coping with cyberbullying: A Delphi study. *Journal of Adolescence*, 37, 373-385. <https://doi.org/10.1016/j.adolescence.2014.02.011>
- Jacobs, N., Goossens, L., Dehue, F., Völlink, T., & Lechner, L. (2015). Dutch cyberbullying victims' experiences, perceptions, attitudes and motivations related to (coping with) cyberbullying: Focus group interviews. *Societies*, 5, 43-64. <https://doi.org/10.3390/soc5010043>
- Kowalski, R.M., Giumetti, G.W., Schroeder, A.N., & Lattanner, M.R. (2014). Bullying in the digital age: A critical review and meta-analysis of cyberbullying research among youth. *Psychological Bulletin*, 140, 1073-1137. <https://doi.org/10.1037/a0035618>
- Llorent, V.J., Ortega, R., & Zych, I. (2016). Bullying and cyberbullying in minorities: Are they more vulnerable than the majority group? *Frontiers in Psychology*, 7, 1507. <https://doi.org/10.3389/fpsyg.2016.01507>
- Martínez, B., & Moreno, D. (2017). Dependencia de las redes sociales virtuales y violencia escolar en adolescentes. *International Journal of Developmental and Educational Psychology*, 1(1), 105-114. <https://doi.org/10.17060/ijodaep.2017.n1.v2.923>
- Martínez-Otero, V. (2017). Acoso y ciberacoso en una muestra de alumnos de secundaria. *Profesorado*, 21(2), 277-298.
- Montoro, E., & Ballesteros, M. (2016). Competencias docentes para la prevención del ciberacoso y delito de odio en Secundaria. *Relatec*, 15(1), 131-143. <https://doi.org/10.17398/1695-288X.15.1.131>
- Monks, C.P., Mahdavi, J., & Risk, K. (2016). The emergence of cyberbullying in childhood: Parent and teacher perspectives. *Psicología Educativa*, 22, 39-48. <https://doi.org/10.1016/j.pse.2016.02.002>
- Muñoz, R., Ortega, R., López, M.R., Batalla, C., Manresa, J.M., Montellá, N., & Torán, P. (2016). The problematic use of Information and Communication Technologies (ICT), in adolescents by the cross sectional JOITIC study. *BMC Pediatrics*, 16(140). <https://doi.org/10.1186/s12887-016-0674-y>
- Nocontentini, A., Zambuto, V., & Menesini, E. (2015). Anti-bullying programs and information and Communication Technologies (ICT): A systematic review. *Aggression and Violent Behavior*, 23, 52-60. <https://doi.org/10.1016/j.avb.2015.05.012>
- Olweus, D., & Limber, S.P. (2018). Some problems with cyberbullying research. *Current Opinion in Psychology*, 19, 139-143.



<https://doi.org/10.1016/j.copsyc.2017.04.012>

Orel, A., Campbell, M.A., Wozencroft, K., Leong, E.W., & Kimpton, M. (2017). Exploring university students' coping strategy intentions for cyberbullying. *Journal of Interpersonal Violence*, 32(3), 446-462. <https://doi.org/10.1177/0886260515586363>

Perren, S., Corcoran, L., Cowie, H., Dehue, F., Garcia, D., Mc Guckin, C.,... & Völlink, T. (2012). Tackling cyberbullying: Review of empirical evidence regarding successful responses by students, parents, and schools. *International Journal of Conflict and Violence*, 6(2), 283-293. <https://doi.org/10.4119/UNIBI/ijcv.244>

Romera, E.M., Cano, J.J., García, C.M., & Ortega, R. (2016). Cyberbullying: Social Competence, Motivation and Peer Relationships [Cyberbullying: Competencia social, motivación y relaciones entre iguales]. *Comunicar*, 48(24), 71-79. <https://doi.org/10.3916/C48-2016-07>

Smith, P.K., Mahdavi, J., Carvalho, C., Fisher, S., Russell, S., & Tippett, N. (2008). Cyberbullying: Its nature and impact in secondary school pupils. *Journal of Child Psychology and Psychiatry*, 49, 376-385.

Stauffer, S.V. (2011). *High school teachers' perceptions of cyber bullying prevention and intervention strategies [Thesis dissertation]*. <http://goo.gl/j51cFu>

Styron, R.A., Bonner, J.L., Styron, J.L., Bridgeforth, J., & Martin, C. (2016). Are teacher and principal candidates prepared to address student cyberbullying. *Journal of At-Risk Issues*, 19(1), 19-28.

Zych, I., Ortega-Ruiz, R., & Del-Rey, R. (2015). Systematic review of theoretical studies on bullying and cyberbullying: Facts, knowledge, prevention, and intervention. *Aggression and Violent Behavior*, 23, 1-21. <https://doi.org/10.1016/j.avb.2015.10.001>



**RED** **INTER** Disciplinaria  
Universitaria

International Network  
of Researchers  
in Media Literacy

[www.redalfamed.org](http://www.redalfamed.org)

 @RedAlfamed

 Red Alfamed

 Red Alfamed






**Researchers**  
from Europe  
and Latin America





# ‘Asegúrate’ Program: Effects on cyber-aggression and its risk factors

Programa «Asegúrate»: Efectos en ciberagresión y sus factores de riesgo

-  Dr. Rosario Del Rey is Associate Professor in the Department of Developmental and Educational Psychology at the University of Seville (Spain) (delrey@us.es). <https://orcid.org/0000-0002-1907-5489>
-  Dr. Joaquín A. Mora-Merchán is Associate Professor in the Department of Developmental and Educational Psychology at the University of Seville (Spain) (merchan@us.es). <https://orcid.org/0000-0002-8558-6965>
-  Dr. José A. Casas is Assistant Professor in the Department of Psychology at the University of Cordoba. (Spain) (jacasas@uco.es). <https://orcid.org/0000-0002-0272-1835>
-  Dr. Rosario Ortega-Ruiz is Full Professor in the Department of Psychology at the University of Cordoba (Spain) (edlorrur@uco.es). <https://orcid.org/0000-0003-2110-6931>
-  Dr. Paz Elípe is Associate Professor in the Department of Psychology at the University of Jaen (Spain) (mpelipe@ujaen.es). <https://orcid.org/0000-0001-5210-3747>

## ABSTRACT

Intervention against cyberbullying and other risks associated with the misuse of ITC and social networks is an important social demand. The ‘Asegúrate’ Program tries to support teachers in this intervention. This research shows the impact of the program among those that have shown to be less sensitive in other studies: cyber-aggressors. Concretely, the impact of the program on the prevalence of aggression in cyberbullying and bullying, sexting and abusive use of the Internet and social networks are analyzed. The evaluation of the program was carried out with a sample of 479 students (54.9% girls) of Compulsory Secondary Education (age  $M = 13.83$ ,  $SD = 1.40$ ) through a quasi-experimental methodology, with two measures over time. The instruments used were the “European Cyberbullying Intervention Project Questionnaire”, the “European Bullying Intervention Project Questionnaire”, the “Internet Related Experiences Questionnaire” and two items about sexting involvement. The results show that the involvement in cyber aggression, sexting, and intrapersonal dimension of abusive use of Internet and social network increases without intervention, whereas it diminishes when the intervention is carried out. Moreover, a significant decrease in the aggression and cyber aggression among cyber aggressors is evidenced. Thus, ‘Asegúrate’ Program is effective for decreasing the prevalence of aggressions and cyber aggressions as well as the involvement in other phenomena considered cyberbullying risk factors.

## RESUMEN

La intervención contra el ciberacoso entre escolares y otros riesgos asociados al uso inapropiado de las TIC y las redes sociales es una importante demanda social. El programa «Asegúrate» pretende facilitar la labor docente en dicha intervención. El presente trabajo da cuenta del impacto de este programa entre quienes han mostrado ser menos sensibles en otros programas: los ciberagresores. Concretamente, se analiza su impacto en la prevalencia de agresión en ciberacoso y acoso escolar, así como en sexting y uso abusivo de Internet y redes sociales. La evaluación del programa se desarrolló con un total de 479 estudiantes (54,9% chicas) de Educación Secundaria Obligatoria (edad  $M = 13,83$ ,  $DT = 1,40$ ) mediante una metodología cuasi-experimental, con dos mediciones a lo largo del tiempo. Los instrumentos utilizados fueron el «European Cyberbullying Intervention Project Questionnaire», el «European Bullying Intervention Project Questionnaire», el «Cuestionario de Experiencias Relacionadas con Internet» y dos ítems sobre implicación en sexting. Los resultados muestran que en ausencia de intervención la implicación en ciberagresión, sexting y la dimensión intrapersonal del uso abusivo de Internet y redes sociales aumenta, mientras que con intervención dichas implicaciones disminuyen. Asimismo, se evidencia una disminución significativa de la intensidad de la agresión y ciberagresión en ciberagresores. Por tanto, se puede afirmar que el programa resulta efectivo tanto para disminuir la prevalencia de agresiones y ciberagresiones como la implicación en otros fenómenos considerados factores de riesgo del ciberacoso.

## KEYWORDS | PALABRAS CLAVE

Cyber aggression, cyberbullying, sexting, abuse, social networks, intervention, evaluation, impact.  
Ciberagresión, ciberacoso, sexting, abuso, redes sociales, intervención, evaluación, impacto.



## 1. Introduction

### 1.1. Cyberbullying and its associated risks

Cyberbullying is an emerging phenomenon defined as repeated harm arising from the widespread and generalized use of digital media to communicate with others and engage in social life (Hinduja & Patchin, 2008). Many researchers have approached this construct by holding it up against its counterpart in the physical world (Garaigordobil, 2015), namely bullying, which has an established scientific background (Prodócimo, Cerezo, & Areñse, 2014). In fact, despite their differences, primarily owing to the contexts in which they take place (Vannucci, Nocentini, Mazzoni, & Menesini, 2012), we now know that a high degree of co-involvement exists between them (Waaasdorp & Bradshaw, 2015). Previous research on Spanish samples report some diverging prevalence trends. In the most recent study conducted with a representative sample of Spanish adolescents (Sastre, 2016), involvement was 10.2% (3.3% cyber aggression and 6.9% cybervictimization). This figure surpasses the 7.7% found by Cerezo, Arnaiz, Giménez, and Maquilón (2016). These data become dispersed when addressing the various forms, declining in the most serious cases (Álvarez-García, Barreiro-Collazo, & Núñez, 2017).

The efforts that go into understanding these behaviors reveal risk factors for cyber aggressions (Modecki, Barber, & Vernon, 2013). Those of particular relevance when it comes to psychoeducational interventions include the abusive use of social networks and sexting (Del Rey, Casas, & Ortega-Ruiz, 2012). Regarding abusive use, “smart-phones” have led to a general increase in time online, especially among the younger populations (Colás, González, & de-Pablos, 2013). Despite this, the actors involved in cyberbullying, particularly cyber aggressors, continue to spend significantly more time connected than their non-involved peers (Hinduja & Patchin, 2008). Sexting, understood as the sending and receiving of messages, images and videos of a sexually explicit nature on a technological device, especially mobile phones (Klettke, Hallford, & Mellor, 2014), deserves special attention not only for being a risk factor for cyberbullying (Livingstone & Smith, 2014), but also for the impact it has in its own right (Korenis & Billick, 2014). What is more, sexting involvement is on the rise among Spanish adolescents (Gámez-Guadix, de Santisteban, & Resett, 2017).

### 1.2. Interventions against cyberbullying and its associated risks

The need to intervene in cyberbullying is, beyond all doubt, a priority in the current climate given the figures and consequences related to this phenomenon (Ortega, et al., 2012). Empirical findings to date have shown that school-based anti-bullying programs are partially effective in tackling cyberbullying (Williford & al., 2013). However, there is also evidence supporting the view that specific content associated with virtual environments and social networks (Del Rey, & al., 2012) as well as sexting (Hinduja & Patchin, 2012) needs to be introduced.

Steps towards addressing cyberbullying in Spain have gradually been taken. The first public interventions have involved adapting school-based anti-bullying protocols and “convivencia” projects (promoting harmonious interaction) within the cyberbullying domain (Cerezo & Rubio, 2017). One such initiative currently underway is the 2016 Strategic Plan for School Co-existence coordinated by the Ministry of Education, Culture and Sports, which prioritizes violence prevention, teaching how to use information and communication technologies (ICT) and teacher training. On this topic, it has been shown that teachers’ feelings of competence are key to reducing bullying and cyberbullying (Casas, Ortega-Ruiz, & Del Rey, 2015; Menesini & Salmivalli, 2017).

Anti-cyberbullying interventions have also been developed and empirically tested with adolescents. These include Cyber program 2.0 (Garaigordobil & Martínez-Valderrey, 2015) and ConRed (Del Rey, & al., 2012), which have proven to be effective in reducing both cybervictimization and cyber aggression as well as bullying and other risks. The ConRed program has even demonstrated its impact on cyber aggressors (Del Rey, Casas, & Ortega, 2016). However, little is still known about their impact on the prevalence of cyber aggression, which is one of the most difficult objectives to achieve in bullying interventions (Ttofi & Farrington, 2011).

### 1.3. The “Asegúrate” Program

The “Asegúrate” Program was created to help teachers intervene against cyberbullying and its associated risks. It was also conceived to enhance their feelings of competence in this area. The program is structured around three main pillars:

a) The theory of normative social behavior (Rimal & Lapinski, 2015). This highlights how social behavior is significantly influenced by social norms, where we see changes in conduct that lead to adopting external conventions and patterns, in addition to avoiding dissent. It upholds the notion that our behavior is likely driven by

what is perceived as socially acceptable, normal and legal (Del Rey, & al., 2012). Thus, adolescents behave with their peers on social networking sites (as well as in face-to-face interactions) according to how they perceive relationship norms in online settings, where bad relationships occur as a way of mimicking or blending in with the context guided by three normative mechanisms: group identity, expectations and recognized legal norms. Recognizing these keys and positively returning them to the students would be essential in ensuring a successful intervention. "Asegúrate" makes use of the following processes in intervention design: first, it presents positive identification models to the group, highlighting how some behaviors do not entail improved integration among peers; second, it examines students' expectations in everyday situations and holds them up against the real effects that bad relationships and online bullying have; and third, it analyzes habitual online norms and works alongside students to assess their impact.

b) Self-regulation skills. The inclusion of reflective practice in psychoeducational programs, aimed at enhancing metacognitive skills, has been carried out successfully for some time now (Joseph, 2009). It has been found that people with lower self-regulation skills are more likely to engage in aggressive behavior and are less capable of gauging the consequences their actions have on others (Roncero, Andreu, & Peña, 2016). In the specific case of cyberbullying, a link between low self-regulation and involvement (Vazsonyi, Machackova, Sevcikova, Smahel, & Cerna, 2012) and between less developed metacognitive skills and the use of non-productive coping strategies (Nacimiento, Rosa, & Mora-Merchán, 2017) has also been observed. Thus, it is necessary to include elements that allow and invite us to reflect on our actions, particularly during adolescence, which is a developmental period characterized by lower self-control and greater impulsivity (Casey, Jones, & Hare, 2008). These elements are especially relevant when it comes to online communication, given the perceived anonymity, limited consequences and invisibility, which can lead to less inhibitory control and, therefore, increased cyber aggression (Van-Royen, Poels, Vandebosch, & Adam, 2017).

c) The ideas/beliefs held by adolescents. Adhering to the principles of constructivist methodologies (e.g., Powell & Cody, 2009), the sequence of activities (Table 1) is based on identifying pre-existing ideas about virtual environments, in particular, social networks. This is followed by an analysis of one's behavior in these settings. Next, the emphasis is placed on reflecting on the reasons behind these behaviors. The following step is to analyze the potential consequences of the behaviors exhibited by those at both the giving and receiving ends. The sequence concludes with an activity that seeks to generalize and transfer the achievements to other relationship contexts. All of these tasks adopt a reflective approach, which is necessary for progressively reshaping the students' beliefs and expectations. This fixed sequence of activities across all sessions allows the teacher, who is responsible for implementing the program, to devise their units of work following a common logic, which can be adapted to the students' characteristics.

#### 1.4. Aim and objectives

Because this represents a new program and its effectiveness is yet to be determined, particularly among those who have shown to be less sensitive to other programs, the aim of the present study was to analyze the impact of "Asegúrate" on aggression in cyberbullying and bullying, as well as on two of the associated risk factors: sexting and the abusive use of the Internet and social networks. Specifically, we sought to identify the program's impact relating to three specific objectives: a) the prevalence of aggression in cyberbullying and bullying, sexting, and abusive use

**Table 1. "Asegúrate" Program**

Areas	Sessions	Sequence of activities
Means of communication on social networks and their implications	1. Online... typing...	<ul style="list-style-type: none"> <li>- Trending topic</li> <li>- My profile</li> <li>- Stop to think</li> <li>- Like/Dislike</li> <li>- Share</li> </ul>
Denormalization of online behaviors	2. #IChooseWholAm	
Criteria for establishing safe friendships	3. #ChoosingFriends	
Cybergossip	4. #Gossiping	
Cyberbullying	5. #Cyber- "Asegúrate"	
Sexting	6. #Sexting- "Asegúrate"	
Abusive use of the Internet and social networks	7. What do you want to be when you're older?	
Cyber co-existence norms	8. #Netiquette	



of the Internet and social network; b) the intensity of cyber-aggressive and aggressive behaviors; and c) cyber aggressors' involvement in the risk factors under consideration: sexting and the abusive use of the Internet and social networks.

## 2. Material and methods

### 2.1. Participants

Four hundred and seventy-nine (479) students aged 12 to 18 years (54.9% girls;  $M=13.83$ ,  $SD=1.40$ ) from seven secondary schools in Andalucía (southern Spain) took part in this study. Among them, 292 belonged to five schools assigned to the quasi-experimental group (57.4% girls;  $M=13.84$ ,  $SD=1.42$ ) and 187 belonged to two schools assigned to the control group (51.1% girls;  $M=13.84$ ,  $SD=1.35$ ).

We can conclude that “Asegúrate”, besides being a program that reduces and occasionally prevents involvement in interpersonal aggressive behaviors, bullying, and cyber-bullying, also reduces and prevents sexting involvement. This dual aspect is especially important given that previous meta-analyses on interventions aimed at reducing school-based aggressions have shown, in general terms, how these programs are effective at reducing levels of aggression when it is high, but not at preventing a potential increase in aggression.

### 2.2. Instruments

The aggression subscale pertaining to the “European Cyberbullying Intervention Project Questionnaire” (ECIPQ; Del Rey & al., 2015) was used to assess cyber aggression. It comprises 11 items that assess the frequency of cyber aggression in the last two months, eliciting Likert-type responses (0=No; 1=Yes, once or twice; 2=Yes, once or twice a month; 3=Yes, around once a week; 4=Yes, more than once a week). Example: “I’ve insulted someone on social networks or WhatsApp”. Reliability of this

subscale in the present study was  $\alpha=.72$ .

The aggression subscale corresponding to the “European Bullying Intervention Project Questionnaire” (EBIPQ; Ortega-Ruiz, Del Rey, & Casas, 2016) was used to assess bullying. It comprises seven Likert-type items and evaluates the frequency of aggression using the same response options as the previous measure. Example: “I’ve insulted and said offensive things to someone”. Reliability of this subscale was  $\alpha=.72$ .

A method applied in previous research (e.g., Ybarra & Mitchell, 2014) was used to assess sexting involvement. Students were asked to respond to two items, rating their agreement across seven Likert-type options (0=Strongly disagree to 6=Strongly agree). The statements were: “I’ve sent sexually explicit videos, images and messages to my boyfriend/girlfriend” and “I’ve received sexually explicit videos, images, and messages from my boyfriend/girlfriend”.

The “Questionnaire of experiences related to the Internet” (CERI; Casas, Ruiz-Olivares, & Ortega-Ruiz, 2013) was used to assess the abusive use of the Internet and social networks. This Internet-related experiences questionnaire comprises ten Likert-type responses with four options (1=Never; 2=Hardly ever; 3=Often; 4=A lot) measuring the intrapersonal dimension (e.g., “When you have problems, do you find that going on social networks or talking via WhatsApp helps you to escape from them?”) and interpersonal dimension of said use (e.g., “Do you find it easier or more comfortable interacting with people via a social network or WhatsApp than in person?”). The reliability in this study was  $\alpha_{\text{inter}}=.70$ ,  $\alpha_{\text{intra}}=.79$ ,  $\alpha_{\text{total}}=.86$ .

### 2.3. Procedure

Incidental sampling was performed. Phone calls were made to the schools to request their collaboration. The centres that agreed to sign up were contacted again in order to arrange a meeting and agree on a schedule and the classes that would take part in the study. The questionnaires were administered by young researchers, trained for

this purpose, during school hours, and with the prior consent of the teaching staff. Before testing could commence, the voluntary nature of study participation, anonymity, data confidentiality and the importance of giving honest answers were emphasized.

Following initial data collection, time 1 (hereinafter T1), the program was implemented at five schools (quasi-experimental groups) and not at two schools (control groups). The quasi-experimental schools had to commit to implementing at least four of the program's teaching modules (of their own choosing). Upon intervention completion at the five quasi-experimental centres, the questionnaires were administered again at least three months from the intervention start date – this time at all seven schools, time 2 (hereinafter T2). The schools that did not participate in the intervention were offered the opportunity to do so once the study had concluded.

The research was undertaken in accordance with APA ethical standards and was approved by the Biomedical Research Ethics Coordinating Committee of Andalucía, which follows the guidelines for Good Clinical Practice set by the International Conference on Harmonization. The project and instruments to be used were presented to the School Board as part of its Co-existence Project and School Improvement Plan, who gave informed consent to participate in the project.

## 2.4. Data analysis

To achieve the proposed objectives, the first step was to create four dichotomous variables. Two would relate to aggressive involvement in bullying and cyberbullying, following the criteria set out by the authors of the scales used (Del Rey & al., 2015): aggressors were considered to be those who confirmed having shown offensive actions once or twice a month, or more frequent displays of any of the behaviors that present themselves in bullying or cyber-bullying scenarios, respectively. As for sexting, active individuals were identified as those who responded affirmatively to at least one of the two direct items ("I've sent sexually explicit videos, images and messages to my boyfriend/girlfriend" and vice versa). The students' scores were used to create the abusive use of the Internet and social networks variable. The latter was devised by taking into account three categories (low, medium and high use) based on the 33.33 and 66.66 percentiles in the T1 responses. Students exhibiting abusive use were considered to be those who gave scores in the upper third.

To analyze the program's impact on the prevalence of aggression in cyberbullying and bullying, as well as sexting and the abusive use of the Internet and social networks, the percent variation in each of the groups (control and quasi-experimental) was calculated. This variation represents the difference between prevalence in T1 and T2 in relation to the value shown in T1. Such variation was calculated using the following formula:  $[(\text{PrevalenceT2} - \text{PrevalenceT1}) / \text{PrevalenceT1}] \times 100$ . In addition, a chi-square test, including involvement in cyber aggression, aggression, sexting and abusive use of the Internet and social networks, was used to compare the statistical significance of this variation in T1 and T2, respectively, by condition, control or experimental. The test's significance would indicate an association in involvement between T1 and T2, that is, involvement has not substantially changed; its absence would indicate that the role has changed.

To achieve the second objective, those students identified as cyber aggressors in T1 were selected. Subsequently, two new quantitative variables for cyber aggression and aggression were calculated based on the means of the items that make up each dimension in order to analyze the variability in both phenomena. Two 2 x 2 repeated measures (2 times, T1 and T2, X 2 conditions, control and experimental) ANOVAs were used to compare changes in the intensity of cyber aggression and aggression, respectively. For the third objective, which was to analyze whether the prevalence of the studied risk factors, sexting and abusive use of the Internet and social networks, varied in the group of students self-identified as cyber aggressors in T1 by the condition, the percent variation for these factors in the aforementioned group of students was calculated.

Coding and data analysis were carried out using the SPSS program, version 21, except for the percent variation calculation which used Excel 2016.

## 3. Results

### 3.1. Impact of the "Asegúrate" Program on the prevalence of cyber aggression, sexting and the abusive use of the Internet and social networks

The results relative to the program's impact on the prevalence of cyber aggression and aggression revealed the different percent variations in the control and experimental groups. Table 2 shows how cyber aggression involvement diminished by 17.5% in the quasi-experimental group and increased by 52% in the control group. Prevalence of

bullying aggression diminished in both groups, but more so in the quasi-experimental group (19.6% vs. 2.9%).

The chi-square test was significant in the control group,  $\chi^2 (1, 187)=24.028$ ,

$p=.001$ , which means that there is an association between cyber aggression in T1 and T2, whereas the test was not significant in the quasi-experimental group,  $\chi^2 (1, 289)=1.198$ ,  $p=.274$ . The results for aggression were similar: a significant association in the control group,  $\chi^2 (1, 187)=14.026$ ,  $p=.001$ , and a non-significant one in the quasi-experimental group,  $\chi^2 (1, 290)=0.553$ ,  $p=.481$ . Regarding the change in prevalence of the two risk factors, sexting, and abusive use, the results of the percent variation show changes in both groups, but in a different order (Table 3). Thus, the percent variation for sexting and the intrapersonal dimension for abusive use in the control group represents an increase; however, a decrease is observed in the quasi-experimental group for both cases. In terms of the interpersonal dimension for abusive use, a decrease is observed in both the control and quasi-experimental groups; although the magnitude in both groups varied, proving greater in the quasi-experimental group.

For sexting, the chi-square test was significant in the control group,  $\chi^2$

$(1, 187)=41.987$ ,  $p=.001$ , and non-significant in the quasi-experimental group,  $\chi^2 (1, 280)=3.345$ ,  $p=.067$ , yielding the same outcome as intrapersonal abusive use ( $\chi^2$  control  $[1, 187]=63.703$ ,  $p=.001$ ,  $\chi^2$  quasi-experimental  $[1, 269]=0.73$ ,  $p=.787$ ). For interpersonal abusive use, the association was significant in the control group,  $\chi^2 (1, 187)=45.120$ ,  $p=.001$ , and bordered on significance in the quasi-experimental group,  $\chi^2 (1, 269)=3.937$ ,  $p=.047$ .

### 3.2. Impact on the intensity of cyber aggression and aggression in cyber aggressors

The ANOVA results for cyber aggression showed a significant intra-subject effect of time,  $F (1, 40)=7.108$ ,  $p=.011$ ,  $\eta^2p=.151$ , but not of condition,  $F (1, 40)=3.280$ ,  $p=.078$ ,  $\eta^2p=.076$ . However, these effects are qualified by the interaction between time

and condition,  $F (1, 40)=6.959$ ,  $p=.012$ ,  $\eta^2p=.148$ . Regarding aggression, the results followed a similar pattern, a significant effect of time,  $F (1,$

Table 4. Means of cyber aggression and aggression in T1 and T2 by the condition			
	Condition	M (SD)	
		T1	T2
Cyber aggression	Experimental (n =30)	1.58 (0.37)	1.11 (0.29)
	Control (n =12)	1.53 (0.32)	1.53 (0.67)
Aggression	Experimental (n =30)	2.03 (0.69)	1.32 (0.45)
	Control (n =12)	1.86 (0.71)	1.88 (0.68)

$40)=9.034$ ,  $p=.005$ ,  $\eta^2p=.184$ ; a lack of significance for condition,  $F (1, 40)=1.138$ ,  $p=.292$ ,  $\eta^2p=.028$ ; and a significant interaction,  $F (1, 40)=9.990$ ,  $p=.003$ ,  $\eta^2p=.200$ .

These data reveal a clear decline in cyber aggression and aggression associated with the intervention, as can be observed when comparing the means (Table 4).

### 3.3. Involvement of cyber aggressors in risk factors

Taking into account those adolescents identified as cyber aggressors in T1, the percent variation in the prevalence of sexting and abusive use of the Internet and social networks in both groups, control and quasi-experimental, was analyzed (Table 5). The results reveal that direct sexting involvement decreased by almost half in the quasi-experimental group, whereas a slight increase was found in the control group. As for abusive use, an increase was

Table 2. Prevalence of cyber aggression and aggression in T1 and T2, by condition, and its percent variation				
	Cyber aggression		Aggression	
	Control	Experimental	Control	Experimental
Prevalence T1 %	2.5	6.3	6.9	14.3
Prevalence T2 %	3.8	5.2	6.7	11.5
Percent variation%	+52.0	-17.5	-2.9	-19.6

Table 3. Prevalence, T1 and T2 for sexting and abusive use of the Internet and social networks, by condition, and its percent variation						
	Sexting		Abusive use			
	Control	Exper.	Intrapersonal		Interpersonal	
			Control	Exper.	Control	Exper.
Prevalence T1 %	5.1	13.6	11.3	15.2	13.9	16.1
Prevalence T2 %	6.5	13.3	11.8	13.7	13.7	13.9
Percent variation %	+27.5	-2.2	+4.42	-9.87	-1.4	-13.7

observed in the control group, whereas a decrease in both the intrapersonal and interpersonal factors was found in the quasi-experimental group.

For sexting, the chi square was marginally significant in the control group and non-significant in the quasi-experimental

**Table 5. T1 and T2 prevalence for sexting and abusive use of the Internet and social networks by condition, and its percent variation in cyber aggressors**

	Sexting		Abusive use			
			Intrapersonal		Interpersonal	
	Control	Exper.	Control	Exper.	Control	Exper.
Prevalence T1 %	7.1	28.6	14.3	35.7	14.3	26.2
Prevalence T2 %	7.3	14.6	15.0	7.5	17.5	15.0
Percent variation %	+2.8	-49.0	+4.90	-78.99	+22.4	-42.7

group,  $\chi^2$  control (1, 12)=3.704,  $p=.054$ ;  $\chi^2$  quasi-experimental (1, 29)=0.232,  $p=.630$ .

For abusive use, the associations were non-significant for group and the intrapersonal factor,  $\chi^2$  control (1, 12)=1.333,  $p=.546$ ;  $\chi^2$  quasi-experimental (1, 28)=0.232,  $p=.630$ ; and non-significant for the interpersonal factor,  $\chi^2$  control (1, 12)=3.086,  $p=.079$ ;  $\chi^2$  quasi-experimental (1, 28)=0.019,  $p=.891$ .

#### 4. Discussion and conclusions

The majority of intervention programs tackling bullying and cyberbullying are effective at addressing victimization (Ttofi & Farrington, 2011), but they are scarcely effective at reducing aggressive behaviors. The aim of this study was to analyze the impact of the "Asegúrate" program on cyber aggression and aggression for the cited phenomena. In light of the results obtained, we can conclude that this program is effective at not only reducing the prevalence of cyber aggressions and aggressions, but it is also effective in reducing the involvement in other phenomena considered to be risk factors for cyberbullying: sexting and the abusive use of the Internet and social networks (Del Rey & al., 2016).

Specifically, the results corresponding to the first objective show that, without intervention, involvement in cyber aggression, sexting, and intrapersonal abusive use increases; however, it diminishes with intervention. This percent variation is especially notable in cyber aggression. This aspect is particularly noteworthy given that earlier studies report on how, as these phenomena hold over time, the potential harm for all those involved increases (Livingstone & Smith, 2014). Furthermore, in the case of bullying aggression and the abusive use of the Internet and social networks interpersonal factor, the analysis of the control group results shows that, unlike the previously mentioned phenomena, these tend to diminish over time. However, the comparative assessment demonstrates that the program accelerates this reduction, yielding a percent variation almost seven times greater in aggression and almost ten times greater in interpersonal abusive use in the quasi-experimental groups than in the control groups. A possible explanation for this diminishing aggression in bullying has to do with the phenomenon's development, given that several studies have observed a decline with advancing age, continuing to fall after the second year of compulsory secondary education (Sastre, 2016). Nevertheless, the program's impact highlights the importance of intervention to speed up this decline. The decrease found in the abusive use interpersonal factor is, to some extent, surprising, especially given that available data indicate that abusive use increases with advancing age, at least between 9 and 16 years of age (Casas, Ruiz-Olivares, & al., 2013). This aspect coincides with the increase observed in the intrapersonal factor corresponding to the control group. However, in this case, the decline observed in the interpersonal factor, coupled with the fact that intervention does not appear to alter involvement levels substantially, suggest the need for analysis into which of the program's factors could be responsible for facilitating a more controlled and "less compulsive" use of the Internet and social networks as a way of escaping, but not as a way of interacting with others. Similarly, the fact that a trend shift is observed when the program is developed (in cyber aggression, in sexting and the abusive use intrapersonal factor) emphasizes the appropriateness of the methodology used. This demonstrates the important role that self-regulation plays as an inhibitor of aggression, as previously reported by other authors (Vazsonyi & al., 2012). Another key finding of the present study is that, although "anti-bullying" programs are used to prevent cyberbullying among students (Williford & al., 2013), certain programs geared towards preventing cyberbullying, such as those commented upon in the introduction (Del Rey, & al., 2012; Garaigordobil & Martínez-Valderrey, 2015) and "Asegúrate", the program subject to study, are also used to prevent aggression in bullying situations.

In terms of the second objective, namely the decline in intensity of aggressive behaviors, the results once again confirm the effectiveness of the program, with significant differences between the control and quasi-experimental



groups emerging. From this perspective, and given how difficult it is to change the aggressors' conduct (Ttofi & Farrington, 2011), the results support the aforementioned effect of self-regulation whereby, not only does it reduce these behaviors in general, but also the students that exhibit them are able to reduce their intensity. What is more, the results demonstrate the transfer of this control from virtual environments (which this program primarily works in) to physical environments. A further explanation for the possible factors responsible for these results has to do with teacher involvement in program implementation. From this perspective, earlier studies show that one of the factors associated with aggression is students' perceptions of teacher non-involvement (Casas & al., 2015). The fact that "Asegúrate" is a teacher-implemented program could change students' perceptions in this respect.

Regarding the third and final objective, the results partially corroborate the program's effect on risk factors in cyber-aggressors. Thus, whereas sexting involvement increases in non-intervened cyber aggressors, a decline by almost a half is observed in the quasi-experimental condition. Conversely, in the case of abusive use, the results do not allow us to confirm whether the program is responsible for the changes observed between the control and quasi-experimental groups. In any case, it is important to highlight the reduced number of students per group in this analysis as a study limitation. We can conclude that "Asegúrate", besides being a program that reduces and occasionally prevents involvement in interpersonal aggressive behaviors, bullying, and cyberbullying, also reduces and prevents sexting involvement. This dual aspect is especially important given that previous meta-analyses on interventions aimed at reducing school-based aggressions have shown, in general terms, how these programs are effective at reducing levels of aggression when it is high, but not at preventing a potential increase in aggression (Wilson & Lipsey, 2007).

Taken together, the results endorse "Asegúrate" as a useful practice that could well be considered an evidence-based practice to reduce the cyberbullying and bullying phenomena, sexting and certain dimensions corresponding to the abusive use of the Internet and social networks. Given the evidence that the holding of these problems over time heightens their impact and effects, programs like the one presented here should be seen as essential tools in schools' daily activities.

Lastly, it is important to note the limitations of this study and future lines of research opened up by the results. In addition to the problems inherent in the use of self-report measures, the short-term longitudinal design used represents a strength yet makes it difficult to control certain variables. Thus, there is no leveling between the quasi-experimental group and the control group in terms of the number of participants, schools, and students. Similarly, the control of outside variables, such as the schools' participation in other activities covered in their co-existence plans, was not possible. Although this hinders the interpretation of the results, it gives them ecological validity, given that this represents the real day-to-day workings of our schools. As for the reality of the phenomena under study, the not very high number of students included in the cyber-aggression analyses, as well as their uneven distribution across the control groups (12) and the quasi-experimental groups (30), means that we should interpret these results with a degree of caution. Regarding future lines of research, we would need to determine whether a longer program would produce stronger or more longer-lasting effects, as reported in other studies. Similarly, we would need to continue investigating the matter to clearly identify which factors that help to prevent cyber aggression also help to prevent traditional aggression and vice-versa, as well as the common and differential associated risk factors, sexting and the abusive use of the Internet and social networks. From this perspective, a more detailed map of these factors would enable us to draw up intervention proposals with common features, based on different risks, and specific features, which are applicable to specific populations and in highly vulnerable developmental periods.

### Funding Agency

This program was funded through the I+D project of the 2013-2016 State Plan of Excellence "Sexting, cyberbullying y riesgos emergentes en la red: claves para su comprensión y respuesta educativa (Sexting, cyberbullying and emerging online risks: keys for its understanding and an educational response)" (EDU2013-44627-P).

### References

- Álvarez-García, D., Barreiro-Collazo, A., & Núñez, J.C. (2017). Ciberagresiones entre adolescentes: prevalencia y diferencias de género. [Cyberaggression among adolescents: prevalence and gender differences]. *Comunicar*, 25(50), 89-97. <https://doi.org/10.3916/C50-2017-08>
- Casas, J.A., Del Rey, R., & Ortega-Ruiz, R. (2013). Bullying and cyberbullying: Convergent and divergent predictor variables. *Computers in Human Behavior*, 29(3), 580-587. <https://doi.org/10.1016/j.chb.2012.11.015>
- Casas, J.A., Ortega-Ruiz, R., & Del Rey, R. (2015). Bullying: The impact of teacher management and trait emotional intelligence. *British Journal of Educational Psychology*, 85(3), 407-423. <https://doi.org/10.1111/bjep.12082>

- Casas, J.A., Ruiz-Olivares, R., & Ortega-Ruiz, R. (2013). Validation of the Internet and Social Networking Experiences Questionnaire in Spanish adolescents. *International Journal of Clinical and Health Psychology*, 13(1), 40-48. [https://doi.org/10.1016/S1697-2600\(13\)70006-1](https://doi.org/10.1016/S1697-2600(13)70006-1)
- Casey, B. J., Jones, R.M., & Hare, T.A. (2008). The Adolescent brain. *Annals of the New York Academy of Sciences*, 1124(1), 111-126. <https://doi.org/10.1196/annals.1440.010>
- Cerezo, F., Arnaiz, P., Giménez, A.M., & Maquilón, J.J. (2016). Conductas de ciberadicción y experiencias de cyberbullying entre adolescentes. *Anales de Psicología*, 32(3), 761-769. <https://doi.org/10.6018/analesps.32.3.217461>
- Cerezo, F., & Rubio, F.J. (2017). Medidas relativas al acoso escolar y ciberacoso en la normativa autonómica española. Un estudio comparativo. *Revista Electrónica Interuniversitaria de Formación del Profesorado*, 20(1), 113. <https://doi.org/10.6018/reifop/20.1.253391>
- Colás, P., González, T., & de-Pablos, J. (2013). Juventud y redes sociales: motivaciones y usos preferentes. [Young people and social networks: Motivations and preferred uses]. *Comunicar*, 20(40), 15-23. <https://doi.org/10.3916/C40-2013-02-01>
- Del Rey, R., Casas, J.A., & Ortega-Ruiz, R. (2012). El programa ConRed: una práctica basada en la evidencia. [The ConRed Program, an evidence-based practice]. *Comunicar*, 23(45), 129-138. <https://doi.org/10.3916/C39-2012-03-03>
- Del Rey, R., Casas, J.A., Ortega-Ruiz, R., Schultze-Krumbholz, A., Scheithauer, H., Smith, P., ... Plichta, P. (2015). Structural validation and cross-cultural robustness of the European Cyberbullying Intervention Project Questionnaire. *Computers in Human Behavior*, 50, 141-147. <https://doi.org/10.1016/j.chb.2015.03.065>
- Del Rey, R., Casas, J.A., & Ortega, R. (2016). Impact of the ConRed program on different cyberbullying roles. *Aggressive Behavior*, 42(2), 123-135. <https://doi.org/10.1002/ab.21608>
- Del Rey, R., Elípe, P., & Ortega-Ruiz, R. (2012). Bullying y cyberbullying: Overlapping and predictive value of the co-occurrence. *Psicothema*, 24(4), 608-613.
- Gámez-Guadix, M., de Santisteban, P., & Resett, S. (2017). Sexting entre adolescentes españoles: Prevalencia y asociación con variables de personalidad. *Psicothema*, 29(1), 29-34. <https://doi.org/10.7334/psicothema2016.222>
- Garaigordobil, M. (2015). Ciberbullying en adolescentes y jóvenes del País Vasco: Cambios con la edad. *Anales de Psicología*, 31(3), 1069. <https://doi.org/10.6018/analesps.31.3.179151>
- Garaigordobil, M., & Martínez-Valderrey, V. (2015). Efectos del Cyberprogram 2.0 en el bullying 'cara-a-cara', el cyberbullying y la empatía. *Psicothema* 27(1), 45-51. <https://doi.org/10.7334/psicothema2014.78>
- Hinduja, S., & Patchin, J.W. (2008). Cyberbullying: An exploratory analysis of factors related to offending and victimization. *Deviant Behavior*, 29(2), 129-156. <https://doi.org/10.1080/01639620701457816>
- Hinduja, S., & Patchin, J.W. (2012). *School climate 2.0: Preventing cyberbullying and sexting one classroom at a time*. School climate 2.0: Preventing cyberbullying and sexting one classroom at a time. Thousand Oaks, California: Corwin Press.
- Joseph, N. (2009). Metacognition Needed: Teaching middle and high school students to develop strategic learning skills. *Preventing School Failure: Alternative Education for Children and Youth*, 54(2), 99-103. <https://doi.org/10.1080/10459880903217770>
- Klettke, B., Hallford, D.J., & Mellor, D.J. (2014). Sexting prevalence and correlates: A systematic literature review. *Clinical Psychology Review*, 34(1), 44-53. <https://doi.org/10.1016/j.cpr.2013.10.007>
- Korenis, P., & Billick, S.B. (2014). Forensic implications: Adolescent sexting and cyberbullying. *Psychiatric Quarterly*, 85(1), 97-101. <https://doi.org/10.1007/s1126-013-9277-z>
- Livingstone, S., & Smith, P.K. (2014). Annual research review: Harms experienced by child users of online and mobile technologies: The nature, prevalence and management of sexual and aggressive risks in the digital age. *Journal of Child Psychology and Psychiatry and Allied Disciplines*. <https://doi.org/10.1111/jcpp.12197>
- Menesini, E., & Salmivalli, C. (2017). Bullying in schools: the state of knowledge and effective interventions. *Psychology, Health & Medicine*, 22(1), 240-253. <https://doi.org/10.1080/13548506.2017.1279740>
- Modecki, K. L., Barber, B.L., & Vernon, L. (2013). Mapping developmental precursors of cyber-Aggression: Trajectories of risk predict perpetration and victimization. *Journal of Youth and Adolescence*, 42(5), 651-661. <https://doi.org/10.1007/s10964-012-9887-z>
- Nacimiento, L., Rosa, I., & Mora-Merchán, J.A. (2017). Valor predictivo de las habilidades metacognitivas en el afrontamiento en situaciones de bullying y cyberbullying. *Informes Psicológicos*, 17(2), 135-158. <https://doi.org/10.18566/infpsic.v17n2a08>
- Ortega-Ruiz, R., Del Rey, R., & Casas, J.A. (2016). Evaluar el bullying y el cyberbullying validación española del EBIP-Q y del ECIP-Q. *Psicología Educativa*, 22(1), 71-79. <https://doi.org/10.1016/j.pse.2016.01.004>
- Ortega, R., Elípe, P., Mora-Merchán, J.A., Genta, M.L., Brighi, A., Guarini, A., & al. (2012). The emotional impact of bullying and cyberbullying on victims: a European cross-national study. *Aggress. Behav.* 38, 342-356. <https://doi.org/10.1002/ab.21440>
- Powell, K.C., & Cody, J.K. (2009). Cognitive and social constructivism: developing tools for an effective classroom. *Education*, 130(2), 241-250.
- Prodócimo, E., Cerezo, F., & Arense, J.J. (2014). Acoso escolar: variables sociofamiliares como factores de riesgo o de protección. *Behavioral Psychology*, 22(2), 345-362.
- Rimal, R.N., & Lapinski, M.K. (2015). A re-explication of social norms, ten years later. *Communication Theory*, 25(4), 393-409. <https://doi.org/10.1111/comt.12080>
- Roncero, D., Andreu, J., & Peña, M.E. (2016). Procesos cognitivos distorsionados en la conducta agresiva y antisocial en adolescentes Distorted cognitive processes in aggressive and antisocial behavior in adolescents. *Anuario de Psicología Jurídica*, 26(1), 88-101. <https://doi.org/10.1016/j.apj.2016.04.002>
- Sastre, A. (2016). *Yo a eso no juego*. Madrid: Save the Children. <https://bit.ly/1oDaq9U>
- Ttofi, M.M., & Farrington, D.P. (2011). Effectiveness of school-based programs to reduce bullying: a systematic and meta-analytic review. *Journal of Experimental Criminology*, 7(1), 27-56. <https://doi.org/10.1007/s11292-010-9109-1>
- Van-Royen, K., Poels, K., Vandebosch, H., & Adam, P. (2017). 'Thinking before posting?' Reducing cyber harassment on social networking sites through a reflective message. *Computers in Human Behavior*, 66, 345-352. <https://doi.org/10.1016/j.chb.2016.09.040>
- Vannucci, M., Nocentini, A., Mazzoni, G., & Menesini, E. (2012). Recalling unrepresented hostile words: False memories predictors of tradi-

tional and cyberbullying. *European Journal of Developmental Psychology*, 9(2), 182-194. <https://doi.org/10.1080/17405629.2011.646459>  
 Vazsonyi, A. T., Machackova, H., Sevcikova, A., Smahel, D., & Cerna, A. (2012). Cyberbullying in context: Direct and indirect effects by low self-control across 25 European countries. *European Journal of Developmental Psychology*, 9(2), 210-227.

<https://doi.org/10.1080/17405629.2011.644919>

Williford, A., Elledge, L.C., Boulton, A.J., DePaolis, K.J., Little, T.D., & Salmivalli, C. (2013). Effects of the KiVa Antibullying program on cyberbullying and cybervictimization frequency among Finnish youth. *Journal of Clinical Child and Adolescent Psychology*, 42(6), 820-833. <https://doi.org/10.1080/15374416.2013.787623>

Wilson, S.J., & Lipsey, M.W. (2007). School-based interventions for aggressive and disruptive behavior. *American Journal of Preventive Medicine*, 33(2), S130-S143. <https://doi.org/10.1016/j.amepre.2007.04.011>

Ybarra, M.L., & Mitchell, K.J. (2014). Sexting and its relation to sexual activity and sexual risk behavior in a national survey of adolescents. *The Journal of Adolescent Health*, 55(6), 757-64. <https://doi.org/10.1016/j.jadohealth.2014.07.012>

Waasdorp, T.E., & Bradshaw, C.P. (2015). The overlap between cyberbullying and traditional bullying. *Journal of Adolescent Health*, 56(5), 483-488. <https://doi.org/10.1016/j.jadohealth.2014.12.002>

# Comunicar

Media Education Research Journal




E- ISSN: 1988-3293 ISSN: 1134-3478





# Cyberbullying and problematic Internet use in Colombia, Uruguay and Spain: Cross-cultural study

Cíberacoso y uso problemático de Internet en Colombia, Uruguay y España:  
Un estudio transcultural

-  Dr. Carolina Yudes-Gómez is Associate Professor in the Department of Educational Psychology and Psychobiology at the International University of La Rioja (Spain) (carolina.yudes@unir.net). <https://orcid.org/0000-0003-4191-7336>
-  Dr. Daniela Baridon-Chauvie is Associate Professor in the Department of Didactics of Mathematics and Experimental Sciences, and Didactics of Social Sciences at the International University of La Rioja (Spain) (daniela.baridon@unir.net). <https://orcid.org/0000-0002-7307-6001>
-  Dr. Joaquín-Manuel González-Cabrera is Professor in the Department of Educational Psychology and Psychobiology at the International University of La Rioja (Spain) (joaquin.gonzalez@unir.net). <https://orcid.org/0000-0003-2865-3428>

## ABSTRACT

The goal of this cross-cultural study was to analyze and compare the cybervictimization and cyberaggression scores, and the problematic Internet use between Spain, Colombia and Uruguay. Despite cultural similarities between the Spanish and the South American contexts, there are few empirical studies that have comparatively examined this issue. The study sample consisted of 2,653 subjects aged 10-18 years. Data was collected through the cyberbullying questionnaire and the Spanish version of the "Revised generalized and problematic Internet use scale". Results showed a higher prevalence of minor cyberbullying behavior in Spain between 10-14 years. In the three countries compared, there was a higher prevalence of two types of bystanders: the defender of the victim and the outsider, although in Colombia there were more profiles of assistant to the bully. Regarding the problematic use of the Internet, there were not differences between the three countries. We provide evidence on the relationship between cybervictimization and cyberaggression and problematic use of the Internet. The dimensions of compulsive use and regulation of mood are the best predictors of cyberbullying. We discuss our results in relation to the possible normalization of violence and its lack of recognition as such.

## RESUMEN

El objetivo de este estudio transcultural ha sido analizar y comparar las puntuaciones de cibervictimización y ciberagresión, y el uso problemático de Internet en adolescentes de España, Colombia y Uruguay, ya que pese a las semejanzas culturales existentes entre el contexto latinoamericano y español son escasos los estudios empíricos que los han comparado previamente. La muestra estuvo formada por 2.653 participantes de 10 a 18 años. Se recogieron datos a través del cuestionario de ciberacoso y de la versión en castellano del «Revised generalized and problematic Internet use scale». Los resultados ponen de manifiesto una mayor prevalencia de conductas de ciberacoso leve en España entre los 10-14 años. En los tres países, destacan dos roles de ciberobservador: defensor de la víctima y no comprometido ante la agresión, aunque con más perfiles de apoyo al agresor en Colombia. No se observan diferencias en un uso problemático de Internet entre los tres países. Se proporcionan evidencias sobre la relación de la cibervictimización y ciberagresión con el uso problemático de Internet. Las dimensiones de uso compulsivo y regulación del estado anímico son las que mejor predicen el ciberacoso. Los resultados son discutidos con relación a la posible normalización de la violencia y su falta de reconocimiento como tal.

## KEYWORDS | PALABRAS CLAVE

Cyberbullying, cybervictimization, cyberaggression, cyberbystander, Internet use, adolescents, cross-cultural study, compulsive use. Ciberacoso, cibervictimización, ciberagresión, ciberobservador, uso de Internet, adolescentes, estudio transcultural, uso compulsivo.



## 1. Introduction

In the last decades, advances in technology and Internet tools have transformed the way we access information, communicate, express ourselves, and interact. However, despite its advantages, the Internet also involves some risks. Many of the psychosocial problems occurring in virtual life replicate the problems found in “real” life (e.g., peer abuse or gender-based abuse). Additionally, new problems have arisen as a result of the misuse of the Internet and/or digital media. The psychosocial problems associated with new technologies are addressed by “cyberpsychology”. This branch of psychology focuses on the relationship between human beings and the use of technology in daily life.

One of the problems linked to the misuse of new technologies is cyberbullying, defined as any behavior performed through electronic or digital media –prevalently cell phones and the Internet– by individuals or groups that repeatedly communicate hostile or aggressive messages intended to inflict harm or discomfort on others (Tokunaga, 2010). The most common behaviors include flaming, denigration (insults and humiliation), threatening and offensive calls or messages, impersonation, exclusion, and outing (Kowalski, Limber, & Agatston, 2012). Cyberbullying can occur anywhere at any time of the day, which aggravates uncertainty in the cybervictim and dramatically extends the potential audience. The identity of the perpetrator can be known or not (Tokunaga, 2010). This imbalance of power has a dramatic impact on the social and emotional well-being of the victim. Thus, cyberbullying affects the personality, self-esteem, social skills and ability of the victim to resolve conflicts (Zych, Ortega, & Del Rey, 2015). Notably, the role of cyberbystander is increasingly gaining relevance, and a range of preventive interventions focused on this role have been developed (e.g., the KIVA bullying prevention program; Salmivalli, Kärnä, & Poskiparta, 2011). Salmivalli (1999) studied in detail the role of bystanders in traditional bullying. The author noted that the role of bystanders in the prevention of perpetuation of bullying is crucial. The author identified five bystander sub-roles, namely: reinforcer of the bully, assistant of the bully, outsider, pro-victim, and defender of the victim, the latter being the most prevalent. Given the relevance of these sub-roles, understanding and identifying them is crucial. Little research has been conducted on this aspect so far.

Cyberbullying is a social problem for which prevalence and incidence have increased dramatically around the world in recent years (Aboujaoude, Savage, Starcevic, & Salame, 2015). Intensive research has been conducted on cyberbullying in the USA and Europe. In contrast, few efforts are being made in Latin America, where cyberbullying has been studied using different methodologies. In Spain, recent data reveal that cyberbullying occurs in all regions, with a mean prevalence of 26,65% (mean SD: 23,23%) for cybervictimization (CBV) and 24,64% for cyberaggression (CBA) (mean SD: 24,35%) (Zych, Ortega-Ruiz, & Marin-López, 2016). The prevalence of cyberbullying is considerably higher in Latin America. In Colombia, its prevalence ranges from 30% (Redondo & Luzardo, 2016; Redondo, Luzardo, García-Lizarazo, & Ingles, 2017) to 60% (Mura & Diamantini, 2013). In Argentina and Mexico, rates reach 49% (Laplacette, Becher, Fernández, Gómez, Lanzillotti, & Lara, 2011; Lucio & González, 2012). Conversely, other studies have shown a prevalence of CBV below 15% in Mexico (Castro & Varela, 2013; García-Maldonado, Joffre, Martínez, & Llanes, 2011), Uruguay (Lozano & al., 2011) and Chile (Varela, Pérez, Schwaderer, Astudillo, & Lecannelier, 2014). These inconsistencies across countries are surprising, given the common ties of language and culture between Spain and Latin America that make comparative studies relevant. However, little research has been conducted to elucidate the causes of such differences. Romera, Herrera-López, Casas, Ortega-Ruiz, and Gómez-Ortiz (2017) recently performed a study to examine the influence of interpersonal variables (perceived social self-efficacy and social motivation) in cyberbullying. The author established a homogeneous model for the Spanish and Colombian populations.

In relation to the use of the Internet, it is worth mentioning that the DSM-V (American Psychiatric Association, 2014) does not recognize addiction to or the intensive use of the Internet as an addictive disorder or as a “behavioral addiction”. However, this does not mean that it is not harmful. One of the most widely used and accepted terms is “problematic Internet use” (Caplan, 2010). This approach places emphasis on the potential dysfunctions and interferences that some use patterns can cause in relation to an individuals’ family, social and academic life. A large number of studies conducted in Spain (Gámez-Guadix, Orue, & Calvete, 2013), in Mexico (Gámez-Guadix, Villa-George, & Calvete, 2012), and in the European context (Blinka, Škařupová, Ševčíková, Wölfling, Müller, & Dreier, 2015) support the adoption of a cognitive-behavioral model to explain patterns of Internet misuse. These characteristics include a preference for online social interaction or compulsive use of the Internet, yet, little evidence has been published on the relationship between this construct and the different roles in cyberbullying, not to mention the scarcity of comparative data in different countries.

For this reason, the main goal of this study was to analyze and compare scores for CBA and CBV in Spain, Colombia, and Uruguay. Other secondary objectives include: (1) Analyzing the factorial structure of the questionnaires used for the samples of Colombia and Uruguay; 2) Describing and comparing the profile of cyberbystanders in the three countries; 3) Analyzing and comparing patterns of problematic Internet use in the three countries; and 4) Examining the relationship between a problematic Internet use and cyberbullying.

Based on the results of previous studies, our hypotheses were: (1) Higher scores for CBV and CBA would be obtained for the Colombian population; (2) The factorial structure of the questionnaires employed would be valid for the Colombian and Uruguayan sample; (3) The most common cyberbystander sub-role would be that of defender of the victim, with a homogeneous distribution across the three countries; (4) No differences would be observed in patterns of problematic Internet use across countries; (5) A correlation exists between problematic Internet use and CBV and CBA.

## 2. Materials and methods

### 2.1. Sample

A cross-sectional, descriptive, analytical study was performed between March 2016 and July 2017. The sample was composed of 2,653 subjects 10 to 18 years of age ( $M=14,48$ ;  $SD=1,66$ ) from Colombia (51,3%), Uruguay (9,9%) and Spain (38,8%), of whom 50,8% were male ( $N=1,350$ ) and 49,1% were female ( $N=1,303$ ). Non-probabilistic incidental sampling was performed. Students were recruited from schools from north to south and from east to west of each country. A total of 12 schools were ultimately included. All centers were located in urban areas with a population of low-medium socio-economic status. The Colombian sample was recruited from five public and three private schools located in Belén,

Age	Colombia			Uruguay			Spain			% total
	H	M	%	H	M	%	H	M	%	
10-12	77	66	10,5	12	24	14	96	88	18	13,7
13-14	213	220	31,8	53	45	38	225	231	44,6	37,4
15-16	270	268	39,5	45	36	31,8	170	150	31,3	35,5
17-18	122	127	18,3	23	19	16,3	39	24	6,2	13,4
total	682 (50%)	681 (50%)	51,3	134 (51,8%)	126 (48,2%)	9,9	534 (51,8%)	496 (48,2%)	38,8	

Sex (M: Male, F: Female)

Neiva, Bogotá and Cali ( $n=1,363$ ; mean age 14,82;  $SD=1,68$ ). The sample from Uruguay was recruited from a private school in Melo ( $n=260$ , mean age: 14,48;  $SD=1,72$ ). The Spanish sample was obtained from two public schools in Valencia and Asturias, and a semi-private school in Seville ( $n=1.030$ ; mean age: 14,01;  $SD=1,49$ ). Age and sex distribution by country are shown in Table 1.

### 2.2. Assessment instruments

Sociodemographic data included sex (male/female), age (categorized into four age groups: 10-12; 13-14; 15-16 and 17-18 years) and country (Colombia; Uruguay; Spain).

"Cuestionario de Ciberacoso" (CBQ; Calvete, Orue, Estévez, Villardón, & Padilla, 2010; Estévez, Villardón, Calvete, Padilla, & Orue, 2010; Gámez-Guadix, Villa-George, & Calvete, 2014). It contains a 17-item CBA scale and an 11-item CBV scale that evaluate behaviors associated with cyberbullying. Answers were scored on a 4-point Likert scale (0=never; 1=once or twice; 2= three or four times; 3=five or more times). Based on norm scores, three profiles, as follows: no problem (total score=0-1); minor cybervictim/cyberbully (scores  $\geq 85$ th percentile and  $< 95$ th; c) severe cybervictim/cyberbully (scores  $\geq 95$ th percentile). The validation study in the Spanish population showed adequate reliability and validity. Cronbach's alpha coefficients for the CBV and CBA dimensions were  $\alpha=.86$  and  $\alpha=.82$ , respectively. Some terms and expressions were adapted for the Colombian and Uruguayan version of the questionnaire (e.g. "móvil" [mobile] was replaced with "celular"; "ordenador" [computer] with "computadora"; "agresor" [aggressor] with "matón", and "acoso" [bullying] with "matoneo", to name a few).

Participants were asked to define their role as cyberbystanders. Dimensions were established according to those described in the literature for traditional bullying (Salmivalli, 1999; Salmivalli, Lagerspetz, Björkqvist, Osterman, & al., 1996), namely: a) assistant of the bully (never starts aggression, but occasionally supports the aggressor); b)

reinforcer of the bully (supports the aggressor, but never joins him/her); c) outsider (never supports the aggressor or the victim); d) pro-victim (supports the victim but does nothing to stop the aggression); e) defender (often defends the victim).

Spanish version of the "Revised Generalized and Problematic Internet Use Scale" (GPIUS2, Gámez-Guadix & al., 2013). This 15-item questionnaire assesses problematic Internet use by five subscales: (1) preference for online social interaction; (2) mood modulated by the Internet; (3) negative effects; (4) cognitive concern; (5) compulsive use. Responses were measured on a 6-point Likert's scale (1=absolutely disagree; 6= agree). Scores were coded based on four categories: a) no problem (score  $\geq 1 < 2$ ); b) isolated problems ( $\geq 2 < 4$ ); c) potentially problematic use (score  $\geq 4 < 5$ ); d) problematic use  $\geq 5 \leq 6$ ). The scale yielded adequate levels of reliability and validity for the Spanish sample. Cochrane's coefficient for this study was  $\alpha=.93$ . Again, the Colombian and Uruguayan versions were adapted.

### 2.3. Procedures

Centers were first contacted by e-mail and, when they agreed to participate, they were contacted by phone for submission of the documents required to participate in the study. The battery of questionnaires was distributed in the classroom by a collaborator and school staff (generally, the class tutor or school counselor). Respondents were encouraged to give truthful answers, not spending too much time to answer a specific question and note down any doubt on the last page. The time required by students to complete the questionnaires ranged from 25 to 40 minutes. Participation was voluntary and anonymous, and no compensation was provided. By completing the questionnaires, the students tacitly agreed to participate in the study. Previous consent was obtained from parents and school management. The study was approved by the Research Ethics Committee of Asturias, Spain (Ref 11/15).

### 3. Analysis and results

Prior to data analysis, structural equation models were created for the CBQ using weighted least squares estimates (WLS) based on the Colombian and Uruguayan samples altogether. Confirmatory factor analysis of GPIUS2 was performed using the robust method of maximum likelihood (including Satorra-Bentler's scaled  $\chi^2$  index). The goodness of fit of the estimated models was assessed using the non-normative fit index (NNFI), and comparative fit index (CFI) and the root mean square error of approximation (RMSEA). NNFI and CFI values above .90 indicate an acceptable goodness of fit, whereas values  $>.95$  indicate good goodness of fit. RMSEA near .05 reveals excellent goodness of fit whereas values ranging from .05 to .08 indicate acceptable goodness of fit (Byrne, 2006; Hu & Bentler, 1999).

Other analyses included: 1) verification of the normal distribution of the sample (Shapiro-Wilks test) and homogeneity of variance (Levene test); 2) analysis of frequencies and measures of central tendency and dispersion of means; 3) estimation of the standard score for the variables found to be correlated; 4)  $\chi^2$  for post-hoc comparison of proportions; 5) partial correlations after adjustment for age; 6) analysis of variance using Bonferroni post-hoc comparisons; 7) stepwise multiple linear regression using F probability for an input value of .15 and an output of .20 to determine the GPIUS2 dimension that best predicted CBV and CBA scores in each country. When statistically significant differences were found, Cohen's d was calculated to estimate the effect size of the difference. A p value  $<.05$  was considered statistically significant. Statistical analyses were performed using SPSS, 23 and Lisrel 8.5.

#### 3.1. Validity and reliability of CBQ and GPIUS2 for the samples from Colombia and Uruguay

The hypothesized model was composed of two correlated factors, one for CBA and

another for CBV (following Gámez-Guadix & al., 2014). The solution obtained was satisfactory, with the adequate goodness of fit:  $\chi^2(234, N=1.620)=341$ ;  $p<.001$ ; RMSEA=.059 (95% CI: .053-.066); NNFI=.98; CFI=.98. The CBV dimension obtained a Cronbach's alpha of .82 whereas CBA yielded .86.

**Table 2. Compared total scores for cyberbullying by country**  
(\* $p<.05$ ; \*\* $p<.001$ )

Country	CBV			CBA		
	mean (SD)	F (p) Post hoc	Cohen's d	Mean (SD)	F (p) Post hoc	Cohen's d
Colombia (a)	1,53 (3,38)	18.895**		,97 (2,8)	9.645**	
Uruguay (b)	2,68 (3,25)	b>a**	.34	1,55 (3,04)	b>a**	.19
Spain (c)	2,08 (3,16)	c>a** b>c*	.16 .18	1,32 (1,69)	c>a**	.15

Mean=arithmetic average; SD= standard deviation; F= Snedecor's F; Post hoc= Bonferroni comparison.

As for GPIUS2, we used the five-item model described elsewhere (Caplan, 2010; Gámez-Guadix & al., 2013). Acceptable results were obtained: S-B  $\chi^2(84)=401$ ;  $p<.001$ ; RMSEA=.070 (IC 95%: .063-.079; NNFI=.98; CFI=.98). Cronbach's alpha was .90.

### 3.2. Prevalence of cybervictimization and cyberaggression

Table 2 shows differences across countries in total scores for CBV and CBA.

Differences in the proportional distribution of severity of cyberbullying are shown in Table 3 by age and country. The percentage of participants with no problems was higher in Colombia. In contrast, Spain showed a higher number of participants with minor problems (especially within the 10-14 age range). No significant differences were observed regarding severe cyberbullying.

Differences based on age and sex were observed in severe CBV in Colombia (10-12 year-old, male: 1,3%; female: 11,7%),  $\chi^2(2, N=8)=6,67$ ;  $p<.05$ , and minor CBV (15-16 year old, male: 4,3%; female: 16,2%),  $\chi^2(2, N=37)=17,82$ ;  $p<.001$ , with a higher percentage for female students. Differences were also observed in Spain in the category of minor CBV, but with a higher percentage for males (13-14 years, male: 25%; female: 7%),  $\chi^2(2, N=28)=18,13$ ;  $p<.001$ . No gender- or sex-based differences were found in relation to CBA.

**Table 3. Proportional distribution of severity of CBV and CBA by age and country**  
(\* $p<.05$ ; \*\* $p<.001$ )

Age	CBQ Level	% CBV: Country			(gI); $\chi^2$	% CBA: Country			(gI); $\chi^2$
		CO (a)	UY (b)	SP (c)		CO (a)	UY (b)	SP (c)	
10-12 (1)	A	89,7 <sup>(c)</sup>	74,2	69,5	(4)=24,43; $p<.001^{**}$	95,5 <sup>(c)</sup>	90,3	81,1	(4)=14,71; $p=.005^*$
	B	4,4	12,9	24,1 <sup>(a)</sup>		1,5	6,5	11,2 <sup>(a)</sup>	
	C	5,9	12,9	6,4		3	3,2	7,7	
13-14 (2)	A	81,7 <sup>(c)</sup>	75	74,3	(4)=7,05; $p=.133$	91,9 <sup>(c)</sup>	89,3	79,1	(4)=49,37; $p<.001^{**}$
	B	12	13,9	16,9		1	1,2	12,3 <sup>(a,b)</sup>	
	C	6,3	11,1	8,8		7,1	9,5	8,6	
15-16 (3)	A	81,8 <sup>(c)</sup>	72,4	84,5	(4)=12,47; $p=.014^*$	87,2 <sup>(c)</sup>	86,8	74,7	(4)=39,32; $p<.001^{**}$
	B	10,2	10,3	4,2		4,5	4,4	17,6 <sup>(a,b)</sup>	
	C	8,0	17,2	11,3		8,3	8,8	7,7	
17-18 (4)	A	84,6	74,1	80,9	(4)=3,32; $p=.506$	89,3 <sup>(b)</sup>	64	83,9	(4)=27,93; $p<.001^{**}$
	B	8,9	11,1	12,8		0,9	20 <sup>(a)</sup>	7,1 <sup>(a)</sup>	
	C	6,5	14,8	6,4		9,8	16	8,9	
Post hoc: Age		---	---	(6)=31,89; $p<.001^{**}$		(6)=21,01; $p=.002^*$	(6)=17,16; $p=.009^*$	---	
	A	---	---	3>1-2		1>3	2>4	---	
	B	---	---	1-2>3		3>2	2<4	---	
	C	---	---	---		---	---	---	
% Total (without age)	A	83,1 <sup>(b,c)</sup>	74,3	76,7	(4)=20,29; $p<.001^{**}$	90 <sup>(c)</sup>	85,8	78,5	(4)=99,62; $p<.001^{**}$
	B	9,9	12	14,3 <sup>(a)</sup>		2,4	5,2	13,4 <sup>(a,b)</sup>	
	C	7	13,6 <sup>(a)</sup>	9		7,6	9	8,1	

Country (CO: Colombia; UY: Uruguay; SP: Spain); CBQ severity (severity of cyberbullying, A: no problem B: minor problems C: severe problems). Numbers and letters were added to categories to facilitate reading and comparison.

The letters next to percentages indicate the countries among which significant differences were observed and the highest percentage compared to the other groups.

### 3.3. Profile of cyberbystander

Based on the total scores shown in Table 4, most respondents reported playing the sub-role of defender of the victim, followed by that of the outsider. Thus, gender-based differences were observed, being male students more likely to play the role of outsider (34,9% vs. 31,2%),  $\chi^2(1, N=856)=4,21$ ;  $p=.04$ , whereas female students were more likely to adopt a role of defenders of the victim (male: 38,2%; female: 44,3%;  $\chi^2(1, N=1.067)=3,96$ ;  $p=.047$ ).

Age-based differences were only observed in Colombia,  $\chi^2(12, N=1.339)=42,21$ ;  $p<.001$ , being the role of assistant of the cyberbully prevalent among 10-12-year-old students as compared to 15-18-year-old students.

Statistically significant differences were observed between Colombia and Spain in the sub-roles of assistant  $\chi^2(2, N=151)=167,57$ ;  $p<.001$ ; reinforcer,  $\chi^2(2, N=123)=65,02$ ;  $p<.001$ ; and outsider,  $\chi^2(2, N=857)=275,26$ ;



$p < .001$ . In contrast, the sub-roles of pro-victim,  $\chi^2(2, N=392)=86,61$ ;  $p < .001$ , and defender of the victim,  $\chi^2(2, N=1.069)=258,07$ ;  $p < .001$ , were significantly more prevalent in Spain than in Colombia.

### 3.4. Problematic Internet use

Differences in overall scores on GPIUS2 were only observed between Colombia and Uruguay ( $F(2, 5653) = 4.052$ ;  $p = 0.018$ ;  $d = .20$ ) (Colombia:  $M = 2.14$ ,  $SD = 1.05$ ; Uruguay:  $M = 2.34$ ,  $SD = .94$ ; Spain:  $M = 2.20$ ,  $SD = 1.08$ ). No gender- or age-based differences were found. By category, differences among countries were prevalently found in isolated problems (Table 5).

All GPIUS2 dimensions were positively and significantly correlated with overall scores for CBV and CBA, although differences –especially between Colombia and Uruguay– were low to moderate (Table 6).

Multiple linear regressions were performed to identify the GPIUS2 dimension that best predicted total scores for CBV and CBA. For Colombia, CBV was predicted by compulsive use ( $\beta = .332$  [.174-.490];  $p < .001$ ) and mood regulation ( $\beta = .263$  [.124-.403];  $p < .001$ ) [ $r^2 = .049$ ]; whereas CBA was best predicted by negative effects ( $\beta = .406$  [.282-.530];  $p < .001$ ) [ $r^2 = .030$ ]. For Uruguay, the best predictors were mood regulation (for CBV:  $\beta = .680$  [.382-.977];

$p < .001$ ; for CBA:  $\beta = .303$  [.060-.546];  $p < .015$ ) [ $r^2 = .103$ ] and negative effects (for CBV:  $\beta = .566$  [.128-1.005];  $p = .012$ ) [ $r^2 = .124$ ]; for CBA:  $\beta = .716$  [.358-1.075];  $p < .001$ ). In Spain, compulsive use ( $\beta = .296$  [.140-.452];  $p < .001$ ), mood regulation ( $\beta = .286$  [.167-.404];  $p < .001$ ) and negative effects ( $\beta = .271$  [.095-.448];  $p = .003$ ) [ $r^2 = .143$ ] were predictors of CBV. CBA was predicted by

**Table 4. Proportional distribution of the level of cyber bystander by age and country**

Country	Age	Profile of cyber bystander				
		Assistant	Reinforcer	Outsider	Pro-Victim	Defender of the Victim
Colombia	10-12	15,5	4,9	25,4	16,9	37,3
	13-14	12,7	7,5	31,1	14,4	34,4
	15-16	6,4	5,9	39,1	12,7	35,9
	17-18	6,2	4,9	40,3	7	41,6
% Subtotal		9,3	6,1	35,3	12,6	36,6
Uruguay	10-12	2,8	5,6	22,2	16,7	52,8
	13-14	3,2	4,3	21,3	19,1	52,1
	15-16	2,6	6,4	37,2	17,9	35,9
	17-18	2,6	2,6	50	15,8	28,9
% Subtotal		2,8	4,8	31,2	17,6	43,6
Spain	10-12	0,6	3,4	26,4	14,6	55,1
	13-14	2,7	2,5	29,1	19,4	46,4
	15-16	1,3	3,9	34,1	19	41,8
	17-18	3,2	0	36,5	9,5	50,8
% Subtotal		1,9	2,9	30,5	17,8	46,9
% total		5,7	4,7	33,1	15,1	41,2

**Table 5. Percentage distribution for GPIUS2 dimensions and category by country**  
(\* $p < .05$ ; \*\* $p < .001$ )

GPIUS2 Dimensions	Category	Country			(gl) $\chi^2$ n=2.655
		CO <sup>(a)</sup>	UY <sup>(b)</sup>	SP <sup>(c)</sup>	
Preference for online social interaction	A	61,2	66,7	68,7 <sup>(a)</sup>	(6)=18,01; $p = .006^*$
	B	32,4 <sup>(c)</sup>	26,8	25,3	
	C	4,5	3,4	3,9	
	D	1,9	3,1	2,1	
Mood regulation	A	46,4 <sup>(b,c)</sup>	26,4	40,9 <sup>(b)</sup>	(6)=45,61; $p < .001^{**}$
	B	34,9	44,1 <sup>(a)</sup>	39,8 <sup>(a)</sup>	
	C	11,9	17,2 <sup>(c)</sup>	10,5	
	D	6,7	12,3 <sup>(a)</sup>	8,8	
Negative effects	A	69,8	72,4	74,7	(6)=45,61; $p > .05$
	B	23,6	23,4	19,5	
	C	4,4	3,4	4,2	
	D	2,2	0,8	1,6	
Cognitive concern	A	67,4 <sup>(b)</sup>	57,9	63,2	(6) = 14,22; $p = .027^*$
	B	25	34,1 <sup>(a)</sup>	27,7	
	C	5,4	5,7	5,5	
	D	2,3	2,3	3,5	
Compulsive use	A	61,8 <sup>(b,c)</sup>	44,1	52,8 <sup>(b)</sup>	(6) = 43,61; $p < .001^{**}$
	B	29,1	42,5 <sup>(a,c)</sup>	33,2	
	C	5,4	8,4	8,9 <sup>(a)</sup>	
	D	3,7	5	5,1	
Total GPIUS2	A	54 <sup>(b)</sup>	41,8	53,6 <sup>(b)</sup>	(6)=22,14; $p < .001^{**}$
	B	39,5	54 <sup>(a,c)</sup>	39,6	
	C	5,4	3,4	5,1	
	D	1,1	0,8	1,7	

Category (A: no problem; B: isolated problems; C: potentially problematic use; D: problematic use). Letters next to percentages indicate countries among which significant differences were observed and the highest percentage compared to the other groups.

compulsive use ( $\beta = .377$  [.308-.446];  $p < .001$ ) [ $r^2 = .100$ ].

#### 4. Discussion and conclusions

This study contributes to the understanding of the prevalence of cyberbullying and the problematic use of the Internet from a comparative approach. In addition, evidence of correlations between the two phenomena is provided.

Few cross-cultural studies have been conducted in relation to cyberbullying. Comparative studies of Spain and Latin America are scarce. The main objective of this study was to analyze and compare the characteristics of cyberbullying in Colombia, Uruguay, and Spain. The results obtained show that minor-CBV is more frequent in Spain than in Colombia, as is CBA in Spain with respect to Colombia and Uruguay. CBV was more frequent in Uruguay than in Colombia. These data do not confirm our first hypothesis that scores for cyberbullying would be higher in Colombia as reported in previous studies. This inconsistency may be due to respondents' inability to recognize that their cyberbullying related behaviors are problematic or a form of cyber abuse. The fact that peer cyberbullying has become commonplace among youngsters may be the result of the social and cultural changes caused by the generalization of violence experienced in the last years (Castro & Varela, 2013). Thus, individuals tend to justify violence and adopt an individualistic perspective by which people have to solve their own problems (Cruz, 2014).

Comparative studies of the prevalence of cyberbullying in Europe and Latin America are hindered by methodological differences, yet the prevalence rates obtained in this study are consistent with those reported in previous studies conducted in Colombia (Herrera-López, Romera, & Ortega-Ruiz, 2017). However, lower prevalence rates have been documented in other Latin American studies (Castro & Varela, 2013; del-Río-Pérez, Bringue, Sádaba, & González, 2009), and the only study performed in Uruguay (Lozano & al., 2011). The prevalence rates reported in these studies range from 6% to 12%, which is consistent with the results obtained in this study. Also, these rates are similar to those obtained in other studies reporting a prevalence of severe cyberbullying ranging between 2% and 7% (Castro & Varela, 2013; Garaigordobil, 2011; García-Fernández, Romera-Félix, & Ortega-Ruiz, 2016; Herrera-López & al., 2017).

Regarding age, the frequency of cyberbullying has consistently been reported to decrease as age increases (Aranzaes & al., 2014) peaking at 12-14 years (Tokunaga, 2010) and 14-15 years (Herrera-López & al., 2017; Zych & al., 2015). This is supported by the results of this study, as prevalence rates were higher in the 13-14 and 15-16 age groups. In relation to gender, the prevalence of CBV was higher among female students, as described in previous studies (Garaigordobil & Aliri, 2013). In contrast, gender-based differences were not observed in relation to CBA.

The role of cyberbystander has been scarcely studied (Jones, Mitchell, & Turner, 2015) and only in English-speaking countries. Nevertheless, the results of this study confirm our third hypothesis, which supports the results obtained for traditional bullying (Salmivalli, 1999; Salmivalli & al., 1996). Thus, prevalent sub-roles include defender of the victim and outsider. Data showed a homogeneous distribution across countries, except for the roles of supporter and reinforcer of the bully. The prevalence of these roles was considerably high in the 10-to-14-year range in the Colombian sample, where support to the victim was lower.

There is growing evidence that problematic Internet use among adolescents has a negative impact on their quality of life, as it causes changes in health habits (sleep, diet, physical activity, among others) and interferes with their family, social and academic life (Cerniglia, Zoratto, Cimino, Laviola, Ammaniti, & Adriani, 2017; Muñoz-Rivas, Fernández-González, & Gámez-Guadix, 2010). Epidemiologic studies have confirmed the clinical and social relevance of problematic Internet use. The meta-analysis conducted by Cheng and Li (2014) with data from 31 countries revealed prevalence rates ranging from 2,6% to 10,9% depending on the country. The prevalence of

Dimensions	Country		
	CO: n=1.360; UY: n=255; SP: n=1.021	CBV	CBA
Preference for online social interaction	CO	.156**	.099**
	UY	.159*	.159*
	SP	.204**	.141**
Mood regulation	CO	.177**	.09*
	UY	.308**	.201**
	SP	.312**	.214**
Negative effects	CO	.182**	.168**
	UY	.227**	.277**
	SP	.305**	.223
Cognitive concern	CO	.174**	.133**
	UY	.243**	.192**
	SP	.314**	.255
Compulsive use	CO	.187**	.157**
	UY	.187*	.213*
	SP	.335**	.313**

problematic Internet use documented in this study was lower than the ones reported in previous studies (<2%) but is consistent when potentially problematic Internet use is included in estimations (reaching 7%). The results obtained also confirm our fourth hypothesis: no significant differences exist among countries. However, no studies had been previously conducted to compare cyberbullying in Uruguay, Colombia and Spain.

Evidence on the correlation between problematic Internet use and cyberbullying is also limited. Our fifth hypothesis was also confirmed, as a positive correlation was observed between the GPIUS2 dimensions studied and CBV and CBA. The dimensions that seem to predict best cyberbullying were mood regulation (for CBV), negative effects (for CBA) and compulsive use (for CBV and CBA).

Finally, the results obtained showed that the instruments used have an adequate factorial validity and reliability for the Colombian and Uruguayan population. Validation was performed as described elsewhere (Gámez-Guadix & al., 2013; 2014), which confirms the null hypothesis.

The diversity of methods employed by which questionnaires and scales were homogenized allows for future comparative studies among different countries. This study may serve as a reference for future cross-cultural studies.

This study had some limitations. First, the results obtained were based on self-reports, with the potential risk of bias. This could be solved in the future by the administration of questionnaires to parents, teachers and peers. Another limitation is that the design of the study is cross-sectional, convenience sampling was performed, and the Uruguayan sample was small with regard to the Spanish and Colombian samples. In addition, the sample only includes students from urban areas with a low/middle socioeconomic status. Third, although evidence of the internal validity of the instruments was obtained for the Colombian and Uruguayan sample altogether, confirmatory factor analysis could not be performed for the Uruguayan sample due to the small size of the sample. Predictive validity and test-retest reliability could also have been assessed. In general terms, the external validity of the results obtained is limited. This study should be understood as a first approach to compare cyberbullying in these three countries. Future longitudinal studies should be conducted to replicate the results obtained in populations from other regions and countries.

In conclusion, this cross-cultural study provides empirical evidence on cyberbullying in two Latin American countries (Colombia and Uruguay) and Spain. Also, this study contributes to the body of knowledge on the prevalence of cyberbullying and identifies it as a problem that affects all cultures and regions. This is the first study to analyze the problematic Internet use from a comparative approach.

### Funding Agency

This study received financial support from the International University of La Rioja (UNIR) under the Research Support Strategy 3 [2015-2017], Research Group "Analysis and prevention of cyberbullying" (CB-OUT), and the Research Support Strategy 4 [2017-2019], Research Group "Cyberpsychology: Psychosocial analysis of online interaction" (Cyberpsychology).

### 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. <https://doi.org/10.1016/j.jadohealth.2015.04.011>
- Aranzales, Y.D., Castaño, J.J., Figueroa, R.A., Jaramillo, S., Landazuri, J.N., Forero, R.A., ... Valencia, K. (2014). Frecuencia de acoso y ciber-acoso, y sus formas de presentación en estudiantes de secundaria de colegios públicos de la ciudad de Manizales, 2013. *Archivos de Medicina*, 14(1), 65-82. <https://goo.gl/LwfbPz>
- Asociación Americana de Psiquiatría (Ed.) (2014). *Manual diagnóstico y estadístico de los trastornos mentales (DSM-5)*. Barcelona: Elsevier.
- Blinka L., Škařupová K., Ševčíková A., Wölfling K., Müller K.W., & Dreier, M. (2015). Excessive Internet use in European adolescents: What determines differences in severity? *International Journal of Public Health*, 60, 249-256. <https://doi.org/10.1007/s00038-014-0635-x>
- Byrne, B.M. (2006). *Structural equation modeling with EQS. Basic concepts, applications, and programming* (2nd ed.). Mahwah, NJ: Erlbaum.
- Calvete, E., Orue, I., Estevez, A., Villardon, L., & Padilla, P. (2010). Cyberbullying in adolescents: modalities and aggressors' profile. *Computers in Human Behavior*, 26, 1128-1135. <https://doi.org/10.1016/j.chb.2010.03.017>
- Caplan, S. (2010). Theory and measurement of generalized problematic Internet use: A two-step approach. *Computers in Human Behaviour*, 26(5), 1089-1097. <https://doi.org/10.1016/j.chb.2010.03.012>
- Castro, A., & Varela, J. (2013). *Depredador escolar, bullying y cyberbullying, salud mental y violencia*. Buenos Aires: Bonum.
- Cerniglia, L., Zoratto, F., Cimino, S., Laviola, G., Ammaniti, M., & Adriani, W. (2017). Internet addiction in adolescence: Neurobiological, psychosocial and clinical issues. *Neuroscience and Biobehavioral Reviews*, 76(Part A), 174-184. <https://doi.org/10.1016/j.neubiorev.2016.12.024>
- Cheng, C., & Li, A.Y.L. (2014). Internet addiction prevalence and quality of (real) life: A meta-analysis of 31 nations across seven world regions. *Cyberpsychology, Behavior, and Social Networking*, 17, 755-760. <https://doi.org/10.1089/cyber.2014.0317>
- Cruz, E. (2014). Hipótesis sobre el matoneo escolar o bullying: A propósito del caso colombiano. *Intersticios*, 8(1), 149-156.

<https://goo.gl/X92MGw>

Del-Rio-Perez, J., Bringue, X., Sadaba, C., & Gonzalez, D. (2009, mayo). Cyberbullying: Un análisis comparativo en estudiantes de argentina, Brasil, Chile, Colombia, México, Perú y Venezuela. *V Congrés Internacional Comunicació i Realitat. Generació digital: oportunitats i riscos dels públics. La transformació dels usos comunicatius*. Barcelona: Universitat Ramon Llull. <https://goo.gl/oCFTQS>

Estevez, A., Villardon, L., Calvete, E., Padilla, P., & Orue, I. (2010). Adolescentes víctimas de cyberbullying: Prevalencia y características. *Psicología Conductual*, 18(1), 73-89. <https://goo.gl/FkPsTo>

Gamez-Guadix, M., Orue, I., & Calvete, E. (2013). Evaluation of the cognitive-behavioral model of generalized and problematic Internet use in Spanish adolescents. *Psychothema*, 25(3), 299-306. <https://doi.org/10.7334/psychothema2012.274>

Gamez-Guadix, M., Villa-George, F., & Calvete, E. (2012). Measurement and analysis of the cognitive-behavioral model of generalized problematic Internet use among Mexican adolescents. *Journal of Adolescence*, 35(6), 1581-1591. <https://doi.org/10.1016/j.adolescence.2012.06.005>

Gamez-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. <https://doi.org/10.1891/0886-6708.VV-D-12-00163R1>

Garaigordobil, M. (2011). Prevalencia y consecuencias del cyberbullying: una revisión. *International Journal of Psychology and Psychological Therapy*, 11(2), 233-254. <https://goo.gl/3w3Ge7>

Garaigordobil, M., & Aliri, J. (2013). Ciberacoso (cyberbullying) en el País Vasco: Diferencias de sexo en víctimas, agresores y observadores. *Psicología Conductual*, 21(3), 461-474. <https://goo.gl/8hJScy>

García-Fernández, C.M., Romera-Felix, E.M., & Ortega-Ruiz, R. (2016). Relaciones entre el bullying y el cyberbullying: prevalencia y coocurrencia. *Pensamiento Psicológico*, 14(1). <https://doi.org/10.11144/Javerianacali.PPSI14-1.rbcp>

García-Maldonado, G., Joffre, V., Martínez, G., & Llanes, A. (2011). Cyberbullying: forma virtual de intimidación escolar. *Revista Colombiana de Psiquiatría*, 40(1), 115-130. [https://doi.org/10.1016/S0034-7450\(14\)60108-6](https://doi.org/10.1016/S0034-7450(14)60108-6)

Herrera-Lopez, M., Romera, E., & Ortega-Ruiz, R. (2017). Bullying y cyberbullying en Colombia: coocurrencia en adolescentes escolarizados. *Revista Latinoamericana de Psicología*, 49(3), 163-172. <https://doi.org/10.1016/j.rlp.2016.08.001>

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. <https://doi.org/10.1080/10705519909540118>

Jones, L.M., Mitchell, K.J., & Turner, H.A. (2015). Victim reports of bystander reactions to in-person and online peer harassment: A national survey of adolescents. *Journal of Youth and Adolescence*, 44(12), 2308-2320. <https://doi.org/10.1007/s10964-015-0342-9>

Kowalski, R.M., Limber, S.P., & Agatston, P.W. (2012). *Cyberbullying: Bullying in the digital age. Second Edition*. Oxford: John Wiley & Sons.

Laplacette, J.A., Becher, C., Fernandez, S., Gomez, L., Lanzillotti, A., & Lara, L. (2011). Cyberbullying en la adolescencia: análisis de un fenómeno tan virtual como real. *III Congreso Internacional de Investigación y Práctica Profesional en Psicología. XVIII Jornadas de Investigación Séptimo Encuentro de Investigadores en Psicología del MERCOSUR*. Universidad de Buenos Aires, Argentina. <https://goo.gl/LjWd9G>

Lozano, F., Gimenez, A., Cabrera, J.M., Fernandez, A., Lewy, E., Salas, F., Cid, A., Hackembruch, C., & Olivera, V. (2011). Violencia: Caracterización de la población adolescente de instituciones educativas de la región oeste de Montevideo-Uruguay en relación a la situación de violencia en que viven. *Revista Biomédica, Medicina Familiar y Comunitaria*, 6(1), 18-40. <https://goo.gl/Mea5Mc>

Lucio, L.A., & Gonzalez, J.H. (2012). El teléfono móvil como instrumento de violencia entre estudiantes de bachillerato en México. *IV Congreso Internacional Latina de Comunicación Social*. Universidad de la Laguna, Tenerife, España. <https://goo.gl/yeu2fY>

Muñoz-Rivas, M.J., Fernandez-Gonzalez, L., & Gamez-Guadix, M. (2010). Analysis of the indicators of pathological Internet use in Spanish university students. *The Spanish Journal of Psychology*, 13(2), 697-707. <https://doi.org/10.1017/S1138741600002365>

Mura, G., & Diamantini, D. (2013). Cyberbullying among Colombian students: An exploratory investigation. *European Journal of Investigation in Health, Psychology and Education*, 3(3), 249-256. <https://goo.gl/aYGVqc>

Redondo, J., & Luzardo, M. (2016, junio). Cyberbullying y género en una muestra de adolescentes colombianos. In J.L. Castejon-Costa (Coord.), *Psicología y educación: Presente y futuro*. Alicante: VIII Congreso de Psicología y Educación (CIPE2016), pp. 1847-1857.

Redondo, J., Luzardo, M., García-Lizarazo, K.L., & Ingles, C.J. (2017). Impacto psicológico del cyberbullying en estudiantes universitarios: un estudio exploratorio. *Revista Colombiana de Ciencias Sociales*, 8(2), 458-478. <https://doi.org/10.21501/22161201.2061>

Romera, E., Herrera-Lopez, M., Casas, J., Ortega-Ruiz, R., & Gomez-Ortiz, O. (2017). Multidimensional social competence, motivation, and cyberbullying: A cultural approach with Colombian and Spanish Adolescents. *Journal of Cross-Cultural Psychology*, 48(8), 1183-1197. <https://doi.org/10.1177/0022022116687854>

Salmivalli, C. (1999). Participant role approach to school bullying: Implications for interventions. *Journal of Adolescence*, 22(4), 453-459. <https://doi.org/10.1006/jado.1999.0239>

Salmivalli, C., Karna, A., & Poskiparta, E. (2011). Counteracting bullying in Finland: The KiVa program and its effects on different forms of being bullied. *International Journal of Behavioral Development*, 35(5), 405-411. <https://doi.org/10.1177/0165025411407457>

Salmivalli, C., Lagerspetz, K., Bjorkqvist, K., Osterman, K., & Kaukiainen, A. (1996). Bullying as a group process: Participant roles and their relations to social status within the group. *Aggressive Behavior*, 22(1), 1-15. [https://doi.org/10.1002/\(SICI\)1098-2337\(1996\)22:1%3C1::AID-AB1%3E3.0.CO;2-T](https://doi.org/10.1002/(SICI)1098-2337(1996)22:1%3C1::AID-AB1%3E3.0.CO;2-T)

Tokunaga, R.S. (2010). Following you home from school: A critical review and synthesis of research on Cyberbullying victimization. *Computers in Human Behavior*, 26(3), 277-287. <https://doi.org/10.1016/j.chb.2009.11.014>

Varela, J., Perez, J. C., Schwaderer, H., Astudillo, J., & Lecannelier, F. (2014). Caracterización de cyberbullying en el gran Santiago de Chile, en 2010. *Revista Quadrimestral da Associação Brasileira de Psicologia Escolar e Educacional*, 18(2), 347-354. <https://doi.org/10.1590/2175-3539/2014/0182794>

Zych, I., Ortega-Ruiz, R., & Marin-Lopez, I. (2016). Cyberbullying: A systematic review of research, its prevalence and assessment issues in



Spanish studies. *Psicología Educativa*, 22(1), 5-18. <https://doi.org/10.1016/j.pse.2016.03.002>

Zych, I., Ortega-Ruiz, R., & Del Rey, R. (2015). Scientific research on bullying and cyberbullying: Where have we been and where are we going. *Aggression and Violent Behavior*, 24, 188-198. <https://doi.org/10.1016/j.avb.2015.05.015>

# Comunicar

Media Education Research Journal

If you are interested  
in Education and  
Communication visit  
our website.



Open access publication  
with online English versions  
of all manuscripts.  
Visit our Authors guidelines  
and share your research with  
our academic community.



[www.comunicarjournal.com](http://www.comunicarjournal.com)

Comunicar 56



aleidoscopio

---

Kaleidoscope

---

Investigaciones

Research

Estudios

Studies

Propuestas

Proposals

# Comunicar

Media Education Research Journal



Comunicar 57 (2018-4)

Artivism: Art and social engagement in a digital world

Comunicar 58 (2019-1)

Digital media and learning.  
Emergent forms of participation  
and social transformation



Comunicar 59 (2019-2)

Emerging mobile media.  
Convergence in  
the new media arena.



NEW ISSUES COMING





# Communication research in Spain: Weaknesses, threats, strengths and opportunities

La investigación en comunicación en España: Debilidades, amenazas, fortalezas y oportunidades

- Dr. Carmen Caffarel is Full Professor in the Sociology and Communication Department at the Rey Juan Carlos University (Spain) (carmen.caffarel@urjc.es) (<https://orcid.org/0000-0002-9804-5164>)
- Dr. Félix Ortega is Associate Professor in the Sociology and Communication Department at the Salamanca University (Spain) (fortega@usal.es) (<https://orcid.org/0000-0003-2735-4813>)
- Dr. Juan-Antonio Gaitán is Senior Lecturer in the Sociology, Methods and Theory Department at the Complutense University of Madrid (Spain) (jagamo@ucm.es) (<https://orcid.org/0000-0002-4496-7315>)

## ABSTRACT

This article presents the methodological strategies, results and a critical analysis of the national research project MapCom “The Research Sphere on Communication Studies Social Practices, Map of Projects, Groups, research objects and methods”. We present the results obtained within the first two phases of the research project. The complete sample of objects for analysis was selected within this time span, all doctoral research and research projects were included. We performed a specific analysis of descriptive variables associated to gender, objects of study, funding, more present methodologies, as well as a comparative analysis between research projects and doctoral theses from a perspective of the objects of study and the methodologies implemented. We contextualize the work with a comparative analysis of research in Social Science and Humanities in the same period analysed in Spain. We performed an analysis of the weaknesses, threats, strengths and opportunities which were detected within the analysis, and we propose recommendations aimed at developing a “Strategic Action Plan for Competitive Research in Communication”. The analysis of this research concludes with the observation of similarities between the objects of study, but also of the differences between the objectives of the investigations when we compare doctoral theses and research projects in the analysed period. We also carried out a comparative analysis of the 12 most relevant universities in Spain, in order to identify differences, similarities and research patterns in research teams or groups, associate doctoral programs and universities.

## RESUMEN

Este artículo presenta las estrategias metodológicas, los resultados y un análisis crítico del proyecto de investigación nacional MapCom «El sistema de investigación en España sobre prácticas sociales de Comunicación, Mapa de Proyectos, Grupos, Líneas, Objetos de estudio y Métodos». Se ofrecen los resultados obtenidos de las dos primeras fases del proyecto de investigación en el conjunto del país y muestra total seleccionada de los objetos de estudio, tesis doctorales y proyectos de investigación. Se realiza un análisis específico de variables descriptivas asociadas a género, objetos de estudio, financiación, metodologías más presentes, así como un análisis comparado entre proyectos de investigación y tesis doctorales desde una perspectiva de los objetos de estudio y las metodologías implementadas. El trabajo se contextualiza con un análisis comparativo de la investigación en Ciencias Sociales y Humanidades en el mismo periodo analizado en España. Se hace un análisis de las debilidades, amenazas, fortalezas y oportunidades que han sido detectadas y se ofrecen recomendaciones orientadas a desarrollar un «Plan de Acción Estratégico para la Investigación Competitiva en Comunicación». El análisis concluye con la constatación de las semejanzas entre los objetos de estudio, pero también de las diferencias entre los objetivos de las investigaciones cuando se comparan tesis doctorales y proyectos de investigación en el periodo analizado. Se lleva a cabo igualmente un análisis comparativo de las 12 universidades con mayor relevancia en España, con el objeto de detectar diferencias, similitudes y patrones de investigación en grupos de investigación, doctorados asociados y universidades.

## KEYWORDS | PALABRAS CLAVE

Communication research, University, doctoral research, research and innovation projects, research methods.  
Meta-investigación en comunicación, Universidad, tesis doctorales, proyectos de investigación, métodos de investigación.





## 1. Introduction and object of research

The research system on communication social practices in Spain has become increasingly interesting in the last few years within our scientific context. Quantitative and qualitative research on the project map, groups, lines of research, objects of study and methods is a field of study that has turned into an institutionalized discipline under research associations, particularly under the Spanish Communication Research Association (AE-IC). An objective as well as scientifically and methodologically rigorous analysis of those projects, research teams, lines of research, objects of study and methods that underpin Communication as an area of knowledge and research has just been completed in Spain.

Research on communication research practices and methodologies within our cultural context can be traced back to the late 20th century. A large portion of this research was hosted by the Spanish Association of Communication Researchers (AICE), the predecessor of the AE-IC. Along these lines, to commemorate the twentieth anniversary of the establishment of the first University Schools of Communication Science in Spain, Caffarel, Domínguez and Romano (1989), Caffarel and Cáceres (1993), and Jones (1994; 1998; 2000), among other authors, examined the who, what, how and where of communication research, as well as the most studied topics and the methods for approaching research projects.

Alsina and Jiménez (2010) have subsequently focused on communication research: a paradigmatic case of a socio-humanistic discipline. Arcila and Piñuel (2013) have broadened the scope of e-communication and Latin American researchers' practice. The bibliometric framework analysis is dealt with by Delgado & al. (2006), Castillo and Xifra (2006), Fuentes and Arguimbau (2010), Repiso & al. (2011) and, more recently, by Blázquez (2015). As for the analysis of meta-research in Communication, it is worth highlighting the work of Fernández and Masip (2013), Martínez and Saperas (2009; 2011), López and Vicente (2011), and Almirón and Reig (2007) on the predominant research methods and techniques in Spanish scientific journals, and mainly the studies of Piñuel & al. (2011; 2015; 2016; 2017) regarding communication research; its object of study being the methodological and theoretical mapping in Spain and Latin America. The interest in meta-research studies also led to a couple of monographic issues, one of them in "Comunicar", edited by Giménez-Toledo and Jiménez-Contreras (2013), and a more recent one in "Disertaciones", edited by Martínez-Nicolás and Vicente-Mariño (2016). These two issues address historical, epistemological and methodological aspects of communication research in Spain and Latin America.

This article presents the results of the national research project MapCom, funded by the Ministry of Economy and Competitiveness, 2013-16. The research project breaks down the mapping of its objects of study into four geographical areas, which can be found at [www.mapcom.es](http://www.mapcom.es). This article displays the aggregate results of its first two completed stages: Phase I, the repository of doctoral theses and research projects, and Phase II, expert group discussions based on the Phillips 66 technique. Finally, Phase III provides a survey of the sample universe of researchers in Spain listed in the academic registers of those universities offering graduate and postgraduate communication studies. The results are currently under statistical analysis, and they shall be examined in future publications.

## 2. Methodology and sample selection

The methods applied, including those related to the sample selection and data analysis, covered three stages:

- Phase I, the repository of doctoral theses and research projects, selecting the whole universe available within the analysed years ([www.mapcom.es](http://www.mapcom.es)) (Caffarel, Ortega, & Gaitán, 2017). The analysis related to the universe of research projects covers the whole sample of national, competitive and funded research projects conducted, and doctoral theses presented, between 1 January 2007 and 31 October 2014.

The following link shows the guide for document analysis and recording in the Mapcom project, (<https://goo.gl/X1qEfb>). This questionnaire which was used in the content analysis protocol includes 28 coding questions with their respective categories to be analysed by the researchers, and it was hosted at the online coding service in a secure computing environment provided by E-Encuesta. For further information on the analysis protocol, see Annex 1: Guide for document analysis and recording (pp. 17-22) as well as Annex 2: Codebook for the post-coding of open variables (pp. 23 and 24) (<https://goo.gl/2Li5mT>). The coding was done by previously trained project researchers between September and December 2015. Also, in order to minimise inaccuracy, a quality control of coding was performed between January and February 2016.

- Phase II consisted of the development of discussion groups made up of communication experts; the Phillips

66 technique-methodology was applied. Participants were invited by letter, and they were selected following a profile suitability analysis. The groups were made up as follows: one of them was composed of main researchers (also designated as principal investigators) with at least two R&D projects; another group comprised consolidated research team leaders; the third group was formed by members or spokespeople of scientific societies (associations, research networks, etc.); the fourth group included university research managers (Vice-chancellors, Deans, Heads of Postgraduate Studies, etc.); there was also a fifth group, made up of people responsible for result dissemination (editors and conference directors, members of scientific journals, etc.); finally, junior researchers made up the sixth group. The experts for each group were selected on the basis of gender quotas and territorial origin (by Universities and Areas). Three meetings were held applying the Phillips 66 technique: one of them took place in Madrid, including experts convened under the joint responsibility of Areas 1 and 2 of the project; another meeting was held in Barcelona, subject to Area 4; the third meeting took place in Malaga, under the responsibility of Area 3. With the aim of addressing the debates within those six groups, the proposed topics referred to the strengths, weaknesses, opportunities, and threats (SWOT) related to the objects of study, research objectives and lines of work, including groups, programs, grants, evaluations, academic claims and calls for funding. Research methodologies: samples, techniques, triangulation, etc. Dissemination of research results: conferences or workshops and publications, among others.

**The research system on communication social practices in Spain has become increasingly interesting in the last few years within our scientific context. Quantitative and qualitative research on the project map, groups, lines of research, objects of study and methods is a field of study that has turned into an institutionalized discipline under research associations, particularly under the Spanish Communication Research Association**

All meetings, both group, and universal meetings, were recorded to ensure that data were adequately collected. This required the involvement of technical staff and equipment, as well as the participants' express consent to the procedure. The working sessions applying the Phillips 66 technique did not exceed five hours including breaks (a full morning, from 9 am to 2 pm). The logistics entailed transportation arrangements, one-night accommodation, and daily allowances at the end of the sessions. The working debates were recorded in digital form, which enabled a digital transcription monitored by an expert company and expert technical staff. These transcripts were subsequently analysed through different qualitative and quantitative techniques.

- The project's third stage, Phase III, included a survey of the sample universe of researchers in Spain listed in the academic registers of those universities offering communication graduate and postgraduate studies, as well as of those researchers listed in scientific societies. As of 19 September 2017, all data have been gathered, and we are currently analysing the results. The main purpose of this last stage was to map the results in order to find out about how academic researchers in the communication domain are socially represented regarding their scientific activities. This third stage is a necessary supplement to the prior phases when it comes to drafting a map of projects, groups, lines, objects of study and research methods on communication social practices in Spain. In this third phase, we also gathered the opinion of a representative sample of communication research stakeholders in our country. Below are the most significant results and conclusions.

### 3. Analysis and results

Below is an analysis of the results obtained from the surveys applied to the documents in Phase I, as well as of the results yielded by the Phillips discussion groups during Phase II of the Mapcom project. The categories of analysis are defined in the link to the survey included in the previous section, along with the methodology used to obtain the descriptive variables of doctoral theses and research projects.

It is worth examining the scientific production associated with the main institutions conducting communication

research in Spain. We deem appropriate to analyse the percentage distribution of doctoral thesis (TD) and research project (PI) production for the top 12 universities within the analysed time period, since these schools represent almost three-fourths of the overall sample examined from 2007 to 2013. Figure 1 shows the percentage distribution of these items.

Considering the 12 universities that produce the highest percentage of documents to the overall analysed universe, representing 73.38% of the examined doctoral research and 75.54% of the research projects, we observe that the ranking differs depending on whether we deal with doctoral theses (TD) or research projects (PI). In the first case, the Universidad Complutense de Madrid-UCM provides 27.1%, the Universidad Autónoma de Barcelona-UAB ranks second (6.86%), and the Universidad de Málaga-UMA ranks third (5.83%) in the production of Ph.D. holders.

Upon the analysis of those Universities contributing the most research projects to the universe, we can notice some major differences; the UCM remains in the lead with 14.69%, and the UAB also ranks second with 10.49% of the research projects. However, the Universidad Pompeu Fabra -

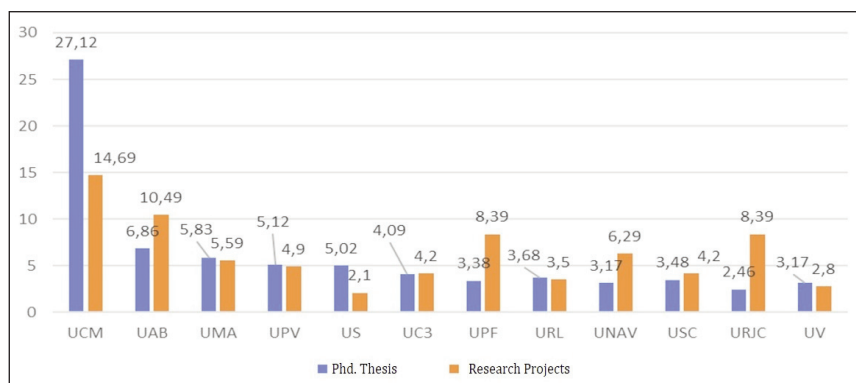


Figure 1. Percentage of doctoral theses and R&D Research projects are broken down by Universities.

UPF and the Universidad Rey Juan Carlos-URJC are tied at 8.39%, and they share the third position. Furthermore, it is worth highlighting that these two Universities' workers profile is comparatively younger than that of other more "veteran" schools with older faculty members. These institutions are considerably close to the top schools in terms of led research projects (PI) during the analysed period. We can assert that "relative youth" of the staff and relative leadership in research project development are positively correlated with achieving a good position in leading research projects. The Universidad de Navarra-UNAV ranks fifth in the production of research projects (6.29%); it is the only private university in this communication research excellence list.

The number of research projects and doctoral theses has progressively increased in the period considered. In 2007, the percentage of doctoral theses and research projects was 3.3% and 9.1% respectively, and by the end of the relevant period, i.e., 2013, research projects amounted to 22.3%, and doctoral theses represented 17.5% of all

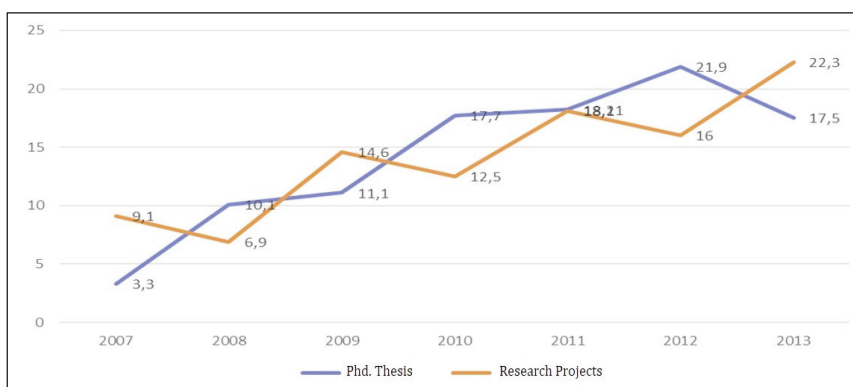


Figure 2. Percentage distribution of doctoral theses and research projects broken down by years.

percentage of doctoral theses than of projects; there could be a productive "synchronization" of doctoral theses being defended in the years following relative peaks of research projects, as well as following the cycles when research project results are defended. This hypothesis will have to be tested by cross-checking objects of study in doctoral

documents. It is worth noting that the odd-numbered years of the period, 2007 and 2009, show an almost identical percentage of theses and projects, i.e., 18.2% and 18.1%. Nevertheless, in 2013 the percentage of research projects exceeded that of doctoral theses. During even-numbered years, there is a greater per-

research and correlated research projects and duration in future research.

Figure 3 shows a gender breakdown between doctoral theses and research projects in Spain over the period analysed. There is an almost perfect balance in the gender distribution of Ph.D. holders: 50.36% of women and 49.64% of men. Nevertheless, when we take research projects into account, there is an imbalance. Women only head or lead 30.07% of research projects, which contrasts with 69.93% of projects led by men, i.e., more than twice as many.

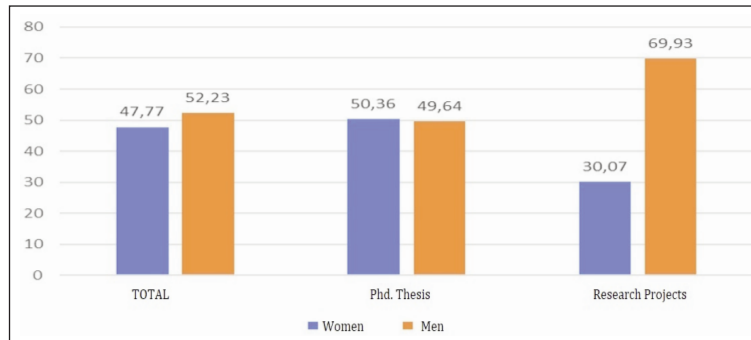


Figure 3. Breakdown of doctoral theses and research projects by gender in Spain for the period 2007-2013.

We have also noticed that only 3 out of 10 research projects are led by women. If we only analyse research projects, considering gender and university of origin, we will obtain the following breakdown shown in Figure 4.

Figure 4 shows that the Universidad Autónoma de Barcelona (UAB) is the only University with more women than men leading research projects in the series: 8 projects are headed by women, and men lead 7. The following universities only have competitive projects led by women in the relevant time series: CEU-CH, IEU, UA, UB, UEx, and UIB. Remarkably, UCLM, UM, UMH, USAL and USP/CEU only have men leading their projects. The greatest imbalance can be seen in the UCM, where there are only 4 projects where women appear as main researchers (IPs) versus 17 projects led by men.

Another descriptive variable of research projects is the amount of financial aid obtained by them. First, it is worth noting that the data provided by the Ministry of Economy and Competitiveness fail to include all the R&D Projects covered by this research. Indeed, these projects have been provided by the researchers themselves, since there is no easy, transparent or open access to this information. According to our estimates, performed by Caffarel & al. (2017) and based on a representative sample of the projects within Area I, the average yearly funding per project would range between EUR 18,000 and 20,000 for three-year projects.

Furthermore, following an analysis of the subjects addressed by all doctoral theses and research projects throughout the time series, we obtain the percentages shown below (Figure 5).

In this regard, 56.64% of research projects study mass media, whereas the analysis of bodies or organizations ranks second with 16.16%, followed by those works addressing interpersonal communication (8%). Significant differences can be found between the objects of study of doctoral theses and research projects. The latter is more

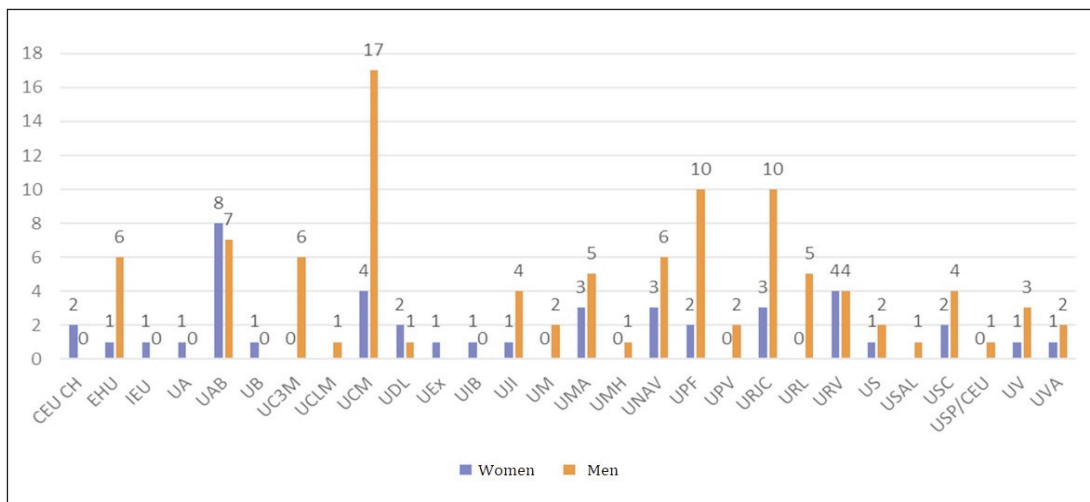


Figure 4. Total number of R&D research projects broken down by gender and university in Spain for the period 2007-2013.



likely to address bodies or organizations, whereas doctoral theses are more inclined towards the group and/or interpersonal communication. Differences in no case exceed 4.72 percentage points.

When we dumped the documents to be analysed, we asked ourselves about the purpose of the relevant research works amongst four possibilities: “describing the dimensions or perspectives of communication practice as an object of study;” “explaining the features of a subject of study in order to propose models;” “evaluating or validating research models

or objects of study”, and “intervening following models to modify behaviours or social processes”. The data obtained show a major difference between doctoral theses and funded research projects (Figure 6).

The purpose of “describing” has a majority presence in both doctoral theses and research projects (55.18% on average considering all the analysed documents), 48.95% in research projects and 56.09% in doctoral theses. There is a greater percentage difference regarding the remaining three purposes. The purposes of “intervening” or “evaluating” are the minority objectives overall (3.84% and 10.45% respectively), and they also mark the difference between research projects and doctoral theses; 8.39% of research projects are aimed at “intervening” versus 3.17% of doctoral theses, and 14.69% of projects aim to “evaluate”, as opposed to doctoral theses, that show a 9.83% for this research purpose. As regards the purpose of “explaining”, percentages show that the majority objective for doctoral theses is explanatory (30.9%), which exceeds the percentage of research projects that intend to “explain” (27.97%).

#### 4. Consensus, weaknesses, threats, and opportunities found in Phillips 66

Below are the most significant points of consensus found in Phase II: discussion groups made up of communication experts based on the Phillips 66 technique. The purpose of these sessions was to detect the most significant

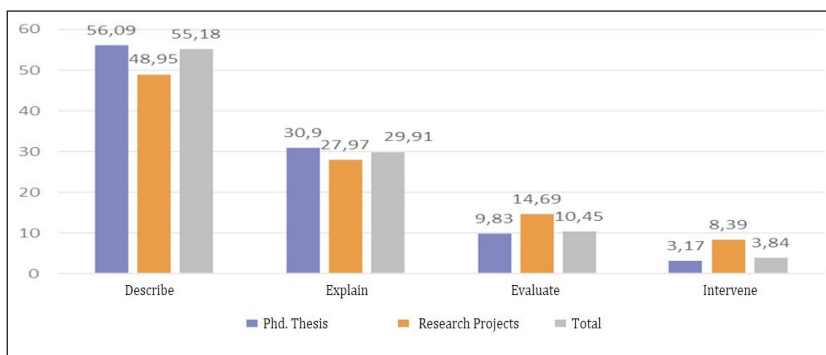


Figure 6. Purposes of Research broken down by doctoral theses (TD) and research projects (R&D).

points of consensus regarding the object of study in the strengths, weaknesses, opportunities, and threats in communication research as well as in connection with the actors of the communication research value chain in Spain. These debates were held in three different facilities located in the project's coordinated areas. There were three research group dynamics in Madrid, Malaga, and Barcelona, totaling 24 discussion groups. Each event was planned to be split into 6 expert discussion groups, as stated before. The groups of participants in the three facilities were broken down as follows: 1) A group was made up of main researchers, (GIP, Main Researchers); 2) Another group comprised consolidated research team leaders (GIC, Consolidated Research Teams); 3) The third group was formed by members or spokespersons of scientific societies (GSC, Scientific Societies Group); 4) The fourth group

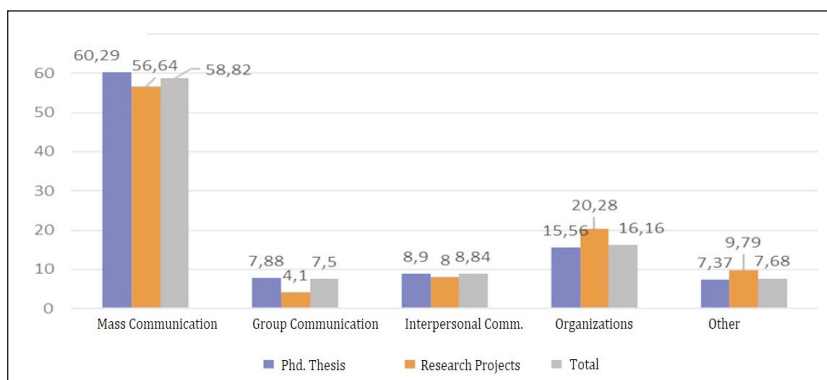


Figure 5. Most relevant objects of study in doctoral theses and R&D research projects.

included university research managers (GGUI, University Research Managers Group), 5) Another group was composed of people responsible for result dissemination (GGDR, Result Dissemination Managers Group); 6) Junior researchers made up the sixth group (GIJ, Junior Researchers Group). Group sessions, two rounds thereof, and group debates were audiovisually recorded and transcribed for subsequent analysis. These files are available at [www.mapcom.es](http://www.mapcom.es) for reference purposes or further analysis.

The most significant conclusions we have been able to draw from the analysed objects in connection with the research questions during the project's second stage have been aggregated and summed up in the table 1.

The previous table summarises the weaknesses and opportunities found in our country for communication research. In our view, it is essential that universities, in agreement with public authorities (the main funders of academic research), design a "Strategic Action Plan for Competitive Research in Communication", allowing to face, in an adequate and realistic manner, the opportunities posed by digital society, big data, neuroscience, artificial intelligence, and fully digital communication for an area of knowledge influenced by other disciplines yet absolutely central to understand the new social, economic, cultural and political paradigms faced in current times.

## 5. Discussion and conclusions

The analysis of weaknesses, threats, strengths, and opportunities found during Phases I and II is the starting point to make recommendations aimed at developing a "Strategic Action Plan for Competitive Research in Communication" in Spain over the next decade. Our analysis ultimately confirms the similarities between objects of study, but it also notes the existing differences between the purposes of research works by comparing doctoral theses and research projects during the analysed time period. A comparative study of the 12 most relevant universities in Spain, with the aim of finding differences, similarities and research patterns in research teams, associated Ph.Ds., and Universities, will require more comprehensive analyses. It is worth noting that Universities with the greatest relative weight and leadership in communication research belong to Madrid, Catalonia, and Andalusia; these are the Autonomous Regions with the most university centres, research teams and research historical traditions. Size, belonging to these "leading" regions, "young" staff, and being a public research centre are the variables that mostly correlate to communication research in Spain; they mostly explain "variance", with the sole exception of the Universidad de Navarra.

Furthermore, it is worth pointing out that communication research in our country is underrepresented in terms of awarded research projects, since only 1% of the projects out of all the Social and Human Science gets awarded, in spite of the fact that the relative weight of doctoral theses on communication is 2%. Additionally, research projects show a predominance of documentary and descriptive methodologies vis-à-vis experimental or intervention methodologies. This pattern of research strategies is even more significant regarding doctoral theses.

Our comparative analysis between research production of doctoral theses and research projects has allowed finding some significant imbalances summarised below, which are also coupled with recommendations with the aim of implementing a "Strategic Action Plan for Competitive Research in Communication".

- Regarding the gender in scholarly authorship, there is an imbalance in favour of men for both kinds of research works. However, this imbalance becomes greater within research projects. There is a need for an active affirmative action policy by universities to put women in leading positions in research teams and projects.

- Whereas the objects of study are similar for doctoral theses and research projects, the purposes differ significantly. Doctoral theses mainly pursue exploratory or diagnostic objectives (description and explanation), but projects show a preference for assessment or therapeutic aims (evaluation and intervention). Better funding is required, as well as an active implementation of "more advanced" and scientific methodologies to test hypotheses; not only descriptive methods but also exploratory, prospective or active intervention methods.

- In doctoral theses and research projects, mass communication (whether from traditional or online media) is the most frequent object of study. Aside from this, studying group communication discriminates more in doctoral theses when the purpose of research is intervention, whereas interpersonal communication has a greater influence when the research objective is the evaluation. Objects of study must be renewed, and we should move away from the comfort zone of "traditional" methodologies and "well-known" subjects; these are to be replaced by renewed objects of study and methods closer to cross-sectional areas of knowledge, inquiring about new matters using both traditional and renewed methodologies, moving towards interdisciplinarity.

Finally, we must contextualise the production of doctoral theses and research projects within the Spanish research framework. We have found that communication research has progressively increased in the analysed

**Table 1. Consensus of weaknesses, threats, strengths and opportunities found in Phase II, Phillips 66 and "Strategic Action Plan for Competitive Research in Communication"-corollary**

Weaknesses	Threats
<ol style="list-style-type: none"> <li>1. Little funding for research projects and research teams from national and regional plans in Spain.</li> <li>2. Scientific research in communication is funded by few universities, and it is concentrated in those schools, mainly public ones, and in specific Autonomous Regions, namely: Madrid, Catalonia, Andalusia, and Valencia. Centralized selection processes.</li> <li>3. Lack of incentives to attract and consolidate research and junior researchers in research projects with mainly descriptive methodologies.</li> <li>4. There is a need to internationalise research projects beyond the comfort zone Spanish-Spain-Latin America.</li> <li>5. Women still face a glass ceiling regarding their access to managerial-leadership positions, as well as regarding access to appropriate career profiles to lead international and/or national research projects.</li> <li>6. Delays in the academic career progression of junior researchers due to existing "academic progress" barriers. Lack of excellence programs associated with emerging junior research versus the EU's science policy in programs such as ERC or H2020, among others.</li> </ol>	<ol style="list-style-type: none"> <li>1. Lack of continuity in academic careers.</li> <li>2. Little funding for research projects involving junior and senior researchers.</li> <li>3. Lack of support to the development of scientific editorial projects in the area of communication associated with international quality indexes.</li> <li>4. The perversion of the "ANECA effect" in the scientific career and the publication of research results. A changing playing field along with biased and random criteria.</li> <li>5. Loss of "critical mass" in the form of potential students interested in Communication and related areas.</li> <li>6. Lack of scientific journals in Spanish indexed in Scopus and/or JCR.</li> <li>7. Little relative weight of communication within Social Science research.</li> <li>8. Precarious funding of communication Ph.D. programs and grant and career programs.</li> <li>9. Consolidation of emerging master's degrees and Ph.D. programs in Latin America and the United States; the competitive and comparative advantage of the Iberian Peninsula as a land of training for Ph.D. and master's degree holders is disappearing.</li> <li>10. Brain drain; expert researchers are leaving the Iberian Peninsula.</li> </ol>
Strengths	Opportunities
<ol style="list-style-type: none"> <li>1. Social and economic interest in communication research.</li> <li>2. Dynamism of national and international scientific societies. Establishment of communication ties between scientific and language "islands."</li> <li>3. Significant emerging presence of not only young but also senior researchers in scientific events and meetings in Europe, English-speaking countries, and Latin America.</li> <li>4. The network of university schools with communication programs, including both consolidated and new emerging schools. Solid master's degree programs and new approaches regarding interdisciplinary Ph.D. programs. The interest in studying in Spanish within the international, European, American and Asian communities.</li> <li>5. Consolidated and emerging communication research talent is being repatriated and/or attracted from top international communication research centres back to Spanish centres. Europe is attractive, and so is Spain as a country of science, including new national and specific programs to attract talent implemented by Universities and Autonomous Regions seeking academic excellence.</li> </ol>	<ol style="list-style-type: none"> <li>1. Involvement in transnational and international research projects; development of multilingual publishing.</li> <li>2. Development of new areas of work and job profiles revolving around specialised training centres in communication and related areas.</li> <li>3. Presence of communication as an object of study in other areas of research, such as big data, ICT or neuroscience.</li> <li>4. Establishment of scientific networks between science in Spanish and science in English, in Latin America, North America, and Spain-Europe.</li> <li>5. The appearance of Open-source publishing projects related to the consolidation and creation of journals in regional and global indexes such as Scopus, JCR, ESCI, and Latindex.</li> <li>6. Future consolidation of a Spanish-speaking emerging science market in America and Europe-Spain.</li> <li>7. Developing and emerging area of knowledge to be developed in the process of improving the positive social and entrepreneurial perception; positive transfer of communication research results to society and business.</li> </ol>

Research data collected through the second phase transcripts and considerations of the authors and of the analysed groups (GIP, Main Researchers), (GIC, Consolidated Research Teams), (GSC, Scientific Societies Group), (GGUI, University Research Managers Group), (GGDR, Result Dissemination Managers Group) and (GIJ, Junior Researchers Group).

period. However, its share or relative weight in Social and Human Science amounts to just one doctoral thesis for every 20 theses presented in university. Similarly, it barely has one research project for every 40 Social Science projects funded in Spain.

When weighing the presence of social research, and particularly communication research, in Spanish research

altogether, we draw the following conclusions: first, 4 out of 10 R&D projects funded in Spain are Social Science projects; second, 3 out of 10 doctoral research presented in university fall into the area of Social and Human Science. Nevertheless, the relative weight of communication research is even lower; indeed, it does not even reach 2% out of the total number of theses or 1% of funded research projects. Furthermore, communication research loses the relative advantage, which characterises social research, i.e., a greater production of funded projects with respect to the production of presented theses.

Communication research is an area of study that will be further developed in our country, following the consolidated trends in increasingly more communication-oriented societies and markets. This Mapcom research project shall be completed, extended and complemented during Phase III by the conclusions pointed out in this article. The theoretical and methodological innovations displayed in this study should be longitudinally applied in our country, and they must be transferred to culturally close environments in Latin America (Piñuel & al., 2016) and Europe, in order to shed light on the state of the art of research in an increasingly more important area of knowledge. There is a need for exploring variables such as “quality”, “impact”, “internationalisation”, or the “scope” of the scientific research we conduct and wish to conduct in our research teams. It is critical to implement a strategic plan providing communication studies with stable and consistent funding, as well as to provide scientific dissemination and improving techniques and methodologies to analyse objects and objectives. These are compelling needs in order to take that leap towards internationalisation and to fully gain a scientific status in global languages since our universities have a merely emerging presence in this regard. As can be expected from any excellence research, Mapcom I will be followed by Mapcom II, which will allow for completing, further analysing, and moving forward along the strategic lines sketched in this paper.

### Funding Agency

This research was funded by the Spanish Ministry of the Economy and Competition under R+D+i Project “Research sphere on communication studies social practices: Maps of projects, groups, research objects and methods” (CSO2013-48933-C4).

### References

- Almirón, N., & Reig, R. (2007). The communications research in Spain: the political economy epistemological approach. *American Communication Journal*, 9(2). <https://goo.gl/cwyH4g>
- Alsina, M.R., & Jiménez, L.G. (2010). Communication theory and research in Spain: A paradigmatic case of a socio-humanistic discipline. *European Journal of Communication*, 25(3), 273-286. <https://doi.org/10.1177/0267323110373458>
- Arcila, C., Piñuel, J.L., & Calderín, M. (2013). La e-investigación de la comunicación: Actitudes, herramientas y prácticas en investigadores iberoamericanos. [The e-research on media & communications: Attitudes, tools and practices in Latin America Researchers]. *Comunicar*, 40, 111-118. <https://doi.org/10.3916/C40-2013-03-01>
- Blázquez, M. (2015). *Tesis doctorales en las universidades españolas durante el periodo 1977-2014*. <https://goo.gl/JjULoZ>
- Cáceres, D., & Caffarel, C. (1993a). La investigación sobre comunicación en España. Un balance cualitativo. *Telos*, 32, 109-124.
- Caffarel, C., & Cáceres, D. (1993b). La comunicación en España: planteamientos temáticos y metodológicos entre 1987 y 1990. La investigación en España. Monografías. *Cuadernos de Investigación en Comunicación*, 29, 23-30.
- Caffarel, C., Domínguez, M., & Romano, V. (1989). El estado de la investigación en Comunicación en España (1978-1987). *Cuadernos de Investigación en Comunicación*, 3, 45-57.
- Caffarel, C., Ortega, F., & Gaitán J.A. (2017). Investigación en comunicación en la universidad española en el periodo 2007 a 2014. *El Profesional de la Información*, 26(2), 218-227. <https://doi.org/10.3145/epi.2017.mar.08>
- Castillo, A., & Xifra, J. (2006). Investigación bibliométrica de las tesis doctorales españolas sobre relaciones públicas (1965-2005). *Anàlisi* 34, 141-161.
- Delgado, E., Torres, D., Contreras, E., & Ruiz, R. (2006). Análisis bibliométrico y de redes sociales aplicado a las tesis bibliométricas defendidas en España (1976-2002): temas, escuelas científicas y redes académicas. *Revista Española de Documentación Científica*, 29(4), 493-524. <https://doi.org/10.3989/redc.2006.v29.i4.306>
- Fernández-Quijada, D., & Masip, P. (2013). Tres décadas de investigación española en comunicación: hacia la mayoría de edad [Three decades of Spanish communication research: Towards legal age]. *Comunicar*, 41, 15-24. <https://doi.org/10.3916/C41-2013-01>
- Giménez-Toledo, E. & Jiménez-Contreras, E. (2013). Los agujeros negros de la comunicación [Black holes of communication Scientific communication and meta-research. *Comunicar*, 41, 10-13. <https://doi.org/10.3916/C41-2013-a2>
- Jones, D.E. (1994). *Investigació sobre comunicació a l'Espanya dels noranta*. Barcelona: Generalitat de Catalunya, Centre d'Investigació de la Comunicació i Universitat Autònoma de Barcelona. Cultura y comunicación social: América Latina y Europa Ibérica.
- Jones, D.E. (1998). Investigación sobre comunicación en España. Evolución y perspectivas. *Zer*, 5, 13-51.
- Jones, D.E., Baró, J., Landa, C., & Ontalba, J.A. (2000). *Investigación sobre comunicación en España: Aproximación bibliométrica a las tesis doctorales (1926-1998)*. Barcelona: ComCat.
- López, P., & Vicente, M. (2011). Métodos y técnicas de investigación dominantes en las revistas científicas españolas sobre comunicación (2000-2009). In J.L. Piñuel, C. Lozano, & A. García (Eds.), *Investigar la comunicación en España*. Madrid: Asociación Española de Investigación en Comunicación / Universidad Rey Juan Carlos.



- Lozano, C., & Gaitán, J.A. (2016). Vicisitudes de la investigación en Comunicación en España en el sexenio 2009-2015. *Disertaciones*, 9, 2, 139-162. <https://doi.org/10.12804/disertaciones.09.02.2016.07>
- Martínez-Nicolás, M., & Vicente-Mariño, M. (Eds.) (2016). La investigación sobre comunicación: Historia, situación actual y prospectiva. *Disertaciones*, 9, 1-7. <https://doi.org/10.12804/disertaciones.09.02.2016>
- Martínez, M. (2009). La investigación sobre comunicación en España. Evolución histórica y retos actuales. *Revista Latina de Comunicación Social*, 64, 1-14. <https://doi.org/10.4185/RLCS-64-2009-800-01-14>
- Martínez, M., & Saperas, E. (2011). La investigación sobre Comunicación en España (1998-2007). Análisis de los artículos publicados en revistas científicas. *Revista Latina de Comunicación Social*, 66, 101-129. <https://doi.org/10.4185/RLCS-66-2011-926-101-129>
- Piñuel, J.L. (2011). La docencia y la investigación universitarias en torno a la Comunicación como objeto de estudio en Europa y América Latina. *Cuadernos Artesanos de Latina*, 15. Tenerife: La Latina. <https://bit.ly/2KboaDh>
- Piñuel, J.L., Lozano, C., & Gaitán, J.A. (2016). Propuesta de estudio para realizar un mapa de la investigación en comunicación en América Latina. *Revista Latinoamericana de Ciencias de la Comunicación*, 11, 22(12), 45-53.
- Repiso, R., Delgado, E., & Torres, D. (2011). Análisis bibliométrico y de redes sociales en tesis doctorales españolas sobre televisión (1976/2007). [Bibliometric and social network analysis applied to television dissertations presented in Spain (1976/2007)]. *Comunicar*, 37, 151-159. <https://doi.org/10.3916/C37-2011-03-07>.

# Comunicar

Media Education Research Journal

If you are interested  
in Education and  
Communication visit  
our website.



Open access publication  
with online English versions  
of all manuscripts.  
Visit our Authors guidelines  
and share your research with  
our academic community.



[www.comunicarjournal.com](http://www.comunicarjournal.com)



# Online risk perception in young people and its effects on digital behaviour

Percepción de riesgo online en jóvenes y su efecto en el comportamiento digital

- Dr. Irene Ramos-Soler is Full Professor in the Department of Communication and Social Psychology at the University of Alicante (Spain) (Irene.Ramos@ua.es) (<https://orcid.org/0000-0003-4616-1494>)
- Dr. Carmen López-Sánchez is Full Professor in the Department of Communication and Social Psychology at the University of Alicante (Spain) (mc.lopez@ua.es) (<https://orcid.org/0000-0003-3411-5546>)
- Dr. Teresa Torrecillas-Lacave is Associate Professor in the Department of Journalism at San Pablo CEU University in Madrid (Spain) (teresat@ceu.es) (<https://orcid.org/0000-0001-6167-658X>)

## ABSTRACT

An important part of current research regarding online risks is aimed at analysing cyber aggression according to its frequency and type. By contrast, there is less scientific knowledge available on risk perception, the analysis of its components, and the measurement and impact on the behaviour of minors on the Internet. Therefore, the main objective of this study is to establish a classification of minors based on their perception of risk, digital consumption habits, family and/or educational protection factors, and the flow of communication. A structured questionnaire was used from a sample of 865 minors aged 10 to 17 from the Autonomous Region of Madrid. Data were processed using SPSS 15.0 and SPAD 5.0. After a factor and classification analysis was conducted, seven different groups were obtained. The predominant profile, in 42% of the cases, is that of a 'prudent person', characterized by a high perception of risk, not spending an excessive amount of time on the Internet, avoiding unsafe behaviour, talking with parents about online difficulties, receiving advice, and having clear rules on Internet use. The perception of risk is shown as a relevant construct in relation to other indicators such as child-rearing techniques used by parents, the time children spend on Internet, dependency on the device, and the type of digital behavior involved.

## RESUMEN

Una parte importante de las investigaciones actuales sobre riesgos online están encaminadas a analizar las ciberagresiones, su frecuencia y forma. En cambio, hay menos acumulación de conocimiento científico centrado en la percepción de riesgo, el análisis de sus componentes y la medición e impacto sobre la actuación de los menores en la red. Por ello, el objetivo principal del estudio es establecer una clasificación de menores a partir de su percepción de riesgo, hábitos de consumo digital, factores de protección familiares y/o educativos y flujos de comunicación. Se ha aplicado un cuestionario estructurado a una muestra de 865 menores, de 10 a 17 años de la Comunidad de Madrid. Los datos se han procesado con SPSS 15.0 y SPAD 5.0. Tras un análisis factorial y de clasificación se han obtenido siete grupos diferenciados. El perfil predominante, en un 42% de los casos, es el de «prudentes», caracterizado por tener una alta percepción de riesgo, no pasar excesivo tiempo en la red, evitar comportamientos no seguros, conversar con los padres sobre las dificultades online, recibir consejos y tener normas claras sobre el uso de Internet. La percepción de riesgo se muestra como un constructo relevante en relación a otros indicadores como la intervención educativa de los padres, el tiempo que se pasa en Internet, la dependencia del dispositivo y el tipo de comportamiento digital.

## KEYWORDS | PALABRAS CLAVE

New technologies, Internet, families, parental mediation, media literacy, adolescents, minors, risk perception.  
Nuevas tecnologías, Internet, familias, mediación parental, alfabetización mediática, adolescentes, menores, percepción de riesgo.



## 1. Introduction and state of the issue

The smartphone has become a fundamental means of socialization for minors. The figure of 25.4% of children ten years of age have a mobile phone connected, which is a figure that rises to 93.9% in the 15-year-old age group. Between 14 and 17 years of age, in more than 75% of the cases, they claim that they make unplanned decisions daily based on the information they receive by the mobile phone (INE, 2016; Fundación Telefónica, 2016). The high penetration of this device intensifies their online activities such as the use of instant messaging or visiting social networks.

These data describe a new interactive user profile that has been shaped since childhood and consolidated after ten years of age, characterized by the accessibility and intensive use of digital services in any context and at any time (Garmendia, Jiménez, & Mascheroni, 2017). This is a scenario in which parents find new difficulties in supervising their adolescent children, who are a risk factor in themselves, due to the tendency to look for new sensations and their greater propensity toward a wider spectrum of digital relationships. (Batalla, Muñoz, & Ortega, 2012; Sánchez-Carbonel & al., 2008).

### 1.1. Risk perception

In this new context of autonomous use, the perception of risk, being understood as the “cognitive process that rests on the information that each person has on certain issues (...), and that each one processes by organizing their value judgments”, which will condition their behaviour (García-del-Castillo, 2012: 138), is a fundamental factor in the acquisition and maintenance of actions related to cybersecurity, mainly as a shield against present dangers; those associated with unsafe behaviour in which minors incur voluntarily (Catalina, López-de-Ayala, & García, 2014).

In general terms, the research is in agreement in pointing out that access to the Internet offers an infinite number of opportunities (Aguaded, 2011: 7), but at the same time, exposure to risks is also greater (Duran & Martínez, 2015; Kowalski & al., 2014), especially the risk of cyber-aggression or cybervictimization (Corcoran, MacGuckin, & Prentice, 2015).

The team from the multinational research network “EU Kids Online” concluded that online risk experiences do not necessarily have to involve harm (Livingstone & al., 2011), but that minors who are more exposed to risks demonstrate more resilience. In a more recent study, this network showed that 31% of subjects between 9 and 16 years old had suffered online or offline harassment and those minors have relationships with strangers through the Internet (Garmendia, Jiménez, & Mascheroni, 2017).

Of all dangers, the most investigated has been cyber bullying (Fernández-Montalvo, Peñalva, & Irazabal, 2015, Navarro & al., 2013, Lee & Stapinski, 2012). Kowalski & al. (2014), point out the increase of this type of risk, which has been promoted by the current social context of intense Internet access through mobiles. Álvarez-García, Barreiro-Collazo, and Núñez (2017), show that verbal aggression and exclusion are the most common behaviours. To this, we must add research that confirms that cyber-aggressors have considerable social support (Romera & al., 2016; Yahner & al., 2015). Regarding the perception of risk, there are several investigations that indicate a high degree of self-confidence shown by the minors regarding perceived risks, which contrasts with the risks experienced (Catalina, López-de-Ayala, & García, 2014).

Labrador and Villadangos (2010) affirm that age increases the perception of the problem posed by the excessive use of the Internet and the mobile phone, and the possible adverse consequences. In 2012, the work of Frutos and Vázquez proved that minors tend toward a more rational use as they acquire maturity.

### 1.2. Family context

Another line of research has studied the relationship between the contexts of family and school in cyber bullying. The study by Ortega-Barón, Buelga, and Cava (2016) states that some dimensions of family and school settings can predict cybervictimization in adolescence. In addition, the emphasis is placed on low academic performance and attention problems in school as a result of suffering cyber bullying (Tokunaga, 2010).

Regarding the profile of the bully, it has been pointed out that a conflictive environment gives rise to children who are capable of being more hostile and exhibiting antisocial and even violent behaviour (Buelga & al., 2015) compared to households with greater parental support that presupposes more positive peer relationships, which diminishes the vulnerability when confronted with this behaviour. Parents acting as mediators in a restrictive way with their children from 6 to 14 years of age mitigate such risks, but also restrict the opportunity to use ICT (Livingstone & al., 2017). Navarro & al. (2015), defend the view that minors with less social skills are more

vulnerable to peer cyber bullying, or that a lack of communication skills foretells problems of self-control (Villa Moral & Suarez, 2016). Lereya, Samara, and Wolke (2013), and they conclude that a negative family environment makes minors more vulnerable.

In short, there is a vital need for parents to acquire the necessary skills to exercise constructive mediation (López-Sánchez & García-del-Castillo, 2017; Torrecillas, Vázquez, & Monteagudo, 2017).

### 1.3. ICT use

A study on the frequency and characteristics of Internet use by Spanish adolescents concludes that the majority connect daily and that the frequency of connection increases with age so that from the age of fifteen onward the connection is almost permanent (Reolid & al., 2016). Carbonel & al. (2012), conclude that there is a relationship between connection time and the problematic use of the Internet and the mobile phone. Lee & Stapinski (2012), state that time is a predictor of more unsafe use.

Regarding distribution, frequency, and causes of addiction to ICT, several works have been published on the subject, but whether or not these technologies cause addiction is still unresolved (Echeburúa, Labrador, & Becoña, 2009). Other studies indicate a strong association between cyber addiction and cyber-bullying (Arnaiz & al., 2016).

**The behaviour of minors in the context of their multi-screen use is becoming increasingly autonomous, mainly due to the spread of the smartphone, which limits the ability of parents to intervene directly in their children's use of the Internet in various devices with measures such as control of connection time or the type of content accessed.**

### 1.4. Objectives and hypothesis

Based on the above information, the objectives set out in this article are the following:

a) To analyze the different types of underage users from the point of view of risk perception; b) To describe the online behaviour of minors and the family mediation in each category of user.

The hypotheses to be verified are the following: a) The majority of minors have a low perception of risk; b) Children with greater risk perception have a stronger upbringing by their parents; c) Children with greater risk perception spend less time on the Internet; d) Children with higher risk perception have less dependence on the device; e) Children with higher risk perception exhibit safer behaviour and have experienced these situations to a lesser extent.

## 2. Materials and methods

The target population that is the subject of study are minors enrolled in the Autonomous Region of Madrid. We have used an ad hoc personal questionnaire as a means of collecting information. The sampling is multi-stage and stratified by groups according to education levels and type of educational centre (private/semi-private or public). In the case of public schools, the income level of the district was another segmentation element used (above average, average, or below average). By means of a simple random sample, a school was selected by type of educational centre: nine schools in total of which three are private or semi-private, and six are public. In each of the centres, random selections were made involving two classes of primary school year 5, secondary school year 8, and high school year 11 ( $n=865$ ). We have worked with a margin of error of 3.87% for a confidence level of 95.5%, and for the most unfavourable option of  $P=Q=50\%$ . 60.7% of the sample are boys (525) and nearly 40% girls (340).

For the grouping of students in segments according to perceived risk, an analysis that was factorial and of classification of multiple correspondences have been carried out with the SPAD 5.0 program. The factorial analysis of multiple correspondences is a method that allows for the study of relations between the modalities of a set of qualitative or nominal variables (Grande & Abascal, 2003: 391). Through the use of this procedure, groups of variables have obtained that segment the population target of the analysis.

In order to know the people involved in each category or group, and therefore their habits and behaviours, a



classification was used. For this analysis, questions pertaining to the risk perception module were used as active variables, and as illustrative variables, the rest of the survey questions related to the use and consumption of ICT, perception/attitudes of the digital culture and ICT, media literacy/competencies, family mediation and communication flow. After analyzing the previous Table 1, a decision was made to create a partition of seven groups.

### 3. Analysis and results

#### 3.1. Group 1. The prudent group

This group, made up of 42% of the surveyed population, is the most numerous segment of all involved and the most heterogeneous. For them, it is quite important to have Internet on the

mobile, even though they do not exhibit much dependence on it. They use the Internet to interact with people they already know, download applications, access social networks, make video calls, and take photos.

During school time, they are connected to the Internet less than one hour. However, when they are not in school, the frequency increases and oscillates between one and three hours. They have an account on Instagram, and their profiles on social networks are usually private. They never talk about their personal lives because it is forbidden by their parents. Their contacts range from ten to one hundred, including parents, but not teachers. They do not like to show affection toward their parents through the Internet.

This prudent behaviour on social networks is consistent with their perception of risk. They are aware of many dangers associated with the use of the Internet such as harassment, blackmail, impersonation, loss of privacy, access to sexual, violent, offensive or unreliable content, among others.

They know how to block messages to increase their security in the online world. If they detect any danger, they talk to their parents and teachers. In fact, they have done it when they have been worried or upset about something related to the Internet. From them, they have received advice on how to use the Internet safely, and the recommendations have seemed useful to them. Their parents let them upload personal photographs and videos under their supervision. They negotiate with them the time and use of the Internet.

#### 3.2. Group 2. The sociable and self-confident group

This group is the second most numerous; it represents 16.76%. It is characterized by having a mobile phone, a video game console, a computer and being connected to the Internet either every day or almost every day, with a frequency that exceeds three hours a day outside of school hours.

Online activity is very high: browsing, using social networks, playing, using instant messaging, working with word processors, downloading movies, searching for information, buying products, among others. They prefer to buy online rather than in physical stores. They are very sociable and dynamic on social networks; their record in a social network is more than five hundred contacts. The privacy settings of their profiles are usually open and public, or partially private. They have Instagram, a YouTube account, Snapchat, and Google+, among others. They often follow YouTubers, and they do so because it entertains them, they like what they do or say, because of the way they talk or dress, and because they learn from them.

They use the Internet to interact with people they already know, with relatives, with friends of acquaintances, and with people, they have met on the Internet, and with the latter, they have even met these people face to face at some time. They have made many new virtual friends.

They identify the following as dangers on the Internet: being a victim of blackmail, losing privacy, access to bad, sexual or violent content, someone posing as another person, and being harassed.

This is a group that is familiar with tools and techniques for navigating safely in the online world, such as blocking messages, deleting the history of pages visited, or bookmark a website as a favourite. If the members of this group perceive any danger on the Internet, they talk to others, preferably parents and teachers. They acknowledge that they have discussed their use of the Internet at times with parents and educators and that their teachers have recommended websites to visit, but their advice, information or suggestions have had little effect on these young people.

**Table 1. Description of the partition into seven categories**

	Inertia	Effectiveness	Weight	Distance
Inertia Intergroups	0,3887			
Inertia Intergroups				
Group 1/7	0,0873	366	366	0,0764
Group 2/7	0,0613	145	145	0,1830
Group 3/7	0,0353	127	127	0,4361
Group 4/7	0,0268	33	33	0,9130
Group 5/7	0,0511	73	73	0,5626
Group 6/7	0,0783	75	75	0,9690
Group 7/7	0,0318	46	46	1,7939
Total Inertia	0,7607			

They buy online with the supervision of their family, but it should be noted that they have unsupervised permission from adults to watch videos on YouTube, surf the net, follow YouTubers, send emails, access social networks, and upload personal photos or videos, among others.

Their parents pay little attention to them when they surf the net, and parents hardly ask them what they do on the Internet. Moreover, they receive few instructions or rules from their parents when they connect. In spite of this, they argue with their parents about the duration of the connection time as well as the moment in which they connect.

Regarding family relationships, they indicate that it is harder for them to show affection toward them through the Internet rather than personally. Many have taught their parents to do something on the Internet and share instant messaging groups with them.

### 3.3. Group 3. The control group

This group represents 14.68% of minors. More than 80% of this group are children between 10 and 11 years old. They have a tablet to access the Internet. For them, having a mobile phone with access to the Internet is not important. From time to time they go online to download applications, watch videos or movies, make and/or edit photos, and use instant messaging. They connect at the most two or three times a week. Connection time on school days is low and on days without school, the time rises to one or two hours. This is a group with a low level of social activity online. They do not have profiles on most social networks, and in fact, they almost never participate in such networks and have few contacts as well. They are aware of the risks on the Internet such as access to harmful content or receiving offensive messages, among others. If they suffer any of these dangers, they talk to their parents or teachers, rather than with friends. They are not familiar with tools or techniques to increase their security such as changing privacy profiles of their social networks or content preference filters. They do not know how to block ads or messages, nor do they know how to bookmark a website as a favourite, or how to find information to use the Internet safely.

When they need to use the Internet to do homework, they receive help from their parents and teachers. What stands out is that they talk with their parents about the dangers and opportunities of ICT and ask them and their teachers for their opinion before publishing content. They never argue with parents about the use of the Internet. Parents control their use of the Internet, impose clear rules, and even make explicit prohibitions such as uploading personal photos or videos, giving personal information, buying online, chatting on social networks, or following YouTubers, among others. With parental control some are allowed to download files, send messages to mobile phones or emails, surf the Internet, watch videos on YouTube, play online, and chat.

When they exceed time limits or do something on the Internet that their parents do not like, they are asked to turn off the computer or stop using the mobile. Minors usually negotiate with their parents for connection time and what they are allowed to do, but the criteria of the adults prevail.

Parents explain to them how to use certain resources and maintain awareness of what the youngsters are doing by asking questions and by through direct supervision. They believe their parents and teachers have a very good level of knowledge about the Internet and other digital tools. However, they have not received advice or recommendations from their teachers. In spite of this, they believe that their teachers care about what could happen to them on the Internet.

### 3.4. Group 4. The connected and independent group

This is the most homogeneous group of all. It represents 3.82% of minors. They are 17 years old, have a mobile, individual television and a computer. They know how to make a blog and download movies. For these students, it is very important to have a mobile phone with Internet access. They are connected the entire day.

They frequently use instant messaging, watch videos or movies, participate in social networks, and follow some YouTubers. Downloading applications and making or editing photos is something they also do very often, along with uploading content, playing online and making video calls. From time to time, they look for information regarding courses or training. They like to learn about the characteristics of a product or service before purchasing it.

They follow well-known people on the Internet because they like what they do or say or because they learn from them. They have profiles on the main social networks such as Instagram, Twitter, and Snapchat. In their profiles, they are very active uploading their photos or videos, and sometimes they talk about their private life. They use the Internet for interaction and have made many new friends through this channel. They also interact personally with these new friends.

To increase their security in the online world, they know how to change the privacy profiles of their social networks, bookmark a website as a favourite, and see if the navigation bar turns green. If they have a problem on the Internet or perceive a risk, they talk with their friends, but never with teachers, parents or siblings. They think the advice they receive from them is not useful. Their parents allow them to surf, chat, access social networks and upload personal photos or videos. They give personal information without their parents' knowledge.

### 3.5. Group 5. The 'hooked on the mobile' group

This group represents 8.44% of children. The mobile phone and Internet access through this device are highly important for members of this segment. If they forget their mobile phone at home, they return to it, and if they are not able to return home, they spend the day suffering because of the absence of their smartphone.

They connect to the Internet every day, or nearly every day, of each week. Outside of school hours, they are connected permanently, and even on days when they have school, they are connected more than three hours a day. They use instant messaging with a high-level frequency, often connecting often in order to search for information about products or services, and from time to time they buy or contract them.

They use social networks, have profiles on Instagram, Snapchat, and YouTube, among others. They upload many personal photos or videos, some of friends or acquaintances, and sometimes they talk about their own life. They follow YouTubers because they like what they do or because they learn something from them. They use the Internet for interaction, especially with friends of acquaintances, or with family members, although they have also made some new friendships through the Internet and even meet with some of them in person.

They know how to block messages and change the privacy profiles of their social networks, bookmark a website in favourites, and delete the record of pages visited. If they perceive any danger or are worried about something related to the Internet, they only talk about it with their friends. They never tell their parents, teachers, or siblings. They do not ask parents for their opinion or permission regarding the personal content they publish, and they believe that neither their parents nor their teachers worry about what might happen to them on the Internet.

When they use the Internet for their homework, they do not receive help or recommendations from their parents. In general, the information, advice or suggestions from parents and educators does not seem useful to them, and they believe that their teachers have very basic knowledge about the Internet.

The supervision exercised by parents toward their children on the use of the Internet is quite permissive. Parents do not negotiate with their children about connection time, nor what they can do on the Web. They do not give them clear rules about Internet use, nor do they ask them much about what they do on the net. They let their children send emails, chat, follow YouTubers, access social networks, download files and upload personal photos or videos, all without parental control. This group prefers to talk with their parents face to face about their intimate or private affairs rather than through the Internet.

### 3.6. Group 6. The group of confident players

This group is mostly male and is characterized by the possession of video consoles and their channel on YouTube. They frequently use the Internet to play games, download movies and applications, and to look for information about education and training. This group represents 8.67% of minors. This group is highlighted by its lack of risk perception. They do not identify as such social isolation or loneliness, harassment, being the victim of black-mail, or receive offensive messages, among others.

They interact on the Internet with people whom they have only met in a virtual sense. If they had a problem on the Internet, they would not talk to their teachers. They indicate that their teachers have not taught them how to use the Internet services, nor have they given them advice on how to use the Internet safely. They believe that their educators do not worry about what could happen to them on the Internet and that these same educators do not have any knowledge about Internet and digital tools.

Regarding their parents, students also believe that they do not worry about what could happen to them on Internet, as they do not receive prohibitions regarding connection time or use. Parents do not give them advice on how to use the Internet safely or discuss with them regarding the time of the day that they connect, but parents do complain if their children make noise, or if the parents are bothered by what the children are doing or watching.

### 3.7. Group 7. The group that is always connected to friends

This group is very homogeneous and represents 5.32% of the minors. Composed mostly of 16-year-old students

who express their preference for reading books on paper instead of on a screen. They have a personal laptop and mobile phone, and if they forget the mobile at home, they return to it. They connect to the Internet every day, or nearly every day, more than three hours a day. They have a high frequency of use of instant messaging and social networks as well, and they often upload their content to the Web to share it with others. They use their devices with access to the Internet to make video calls, use text processors, and save data in the cloud.

From time to time, they go online to search for information on health and education topics, or to buy a product or service. On the other hand, they almost never play games online, either alone or with other people. Their profile in social networks is usually private, something they know how to do perfectly. They have accounts on Instagram, Twitter, Snapchat, among others. Their contacts in a social network range between two hundred and five hundred and even their teachers are among them.

Regarding the type of people with whom they have relationships through the Internet, these are people they know from the previous face to face encounters. If they felt there was a problem on the Web, they would not talk about it with their teachers, even if these educators have recommended Internet sites for them to visit and the students share an instant messaging group with them. Instead, they would talk about it with their friends.

Their parents do not help them when they have to enter the Internet to do homework, nor have they taught their children to use Internet services. Their parents do not monitor them when they are surfing the net, although they have discussed with their parents and teachers about use of the Internet.

Their family allows them, without supervision, to send emails and messages to mobile phones, chat or use Messenger, connect to social networks, follow youTubers, download files, upload personal photos or videos, and give personal information. With family supervision, they can buy through Internet.

**The perception of risk is based on value judgments that are translated into the ability to detect, identify and react to problematic situations when surfing the Internet, which aids the self-control of minors, and therefore, their cyber security.**

#### 4. Discussion and conclusions

The main objective of this work has been to analyze the relationship between risk perception and family and behaviour variables on the Internet in order to shed light on the problem of Internet cyber security. The perception of risk, which is highly present in studies aimed at the prevention of problematic behaviour in the field of health, is considered a key variable in the initiation and maintenance of risky behaviour (García-del-Castillo, 2012). Although there is no accumulated knowledge about its conception in the field of cyber security, we can define it as the value judgment and the meaning that the child attributes to a situation of danger on the Internet. This value judgment translates into the ability to detect, identify and react to problematic situations when surfing the Internet, and has less to do with the degree of awareness of the dangers that the Internet entails. The question is to analyze how that value judgment is constructed and how parents can intervene to influence the variable as a protection factor.

The results of this study reveal that there is a significant relationship between risk perception and other family and behavioural variables. Minors with a greater perception of risk on the Internet have more ability to protect themselves against the online dangers, and at the same time are those who have a more favourable educational upbringing from their parents, and who also have healthier practices on the Internet. This group, which we have designated as "prudent", represents 42% of the target population. This data refutes the proposed hypothesis that stated that minors have little perception of risk, both from the perspective of self-confidence when confronted with the dangers associated with ICT (Catalina, López-de-Ayala & García, 2014), as well as from the point of view of being able to face problematic situations.

To this 40%, we must add the 16.76% that also show a high perception of risk and greater ability to act against possible dangers, but with a different profile. They use ICT more intensively, often performing a wider range of online activities, are very active in social networks, and highly connected to others. They are willing to ask parents for help in dealing with problematic situations, have greater ability in applying cyber security techniques, while at



the same time parents exercise a type of mediation based on dialogue and moderate supervision rather than on explicit rules and prohibitions. This is the group described as “social and self-confident”. It has been confirmed that the family plays an essential role in developing risk perception, which minimizes problematic experiences, as confirmed by other investigations (Ortega-Barón, Buelga, & Cava, 2016).

This work also confirms that age, as stated by Frutos and Vázquez (2012), is a significant variable, not only for the perception of risk, but also with regard to family and behavioural variables. It has been confirmed that the youngest children are the ones who receive more mediation strategies based on supervision, prohibition, and control of connection time and content. 14.68% are in the so-called “controlled” group. These are minors up to the age of 11 whose use is very limited, but who at the same time have a lack of knowledge of the techniques or tools to increase their security because early training in the home is not common, even to the point of not receiving any advice or recommendations.

The age of 11 is the point of transition to the adult age on the internet, when family mediation strategies of the type described above decrease, and when connection time and use of digital services soars along with greater exposure to risks and opportunities. 26.25% of minors show little perception of risk, and there are four distinct profiles that can be distinguished. A common characteristic among these four groups is that of not perceiving parents and teachers as authority figures, and these children have a negative perception of the help these adults can give to them. They affirm that their parents are absent from the media experience of the children. Two other hypotheses are verified: first, as the educational intervention by parents increases, the perception of risk by minors also increases; secondly, as the perception of risk by minors increases, the exposure to problematic behaviours decreases.

On one hand is the so-called “hooked on the mobile” group (8.44%). They are characterized by their dependence on this device. They are the ones who use the mobile the most, more than three hours a day when they have school and uninterrupted on weekends. They use the Internet to navigate and interact. The group known as “confident players” (8.67%) are mainly male and are characterized by using the Internet basically to play video games and to download movies. They feel that both parents and teachers do not care about what they do on the Internet. The “always connected to friends” group (5.32%) use the Internet primarily to interact with peers, and the “connected and independent” group (3.82%) are older, have an average age of 17 years, and make a more solitary use of Internet, without the need to connect with others, but to publish content, download movies or access information of interest. Regarding device dependence and connection time, no significant relationship was perceived.

In short, although this study only presents a description of how the variables behave in each group and have been unable to establish causal relationships, it is nonetheless a novel and pioneering contribution in placing the perception of risk as a fundamental variable in cyber security. It is necessary to conduct new studies aimed at deepening our understanding of risk perception as an ability when faced with problematic behaviour, and to study measures to influence it as a protection factor in a context in which self-regulation by minors, based on solid value judgments, emerges as a fundamental path for the cyber security of minors in the digital world.

### Funding Agency

This article disseminates results of the research project known as “Domestic Authority, digital training and family learning community with school-age children”, financed by the National Plan (CSO2013-42166-R) within the framework of the Program of Activities on Digital Vulnerability, PROVULDIG (S2015/HUM-3434), co-financed by the Autonomous Region of Madrid and the European Social Fund.

### References

- Aguaded, I. (2011). Media education: An international unstoppable phenomenon UN, Europe and Spain support for edu-communication [La educación mediática, un movimiento internacional imparable. La ONU, Europa y España apuestan por la Educomunicación]. *Comunicar*, 37(XIX), 7-8. <https://doi.org/10.3916/C37-2011-01-01>
- Álvarez-García, D., Barreiro-Collazo, A., & Núñez, J.C. (2017). Cyberaggression among adolescents: Prevalence and gender differences [Ciberagresión entre adolescentes: Prevalencia y diferencias de género]. *Comunicar*, 50(XXV), 89-97. <https://doi.org/10.3916/C50-2017-08>
- Arnaiz, P., Cerezo, F., Giménez, A., & Maquillón, J. (2016). Conductas de ciberadicción y experiencias de ciberbullying entre adolescentes. *Anales de Psicología*, 32(3), 761-769. <https://doi.org/10.6018/analesps.32.3.217461>
- Batalla, C., Muñoz, R., & Ortega, R. (2012). El riesgo de adicción a nuevas tecnologías en la adolescencia: ¿Debemos preocuparnos? *Formación Médica Continuada en Atención Primaria*, 19(9), 519-520. <https://goo.gl/rxqKfM>
- Buelga, S., Iranzo, B., Cava, M.J., & Torralba, E. (2015). Psychological profile of adolescent cyberbullying aggressors. *International Journal of Social Psychology*, 30(2), 382-406. <https://doi.org/10.1080/21711976.2015.1016754>
- Carbonell, X., Fúster, H., Chamarro, A., & Oberst, U. (2012). Adicción a Internet y móvil: Una revisión de estudios empíricos españoles. *Papeles del Psicólogo*, 33(2), 82-89. <https://goo.gl/gPAmKj>
- Catalina, B., López-de-Ayala, M.C., & García, A. (2014). Los riesgos de los adolescentes en Internet: los menores como actores y víctimas de

- los peligros de Internet. *Revista Latina de Comunicación Social*, 69, 462-485. <https://doi.org/10.4185/RLCS-2014-1020>
- Corcoran, I., Mc-Guckin, C., & Prentice, G. (2015). Cyberbullying or cyber aggression? A review of existing definitions of cyber-based peer-to-peer aggression. *Societies*, 5(2), 245-255. <https://doi.org/10.3390/soc5020245>
- Durán, M., & Martínez, R. (2015). Cyberbullying through mobile phone and the Internet in dating relationships among youth people [Ciberacoso mediante teléfono móvil e Internet en las relaciones de noviazgo entre jóvenes]. *Comunicar*, 44(XXII), 159-167. <https://doi.org/10.3916/C44-2015-17>
- Echeburúa, E., Labrador, F., & Becoña, E. (2009). *Adicción a las nuevas tecnologías en adolescentes y jóvenes*. Madrid: Pirámide.
- Fernández-Montalvo, J., Peñalva, A., & Irazabal, I. (2015). Internet use habits and risk behaviours in preadolescence [Hábitos de uso y conductas de riesgo en Internet en la preadolescencia]. *Comunicar*, 44(XXII), 113-120. <https://doi.org/10.3916/C44-2015-12>
- Frutos, B., & Vázquez, T. (2012). Adolescentes y jóvenes en el entorno digital: Análisis de su discurso sobre usos, percepción de riesgo y mecanismos de protección. *Doxa Comunicación*, 15, 57-79 <https://goo.gl/KD6euj>
- Fundación Telefónica (2016). *La Sociedad de la Información en España 2016*. Madrid: Ariel.
- García-del-Castillo, J. A. (2012). Concepto de percepción de riesgo y su repercusión en las adicciones. *Health and Addictions*, 12(2), 133-151. <https://goo.gl/Xcvqmu>
- Garmendia, M., Jiménez, E., & Mascheroni, G. (2017). *Riesgos y oportunidades en Internet y uso de dispositivos móviles entre menores españoles (2010-2015)*. Madrid: Red.es / Universidad del País Vasco.
- Grande, I., & Abascal, E. (2003). *Fundamentos y técnicas de investigación comercial*. Madrid: ESIC.
- Instituto Nacional de Estadística (INE) (Ed.) (2016). *Encuesta sobre equipamiento y uso de tecnologías de información y comunicación en los hogares*. <https://goo.gl/EFno7e>
- Kowalski, R.M., Giumetti, G.W., Schroeder, A.N., & Lattanner, M.R. (2014). Bullying in the digital age: a critical review and meta-analysis of cyberbullying research among youth. *Psychol Bull*, 140(4), 1073-1137. <https://doi.org/10.1037/a0035618>
- Labrador, F.J., & Villadangos, S. (2010). Menores y nuevas tecnologías: Conductas indicadoras de posible problema de adicción. *Psicothema*, 22(2), 180-188. <https://goo.gl/GCFj9s>
- Lee, B.W., & Stapinski, L.A. (2012). Seeking safety on the Internet: Relationship between social anxiety and problematic Internet use. *Journal of Anxiety Disorders*, 26(1), 197-205. <https://doi.org/10.1016/j.janxdis.2011.11.001>
- Lereya, S.T., Samara, M., & Wolke, D. (2013). Parenting behavior and the risk of becoming a victim and a bully/victim: A Meta-analysis Study. *Child Abuse & Neglect*, 37(12), 1091-1108. <https://doi.org/10.1016/j.chiabu.2013.03.001>
- Livingstone, S., Haddon, L., Görzig, A., & Olafsson, K. (2011). Risks and safety on the Internet: *The perspective of European Children. Full findings*. London: LSE, EU Kids Online.
- Livingstone, S., Ólafsson, K., Helsper, E.J., Lupiáñez, F., Veltri, G.A., & Folkvord, F. (2017). Maximizing opportunities and minimizing risks for children online: The role of digital skills in emerging strategies of parental mediation. *Journal of Communication*, 67(1), 82-105. <https://doi.org/10.1111/jcom.12277>
- López-Sánchez, C., & García-del-Castillo, J.A. (2017). La familia como mediadora ante la brecha digital: Repercusión en la autoridad. *Revista Colombiana de Ciencias Sociales*, 8(1), 108-124. <https://doi.org/10.21501/22161201.1928>
- Navarro, R., Ruiz-Oliva, R., Larrañaga, E., & Yubero, S. (2015). The impact of cyberbullying and social bullying on optimism, global and school-related happiness and life satisfaction among 10-12-year-old schoolchildren. *Applied Research in Quality of Life*, 10(1), 15-36. <https://doi.org/10.1007/s11482-013-9292-0>
- Navarro, R., Serna, C., Martínez, V., & Ruiz-Oliva, R. (2013). The role of Internet use and parental mediation on cyberbullying victimization among Spanish children from rural public schools. *European Journal of Psychology of Education*, 28(3), 725-745. <https://doi.org/10.1007/s10212-012-0137-2>
- Ortega-Barón, J., Buelga, S., & Cava, J. (2016). The influence of school climate and family climate among adolescents victims of cyberbullying [Influencia del clima escolar y familiar en adolescentes, víctimas de ciberacoso]. *Comunicar*, 46(XXIV), 57-65. <https://doi.org/10.3916/C46-2016-06>
- Reolid, R., Flores, M., López, M., Alcántud, P., Ayuso, C., & Escolar, F. (2016). Frecuencia y características de uso de Internet por adolescentes españoles. Un estudio transversal. *Arch. Argent. Pediatr*, 114(1), 6-13. <https://doi.org/10.5546/aap.2016.6>
- Romera, E.M., Cano, J.J., García-Fernández, C., & Ortega-Ruiz, R. (2016). Cyberbullying: Social competence, motivation and peer relationships [Cyberbullying: Competencia social, motivación y relaciones entre iguales]. *Comunicar*, 48(XXIV), 71-79. <https://doi.org/10.3916/C48-2016-07>
- Sánchez-Carbonell, X., Beranuy, M., Castellana, M., Chamarro, A., & Oberst, U. (2008). La adicción a Internet y a móvil: ¿moda o trastorno? *Adicciones*, 20(2), 149-160. <https://goo.gl/5TAs6q>
- Tokunaga, R.S. (2010). Following you home from school: A critical review and synthesis of research on cyberbullying victimization. *Computers in Human Behavior*, 26(3), 277-287. <https://doi.org/10.1016/j.chb.2009.11.014>
- Torrecillas, T., Vázquez, T., & Monteagudo, L. (2017). Percepción de los padres sobre el empoderamiento digital de las familias en hogares hiperconectados. *El Profesional de la Información*, 26(1), 97-104. <https://doi.org/10.3145/epi.2017.ene.10>
- Villa-Moral, M., & Suárez, C. (2016). Factores de riesgo en el uso problemático de Internet y del teléfono móvil en adolescentes españoles. *Revista Iberoamericana de Psicología y Salud*, 7, 69-78. <https://goo.gl/trVW5u>
- Yahner, J., Dank, M., Zweig, J.M., & Lachman, P. (2015). The Co-occurrence of physical and cyber dating violence and bullying among teens. *Journal of Interpersonal Violence*, 30(7), 1079-1089. <https://doi.org/10.1177/0886260514540324>

If you are interested  
in Education and  
Communication...



# Comunicar

GROUP

Publications, Sources,  
Collections, Training,  
Workshops and Activities  
for Media Literacy  
Enhancing

[www.grupocomunicar.com](http://www.grupocomunicar.com)





# Spies and security: Assessing the impact of animated videos on intelligence services in school children

Espías y seguridad: Evaluación del impacto de vídeos animados sobre los servicios de inteligencia en escolares

- Dr. Antonio M. Díaz-Fernández is Associate Professor in the Department of International Public Law, Criminal Law, and Procedural Law at the University of Cadiz (Spain) (antonio.diazfernandez@uca.es) (<https://orcid.org/0000-0002-2376-0374>)
- Cristina del-Real-Castrillo is Predoctoral Researcher in the Department of International Public Law, Criminal Law, and Procedural Law of the University of Cadiz (Spain) (cristina.delreal@uca.es) (<https://orcid.org/0000-0003-3069-4974>)

## ABSTRACT

Making the work of security organizations known to school children is a means of mitigating feelings of insecurity provoked by the diffusion of information on terrorist attacks in communications media and through social media. Whilst there is a longer tradition of projects to educate school children on the police and the armed forces, no comparable projects have been found on the intelligence services. With the objective of filling this gap, the authors designed and produced two animated educational videos for Spanish school children on the Spanish intelligence service: The National Intelligence Center (CNI). In this paper, the impact of the videos is measured in relation to the knowledge, the stereotypes, and the attitudes of school children towards the CNI. To do so, two questionnaires were administered to 1,092 school children aged 8 and 12, before and after viewing the videos. The results of the questionnaire prior to screening the videos showed that the school children held no knowledge of the intelligence services, and expressed highly developed stereotypes, and moderately negative attitudes towards them. Student-t tests for related samples were used to confirm the responses, on the basis of which it was found that the videos modified both knowledge and stereotyping, as well as attitudes towards the CNI. Specifically, following the screenings the knowledge of the school children improved, stereotyping diminished, and positive attitudes increased.

## RESUMEN

Dar a conocer a los escolares las organizaciones de seguridad es un medio para reducir la inseguridad generada por la difusión de los atentados terroristas en los medios de comunicación y redes sociales. Mientras que hay una mayor tradición en proyectos para educar a los escolares sobre la policía y los militares, no se han encontrado proyectos análogos sobre los servicios de inteligencia. Con el objetivo de suplir esta carencia, los autores diseñaron y produjeron dos vídeos animados educativos destinados a escolares españoles sobre el servicio de inteligencia español, el Centro Nacional de Inteligencia (CNI). Este artículo mide cuál es el impacto de los vídeos en el conocimiento, los estereotipos y las actitudes de los escolares hacia el CNI. Para ello, se aplicaron dos cuestionarios a 1.092 escolares de 8 a 16 años, antes y después de la visualización de los vídeos. Los resultados previos a la visualización mostraron un conocimiento nulo, alto grado de estereotipos y actitudes moderadamente negativas hacia los servicios de inteligencia. Se comprobaron las respuestas mediante pruebas T para muestras relacionadas, a partir de las cuales se obtuvo que los vídeos modificaban el conocimiento, los estereotipos y las actitudes hacia el CNI. Específicamente, tras la visualización mejoró el conocimiento de los escolares, disminuyó el grado de estereotipos y aumentaron las actitudes positivas.

## KEYWORDS | PALABRAS CLAVE

Attitudes, school, Spain, stereotypes, childhood, security, intelligence service, video.  
Actitudes, escuela, España, estereotipos, infancia, seguridad, servicio de inteligencia, vídeo.





## 1. Introduction

All children and young adolescents with whom we speak will have been born after the 2001 terrorist attacks against the United States. Terrorism has unleashed attacks against the cities in which people of that age live ever since they have been able to reason. If in the 1930s, children feared wild beasts and thunder storms, successive generations would live in fear of nuclear warfare, and today fear is awoken in children by the thought of tsunamis and hurricanes and terrorism (Garbarino & al., 2015). Teachers would benefit from the background information that is needed to explain the context of terrorist attacks and the existence of a State organization that attempts to counter terrorism. As stated by Jaramillo (2005), teachers should be able to choose from among the different tools available for their educational needs.

Verbal information and vicarious learning are known to have a role in prompting anxiety in young children and causing them to succumb to fear (Field & Lawson, 2003), to which the role of television in developing children's perceptions of personal vulnerability may be added (Romer & al., 2003). In fact, the change from fear of 'thunder' to fear of 'terrorism' is, without doubt, due to the notorious relation that exists between consumption of the communications media and the perception of threats and vulnerability that, although present in most individuals, is of particular concern among children. Although younger children are in general more exposed and affected by the news than older children and adults, catastrophic news such as the attacks on New York, Madrid, London, Paris, and Barcelona can have an intense impact at all ages. One study completed with children from schools in the city of New York brought to light a wide range of mental health problems (Hoven & al., 2002), which included agoraphobia (15%), anxiety due to separation (12%), and disorder due to post-traumatic stress (11%) as consequences of the attacks. The children who reported greater exposure to the news showed higher ratios of Post-Traumatic Stress Disorder (PTSD) than those children with less exposure to television. The impact of terrorism on young children through their exposure to the communications media and social media was observed in thirteen studies that Pfefferbaum (2018) compiled on the matter.

Children learn through observation and imitation, so the role of their intermediaries, such as parents and school teachers, in controlling which messages are communicated and how those messages are conveyed is a fundamental one (Comer & Kendall, 2007; Punch, 2002). Parents may do little more than recreating the stereotypes associated with James Bond films and the novels of John Le Carré to which the children may have previously been exposed through the media, while school is a territory where spies<sup>1</sup> are not found (Quintelier, 2015). However, while the information voids are easy to define, it is more complex to confront the stereotypes; the set of –positive or negative– beliefs that one group of people hold in the form of cognitive schemes that influence the way they process social information (McGarty & al., 2002). This view fits in with the proposal of van Deth & al. (2011), which is used in this investigation, that distinguishes between 'Political Awareness' (awareness of institutions) and 'Functional Knowledge' (what they do) when gathering information in the field.

The central objective of the educational system is from very early ages to transmit commonly shared values such as human rights and the freedoms that characterize democratic societies (Starkey, 2012). As reflected in Gardner (1991), perceptions of the police and the world of law enforcement among children represent a struggle between the goodies and the baddies. If we follow DiSessa (1982: 465), who sustained that appropriate opinions on the police need to be established during the first years of infancy, it would also follow that the existence of the intelligence services as an institution working to prevent terrorist attacks and in hot pursuit of the perpetrators should be communicated to the younger citizens of a democracy.

The constant appearance of 'secret' agencies in the television news combating terrorism in the city, terrorist alerts, simulated evacuations, telephone surveillance... does nothing to improve the situation. The studies by Klein & al. (2009), DeVoe & al. (2011) and Carpenter & al. (2012) on the reactions of young children following terrorist attacks showed that children who were informed by their carers expressed less anxiety. Therefore, if the participation of children in a democracy is to be free from fear, it is important to work with them in these initial phases of their lives, because this period of their life, as Sapiro (2004) has demonstrated, is essential in the formation of their points of view and their commitment towards good citizenship.

The differences between well-informed and poorly informed citizens can be dramatic (Delli Carpini, & Keeter, 1996: 272). Therefore, transmitting a better and a complete image of the intelligence services to younger citizens, when still forming their opinions on the concept of democracy, and transmitting what this political form of governance implies, will have two positive consequences. On the one hand, its consequence will be greater legitimacy and trust among citizens; and, on the other, it will imply increased decision-making capacity and informed opinions on the

actions carried out by the intelligence services (Díez-Nicolás, 2012: 162). Our project is inspired by that same logic; it contributes to bridging the information gaps and the existing stereotypes on the intelligence services through the development and testing of this pedagogic material, in such a way that the impact of historic events –all the greater at earlier ages (Schumann & Scott, 1989)– can be mitigated.

Ever since the 1960s, studies have been conducted on what the perceptions of young children are towards the police. However, the authors are unaware of any studies on the same topic, but with regard to spies. The logic behind this lack of studies is, in our opinion, that, unlike the police –and to some extent the military too– children and adolescents have no direct encounters with spies. Among other reasons, spies work undercover, children and adolescents are never likely to meet them or to interact with them, neither will they have close family members who identify themselves as spies, nor are spies identified with a logotype, and they have no visible installations that can be visited. Therefore, although we may learn from the methodology of those studies, comparisons with the way in which schoolchildren perceive the different law enforcement institutions of a democratic State are invalid. Nevertheless, we can indeed draw out some interesting reflections from these experiences for our study.

With regard to the methodology, we have found studies that measure knowledge and/or opinion at two points in time between which the children have been exposed to some form of input, as in this contribution. For example,

after a specific activity (Hopkins & al., 1992) or after interacting with the police at a school visit in the playground (Derbyshire, 1968). We also find studies with schools where the police are permanently stationed for crime-prevention and mediation tasks and other studies on schools where the police have no permanent presence (Hopkins & al. 1992), as well as studies completed after screening different videos to an audience of schoolchildren with fragments of police films and television series (Low & Durkin, 2001).

It must not be thought that all of the conclusions drawn from these studies can be generalized. For some authors, children not only distrust the police, but they also show a lack of understanding or hold misperceptions on the role of the police in society (Brown & Benedict 2002; Hurst & Frank 2000). The views of young people are in many studies worse than the views expressed by children (Loader, 1996; McAra & McVie, 2010), due to young people making greater use of public spaces. They also have a greater likelihood of entering into contact and indeed conflict with the police, including negative experiences of policing, as young people start to socialize more with peers in public spaces free from parental care. In studies from North America, trust in the police amongst ethnic minority communities is found to be considerably lower than in white communities (Hurst & al., 2000; Flexon & al., 2009). Evidence of gender differences in attitudes towards the police is mixed, with some studies finding no differences (Hinds, 2007), while others find that either males (Weitzer & Tuch, 1999) or females (Flexon & al., 2009) hold more negative views.

With the objective of supplementing the lack of educational materials designed for school children on the intelligence services, the authors conceptualized and designed two animated videos. The objective of this article was to measure the impact of having viewed the video on the knowledge, the stereotypes, and the attitudes of school children in relation to the Spanish intelligence service. Therefore, the research question proposed in this article is: how will viewing the videos on CNI modify the knowledge, the stereotypes, and the attitudes of school children in relation to the intelligence service? The hypothesis is that viewing the animated videos will increase knowledge of CNI, reduce stereotypes, and favor more positive attitudes.

**The screenings of the informative animated videos increased knowledge of the intelligence services, reduced stereotypes associated with the work of the agents, and increased positive attitudes towards the work of the CNI. Hence, our study has confirmed the starting hypothesis of the authors. The few studies completed with the police show a change before and after the children were exposed to the input.**

The investigation is designed as a quasi-experimental methodology, and the design involved only one group with which to evaluate the changes in the variables before and after having screened the corresponding video to each group. In section 2 of this paper, the process of designing the videos and the methodology of the study are set out. The results are summarised in section 3 and, in section 4, the results are discussed, and future lines of investigation that use the videos are proposed.

## 2. Material and methods

### 2.1. Preparation of the animated video

The initial objective was to prepare two animated videos for children between 8 and 11 years in age and for young adolescents between 12 and 16 years in age<sup>2</sup> through which to explain the role of an intelligence service –the Spanish CNI– in a democratic society<sup>3</sup>. The use of different formats was considered during the design of the project: comic, animated video, and story. However, directing the project at the generations that fit within what Palfrey & Gasser (2008) have baptized the generation of ‘digital natives’ led us to select the animated video rather than the comic or the story. In particular, the video format was justified insofar as i) it permits a combination of verbal, visual, textural, graphical, and musical mediums; ii) audio-visual channels are the principal on-line format that the target population consumes; and, iii) it can be reproduced on different channels (television, Internet) and devices (mobiles, computers, tablets, etc.), permitting individual screenings or as part of educational programs for citizenship.

The messages that were used to convey the information on the role of an intelligence service in a democratic State were known to the authors from previous research (Díaz-Fernández, 2005, 2016). The final list of messages included in the videos appears in Table 1. There were differences in the internal layout of the script, if those messages were: 1) Explicit (conveyed through explicit sentences in the text) or implicit (conveyed through images), or if they were; 2) Transversal (appearing throughout the video) or specific (appearing at a specific time in the video).

The scripts of the two videos were drafted on the basis of the final list of 14 messages. Due to the different degrees of maturity of both groups, some differences were established between both videos: 1) A simpler language with short sentences for the children; 2) Simplified messages for the children (for example, instead of the three forms of control, only judicial supervision was explained to them, as it was the one they knew best); and; 3) The use of simpler drawings in the video for the children with fewer details than in

the video for the adolescents (Image 1 & 2). The images were complemented with emotive, affective, decorative, and musical elements, in accordance with the suggestions from Barker & al. (2003) and Meyer (2012), adopting the recommendations and the experiences of the use of didactic videos compiled in Cabero (2004). The music was specially composed for both videos.

### 2.2. Participants

A total of 1,092 children and adolescents (n=1,092) participated in the study (with a confidence interval of 95% and margin of error of  $\pm 3\%$ ). The participants were drawn from eight Spanish schools in the cities of Cadiz, Jerez de la Frontera, Mairena del Aljarafe, Gines, and Seville. 489 (44.2%) of the participants were boys, and 603

**Table 1. List of messages by order of appearance and condition**

Messages to transmit	Condition
1) CNI is the acronym of the Centro Nacional de Inteligencia	Explicit, Specific
2) CNI is an entity that supports the decisions of the Government	Explicit, Transversal
3) Men and women work for the CNI in equal numbers	Implicit, Transversal
4) CNI employees are of all ages	Implicit, Transversal
5) They are agents, not spies, and there are two types: analysts and operators	Explicit, Transversal
6) The operatives obtain information through different mediums, and the analysts analyse it	Explicit, Specific
7) The intelligence report is the document where they express their conclusions	Explicit, Specific
8) Their work is different from the work of the police, the military, and private detectives	Explicit, Specific
9) They use no arms	Explicit, Specific
10) They have families and children, but their families may sometimes be unaware of their profession	Explicit, Specific
11) They have three forms of supervision: political, judicial, and parliamentary	Explicit, Specific
12) They have their headquarters in Madrid	Explicit, Implicit, Transversal
13) Anybody can work for the CNI	Explicit, Specific
14) They are not secret, but discrete	Explicit, Specific

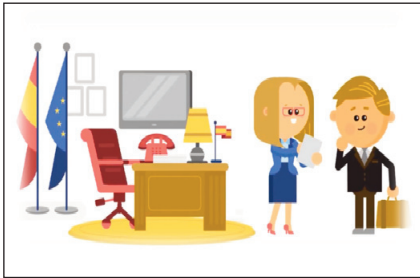


Image 1. Video characters for Primary School (EP) Pupils.



Image 2. Video characters for Secondary School (ESO) Pupils.

(55.8%) were girls. The age of the sample fluctuated between 8 and 16 years old, with an average of 12.14 years ( $SD=2.54$ ). The educational levels of the school children corresponded to two educational stages: the group of “Primary Education” (EP) was

composed of 495 participants (45.3%), and the group of “Secondary Education” (ESO), of 597 participants (54.7%). In addition, each sample is close to the average size of the samples habitually used in studies on knowledge and evaluation of the police such as those by Moretz (1980) with 137 participants, Hurst & al. (2000) with 852, Nihart & al. (2005) with 1,029, and Sindall & al. (2016) with 1,500. The schools were selected in accordance with two criteria to guarantee the representativeness of the socio-economic and demographic data: i) model of management and funding (public, private, and state-assisted); and, ii) (low, medium, and high) socio-economic level. The schools were therefore categorized as follows: private/high (1); state-assisted/high (2); state-assisted/medium (2); public/medium (2); and, public/low (2). All the schools were in large, medium, and small cities with populations of between 700,000 and 13,000 inhabitants.

### 2.3. Questionnaire

The questionnaire was structured into four sections corresponding to the four variables under analysis with a total of 30 items: 1) Sociodemographic data; 2) Knowledge of CNI; 3) Stereotypes on the work of intelligence service agents; 4) attitudes towards CNI. The following describes the content of each of the four sections.

In sociodemographic data, only the educational stage (EP or ESO) and the sex of the participant were recorded. This decision was agreed with the teaching centres, to avoid having to request the informed consent of the parents when gathering a minimum of personal information (Thomas & O’Kane, 1998).

Knowledge of the CNI was measured through six items with three possible responses: one correct, another wrong, and a third that affirmed no knowledge (Don’t know/No opinion). These responses scored between 0 and two following the criteria of Mondak (1999), according to which the assumption of not knowing is an intermediate measurement between right and wrong knowledge. Three levels were therefore defined: 0=wrong knowledge; 1=don’t know; and 2=right knowledge. This measurement obtained acceptable scores for internal consistency ( $\alpha=.95$ ).

The stereotypes on the work of the intelligence agents were measured with 16 items divided into: 1) Stereotypes associated with the influence of the communications media (4 items) ( $\alpha=.88$ ); 2) Stereotypes associated with police work (4 items) ( $\alpha=.96$ ); 3) Stereotypes associated with military work (4 items) ( $\alpha=.50$ ); and, iv) stereotypes associated with the work of private detectives (4 items) ( $\alpha=.93$ ). As may be seen, the stereotypes associated with military work was the only block with no reliable internal consistency ( $\alpha\geq.70$ ). An analysis of the correlations matrix identified one of the items as related in a negative manner with the other items of the construct (“work together in a group”), so this item was removed from the final analysis, thereby obtaining greater internal consistency and reliability ( $\alpha=.81$ ). Each item was positively expressed (for example, “spies are secret”) and the participants had to show their degree of agreement or disagreement with the affirmation on a 5-point Likert-type scale, where 1 was “completely disagree”, and 5 was “completely agree”, and where point 3 marked the intermediate point, “neither agree nor disagree”. For the students of EP, emoticons were shown alongside the scale that expressed each of the grades, so that they would better understand the test responses.

The attitudes towards CNI were measured through six items on a 5-point Likert-type scale, where one was “completely disagree” and 5 “completely agree”, and where point 3 marked the intermediate point, “neither agree nor disagree”. Items 2, 3 and six were formulated in positive terms when describing the CNI, where one was considered as a completely negative attitude towards the CNI and five as a completely positive attitude towards CNI. During the preparation of the database, the scores for items 1, 4 and five that were formulated in negative terms, were inverted (1=5; 2=4; 4=2; 5=1) before the analysis was completed. In this way, high scores in the



sum of items indicated a favourable attitude towards the CNI. This measurement system yielded acceptable scores for internal consistency reliability ( $\alpha=.97$ ).

## 2.4. Procedure

The video was edited with the help of a communications company between April and October 2016. The first data-collection session, the video screening, and the second data-collection session with the students took place during October. The sample of participants was selected from among the schoolchildren at each centre by the Direction of the centre. An informed consent form was provided to the schools, although none of them considered its use necessary. Data collection was organized in two sessions with each one of the classes. During the first session, the participants were invited to fill in the questionnaire as a self-administered exercise. The researcher and the class tutors were at all times present to respond to the doubts of the participants and to supervise the collection of data so that it was done in the way that had been agreed with the centre. In the second session, the participants were shown the animated video corresponding to their educational stage (EP or ESO). Once the video had ended, the students were once again administered the same questionnaire as in the first session.

## 3. Analysis and results

The results obtained after the first administration of the questionnaire are shown in Table 2. As may be seen, the “average” level of knowledge of the participants was low, with 95.9% of participants giving responses between 0 –wrong knowledge– and 1 –no knowledge–. It was, in addition, observed that both the standard deviation and the variance were small. These data allowed us to conclude that both the EP and the ESO students held little or no knowledge of the CNI and its functions.

The second variable, “stereotypes” received a higher score than the neutral value of three (3=“neither agree nor disagree”). A priori, this result might indicate that the participants were so unaware of the matter that they were unable to identify each of the stereotypes included in the questionnaire. However, the analysis by type of stereotype –associated with the influence of the communications media, police work, military work, and the work of private detectives– yielded different results. In Table 3 it may be seen that the stereotypes associated with the communications media obtained the highest scores. The most representative features that the participants employed to refer to the work of a spy were, in the first and second place, “spies follow people who don’t know they are being followed” (100% scored it with a 5, “completely agree”) and “they infiltrate dangerous places” (70.3% scored it with a 5, “completely agree”). As with the variable “knowledge”, the standard deviation and the variance were small, from which it may be understood that the scores for the stereotypes were very similar.

	<b>Media stereotypes</b>	<b>Police stereotypes</b>	<b>Military stereotypes</b>	<b>Detective stereotypes</b>
Mean	4.15	3.57	2.17	3.82
Median	4.00	3.50	2.33	3.75
Mode	4.00	3.25	2.33	3.75
Std. Deviation	.46	.62	.25	.41
Variance	.22	.38	.06	.17

and I don’t know whether they are spying on me” and “I don’t trust them to work for the Spanish people”. These scores provide evidence that the participants perceive the CNI agents as “unknown”, “undercover”, and as “dangerous” agents who cannot be controlled. No significant differences were observed for the three variables according to the educational stage or the sex of the participants.

Finally, with regard to the variable “attitudes”, it may be seen that the participants had in their majority negative attitudes towards CNI (Mean=2.04; Median=1.84; Mode=1.83) to a very similar extent. Specifically, the items for which the lowest scores were obtained, in first and second place, were “they are undercover,

### 3.1. Effects of video screenings

When analysing the differences between the scores obtained for the variables before and after the video screenings, it was concluded that those scores differed significantly with respect to all the items under analysis ( $p < 0.001$  and  $r > 0.8$  for all the  $t$ -tests). Under the variable “knowledge” ( $t = -151.850$ ;  $p < 0.001$ ;  $r = 0.97$ ), the screening of the video increased knowledge of the work, the organization, and the function of the CNI in a democratic State in the total sample of participants ( $\text{Mean}_{\text{before}} = .515$ ;  $\text{Mean}_{\text{after}} = 1.93$ ). The effect size of the video screening for this variable ( $r^2 = 0.95$ ) allows us to affirm that 95% of the observed increase in the scores for “knowledge” of participants was due to the screening of the videos.

Table 4. Average scores by educational stage						
	Knowledge		Stereotypes		Attitudes	
	Before	After	Before	After	Before	After
EP	.519	1.92	3.40	1.53	2.02	4.58
ESO	.510	1.94	3.45	1.52	2.05	4.63

Note: All differences are significant ( $p < 0.001$ ).

Table 5. Average scores by sex						
	Knowledge		Stereotypes		Attitudes	
	Before	After	Before	After	Before	After
Boys	.516	1.93	3.42	1.52	2.05	4.58
Girls	.514	1.93	3.43	1.53	2.03	4.62

Note: All differences are significant ( $p < 0.001$ ).

Statistically significant differences were also obtained for the variable “stereotypes” before and after the video screening ( $t = 193.849$ ;  $p < 0.001$ ;  $r = 0.97$ ). In total, the scores for “stereotypes” fell for all participants from 3.426 ( $\text{Mean}_{\text{before}} = 3.426$ ) to 1.526 ( $\text{Mean}_{\text{after}} = 1.526$ ).

Finally, the participants presented more favourable scores towards the CNI under the variable “attitudes” after the video screening

corresponding to their age group ( $t = -177.682$ ;  $p < 0.001$ ;  $r = 0.98$ ), with an effect size for the video screenings of  $r^2 = 0.966$ , which allows us to affirm that 96.6% of the increase in the positive attitudes towards the CNI was due to the participants having watched the videos. In Tables 4 and 5, the average scores for “knowledge”, “stereotypes” and “attitudes” before and after the video screening are shown by educational stage and sex.

### 4. Discussion and conclusions

These data allow us to conclude that the screenings of the informative animated videos increased knowledge of the intelligence services, reduced stereotypes associated with the work of the agents, and increased positive attitudes towards the work of the CNI. Hence, our study has confirmed the starting hypothesis of the authors. The few studies completed with the police show a change before and after the children were exposed to the input, although not as significant, nor exclusively attributable to one variable, because, for example, in the studies with resident police officers, it was not possible to measure whether the impact was due to the presence of a police officer or because of the personality of the specific police officer present at the educational centre (Hopkins & al. 1992). However, the impact following the screening of the videos was higher than the impact reported in studies on the police force. Unlike the studies with the police, it was confirmed that the lack of direct contact with the intelligence service meant that the school children had weaker and more erroneous knowledge of their functions. However, despite that lack of knowledge, familiarity with the work ‘spy’ meant that they assumed the majority of stereotypes that are conveyed through the communications media in its broadest sense.

Moreover, there is a great similarity between the results for students of both sexes with the results in Hinds (2007) when, in other studies, it appeared that either one or the other sex was the most critical (Weitzer & Tuch, 1999; Flexon & al., 2009). The population of Spanish school children is therefore of greater similarity than those of other countries. Immigration is highly concentrated in some cities, and within those, in specific neighborhoods and colleges, so much so that the impact of that variable was not measured. Nevertheless, the schools that were selected showed a very wide socioeconomic composition, encompassing conflictive neighborhoods and elite centres of a religious nature, which strengthens the similarity of the views that were gathered following the screening of the video. Neither was an abrupt cut-off point observed between age groups (children and young adolescents), as was detected by Sindall & al. (2016).

The importance of having pedagogic materials for parents and educators has been demonstrated, in order to widen knowledge of the security institutions among children and young people across the world where the attacks that strike at the heart of our cities appear to be increasingly recurrent. Moreover, an understanding of the knowledge that school children hold of these “secret” agencies would be relevant information with which to develop information campaigns directed at improving their role in a democratic State. This is a line of work that the authors

wish to follow in a subsequent phase, in collaboration with professionals to develop didactic units that can be employed individually or jointly with other materials and campaigns.

The videos will be used in future investigations to see whether they reduce the fear of terrorism and perceptions of insecurity among school children, considering variables such as hours of exposure to the news and use of social media. These variables have been proposed in the studies of Smith & Wilson (2002), which established that watching television was a predictor of sensations of fear, and that of Comer & al. (2008), which established that time viewing the television and Internet were variables associated with anxiety, perceptions of fear, and personal vulnerability. Our hypothesis for future research is that the improved knowledge provided by the videos would help to soothe the anxiety and the stress expressed by young people in reaction to the news of terrorist attacks when the story of the “baddies” confronts the story of the “goodies” within a State that is there to protect them and yet, as has been confirmed, remained imperceptible.

### Funding Agency

This research has been funded through the collaborative agreement existing between the University of Cadiz and the CNI. This publication has been partially granted by INDESS (Research University Institute for Sustainable Social Development) at the University of Cadiz, Spain.

### Notes

<sup>1</sup> Although the authors prefer the term ‘agent’, for the purposes of clarity, the more common term of ‘spy’ was used with young children.

<sup>2</sup> The Spanish Educational System is organized in its obligatory phase in Primary Education (Educación Primaria) (EP), between 6 and 12 years in age and Compulsory Secondary Education (Educación Secundaria Obligatoria) (ESO) from 12 to 16 years in age.

<sup>3</sup> The videos are available from the following link <http://bit.ly/2BMmvTF> to the University of Cadiz

### References

- Barker, J., & Weller, S. (2003). ‘Is it fun?’ Developing children centred research methods. *International Journal of Sociology and Social Policy*, 23(1/2), 33-58. <https://doi.org/10.1108/01443330310790435>
- Brown, B., & Benedict, W. (2002). Perceptions of the police: past findings, methodological issues, conceptual issues, and policy implications. *Policing*, 25, 543-580. <https://doi.org/10.1108/13639510210437032>
- Cabero, J. (2004). El diseño de vídeos didácticos. In J. Salinas, J. Cabero & I. Aguaded (Coords.), *Tecnologías para la educación: Diseño, producción y evaluación de medios para la formación docente* (pp. 141-156). Madrid: Alianza.
- Carpenter, A.L., Elkins, R., Kerns, M., Chou, C., Green, T., & Comer, J. (2012). Event-related household discussions following the Boston marathon bombing and associated posttraumatic stress among area youth. *Journal of Clinical Child & Adolescent Psychology*, 46, 331-342. <https://doi.org/10.1080/15374416.2015.1063432>
- Comer, J.S., & Kendall, P. (2007). Terrorism: the psychological impact on youth. *Clinical Psychology*, 14, 179-212. <https://doi.org/10.1111/j.1468-2850.2007.00078.x>
- Comer, J.S., Furr, J.M., Beidas, R.S., Babyar, H.M., & Kendall, P.C. (2008). Media use and children’s perceptions of societal threat and personal vulnerability. *Journal of Clinical Child & Adolescent Psychology*, 37(3), 622-630. <https://doi.org/10.1080/15374410802148145>
- Delli-Carpini, M., & Keeter, S. (1996). *What Americans know about politics and why it matters*. New Haven: Yale University Press.
- Derbyshire, R.L. (1968). Children’s perceptions of the police: a comparative study of attitudes and attitude change. *Journal of Criminal Law and Criminology*, 59(2), 183-190. <https://doi.org/10.2307/1141938>
- DeVoe, E.R., Bannon, W., Klein, T.P., & Miranda-Julian, C. (2011). Young children in the aftermath of the World Trade Center attacks. *Psychological Trauma*, 3(1), 1-7. <https://doi.org/10.1037/a0020567>
- Díaz-Fernández, A.M. (2005). *Los servicios de inteligencia españoles*. Madrid: Alianza.
- Díaz-Fernández, A.M. (2016). *Espionaje para políticos*. Valencia: Tirant Lo Blanch.
- Díez-Nicolás, J. (2012). La imagen de los servicios de inteligencia en la sociedad. *Inteligencia y Seguridad*, 12, 161-181. <https://doi.org/10.5211/iyss.11.article8>
- DiSessa, A. (1982). Unlearning Aristotelian physics: a study of knowledge-based learning. *Cognitive Science*, 6, 37-75. [https://doi.org/10.1207/s15516709cog0601\\_2](https://doi.org/10.1207/s15516709cog0601_2)
- Field, A.P., & Lawson, J. (2003). Fear information and the development of fears during childhood: effects on implicit fear responses and behavioural avoidance. *Behaviour Research and Therapy*, 41, 1277-1293. [https://doi.org/10.1016/S0005-7967\(03\)00034-2](https://doi.org/10.1016/S0005-7967(03)00034-2)
- Flexon, J.L., Lurigio, A.J., & Greenleaf, R.G. (2009). Exploring the dimensions of trust in the police among Chicago juveniles. *Journal of Criminal Justice*, 37(2), 180-189. <https://doi.org/10.1016/j.jcrimjus.2009.02.006>
- Garbarino, J., Governale, A., Henry, P., & Nesi, D. (2015). Children and Terrorism, Sharing child and youth development knowledge. *Social Policy Report*, 29(2). <https://goo.gl/uqoCJC>
- Gardner, H. (1991). *The unschooled mind: how children think and how schools should teach*. New York: Basic Books.
- Hinds, L. (2007). Building police-youth relationships: the importance of procedural justice. *Youth Justice*, 7(3), 195-209. <https://doi.org/10.1177/1473225407082510>
- Hopkins, N., Hewstone, M., & Hantzi, A. (1992). Police-schools liaison and young people’s image of the police: An intervention evaluation. *British Journal of Psychology*, 83, 203-220. <https://doi.org/10.1111/j.2044-8295.1992.tb02435.x>

- Hoven C.W., Duarte, C.S., Wu, P., & Rosen, C. (2002). *The effects of the World Trade Center attack on New York City public school students. Initial report to the New York City Board of Education*. New York State Psychiatric Institute, New York.
- Hurst, Y.G., Frank, J., & Browning, S.L. (2000). The attitudes of juveniles toward the police: A comparison of black and white youth. *Policing*, 23, 37-53. <https://doi.org/10.1108/13639510010314607>
- Hurst, Y.G., & Frank, J. (2000). How kids view cops: the nature of juvenile attitudes toward the police. *Journal of Criminal Justice* 28, 189-202. [https://doi.org/10.1016/S0047-2352\(00\)00035-0](https://doi.org/10.1016/S0047-2352(00)00035-0)
- Jaramillo, A. (2005). Fictional video and scientific education: a paradoxical relationship. [Video argumental y educación en ciencias: una relación paradójica]. *Comunicar*, 24, 121-128.
- Klein, T.P., Devoe, E.R., Miranda-Julian, C. and Linas, K. (2009). Young children's responses to September 11th: The New York City experience. *Infant Mental Health Journal*, 30, 1-22. <https://doi.org/10.1002/imhj.20200>
- Loader, I. (1996). *Youth, Policing, and Democracy*. Basingstoke: Macmillan. <https://doi.org/10.1057/9780230373839>
- Low, J., & Durkin, K. (2001). Children's conceptualization of law enforcement on television and in real life. *Legal & Criminological Psychology*, 6, 197-214. <https://doi.org/10.1111/j.2044-8295.1992.tb02435.x>
- McAra, L., & McVie, S. (2010). Youth crime and justice: Key messages from the Edinburgh study of youth transitions and crime. *Criminology and Criminal Justice* 10(2), 179-209. <https://doi.org/10.1177/1748895809360971>
- McGarty, C., Yzerbyt, V.Y., & Spears, R. (2002). Social, cultural and cognitive factors in stereotype formation. In C. McGarty, & R. Spears (Eds.), *Stereotypes as explanations. The formation of meaningful about social groups*. Cambridge: Cambridge University Press. <https://doi.org/10.1017/CBO9780511489877.002>
- Meyer, M.E. (2012). New directions in critical television studies: Exploring text, audience, and production in communication scholarship. *Communication Studies*, 63(3), 263-268. <https://doi.org/10.1080/10510974.2012.684291>
- Mondak, J.J. (1999). Reconsidering the measurement of political knowledge. *Political Analysis*, 8(1), 57-82. <https://doi.org/10.1093/oxford-journals.pan.a029805>
- Moretz, W.J. (1980). Kids to cops 'We think you're important, but we're not sure we understand you'. *Journal of Police Science and Administration*, 8(2), 220-224.
- Nihart, T., Lersch, K.M., Sellers, C.S., & Mieczkowski, T. (2005). Kids, cops, parents and teachers: exploring juvenile attitudes toward authority figures. *Western Criminology Review*, 6(1), 79-88.
- Palfrey, J., & Gasser, U. (2008). *Born digital: Understanding the first generation of digital natives*. New York: Basic Books.
- Pfefferbaum, B., Phebe, T., & Rose, L. (2018). Media effects in youth exposed to terrorist incidents: A historical perspective, child and family disaster psychiatry. *Current Psychiatry Reports*, 20(11), 1-11. <https://doi.org/10.1007/s11920-018-0875-1>
- Punch, S. (2002). Research with children: The same or different from research with adults? *Childhood*, 9(3), 32-41. <https://doi.org/10.1177/0907568202009003005>
- Quintelier, E. (2015). Intergenerational transmission of political participation intention. *Acta Politica*, 50(3), 279-296. <https://doi.org/10.1057/ap.2014.19>
- Romer, D., Jamieson, K.H., & Aday, S. (2003). Television news and the cultivation of fear of crime. *Journal of Communication*, 53, 88-104. <https://doi.org/10.1111/j.1460-2466.2003.tb03007.x>
- Sapiro, V. (2004). 'Not your parents' political socialization: Introduction for a new generation. *Annual Review*, 7(1), 1-23. <https://doi.org/10.1146/annurev.polisci.7.012003.104840>
- Schumann H., & Scott, J. (1989). Generations and collective memories. *American Sociological Review*, 54, 359-81. <https://doi.org/10.2307/2095611>
- Sindall, K., McCarthy, D.J., & Brunton-Smith, I. (2016). Young people and the formation of attitudes towards the police. *European Journal of Criminology*, 14(3), 344-364. <https://doi.org/10.1177/1477370816661739>
- Smith, S.L. & Wilson, B.J. (2009). Children's comprehension of and fear reactions to television news. *Media Psychology*, 4(1), 1-26. [https://doi.org/10.1207/S1532785XMEP0401\\_01](https://doi.org/10.1207/S1532785XMEP0401_01)
- Starkey, H. (2012). Human rights, cosmopolitanism and utopias: Implications for citizenship education. *Cambridge Journal of Education*, 42(1), 21-35. <https://doi.org/10.1080/0305764X.2011.651205>
- Thomas, N., & C. O'Kane. (1998). The ethics of participatory research with children. *Children and Society*, 12, 336-48. <https://doi.org/10.1111/j.1099-0860.1998.tb00090.x>
- Van-Deth, J.W., Abendschön, S., & Vollmar, M. (2011). Children and politics: an empirical reassessment of early political socialization. *Political Psychology*, 32(1), 147-173. <https://doi.org/10.1111/j.1467-9221.2010.00798.x>
- Weitzer, R., & Tuch, S.A. (1999). Race, class, and perceptions of discrimination by the police. *Crime & Delinquency*, 45(4), 494-507. <https://doi.org/10.1177/001128799045004006>



# Comunicar

## GROUP



[www.grupocomunicar.com](http://www.grupocomunicar.com)  
[www.comunicarjournal.com](http://www.comunicarjournal.com)



# Problematic uses of ICT among young people in their personal and school life

Usos problemáticos de las TIC entre jóvenes en su vida personal y escolar

- ID** Dr. David Rodríguez-Gómez is Associate Professor in the Department of Applied Pedagogy at the Autonomous University of Barcelona (UAB) (Spain) (david.rodriguez.gomez@uab.cat) (<https://orcid.org/0000-0001-9845-0744>).
- ID** Dr. Diego Castro is Associate Professor in the Department of Applied Pedagogy at the Autonomous University of Barcelona (UAB) (Spain) (diego.castro@uab.cat) (<https://orcid.org/0000-0003-2842-0894>).
- ID** Dr. Julio Meneses is Associate Professor of Psychology and Education Studies and a researcher in the Internet Interdisciplinary Institute of the Open University of Catalonia (UOC) (Spain) (jmenesesn@uoc.edu) (<https://orcid.org/0000-0003-4959-456X>).

## ABSTRACT

Studies on ICT use in education usually focus on ICT's contribution to training processes. However, scarce research has concentrated on the problematic use of ICT among young people in the school context, and most of it approaches the problem from a psychopathological perspective. The purpose of this paper, in contrast, is to analyse problematic ICT use among young people in their personal and school setting. The methodology involved applying a questionnaire to a sample of 1,052 youths aged between 12 and 18 years old. The study starts with a univariate and bivariate descriptive analysis. Subsequently, three Poisson regression models were developed to evaluate the contribution of several predictor variables to the three types of problematic uses identified in their sphere, learning processes and classroom relationships. Results show a relationship between problematic ICT use in personal and school settings, with older youths who use smartphones (the) most likely to engage in this type of behaviour. The use of mobile technology largely explains the problematic behaviour in the use of ICT among young people in personal and school contexts, which justifies the need to promote actions contributing to more responsible use of this type of technology in all areas of their personal, school and social life.

## RESUMEN

Los estudios sobre el uso de las TIC en educación suelen analizar su contribución a los procesos formativos. Son escasas las investigaciones centradas en los usos problemáticos de las TIC que realizan los jóvenes en el contexto escolar y, la mayoría, lo abordan desde una perspectiva psicopatológica. El propósito del presente artículo es analizar los usos problemáticos de las TIC entre jóvenes en su ámbito personal y escolar. La metodología consistió en la aplicación de un cuestionario a 1.052 jóvenes de entre 12 y 18 años. El estudio se inicia con un análisis univariante y bivalente. Posteriormente, se desarrollan tres modelos de regresión de Poisson para valorar la contribución de diversas variables predictoras sobre tres tipos de usos problemáticos identificados en: el ámbito personal, los procesos de aprendizaje y las relaciones de aula. Los resultados muestran una relación entre los usos problemáticos en el ámbito personal y escolar, siendo los chicos de mayor edad y que utilizan intensivamente los «smartphones» los que más probabilidades tienen de incurrir en este tipo de comportamientos. El uso de la tecnología móvil explica en gran medida las conductas inadecuadas en el uso de las TIC en los ámbitos personal y escolar entre los jóvenes, lo que justifica la necesidad de promover actuaciones que contribuyan a un uso más responsable de este tipo de tecnología en todos los ámbitos de su vida personal, escolar y social.

## KEYWORDS | PALABRAS CLAVE

ICT, young people, digital behaviour, mobile devices, school, learning, personal relationships, quantitative analysis.  
TIC, jóvenes, comportamiento digital, dispositivos móviles, escuela, aprendizaje, relaciones personales, análisis cuantitativo.



## 1. Introduction

Information and communications technology (ICT) and, in particular, the Internet and mobile devices (mobile phones and tablets) are part of young people's lives, both in the school context and beyond (Lenhart, 2015). The Survey on the Equipment and Use of Information and Communications Technology in Homes in 2016 conducted by the National Statistics Institute (INE) indicates that 98.4% of young people (98.6% of males and 98.2% of females) aged between 16 and 24 years old use the Internet, representing a 17% increase compared to figures recorded in 2006. In the case of children aged between 10 and 15 years old, the INE establishes that in 2016, 94.9% used a computer every day, 95.2% tended to use the Internet, and 69.8% had a mobile phone. Studies analysing ICT use among young people are abundant, and indicate that the main personal uses are associated with watching video clips, instant messaging, participation in social networks, videogames and exchanging photos, videos and music, among others (Stald & al., 2014). Thus, for example, common research topics are the analysis of safe Internet use (Valcke, De-Wever, Van-Keer, & Schellens, 2011), the role of the family in the development of young people's behaviour and attitudes towards ICT (Aesaert & Van-Braak, 2014), mobile technology (Vincent, 2015) and the influence of social networks (Manca & Grion, 2017) and certain types of videogames on their behaviour (Muros, Aragon, & Bustos, 2013).

In the educational context, studies tend to analyse the contribution of technology to teaching and learning processes (Perez-Sanagustin & al., 2017). Among other aspects, this research explains how ICT modify classroom practices, improve students' motivation, commitment and results, increase the interaction between teaching staff and students, and foster more student-oriented didactic processes (Biagi & Loi, 2013; Chen, 2010; Comi, Argentin, Gui, Origo, & Pagani, 2017). Lastly, although to a lesser degree, we can also find contributions which, in addition to classrooms and learning processes, study the incorporation of ICT into the school context. This type of studies tends to focus on structural aspects, such as Internet access, technical-administrative support for teaching staff (Wastiau & al., 2013) and policies on ICT (Meneses, Fabregues, Jacovkis, & Rodriguez-Gomez, 2014). Other research has highlighted collaboration and participation in the educational community (Dias-Fonseca & Potter, 2016) and the professional use of ICT among teaching staff (Meneses, Fabregues, Rodríguez-Gómez, & Ion, 2012).

As indicated by Selwyn (2016) and Sureda-Negre, Comas-Forgas & Oliver-Trobat (2015), the majority of contributions on the use of technologies in the educational context tend to highlight their neutral or even beneficial nature. However, little research has focused, from a comprehensive perspective, on the unethical, problematic, inappropriate and dysfunctional uses young people make of ICT in the educational context (Lau & Yuen, 2014). Although there are some analyses that examine very specific elements such as plagiarism (Gomez-Espinosa, Francisco, & Moreno-Ger, 2016), academic copying (Byrne & Trushell, 2013) and the distracting element of technology (Xu, 2015), the majority of studies tend to tackle the problematic uses of ICT among young people from a psychopathological perspective (Selwyn, 2016), for example, studies on the consumption of online and offline pornography among adolescents (Rivera, Santos, Cabrera, & Docal, 2016), sexting (Atwood, 2016), the academic impact of online games (Floros, Paradisioti, Hadjimarcou, Mappouras, Karkanioti, & Siomos, 2015) and Internet addiction (Salmela-Aro, Upadaya, Hakkarainen, Lonka, & Alho, 2017). Most notable among these are the studies on cyber-bullying (Kowalski, Giumetti, Schroeder, & Lattanner, 2014), which document and analyse, among other aspects, its nature and impact on young people (Smith, Mahdavi, Carvalho, Fisher, Russell, & Tippett, 2008) or the personal characteristics and the social, family and school contexts of those bullied and of bullies (Ortega, Buelga, & Cava, 2016).

The use of ICT entails an evident risk for young people who must face new challenges and situations for which they probably lack the knowledge and experience required to discern and make the correct decisions (Livingstone, Haddon, Görzig, & Olafsson, 2011). Problematic ICT use, regardless of the context in which it occurs, leads to repercussions that go beyond the specific use of ICT and affect other dimensions of the psycho-emotional and social development of young people (Hatzigianni, Gregoriadis, & Fleer, 2016). It is essential to shed light on the problematic use young people make of ICT in the school context in order to adopt organisational, advisory and training measures that improve their potential as a tool in the educational context. In this regard, the aim of the present study is to analyse the problematic use of ICT among young people in their personal and school life.

## 2. Method

This study was conducted in the framework of the project "The use and abuse of new information and communications technology in adolescents" (Gairín & al., 2014). The fieldwork consisted of the application of a

self-administered questionnaire (on paper, during an hour-long class and in the presence of a researcher and the group tutor) to a non-representative sample of 1,052 young people aged between 12 and 18 years old who were in compulsory and post-compulsory secondary education. 48.1% of the young people were female, and their average age was 16.81. The survey, created on the basis of a bibliographic review and the opinion of experts, underwent an assessment of content and served to collect sociodemographic information, as well as information about the relation between young people and ICT in different contexts of their daily life, particularly, the frequency and type of ICT use, their satisfaction, and self-regulation and self-protection mechanisms.

## 2.1. Measures

The predictor variables used in this study are gender, age, and frequency of ICT use at school and home and the use of smartphones. The criterion variables are problematic use in the personal context, in learning processes and classroom relationships (Table 1).

The age variable was recodified in five categories (11-12 years, 13-14 years, 15-16 years, 17-18 years, and over-18), thereby respecting the usual vertical grouping in regulated studies. The variables of frequency of ICT use at school and home, as well as the use of smartphones, were included in the study since

this type of measure is one of the key factors to explain the relationship between young people and technology (Fraillon, Ainley, Schulz, Friedman, & Gebhardt, 2014). These three variables contain five categories that provide information about the amount of time that, from Monday to Friday, young people devote to ICT: none, less than 1 hour, 1-3 hours, 3 to 6 hours, more than 6 hours).

Lastly, as regards ICT use, information was collected from a list of twelve problematic uses that young people made during the last academic year. This information was codified using twelve dichotomous variables (presence vs. absence) which served to perform an exploratory factorial analysis that helped to classify problematic ICT use in three categories ranging from 0 to 4, where 0 means that no type of problematic behaviour was performed and four means that four types of bad uses were made. Figure 1 shows the twelve uses considered and the percentage of young people who performed them during an academic year: problematic uses in the personal context (using the personal data of other people such as for example, photos, videos, passwords, etc., using others' identities on platforms such as "Facebook", "WhatsApp", "Line", etc., offending other people by recording and sending images of them without their permission and sharing photos or videos related to other people without their consent", problematic uses in the learning process (copying classmates' homework, sharing others' homework to copy them, copying other people's work and copying during exams), and problematic uses in the classroom (wasting time they could dedicate to learning, becoming distracted during class, distracting their classmates and bothering them).

The principal components analysis (PCA) with oblimin rotation<sup>1</sup> showed an acceptable structure ( $KMO=.849$  and a significant Barlett test,  $p=.000$ ), which explains 74.21% of the total variance observed and which shows rotated factorial loads that oscillate between .864 and .906 for the first component (problematic uses in the personal context), between .649 and .962 for the second (problematic uses during learning processes), and .523 and .903 for the last (problematic uses in classroom relationships). Likewise, the reliability analysis showed a Cronbach  $\alpha$  of .936, .929 and .880, respectively. Based on this classification, three independent counts of inappropriate behaviours were developed for each of the young people's spheres of daily activity.

**Problematic ICT use, regardless of the context in which it occurs, leads to repercussions that go beyond the specific use of ICT and affect other dimensions of the psycho-emotional and social development of young people. It is essential to shed light on the problematic use young people make of ICT in the school context in order to adopt organisational, advisory and training measures that improve their potential as a tool in the educational context.**

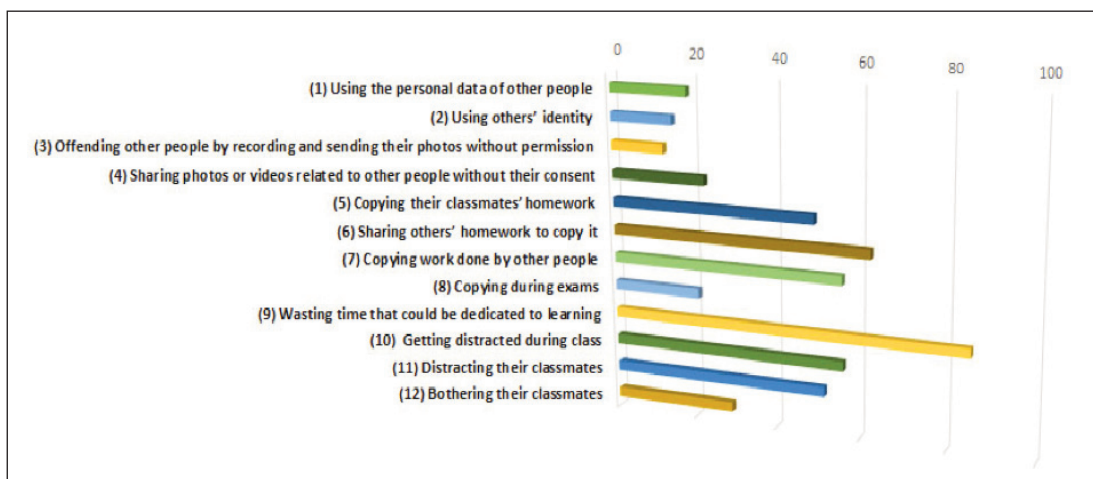


Figure 1. Problematic uses of ICT among young people in secondary education during an academic year (%).

## 2.2. Statistical analysis

The first approach to the available data begins with a descriptive and bivariate analysis. According to the nature of the variables considered, appropriate tests were applied to assess the degree of association between them<sup>2</sup> and their corresponding significance levels were obtained (Table 1).

Below, three Poisson regression models were performed, a multivariate type of analysis from the family of the general linear model specifically developed to assess the contribution of various predictor variables, simultaneously and, therefore, monitoring the effect of the other variables considered, in a criterion variable based on a count. This type of analysis is chosen when, as is the case of the count of the number of problematic uses of ICT made by young people, the assumptions on which the linear regression model is based are violated (Cohen, Cohen, West, & Aiken, 2003; Cox, West, & Aiken, 2009).

The models were calculated and assessed, verifying that the assumption of equidispersion established by the Poisson regression was not breached. The Pearson goodness of fit chi-squared test showed indices of over-dispersion in the case of the count of inappropriate behaviours in the personal context ( $X^2$  value/degrees of freedom = 1787.141/1016 = 1.759) and, therefore, in this case, the binomial, negative regression model was used as an alternative. The suitability of this decision was corroborated by the global adjustment indicators from the new model which, as was expected, showed lower values in accordance with the Akaike information criterion and the Bayesian information criterion.

Table 2 shows the results of this analysis, presenting the parameter estimations, the standard errors and the corresponding Wald tests to assess their significance, as well as the global significance of the models (likelihood ratio) and the indicators required to assess their adjustment. To facilitate the interpretation of the results, the values of the estimated marginal means were also calculated, which serve to illustrate the differences in the count of the problematic uses of ICT once the effect of the rest of the model variables has been monitored.

## 3. Results

The data shown in Table 1 indicate that, although problematic uses of technology among young people are occurring, these uses are practically non-existent in the personal context (e.g., use of others' data, use of others' identity, offending others by recording and sending photos and sharing videos, links, about without permission) with a mean in the sample of .67 ( $dt=1.14$ ). However, the problematic uses appear to occur more frequently in classroom relationships ( $m=2.22$ ,  $dt=1.26$ ) and during learning processes ( $m=1.88$ ,  $dt=1.42$ ).

As expected, although the three types of uses analysed are related, with correlations that oscillate between  $r=.318$  and  $r=.513$  ( $p=.000$ ), indicating the association existing between personal behaviour and school behaviour, the most consistent relation is found between those uses associated with the classroom and the learning processes ( $r=.513$ ,  $p=.000$ ).

As regards the explanatory variables, while in the case of gender the most distinct relation occurs with problematic uses in the personal context ( $rpb=.196$ ,  $p=.000$ ), age correlates to a greater extent with problematic



uses during learning processes ( $r_s=.152$ ,  $p=.000$ ). Likewise, the scarce correlation existing between gender and inappropriate uses during learning processes is notable ( $r_{pb}=.061$ ,  $p<.05$ ).

If we now observe the use of ICT and smartphones in the variables, we observe how the hours of “smartphone” use is the predictor variable which, compared to the rest, presents a stronger relation with the three types of problematic uses analysed: inappropriate behaviours during the learning processes ( $r_s=.141$ ,  $p=.000$ ), inappropriate behaviours in the personal context ( $r_s=.077$ ,  $p<.05$ ) and inappropriate behaviours in classroom relationships ( $r_s=.203$ ,  $p=.000$ ).

ICT use, both at school and at home, shows a pattern of very similar relations, where the most frequent use of ICT is associated with more inappropriate behaviour in classroom relationships ( $r_s=.128$  and  $r_s=.114$ ,  $p=.000$ ,

**Table 1. Means, typical deviation and correlations between the variables observed**  
(<sup>a</sup> $p<.05$ ; <sup>b</sup> $p<.01$ ; <sup>c</sup> $p<.001$ ; <sup>d</sup> $p=.000$ )

	M	DT	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Problematic uses in the personal context (1)	.67	1.14	-							
Problematic uses in the learning process (2)	1.88	1.42	.318 <sup>d</sup>	-						
Problematic uses in classroom relationships (3)	2.22	1.26	.332 <sup>d</sup>	.513 <sup>d</sup>	-					
Gender (4)	.57	.49	.196 <sup>d</sup>	.061 <sup>a</sup>	.126 <sup>d</sup>	-				
Age (5)	2.28	1.10	.101 <sup>c</sup>	.152 <sup>d</sup>	.115 <sup>d</sup>	.114 <sup>d</sup>	-			
Frequency of ICT use at school (6)	1.43	1.30	.046	.047	.128 <sup>d</sup>	.103 <sup>c</sup>	.071 <sup>a</sup>	-		
Frequency of ICT use at home (7)	1.94	1.19	.046	.074 <sup>a</sup>	.114 <sup>d</sup>	.074 <sup>a</sup>	.080 <sup>b</sup>	.341 <sup>d</sup>	-	
Frequency of use of smartphones (8)	2.37	1.38	.077 <sup>a</sup>	.141 <sup>d</sup>	.203 <sup>d</sup>	.113 <sup>d</sup>	.124 <sup>d</sup>	.005	.112 <sup>d</sup>	-

respectively) and, on the contrary, it does not present significant differences as regards inappropriate behaviours in the personal context.

Once the bivariate relations have been analysed, Table 2 shows three Poisson regression models which serve to examine the number of problematic uses (criterion variables) according to the available predictors<sup>3</sup>.

In relation to the model generated for problematic ICT use in the personal context ( $lr=95.058$ ,  $p=.000$ ), once the effect of the rest of the variables has been controlled, we observe that this type of use is statistically greater among males ( $Exp(B)=2.037$ ,  $p=.000$ ) aged between 17 and 18 years old ( $Exp(B)=2.006$ ,  $p<.05$ ). Specifically, the data indicate, on the one hand, that males make a mean of .7186 ( $dt=.06066$ ) problematic uses per academic year in the personal sphere, compared to the .3529 ( $dt=.03983$ ) problematic uses per academic year made by females and, on the other hand, that teenagers aged between 17 and 18 double the problematic uses in the personal context ( $mme=.7874$ ,  $dt=.08002$ ) than those young people aged between 11 and 12 ( $mme=.3926$ ,  $dt=.10991$ ).

Unlike what occurred in the bivariate analyses, the use of ICT at school presents a significant effect on problematic use in the personal context. Those youths who make moderate use of ICT at school (between 1 and 3 hours), recognise making 35.4% ( $p<.05$ ) more problematic uses in the personal context than those youths who say they have not used ICT at school ( $mme=.4335$ ,  $dt=.04935$ ). On the contrary, if we focus on the frequency of the use of smartphones, teenagers who spend more than 6 hours weekly on these devices are more likely to make problematic use of ICT in the personal context ( $Exp(B)=1.482$ ,  $p<.05$ ).

If we now focus on the models that are more associated with the school context, and that explain the problematic uses of ICT during learning processes ( $lr=63.291$ ,  $p=.000$ ) and in classroom relationships ( $lr=65.652$ ,  $p=.000$ ), we see how the sample variables used (gender and age) present unequal behaviour. In the case of gender, only when the problematic uses are analysed in the classroom relationships is the effect significant. As occurred in the first model developed (problematic uses of ICT in the personal context), males presented a slightly higher number of problematic uses in classroom relationships ( $mme=2.2315$ ,  $dt=.07775$ ) than females ( $mme=1.9405$ ,  $dt=.08382$ ). On the contrary, when we analyse age, the significant effects only appear to be associated with the problematic use of ICT in learning processes, with young people aged more than 15 years old making the greatest number of problematic uses. It is important to point out that the probability of problematic use increases with age, being, compared to teenagers aged 11 to 12 years old, 45.5% ( $p<.05$ ) greater for those teenagers between 15 and 16 years old, 56.0% ( $p<.001$ ) greater for young people aged between 17 and 18 years old and 60.6% ( $p<.01$ ) greater for young people aged over 18.

The use of ICT at school appears to be not only associated with problematic uses in classroom relations, with youths who most use ICT (more than 6 hours weekly) recognising a greater number of inappropriate behaviours

(21.2% more than those young people who do not use ICT at school). In any case, the frequency of “smartphone” use once again presents a more consistent effect in both models. In accordance with that mentioned above for problematic uses in the personal sphere, those young people who use smartphones for more than 6 hours weekly recognised a higher number of problematic uses, both in learning processes ( $mme=1.9914$ ,  $dt=.09730$ ), and in classroom relations ( $mme=2.4459$ ,  $dt=.10954$ ).

#### 4. Discussion and conclusions

This article has tackled the analysis of the problematic uses young people make of ICT in the academic context of secondary education. This type of use does not tend to be studied from the perspective of the school context

(Selwyn, 2016) and yet, it is an essential element to understand the use young people make of ICT, complementing more traditional approaches that tend to only focus on training processes and practices (Perez-Sanagustin & al., 2017).

The results reveal that problematic ICT use among youths tends to be associated to a greater extent with learning processes and classroom relationships and, to a lesser extent with the purely personal context. In any case, as indicated in previous research (Gronn, Scott, Edwards, & Henderson, 2014; Kent & Facer, 2004) there is a clear link between the use, in this case problematic, made of technology in the personal and school contexts.

The bivariate analyses show

<b>Table 2. General linear models for the problematic use of ICT among young people in secondary education</b> (*p<.05; **p<.01; ***p<.001; ****p<.000)									
	Problematic uses in the personal context (1)			Problematic uses in the learning process (2)			Problematic uses in classroom relations (3)		
	B (S.E.)	Exp(B)	Wald	B (S.E.)	Exp(B)	Wald	B (S.E.)	Exp(B)	Wald
<b>Intercept</b>	-1.541 (.337)	.214	20.928 <sup>a</sup>	.073 (.155)	1.075	.221	.293 (.137)	1.340	4.577 <sup>a</sup>
<b>Gender</b>									
Male	-	-	-	-	-	-	-	-	-
Female	.711 (.113)	2.037	39.468 <sup>a</sup>	.092 (.047)	1.096	3.776	.140 (.045)	1.150	9.699 <sup>b</sup>
<b>Age</b>									
Between 11 & 12 years	-	-	-	-	-	-	-	-	-
Between 13 & 14 years	.038 (.304)	1.038	.015	.187 (.138)	1.206	1.843	-.009 (.118)	.991	.006
Between 15 & 16 years	.302 (.295)	1.352	1.044	.375 (.134)	1.455	7.794 <sup>a</sup>	.121 (.115)	1.128	1.105
Between 17 & 18 years	.696 (.294)	2.006	5.589 <sup>a</sup>	.444 (.135)	1.560	10.820 <sup>c</sup>	.164 (.116)	1.178	2.004
Over 18 years	.209 (.314)	1.233	.446	.474 (.141)	1.606	11.345 <sup>c</sup>	.069 (.123)	1.071	.313
<b>Frequency of ICT use at school</b>									
None	-	-	-	-	-	-	-	-	-
Less than 1 hour	.232 (.150)	1.261	2.385	.069 (.066)	1.072	1.122	.100 (.062)	1.105	2.569
Between 1h and 3h	.303 (.144)	1.354	4.462 <sup>a</sup>	.083 (.062)	1.087	1.806	.112 (.060)	1.118	3.524
Between 3h and 6h	-.021 (.180)	.979	.014	.020 (.076)	1.020	.067	.134 (.072)	1.144	3.520
More than 6h	.235 (.198)	1.265	1.404	.014 (.088)	1.014	.024	.193 (.081)	1.212	5.639 <sup>a</sup>
<b>Frequency of ICT use at home</b>									
None	-	-	-	-	-	-	-	-	-
Less than 1 hour	-.169 (.183)	.845	.846	-.009 (.082)	.991	.013	.021 (.078)	1.021	.072
Between 1h and 3h	-.195 (.173)	.823	1.271	-.027 (.078)	.974	.118	.056 (.074)	1.058	.582
Between 3h and 6h	.072 (.193)	1.075	.140	.084 (.087)	1.088	.948	.109 (.083)	1.115	1.74
More than 6h	.010 (.210)	1.010	.002	.103 (.094)	1.108	1.204	.081 (.089)	1.084	.820
<b>Frequency of “smartphone” use</b>									
None	-	-	-	-	-	-	-	-	-
Less than 1 hour	.083 (.214)	1.086	.150	.008 (.956)	1.008	.007	.079 (.092)	1.082	.747
Between 1h and 3h	.159 (.182)	1.173	.769	.004 (.080)	1.004	.003	.107 (.077)	1.113	1.923
Between 3h and 6h	.151 (.185)	1.163	.670	.120 (.080)	1.127	2.236	.212 (.078)	1.237	7.479 <sup>b</sup>
More than 6h	.393 (.173)	1.482	5.194 <sup>a</sup>	.207 (.075)	1.229	7.511 <sup>b</sup>	.302 (.074)	1.352	16.773 <sup>c</sup>
<b>Model summary</b>									
Likelihood ratio	95.058 <sup>a</sup>			63.291 <sup>c</sup>			65.652 <sup>d</sup>		
Pearson chi-squared test (gl.)	1113.539 (1016)			1095.677 (1039)			686.425 (1005)		
Akaike information criterion	2211.716			3658.688			3.380		
Bayesian information criterion	2300.658			3748.026			3468.749		
Sample size	1034			1057			1023		

than males and youths in their last teens recognise a greater number of dysfunctional uses or inappropriate behaviours in the three contexts analysed (in the personal context, in learning processes and in classroom relationships). However, these differences are slightly reduced in the multivariate analyses, when other variables are introduced such as ICT use at school and home, and the use of smartphones. These results are consistent with those studies that, from a more complex perspective, place the emphasis on the digital inequalities of young people (Davies, Coleman, & Livingston, 2014; Robinson & al., 2015), considering not only their sociodemographic characteristics, but also their attitudes, motivation and skills using technology, as well as the time dedicated and the frequency and typology of uses.

The frequency of use and access to technology are two of the factors usually associated with the attitudes and typology of uses made by users. Thus, for example, Rohatgi and others (2016) establish a clear relationship between ICT use, self-efficacy, and digital literacy. As regards attitudes, Fraillon and others (2010) indicate that students with greater access to and use of ICT at home and school are more confident about their digital skills. The results of this study demonstrate that, although there is a certain relation between the number of hours spent using ICT, both in and out of school, when we monitor the effect of other variables (the use of smartphones and sociodemographic variables), ICT use at school only shows some significant differences in problematic ICT use, with those young people who make a moderate to intensive use of ICT being the ones who have a higher number of inappropriate behaviours in the personal sphere and their classroom relationships (Figure 2). Under no circumstances is the frequency of use associated with inappropriate behaviours during the learning processes (e.g., copying homework, sharing materials from others to copy them, copying work done by others and copying during exams).

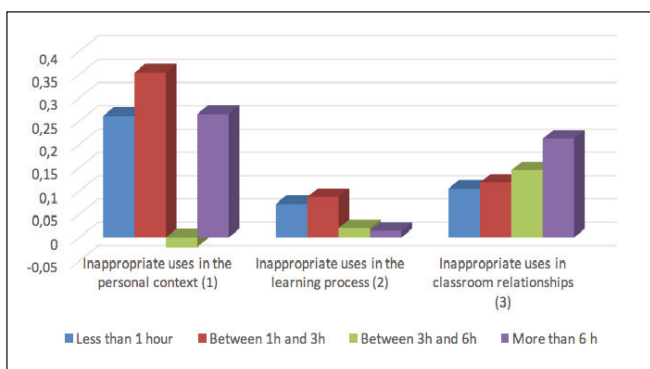


Figure 2. Influence of the frequency of ICT use at school on problematic ICT use among young people (variation in likelihood).

The study presented herein shows how the frequency of "Smartphone" use by young people is the best predictor of problematic ICT use in all the contexts analysed (Figure 3). Likewise, our results reveal a behaviour pattern that is much more consistent with previous studies, in which, for example, it is established that people with more access to the Internet tend to have more developed digital skills and explore a greater range of mobile technology possibilities (Hargittai & Kim, 2010).

In short, this study contributes to complete, from a multi-dimensional perspective, the previous conceptual framework on the use young people make of ICT. In agreement with previous studies, we observe how the use of technology in the school context and, specifically, of mobile devices (Atwood, 2016; Festl, Scharrow, & Quandt, 2015; Kauffman & Young, 2015) are essential elements to understand the inappropriate behaviours of young people when they use ICT both in the school context, and in their daily life.

Nevertheless, this study presents some limitations that suggest interpreting the results as an initial exploration of the dysfunctional uses of ICT among young people in the school context. Thus, for example, more specific measures should be considered (e.g., digital literacy, attitudes, access, equipment, socioeconomic situation) that will help us to gain a better understanding of the use young people make of ICT, thereby facilitating the development of proposals that can contribute to reducing those uses considered to be problematic. Likewise, it would be fundamental to promote studies that specifically analyse the use young people make of mobile technology, in and out of the school context, from the perspective of all the agents involved. In this vein, some research has highlighted the importance of tackling the discussion on ICT use among young people from a more comprehensive and contextual approach (Valcke & al., 2011).

In addition, an approach using a mixed methodological approach, combining questionnaires and interviews, would provide us with a better understanding of the phenomenon (Tashakkori & Teddlie, 2010). The qualitative data will provide more contextual information on why problematic uses during learning processes appear to be the least conditioned by technology use and specify, in addition to the frequency of use, how digital literacy and the type of use being made of ICT is associated with the dysfunctional uses that we have tackled here.

To conclude, the use of mobile technology largely explains the inappropriate behaviours in ICT use among youths in the personal and school contexts. Educational centres, as a reference context for these young people, instead of avoiding the use of mobile technology, should foster actions that contribute towards responsible use of this technology by young people in all areas of their personal, school and social life.

### Notes

<sup>1</sup> Given the dichotomous nature of the variables used for the count, the programme Factor (Lorenzo-Seva & Ferrando, 2006) was used to perform the PCA analysis with the polychoric correlation.

<sup>2</sup> In accordance with the metrics of the pairs of variables, the Pearson  $r$  test was used for continuous variables, the Spearman correlation range ( $r_s$ ) between ordinal and pair variables comprising quantitative and ordinal variables, the point-biserial ( $r_{pb}$ ) for quantitative and dichotomous variables, and the phi ( $r_{\phi}$ ) for pairs of ordinal and dichotomous variables.

<sup>3</sup> The graphs, showing the influence of gender, age and ICT use at home on problematic ICT use among young people are available at Figshare (<https://goo.gl/a38AFs>). The graphs corresponding to the frequency of ICT use at school and the frequency of "smartphone" use are directly included in the text.

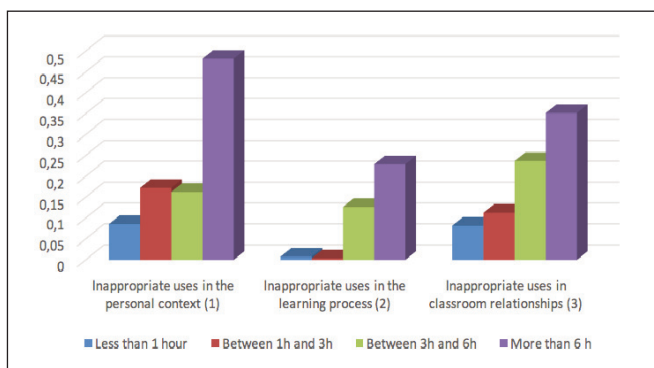


Figure 3. Influence of the frequency of "Smartphone" use at school on problematic ICT use among young people (variation in likelihood).

### Funding Agency

Study financed by the Mapfre Foundation (2012 research grants) under the title "Use and abuse of information and communications technology in adolescents", and coordinated by Diego Castro and Joaquín Gairín.

### References

- Aesaert, K., & Van-Braak, J. (2014). Exploring factors related to primary school pupils' ICT self-efficacy: A multilevel approach. *Computers in Human Behavior*, 41, 327-341. <https://doi.org/10.1016/j.chb.2014.10.006>
- Atwood, R. (2016). *The relationship between adolescents' use of Internet-enabled mobile devices and engaging in problematic digital behaviors*. Utah State University: All Graduate Theses and Dissertations, 4874. <https://goo.gl/2p8E15>
- Biagi, F., & Loi, M. (2013). Measuring ICT use and learning outcomes: Evidence from recent econometric studies. *European Journal of Education*, 48(1), 28-42. <https://doi.org/10.1111/ejed.12016>
- Blau, I., & Shamir-Inbal, T. (2017). Digital competences and long-term ICT integration in school culture: The perspective of elementary school leaders. *Education and Information Technologies*, 22(3), 769-787. <https://doi.org/10.1007/s10639-015-9456-7>
- Byrne, K., & Trushell, J. (2013). Education undergraduates and ICT-enhanced academic dishonesty: A moral panic? *British Journal of Educational Technology*, 44(1), 6-19. <https://doi.org/10.1111/j.1467-8535.2012.01381.x>
- Chen, R. J. (2010). Investigating models for preservice teachers' use of technology to support student-centered learning. *Computers & Education*, 55(1), 32-42. <https://doi.org/10.1016/j.compedu.2009.11.015>
- Cohen, J., Cohen, P., West, S.G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences*. Mahwah: Lawrence Erlbaum Associates.
- Comi, S. L., Argentin, G., Gui, M., Origo, F., & Pagani, L. (2017). Is it the way they use it? Teachers, ICT and student achievement. *Economics of Education Review*, 56, 24-39. <https://doi.org/10.1016/j.econedurev.2016.11.007>
- Coxe, S., West, S.G., & Aiken, L. S. (2009). The analysis of count data: A gentle introduction to poisson regression and its alternatives. *Journal of Personality Assessment*, 91(2), 121-136. <https://doi.org/10.1080/00223890802634175>
- Davies, C., Coleman, J., & Livingston, S. (2014). *Digital technologies in the lives of Young people*. London: Routledge.
- Dias-Fonseca, T., & Potter, J. (2016). La educación mediática como estrategia de participación cívica on-line en las escuelas portuguesas. [Media education as a strategy for online civic participation in Portuguese schools]. *Comunicar*, 49(24), 9-18. <https://doi.org/10.3916/C49-2016-01>
- Festl, R., Scharkow, M., & Quandt, T. (2015). The individual or the group: a multilevel analysis of cyberbullying in school classes. *Human Communication Research*, 41(4), 535-556. <https://doi.org/10.1111/hcre.12056>
- Floros, G., Paradisioti, A., Hadjimarcou, M., Mappouras, D. G., Karkanioti, O., & Siomos, K. (2015). Adolescent online gambling in Cyprus: associated school performance and psychopathology. *Journal of Gambling Studies*, 31(2), 367-384. <https://doi.org/10.1007/s10899-013-9424-3>
- Fraillon, J., Ainley, J., Schulz, W., Friedman, T., & Gebhardt, E. (2014). *Preparing for life in a digital age: The IEA International Computer and Information Literacy Study international report*. Melbourne: Springer Open. <https://doi.org/10.1007/978-3-319-14222-7>
- Gairín, J., Castro, D., Díaz-Vicario, A., Rodríguez-Gómez, D., Mercader, C., Bartrina, M.J., ... Sabaté, B. (2014). Estudio sobre los usos y abusos de las tecnologías de la información y la comunicación en adolescentes. *Seguridad y Medio Ambiente*, 135, 18-29. <https://goo.gl/P9bTcN>



- Gomez-Espinosa, M., Francisco, V., & Moreno-Ger, P. (2016). El impacto del diseño de actividades en el plagio de Internet en educación superior. [The impact of activity design in Internet plagiarism in higher education]. *Comunicar*, 24(48), 39-48. <https://doi.org/10.3916/C48-2016-04>
- Gronn, D., Scott, A., Edwards, S., & Henderson, M. (2014). 'Technological me': young children's use of technology across their home and school contexts. *Technology, Pedagogy and Education*, 23(4), 439-454. <https://doi.org/10.1080/1475939X.2013.813406>
- Hargittai E., & Kim, S.J. (2010). *The prevalence of Smartphone use among a wired group of young adults*. Institute for Policy Research Northwestern University, Working Paper Series. <https://goo.gl/2RrLyd>
- Hatzigianni, M., Gregoriadis, A., & Fleer, M. (2016). Computer use at schools and associations with social-emotional outcomes - A holistic approach. Findings from the longitudinal study of Australian Children. *Computers & Education*, 95, 134-150. <https://doi.org/10.1016/j.compedu.2016.01.003>
- Kauffman, Y., & Young, M.F. (2015). Digital plagiarism: An experimental study of the effect of instructional goals and copy-and-paste affordance. *Computers & Education*, 83, 44-56. <https://doi.org/10.1016/j.compedu.2014.12.016>
- Kent, N., & Facer, K. (2004). Different worlds? A comparison of young people's home and school ICT use. *Journal of Computer Assisted Learning*, 20(6), 440-455. <https://doi.org/10.1111/j.1365-2729.2004.00102.x>
- Kowalski, R.M., Giumetti, G.W., Schroeder, A.N., & Lattanner, M.R. (2014). Bullying in the digital age: A critical review and meta-analysis of cyberbullying research among youth. *Psychological Bulletin*, 140(4), 1073-1137. <https://doi.org/10.1037/a0035618>
- Lau, W.W., & Yuen, A.H. (2014). Internet ethics of adolescents: Understanding demographic differences. *Computers & Education*, 72, 378-385. <https://doi.org/10.1016/j.compedu.2013.12.006>
- Lenhart, A. (2015). *Teens, social media & technology overview 2015*. Pew Research Center. <https://goo.gl/nrMHXD>
- Livingstone, S., Haddon, L., Görzig, A., & Olafsson, K. (2011). *Risks and safety on the Internet: The perspective of European children: Full findings and policy implications from the EU Kids Online survey of 9-16-year olds and their parents in 25 countries*. Deliverable D4. London: LSE: EU Kids Online. <https://goo.gl/zdszgh>
- Lorenzo-Seva, U., & Ferrando, P. J. (2006). Factor: A computer program to fit the exploratory factor analysis model. *Behavioral Research Methods, Instruments and Computers*, 38(1), 88-91. <https://doi.org/10.3758/BF03192753>
- Manca, S., & Grion, V. (2017). Engaging students in school participatory practice through Facebook: The story of a failure. *British Journal of Educational Technology*, 48(5), 1153-1163. <https://doi.org/10.1111/bjet.12527>
- Meneses, J., Fabregues, S., Rodriguez-Gomez, D., & Ion, G. (2012). Internet in teachers' professional practice outside the classroom: Examining supportive and management uses in primary and secondary schools. *Computers & Education*, 59(3), 915-924. <https://doi.org/10.1016/j.compedu.2012.04.011>
- Meneses, J., Fabregues, S., Jacovkis, J., & Rodriguez-Gomez, D. (2014). La introducción de las TIC en el sistema educativo español (2000-2010): un análisis comparado de las políticas autonómicas desde una perspectiva multinivel. *Estudios sobre Educación*, 27, 63-90. <https://doi.org/10.15581/004.27.63-90>
- Muros, B., Aragon, Y., & Bustos, A. (2013). La ocupación del tiempo libre de jóvenes en el uso de videojuegos y redes. [Youth's usage of leisure time with video games and social networks]. *Comunicar*, 40, 31-39. <https://doi.org/10.3916/C40-2013-02-03>
- Ortega, J., Buelga, S., & Cava, M.J. (2016). Influencia del clima escolar y familiar en adolescentes, víctimas de ciberacoso. [The influence of school climate and family climate among adolescents victims of cyberbullying]. *Comunicar*, 46, 57-65. <https://doi.org/10.3916/C46-2016-06>
- Perez-Sanagustin, M., Nussbaum, M., Hilliger, I., Alario-Hoyos, C., Heller, R.S., Twining, P., & Tsai, C.C. (2017). Research on ICT in K-12 schools-A review of experimental and survey-based studies in computers & education 2011 to 2015. *Computers & Education*, 104, A1-A15. <https://doi.org/10.1016/j.compedu.2016.09.006>
- Rivera, R., Santos, D., Cabrera, V., & Docal, M.C. (2016). Consumo de pornografía on-line y off-line en adolescentes colombianos. [Online and offline pornography consumption in Colombian adolescents]. *Comunicar*, 46, 37-45. <https://doi.org/10.3916/C46-2016-04>
- Robinson, L., Cotten, S.R., Ono, H., Quan-Haase, A., Mesch, G., Chen, W., Schulz, J. Hale, T.M., & Stern, M. J. (2015). Digital inequalities and why they matter. *Information, Communication & Society*, 18(5), 569-582. <https://doi.org/10.1080/1369118X.2015.1012532>
- Rohatgi, A., Scherer, R., & Hatlevik, O.E. (2016). The role of ICT self-efficacy for students' ICT use and their achievement in a computer and information literacy test. *Computers & Education*, 102, 103-116. <https://doi.org/10.1016/j.compedu.2016.08.001>
- Salmela-Aro, K., Upadaya, K., Hakkarainen, K., Lonka, K., & Alho, K. (2017). The dark side of Internet use: two longitudinal studies of excessive Internet use, depressive symptoms, school burnout and engagement among Finnish early and late adolescents. *Journal of Youth and Adolescence*, 46, 343-357. <https://doi.org/10.1007/s10964-016-0494-2>
- Selwyn, N. (2016). Digital downsides: Exploring university students' negative engagements with digital technology. *Teaching in Higher Education*, 21(8), 1006-1021. <https://doi.org/10.1080/13562517.2016.1213229>
- Smith, P.K., Mahdavi, J., Carvalho, M., Fisher, S., Russell, S., & Tippett, N. (2008). Cyberbullying: Its nature and impact in secondary school pupils. *Journal of Child Psychology and Psychiatry*, 49(4), 376-385. <https://doi.org/10.1111/j.1469-7610.2007.01846.x>
- Stald, G., Green, L., Barbovski, M., Haddon, L., Mascheroni, G., Ságvári, B., Scifo, B., & Tsiliki, L. (2014). *Online on the mobile: Internet use on smartphones and associated risks among youth in Europe*. <https://goo.gl/Qn9T3z>
- Sureda-Negre, J., Comas-Forgas, R., & Oliver-Trobat, M.F. (2015). Plagio académico entre alumnado de Secundaria y Bachillerato: Diferencias en cuanto al género y la procrastinación. [Academic plagiarism among secondary and high school students: Differences in gender and procrastination]. *Comunicar*, 44, 103-111. <https://doi.org/10.3916/C44-2015-11>
- Tashakkori, A., & Teddlie, C. (Eds.). (2010). *Sage handbook of mixed methods in social & behavioral research*. London: Sage. <https://doi.org/10.4135/9781506335193>
- Valcke, M., De Wever, B., Van-Keer, H., & Schellens, T. (2011). Long-term study of safe Internet use of young children. *Computers & Education*, 57(1), 1292-1305. <https://doi.org/10.1016/j.compedu.2011.01.010>
- Vincent, J. (2015). *Mobile Opportunities. Exploring positive mobile media opportunities for European children*. POLIS: Journalism and



Society. London School of Economics and Political Science. <https://goo.gl/dVeEcJ>

Wastiau, P., Blamire, R., Kearney, C., Quittre, V., Van-de-Gaer, E., & Monseur, C. (2013). The use of ICT in education: a survey of schools in Europe. *European Journal of Education*, 48(1), 11-27. <https://doi.org/10.1111/ejed.12020>

Xu, J. (2015). Investigating factors that influence conventional distraction and tech-related distraction in math homework. *Computers & Education*, 81, 304-314. <https://doi.org/10.1016/j.compedu.2014.10.024>

# Comunicar

Media Education Research Journal






1.740 research and studies articles published  
574 academic reviewers from 45 countries  
The journal appears in 618 international databases



# Excessive use of social networks: Psychosocial profile of Spanish adolescents

Uso excesivo de redes sociales: Perfil psicosocial  
de adolescentes españoles

-  Dr. Sara Malo-Cerrato is Lecturer in the Department of Psychology at the University of Girona (Spain) (sara.malo@udg.edu) (<https://orcid.org/0000-0003-3561-0610>)
-  Maria-de-las-Mercedes Martín-Perpiñá is Researcher in the Department of Psychology at the University of Girona (Spain) (merche\_martin77@hotmail.com) (<https://orcid.org/0000-0002-0922-4380>)
-  Dr. Ferran Viñas-Poch is Senior Lecturer in the Department of Psychology at the University of Girona (Spain) (ferran.vinas@udg.edu) (<https://orcid.org/0000-0002-4994-5000>)

## ABSTRACT

Understanding the factors that predict excessive use of social networks in adolescence can help prevent problems such as addictive behaviours, loneliness or cyberbullying. The main aim was to ascertain the psychological and social profile of adolescents whose use of SNS is excessive. Participants comprised 1,102 adolescents aged between 11 and 18 from Girona (Spain). Those who made excessive use of social networks were grouped together. Their personality and social profiles were explored, the former using NEO FFI, NEO PI-R and Self-Concept AF5, and the latter through the use of Social Support Appraisals, self-attributed type of ICT use in the family and rules regarding ICT use at home. The prevalence of excessive use was 12.8%, being higher among girls. The personality profile was characterized by neuroticism, impulsivity and a lower family, academic and emotional self-concept. The social profile was defined by the perception of high ICT consumption in the mother and siblings, and a lack of rules. The protective factors were conscientiousness, the existence of rules, and being a boy; risk factors were the use of SNS as a distraction and for fun, and the perception of high sibling consumption. Interventions based on gender and working on responsible ICT use within the family environment are proposed to prevent more serious psychological problems.

## RESUMEN

Poder entender los factores que predicen un uso excesivo de redes sociales en la adolescencia puede ayudar a prevenir problemas como conductas adictivas, soledad o ciberacoso. El principal objetivo es explorar el perfil psicológico y social de adolescentes que realizan un uso excesivo de redes sociales. Participaron 1.102 adolescentes de 11 a 18 años de Girona (España). Se agruparon los que realizaban un uso excesivo y se exploró su perfil de personalidad (NEO FFI, NEO PI-R y autoconcepto AF5) y el social (apoyo social percibido, tipología autoatribuida de consumo de TIC en la familia y normas de uso de las TIC en el hogar). La prevalencia de uso excesivo fue del 12,8%, siendo mayor en chicas. El perfil de personalidad se caracterizaba por el neuroticismo, la impulsividad y menor autoconcepto familiar, académico y emocional. Percibir elevado consumo de TIC en la madre y hermanos y no disponer de normas de uso define su perfil social. Los factores protectores fueron: la responsabilidad, tener normas de uso y ser chico, y los de riesgo: el uso de redes sociales para distraerse y divertirse, y la elevada percepción de consumo de los hermanos. Se sugiere plantear intervenciones según el sexo y trabajar el uso responsable de las TIC con el entorno familiar, para prevenir problemáticas psicológicas más graves.

## KEYWORDS | PALABRAS CLAVE

Excessive use, social networks, teenagers, personality, self-concept, social support, family consumption, rules of use.  
Uso excesivo, redes sociales, adolescentes, personalidad, autoconcepto, apoyo social, consumo familiar, normas de uso.

## 1. Introduction

Children and adolescents' increased use of and constant presence on social networks has been highlighted by a number of global organizations and researchers (Livingstone, Haddon, Görzig, & Ólafsson, 2011; International Telecommunication Union, 2017). This continuous use of technology may lead to "excessive use", something recognized as a public health concern (World Health Organization, 2014) and it can be associated with serious psychological and interpersonal relationship problems as addiction (Ho, Lwing, & Lee, 2017), loneliness (Ndasauka & al., 2016) or cyberbullying (Casas, Del Rio, & Ortega-Ruiz, 2013). This study will use the term "excessive use" of social networks (Buckner, Castille, & Sheets, 2012), understanding this to be when the number of hours of use affects adolescents leading a normal daily life (Castellana, Sánchez-Carbonell, Graner, & Beranuy, 2007; Viñas, 2009), but not only in terms of the time invested in this use but also in the impact that it causes in personal and social areas of adolescent life (Smahel & al., 2012).

In southern European countries, excessive Internet use ranges from 3% to 24% (Olafsson, Livingstone, & Haddon, 2014), with similar percentages reported in the United States (Weinstein & Lejoyeux, 2010). In Spain, 21.3% of adolescents are at risk of developing addictive Internet behaviour due to abusive use of social networks (Fundación Mapfre, 2014). Some studies pointed out gender differences in social network excessive use (Müller & al., 2017): intensive use is related to girls whereas an addictive use is related to boys among intensive users (3.6% of girls vs. a 4.1% of boys). Nevertheless, results on gender differences are not consistent in the literature. In this sense, Salehan and Negabahn (2013) didn't find gender differences between the use of mobile social networking applications and mobile addiction; in opposite to previous research that suggests that women are more susceptible to develop addictive behaviour.

The heavy presence of adolescents in social networks allows them to express and develop their personality and their characteristics. Moreover, the social nature of networks implies a wide range of interactions and relationships among adolescents and the others as peers, relatives, or strangers. For this reason, the present research is conducted on their psychological profile, as well as personality, social, and context factors, to determine the impact of excessive use of social networks on adolescents. While some studies show the importance of analyzing these aspects together (Marino & al., 2016), studies that explore them separately are more common.

Research linked certain personality traits to the social networks use, and the majority of them are based on Costa and McCrae's (1992) Big Five Theory. In this regard, it has been observed that high scores in neuroticism (Amichai-Hamburger & Vinitzky, 2010; Marino & al., 2016; Tang, Chen, Yang, Chung, & Lee, 2016) and low scores in extraversion (Ross, Orr, Sisic, Arseneault, & Simmering, 2009) are linked to problematic or addictive use. There is a negative correlation between the use of networks such as Facebook or Twitter and the facets of openness to experience and conscientiousness (Hughes, Rowe, Batey, & Lee, 2012; Schou & al., 2013), which act as protective factors. Some studies show that high scores in agreeability are linked to problematic use (Kuss, Van-Rooij, Shorter, Griffiths, & Van-de-Mheen, 2013), while others conclude that they are an indicator of a lower risk of developing addiction (Meerkerk, Van-den-Eijnden, Vermulst, & Garrestsen, 2009). Finally, our aim was also to analyze the relationship between impulsiveness and excessive use of social networks, since some studies note that this seems to be the strongest predictor of problematic use (Billieux, Gay, Rochat, & Van-der-Linden, 2010; Billieux, Van-der-Linden, & Rochat, 2008).

Adolescents seek acceptance or social validation through social networks, and this affects their well-being and self-esteem (Jackson, von Eye, Fitzgerald, Zhao, & Witt, 2010; Pérez, Rumoroso, & Brenes, 2009; Valkenburg, Peter, & Schouten, 2006). Low self-esteem is linked to the more frequent use of social networks (Aydin & Volkan, 2011), and symptoms of addiction (Bahrainian, Haji-Alizadeh, Raeisoon, Hashemi-Gorji, & Khazaei, 2014).

The Internet and social networks allow adolescents to connect with their friends, create and strengthen interpersonal relationships, support others and receive social support, and cultivate emotional ties (Best, Manktelow, & Taylor, 2014; Frison & Eggermont, 2015; Livingstone, 2008; Reich, Subrahmanyam, & Spinoza, 2012; Tang & al., 2016).

The family may provide an environment that protects against excessive use of technology as long as this social context is perceived to be a facilitator of social support (Echeburúa, 2012). Research shows that parents use a range of mediation strategies to regulate the use their children make of the Internet (Durager & Livingstone, 2012; Livingstone & Helsper, 2008), among them restrictions or rules of use (OfCom, 2016; Garmendia, Jiménez, Casado, & Mascheroni, 2016).

Another factor related to adolescents' use of technology is the real or perceived use of their parents (Hiniker,

Shoenebeck, & Kientz, 2016; Lauricella, Wartella, & Rideout, 2015; Livingstone, Haddon, Görzig, & Ólafsson, 2011). In those European countries where parents use the Internet on a daily basis, their children use it more frequently; the reverse is also true (Livingstone & al., 2011). These data would seem to indicate that the relationship between parental and children's use not only means that they spend more time using technology together, but also that there is an individualized increase in the time they spend separately on their devices (Lauricella & al., 2015). As Boyd points out (2014: 85): "A gap in perspective –about the adolescents' opportunities to gather with friends– exists because teens and parents have different ideas of what social life should look like".

The primary aim of this cross-sectional study is to determine the psychological and social profile of adolescents aged between 11 and 18 who make excessive use of social networks. It explicitly sets out to:

Describe the socio-demographic profile and prevalence of use among the group of adolescents identified as excessive users versus that of the normative group.

Explore which personality and social context variables constitute the profile of such consumers.

Assess which variables best predict excessive use of social networks in the age group researched.

**Setting rules, restrictions, or technical mediation strategies (such as parental filters) is linked to lower online risk. However, this can lead to children becoming less free to explore, learn and develop resilience; thus taking less advantage of digital opportunities and abilities.**

## 2. Material and methods

### 2.1. Participants

The multi-stage cluster sampling technique was used to choose a random sample ( $n=1,218$ ) from a total population of 5,365 secondary, baccalaureate, and professional training students in the Alt Empordà region (Girona, Spain). The final sample was comprised of 1,102 students (90.5% participation) from 6 educational centres, most of which are state-run (91.6%). 48.1% of participants were boys whose ages ranged from 11 to 18 ( $M=14.42$ ;  $SD=1.78$ ). At the time of the research, the students were attending the 4th year of secondary education ( $n=793$ ) (equivalent to year 10 in the UK education system); the 1st and 2nd years of the university entry level course or baccalaureate ( $n=278$ ) (equivalent to a two-year 'A' level course); or professional training cycles ( $n=31$ ).

### 2.2. Instruments

- Scales to determine excessive social networks use:

- A Self-attributed scale of social networks use (Facebook, Twitter, WhatsApp, Instagram, Snapchat) (Casas & al., 2007). A single-item scale which asks subjects what kind of social networks consumer they consider themselves to be based on 5 possible answers (1=I never or hardly ever use it; 2=I'm a low consumer; 3=I'm an average consumer; 4=I'm a fairly high consumer; 5=I'm a very high consumer).

- The media and technology usage and attitudes scale (MTUA) (Rosen, Whaling, Carrier, Cheever, & Rokkum, 2013). 60 items are grouped into 15 sub-scales assessing the frequency of use and attitudes towards ICT (1=Never and 10=Continually). The sub-scale "social networks Activities" ( $\alpha = .89$ ) was used for those who indicated they had a Facebook profile (Instagram was added as it is currently one of the networks most used by adolescents).

- Scales to determine personality:

- NEO Five Factor Inventory (Costa & Mc Rae, 1992, 2004): a reduced version of NEO PI-R, allowing the assessment of five personality traits and consisting of 60 items (0= Totally disagree and 4= Totally agree). Cronbach alphas for each scale are: neuroticism, .64; extraversion, .61; openness to experience, .62; agreeableness, .53; and conscientiousness, .69. The impulsiveness facet items of the NEO PI-R (Costa & Mc Rae, 2008) were added, showing an internal consistency of .74.

- AF5 self-concept by García and Musitu (1999). The Catalan-adapted version was applied (Malo & al., 2014), consisting of 30 items contemplating the five self-concept dimensions suggested by the original authors

(0=Never and 10=Always). The psychometric properties of this scale are excellent and similar to those of the original scale: internal consistency ranges vary between .75 (social) and .91 (academic).

- Scales to determine social context:

- Social Support Appraisals (SSA) (Vaux & al., 1986). This study used 14 of the 23 original items, seven referring to the family and seven to friendships (0=Not at all and 10=Very clearly). The internal consistency of the friends' dimension of SSA is .91, and that of family .92.

- Self-attributed scale for family ICT use. A single-item scale adapted from Casas et al. (2007), in which subjects classified the kind of consumer their parents and siblings were.

- Rules on ICT use at home (adapted version of Hiniker & al., 2017). A dichotomous question (Yes/No) was created to determine whether there were any set rules at home regarding the use of ICT (mobile, computer, tablet, etc.).

- Items from the scale perceptions regarding social networks use (a scale created ad hoc). 19 items were designed to explore how and what adolescents feel when using social networks. The question was as follows: Below you will find a group of phrases regarding things you may feel when using social networks such as Facebook, Twitter or WhatsApp. Please indicate how far you agree with each of them. When I use social networks... The scale ranged from 0 (I completely disagree) to 10 (I completely agree). The Cronbach Alpha for this study was .92.

### 2.3. Procedure

Permission was requested from the Government of Catalonia's Department of Education and the respective school boards and parents associations, who were also informed of the research aims. All head teachers and students were guaranteed data confidentiality and anonymity. The questionnaire was divided into two parts to make it less tiring for participants and administered in two one-hour sessions during the 2016-2017 academic year. Two researchers were present to answer questions or doubts.

### 2.4. Data analysis

To meet the general aim, two groups of social network use were created: one for excessive use and a normative group. To this end, participants who had answered "5" (I'm a very high consumer) in the social networks consumption self-concept questionnaire, and those who had answered "10" (Continually) in three or more of the items of the MTUA "social network activity" sub-scale, were grouped. A value of "0" was given to the normative group and "1" to that of excessive use. For the first specific aim, the prevalence of participants who formed part of this group was calculated in comparison to the normative group; chi-squared tests were used to compare the results by gender and age. For the second, the t-test was used to analyze both the psychological and social profiles of the group with excessive use, and chi-squared tests were also used to analyze the social profile. For the final aim, a forward stepwise binary logistic regression was carried out to ascertain the variables that are predictors of excessive use. The dependent variable was the categorical variable of the "use group", where "0" was given to the normative group and "1" to the group making excessive use of social networks. The covariables were the personality dimensions (NEOFFI, NEOPIR, and AF5 self-concept), social variables (social support, perceived use by father, mother and siblings, the presence or not of rules, and the group of variables from the ad hoc scale on perceptions regarding use of social networks), and gender.

All analyses were carried out using the SPSS, version 23.0 statistical package. The minimum level of statistical significance required in all tests was  $p < .05$ .

## 3. Analysis and results

a) Socio-demographic profile and prevalence of excessive social networks use group and normative group. The prevalence of boys ( $n=34$ ) and girls ( $n=78$ ) who form part of the group making excessive use of social networks is 12.8%; the percentage of girls (69.4%) is significantly higher ( $\chi^2=16.743$ ;  $p < .001$ ) than that of boys. No differences were observed regarding age.

b) Personality profile of excessive social networks use group and normative group. Those participants classified in the group with excessive use show significantly higher scores than the normative group concerning neuroticism and impulsiveness, while this difference was observed in the scores for agreeableness and conscientiousness for the normative group. Those adolescents with excessive use show significantly lower scores in the family, academic and emotional self-concept than the other users (Table 1).



**Table 1. Average scores in the five personality dimensions of the NEO-FFI, impulsiveness facet of the NEO PI-R, and AF5 self-concept scale, according to social network use group**

Variables	Excessive use group	Normative use group
Neuroticism	X 1.95 S .81	X 1.74 S .74 p=.004
Extraversion	X 2.29 S .86	X 2.22 S .71
Openness to experience	X 2.05 S .74	X 2.10 S .75
Agreeableness	X 2.02 S .76	X 2.28 S .68 p<.001
Conscientiousness	X 1.86 S .70	X 2.19 S .70 p<.001
Impulsiveness	X 2.07 S .72	X 1.75 S 1.07 p=.002
AF5 – Family Self-Concept	X 7.59 S 2.23	X 8.13 S 1.74 p=0.14
AF5 – Academic Self-Concept	X 6.12 S 2.01	X 6.85 S 1.86 p<.001
AF5 – Social Self-Concept	X 7.35 S 1.67	X 7.28 S 1.62
AF5 – Emotional Self-Concept	X 4.72 S 1.99	X 5.40 S 1.98 p=.001
AF5 – Physical Self-Concept	X 6.40 S 2.21	X 6.70 S 1.84

= .301-.857) and being a boy (OR=.387; IC 95%=.234-.641); while the risk factors are related to the use of social networks as a distraction after schoolwork (OR=1.157; IC 95%=1.043-1.283), for fun (OR=1.475; IC 95%=1.258-1.729), and the perception of sibling ICT use (OR=1.229; IC 95%=1.036-1.458) (Table 3).

#### 4. Discussion and conclusions

The primary aim of this paper was to describe the psychosocial profile of a sample of Spanish adolescents aged between 11 and 18 who make excessive use of social networks. The data used to construct this profile were based on results deriving from the Five Factor Model, self-concept, the contextual variables of social support from friends and family, and the perception of the family's ICT consumption. Specifically, we found a greater prevalence of girls than boys in the excessive use group (Müller & al., 2017); and, while age does not seem to be a discriminating element, it was observed that it is at 13 (21.4%) and 16 (18.8%), the periods

c) The social profile of excessive social networks use group and normative group. There are no significant differences in the perception of social support from friends and family among groups; however, significant differences were noted in the perception of ICT consumption by parents and siblings: those adolescents who make excessive use of social networks attribute a higher consumption to their mothers and siblings than those in the normative group (Table 2).

59.5% of participants said there were no rules regulating ICT use at home. The groups show significant statistical differences ( $\chi^2(4) = 8.390$ ;  $p = .004$ ): 72.1% of the excessive use group stated there were no rules (57.6% in the normative group), and 42.2% of the normative group said there were (27.9% of the excessive use group).

d) Variables predicting excessive and normative use of social networks. The model correctly classified 86.3% of participants. The Nagelkerke R<sup>2</sup> indicates that the model explains 27.2% of the variability. The protective factors against excessive social networks use are the dimension of conscientiousness (OR=.512; IC 95%= .355-.739), family self-concept (OR=.841; IC 95%= .742 -.953), the existence of rules regulating ICT use at home (OR=.508; IC 95%

**Table 2. Average scores in perceived social support and perceived ICT use of parents and siblings according to social network consumption group**

Variables	Excessive use group	Normative use group
SSA – Family	X 8.09 S 2.10	X 8.38 S 1.67
SSA – Friends	X 8.09 S 1.72	X 7.87 S 1.68
ICT consumption – Mother	X 3.13 S 1.09	X 2.76 S .95 p<.001
ICT consumption - Father	X 2.68 S .98	X 2.53 S .98
ICT consumption - Siblings	X 3.48 S 1.57	X 2.90 S 1.54 p<.001

where there is most intense use of these technologies (Caldevilla, 2010). The prevalence of excessive use in this study (12.8%) was moderate, and in the intermediate band of values detected in previous studies (Olafsson & al., 2014; Weinstein & Lejoyeux, 2010).

Secondly, the results of this study support data from previous research identifying differentiated personality

characteristics between the group making excessive use of social networks and the normative group, the former presenting the traits of neuroticism and impulsiveness, which confirmed their link to addictive and problematic behaviors. Some adolescents with high scores in neuroticism use Facebook as much to regulate their mood (Marino & al., 2016; Tang & al., 2016) as to experience the feeling of belonging to a group and satisfy their need to feel confident (Amichai-Hamburger & Vinitzky, 2010). Furthermore, the tendency to act hastily in response to intense emotional situations, such as social networks use, is an indicator of problematic use (Billieux & al., 2010; Billieux & al., 2008). The normative use group was characterized by higher agreeableness and conscientiousness, both factors being related to a lower risk of developing addictive behaviors (Meerkerk & al., 2009; Schou & al., 2013). However, these results should be interpreted with caution due to the low rates of internal consistency observed in some of the scales.

Self-esteem was another construct that presents differences between groups: the excessive use group showed a lower self-assessment of how they were perceived by their family, the academic world –by teachers, classmates and themselves– and the level of understanding of their own emotions and how these were shown to others (García & Musitu, 1999). Maintaining good levels of self-esteem and self-concept, above all in some of these dimensions, acts as a protective factor against ICT addictions (Echeburúa, 2012). An example is to be found in Pérez et al. (2009), who observed that those adolescents who make a varied and intense use of their free-time, and a low use of entertainment media and new media such as the Internet, show a more positive academic self-assessment than those whose free-time is less rich and diverse and who make greater use of entertainment and new media.

Regarding the contextual variables, no differences were found between the groups in perceived social support from either friends or family. Previous research does, however, show that giving and receiving social support online may be a motivation to make more intensive use of social networks (Tang & al., 2016). Nonetheless, the role played by the perception of the family's ICT consumption appeared as a differentiating factor in the formation of one type of social networks consumer or other (Hiniker & al., 2016). Our results support the idea that those adolescents who form part of the group of excessive users perceived that their mothers and siblings also made intensive use of such technologies, functioning as models of consumption (Livingstone & al., 2011). As previous studies have noted, this aspect seems not only to affect how the family uses ICT, but also individualized use by children (Lauricella & al., 2015). In the current context, in which multiple devices are frequently used by all members of the family, including the youngest (Holloway, Green, & Livingstone, 2013), parents and relatives play an essential role in the vicarious learning of responsible ICT use. Our study revealed that half of the sample said there are no rules governing ICT use at home, confirming that education should not merely be limited to rule-regulated use (OfCom, 2016; Garmendia & al., 2016). This percentage was even higher (72.1%) in the group that made excessive use. Durager

**Table 3. Binary logistical regression of personality factors, social context variables and gender in excessive social networks use**

Steps	Variables	B	E.T	Wald	gl	p	OR	IC 95%	
Step 7(g)	Responsibility	-.67	.19	12.81	1	<.001	.51	.36	.74
	Family self-concept	-.17	.06	7.34	1	.007	.84	.74	.95
	Rules (Yes/No)	-.68	.27	6.44	1	.011	.51	.30	.86
	Gender	-.95	.26	13.63	1	<.001	.39	.23	.64
	I use social networks after school work for distraction	.15	.05	7.62	1	.006	1.16	1.04	1.28
	I have fun on social networks	.39	.08	22.92	1	<.001	1.48	1.26	1.73
	Sibling ICT consumption	.21	.09	5.61	1	.018	1.23	1.04	1.58
	Constant	-3315	.89	13976	1	<.001	.04		

a. Variable(s) introduced in step 1: I use social networks after school work for distraction; b. Variable(s) introduced in step 2: I have fun; c. Variable(s) introduced in step 3: NEOFFI Conscientiousness; d. Variable(s) introduced in step 4: Gender; e. Variable(s) introduced in step 5: AF5Family; f. Variable(s) introduced in step 6: Rules (Yes/No); g. Variable(s) introduced in step 7: Sibling ICT consumption.

and Livingstone (2012) suggest that one of the most effective strategies for regulating responsible use, increasing opportunities and preventing risks, is active mediation, talking actively or sharing online activities with children. Contrarily, setting rules, restrictions, or technical mediation strategies (such as parental filters) is linked to lower online risk. However, this can lead to children becoming less free to explore, learn and develop resilience; thus taking less advantage of digital opportunities and abilities.

The present study is not exempt from limitations. The sample, while representative of a region and age range, does not permit extrapolation to other population groups. The data have been compiled through self-assessment surveys, which do not guarantee reliability or validity, as some subjects may have responded based on social desirability. Since this is a cross-sectional study, we cannot determine causative relationships. Future longitudinal cohort research would provide a sounder profile of excessive social network use, as well as protective and risk variables. Taking into account the percentage of explained variance, further variables that have not been dealt with in this study should be examined, such as social context and personality, as these may be related to the studied profile.

Despite these limitations, our study allows us to support previous findings because we found: a) gender differences between excessive and normative user, but not according to age, b) similar prevalence of

**The role played by the perception of the family's ICT consumption appeared as a differentiating factor in the formation of one type of social networks consumer or other. Our results support the idea that those adolescents who form part of the group of excessive users perceived that their mothers and siblings also made intensive use of such technologies, functioning as models of consumption.**

Spanish adolescents' excessive use than European and American countries, c) impulsiveness and neuroticism as a main personality variables related to excessive use, and d) although we didn't find differences in perceived social support between groups of consumers, the group of excessive users perceived significantly more ICT family consume (mother and siblings). Furthermore, our data showed that the excessive use of social networks was negatively predicted by gender, responsibility, to have rules at home, and family self-concept; and was positively predicted by the perception of siblings ICT use, the use of social networks to have fun and to use them after school for distraction. According to these predictive variables we observed two adolescents' profiles: (a) Being a girl, using social networks as a distraction and for fun, and perceiving a high ICT use by siblings, as a risk profile; (b) Being a boy, with a high score in conscientiousness, high academic self-concept and having ICT-use rules at home as a protective one. It should be noted that the percentage of variance explained by the regression model is rather low and, consequently, it can be considered that there are other variables not included in this study that can predict excessive use.

These discoveries lead us to a number of conclusions: 1) Being part of the group of excessive users implies greater time using social networks and it may lead to a potential risk, affecting adolescents' everyday life; in this regard, recent studies point out that the intensive use of social networks in adolescence is related to Internet addiction and psychosocial distress. (Müller & al., 2017) 2) The profile of this group of users is comprised of the combination of personality traits and the closest social context in which they learn to use ICT, revealing the need for further studies that explore both variables, on the one hand, and on the other hand, the need to create: a) specific youth interventions to regulate the traits of personality directly associated with excessive use—as impulsivity—with training programs in full conscientiousness (Mindfulness) (Franco, de la Fuente, & Salvador, 2011), and b) to develop social policies to promote a more responsible use in family context. (Gómez, Harris, Barreiro, Isorna, & Rial, 2017). Finally, 3) As we have seen in previous studies (Müller & al., 2017) due to being a girl is a factor of risk for excessive use, the gender variable should be taken into account when developing specific intervention proposals to prevent problematic ICT behaviours.

Overall, the results of this study can be a first step for the construction of new measures of excessive use of social networks to assess the facets of the personality of adolescents, as well as to more deeply analyze the context of family use in which children and teenagers are socialized. Following the ecological model of Bronfenbrenner (Bronfenbrenner & Evans, 2000) we could explore other contexts of socialization such as school life or leisure and free time (see chapter 3 of Boyd, 2014), and even explore what social values are involved in the excessive ICT use (for example, hedonism, security, or individualism). All these new variables would allow us to have a wider view of the complexity of this psychosocial reality.

### Funding Agency

The authors belong to the ERIDIQV, Research Team on Children, Adolescents, Children's Rights and their Quality of Life ([www.udg.edu/eridiv](http://www.udg.edu/eridiv)) from the University of Girona, recognized as a Consolidated Research Group by Autonomous Government of Catalonia (2014-SGR-1332 and 2017 SGR 162), obtaining funding to collect data for this study.

### References

- Amichai-Hamburger, Y., & Vinitzky, G. (2010). Social network use and personality. *Computers in Human Behavior*, 26, 1289-1295. <https://doi.org/10.1016/j.chb.2010.03.018>
- Aydin, B., & Volkan, S. (2011). Internet addiction among adolescents: the role of self-esteem. *Procedia and Behavioral Sciences*, 15, 3500-3505. <https://doi.org/10.1016/j.sbspro.2011.04.325>
- Bahrainian, S., Haji-Alizadeh, K., Raeisoon, M., Hashemi-Gorji, O., & Khazaei, A. (2014). Relationship of Internet addiction with self-esteem and depression in university students. *Journal of Preventive Medicine and Hygiene*, 55(3), 86-89.
- Best, P., Manktelow, R., & Taylor, B. (2014). Online communication, social media and adolescent wellbeing: A systematic narrative review. *Children and Youth Services*, 41, 27-36. <https://doi.org/10.1016/j.childyouth.2014.03.001>
- Billieux, J., Van-der-Linden, M., & Rochat, L. (2008). The role of impulsivity in actual and problematic use of the mobile phone. *Applied Cognitive Psychology*, 22, 1195-1210. <https://doi.org/10.1002/acp.1429>
- Billieux, J., Gay, P., Rochat, L., & Van-der-Linden, M. (2010). The role of urgency and its underlying psychological mechanisms in problematic behaviours. *Behaviour Research and Therapy* 48(11), 1085-1096. <https://doi.org/10.1016/j.brat.2010.07.008>
- Boyd, D. (2014). *It's complicated. The social lives of networked teens*. Yale University Press.
- Bronfenbrenner, U., & Evans, G.W. (2000). Developmental science in the 21st century: Emerging theoretical models, research designs, and empirical findings. *Social Development*, 9, 115-125. <https://doi.org/10.1111/1467-9507.00114>
- Buckner, J.E., Castille, C.M., & Sheets, T.L. (2012). The five factor model of personality and employees' excessive use of technology. *Computers in Human Behavior*, 28(5), 1947-1953. <https://doi.org/10.1016/j.chb.2012.05.014>
- Caldevilla, D. (2010). Las Redes Sociales. Tipología, uso y consumo de las redes 2.0 en la sociedad digital actual. *Documentación de las Ciencias de la Información*, 33, 45-68.
- Casas, J.A., Del-Rio, R., & Ortega-Ruiz, R. (2013). Bullying and cyberbullying: Convergent and divergent predictor variables. *Computers in Human Behavior*, 29, 580-587. <https://doi.org/10.1016/j.chb.2012.11.015>
- Casas, F., Madoirell, L., Figuer, C., González, M., Malo, S., García, M., ... Babot, N. (2007). *Preferències i expectatives dels adolescents relatives a la televisió a Catalunya*. Barcelona: Consell Audiovisual de Catalunya.
- Castellana, M., Sánchez-Carbonell, X., Graner, C., & Beranuy, M. (2007). El adolescente ante las tecnologías de la información y la comunicación: Internet, móvil y videojuegos. *Papeles del Psicólogo*, 28(3), 196-204.
- Costa, P.T., & McCrae, R.R. (1992). *The revised NEO personality inventory (NEO-PI-R) and NEO-five-factor inventory (NEO-FFI) professional manual*. Odessa, FL: Psychological Assessment Resources.
- Costa, P.T., & McCrae, R.R. (2004). A contemplated revision of the NEO Five-Factor Inventory. *Personality and Individual Differences*, 36, 587-596. [https://doi.org/10.1016/S0191-8869\(03\)00118-1](https://doi.org/10.1016/S0191-8869(03)00118-1)
- Costa, P.T., & McCrae, R.R. (2008). *NEO PI-R Inventario de Personalidad NEO Revisado Manual*. Madrid, TEA.
- Durager, A., & Livingstone, S. (2012). *How can parents support children's Internet safety?* London: EU Kids Online. <https://goo.gl/Bh3Lw1>
- Echeburúa, E. (2012). Factores de riesgo y factores de protección en la adicción a las nuevas tecnologías y Redes Sociales en jóvenes y adolescentes. *Revista Española de Drogodependencias*, 4, 435-448.
- Franco, C., de la Fuente, M., & Salvador, M. (2011). Impacto de un programa de entrenamiento en consciencia plena (mindfulness) en las medidas de crecimiento y la autorrealización personal. *Psicothema*, 23(1), 58-65.
- Frison, E., & Eggermont, S. (2015). Exploring the relationships between different types of Facebook use, perceived online social support, and adolescents' depressed mood. *Social Science Computer Review*, 34(2), 153-171. <https://doi.org/10.1177/0894439314567449>
- Fundación Mapfre (Ed.) (2014). Más de 70.000 adolescentes son tecnoadictos. *Seguridad y Medioambiente*, 1, 66-69.
- García, F., & Musitu, G. (1999). *Autoconcepto forma 5. AF5. Manual*. Madrid: TEA.
- Garmendia, M., Jiménez, E., Casado, M., & Mascheroni, G. (2016). Riesgos y oportunidades en Internet y uso de dispositivos móviles entre menores españoles (2010-2015). *Net children and go mobile. Final Report March 2016*. <https://goo.gl/aFSxB>
- Gómez, P., Harris, S.K., Barreiro, C., Isorna, M., & Rial, A. (2017). Profiles of Internet use and parental involvement, and rates of online risks and problematic Internet use among Spanish adolescents. *Computer in Human Behaviour*, 75, 826-833. <https://doi.org/10.1016/j.chb.2017.06.027>
- Hiniker, A., Schoenebeck, S.Y., & Kientz, J.A. (2017). Not at the dinner table: Parents' and children's perspectives on family technology rules. *CSCW '16*, February 27-March 02, 2016, San Francisco, CA, USA. <https://doi.org/10.1145/2818048.2819940>



- Ho, S.S., Lwing, M.O., & Lee, E.W.J. (2017). Till logout do us part? Comparison of factors predicting excessive social network sites use and addiction between Singaporean adolescents and adults. *Computers in Human Behavior*, 75, 632-642. <https://doi.org/10.1016/j.chb.2017.06.002>
- Holloway, D., Green, L., & Livingstone, S. (2013). *Zero to eight. Young children and their Internet use*. London: EU Kids Online. <https://goo.gl/bfZrH8>
- Hughes, D.J., Rowe, M., Batey, M., & Lee, A. (2012). A tale of two sites: Twitter vs. Facebook and the personality predictors of social media usage. *Computers in Human Behavior*, 28, 561-569. <https://doi.org/10.1016/j.chb.2011.11.001>
- International Telecommunication Union (2017). *The World in 2017. ICT facts and figures*. Geneva, Switzerland: International Telecommunication Union.
- Jackson, L.A., Von-Eye, A., Fitzgerald, H.E., Zhao, Y., & Witt, E.A. (2010). Self-concept, self-esteem, gender, race and information technology use. *Computers in Human Behavior*, 26(3), 323-328. <https://doi.org/10.1016/j.chb.2009.11.001>
- Kuss, D.J., Van-Rooij, A.J., Shorter, G.W., Griffiths, M.D., & Van-de-Mheen, D. (2013). Internet addiction in adolescents: Prevalence and risk factors. *Computers Human Behaviour*, 29(5), 1987-1996. <https://doi.org/10.1016/j.chb.2013.04.002>
- Lauricella, A., Wartella, E., & Rideout, V. (2015). Young children's screen time: The complex role of parent and child factors. *Journal of Applied Developmental Psychology*, 36, 11-17. <https://doi.org/10.1016/j.appdev.2014.12.001>
- Livingstone, S. (2008). Taking risky opportunities in youthful content creation: Teenagers' use of social networking sites for intimacy, privacy and self-expression. *New Media & Society*, 10(3), 393-411. <https://doi.org/10.1177/1461444808089415>
- Livingstone, S., & Helsper, E. (2008). Parental mediation and children's Internet use. *Journal of Broadcasting and Electronic Media*, 52(4), 581-599. <https://doi.org/10.1080/08838150802437396>
- Livingstone, S., Haddon, L., Görzig, A., & Ólafsson, K. (2011). *Risks and safety on the Internet: The perspective of European children: full findings and policy implications from the EU Kids Online survey of 9-16 year olds and their parents in 25 countries. Deliverable D4*. London: EU Kids Online. <https://goo.gl/orGdQV>
- Malo, S., González, M., Casas, F., Viñas, F., Gras, M.E., & Bataller, S. (2014). Adaptación al catalán [Catalan adaptation]. In F. García & G. Musitu (Ed.), *AF5. Autoconcepto-Forma 5* (pp. 69-88). Madrid: TEA.
- Marino, C., Vieno, A., Pastore, M., Albery, I.P., Frings, D., & Spada, M.M. (2016). Modeling the contribution of personality, social identity and social norms to problematic Facebook use in adolescents. *Addictive Behaviors*, 63, 51-56. <https://doi.org/10.1016/j.addbeh.2016.07.001>
- Meerkerk, G.J., Van-den-Eijnden, R.J., Vermulst, A.A., & Garretsen, H.F. (2009). The compulsive Internet use scale (CIUS): Some psychometric properties. *Cyberpsychology Behavior*, 12(1), 1-6. <https://doi.org/10.1089/cpb.2008.0181>
- Müller, K.W., Dreier, M., Beutel, M.E., Duven, E., Giral, S., & Wölfling, K. (2017). A hidden type of Internet addiction? Intense and addictive use of social networking sites in adolescence. *Computers in Human Behaviour*, 55, 172-177. <https://doi.org/10.1016/j.chb.2015.09.007>
- Ndasauka Y., Hou, J., Wang, Y., Yang, L., Yang, Z., Ye, Z. ... Zhang, X. (2016). Excessive use of Twitter among college students in the UK: Validation of microblog excessive use scale and relationships to social interaction and loneliness. *Computers in Human Behavior*, 55, 963-971. <https://doi.org/10.1016/j.chb.2015.10.020>
- OfCom, U.K. (2016). *Children and Parents: Media use and attitudes report*. <https://goo.gl/9FdxdB>
- Ólafsson, K., Livingstone, S., & Haddon, L. (2014). *Children's use of online technologies in Europe: a review of the European evidence base (revised edition)*. London: EU Kids Online. <https://goo.gl/NiQxm4>
- Pérez, R., Rumoroso, A.M., & Brenes, C. (2009). El uso de tecnologías de la información y la comunicación y la evaluación de sí mismo en adolescentes costarricenses. *Revista Interamericana de Psicología*, 43(3), 610-617.
- Reich, S.M., Subrahmanyam, K., & Espinoza, G. (2012). Friending, IMing, and hanging out face-to-face: overlap in adolescents' online and offline social networks. *Development Psychology*, 48(2), 356-68. <https://doi.org/10.1037/a0026980>
- Rosen, L.D., Whaling, K., Carrier, L.M., Cheever, N.A., & Rökkum, J. (2013). The Media and Technology Usage and Attitudes Scale: An empirical investigation. *Computer Human Behavior*, 29(6), 2501-2511. <https://doi.org/10.1016/j.chb.2013.06.006>
- Ross, C., Orr, E., Sisic, M., Arseneault, J.M., & Simmering, M. (2009). Personality and motivations associated with Facebook use. *Computers in Human Behavior*, 25(2), 578-586. <https://doi.org/10.1016/j.chb.2008.12.024>
- Salehan, M., & Negabahn, A. (2013). Social networking on smartphones: When mobile phones become addictive. *Computers in Human Behavior*, 29, 2632-2639. <https://doi.org/10.1016/j.chb.2013.07.003>
- Schou, C., Griffiths, M. D., Gjertsen, S.R., Krossbakken, E., Kvam, S., & Pallesen, S. (2013). The relationships between behavioral addictions and the five-factor model of personality. *Journal Behavior Addiction*, 2(2), 90-99. <https://doi.org/10.1556/JBA.2.2013.003>
- Smahel, D., Helsper, E., Green, L., Kalmus, V., Blinka, L., & Ólafsson, K. (2012). *Excessive Internet use among European children*. London: EU Kids Online, London School of Economics & Political Science. <https://goo.gl/P7rhLT>
- Tang, J.H., Chen, M.C., Yang, C.Y., Chung, T.Y., & Lee, Y.A. (2016). Personality traits, interpersonal relationships, online social support, and Facebook addiction. *Telematics and Informatics*, 33, 102-108. <https://doi.org/10.1016/j.tele.2015.06.003>
- Valkenburg, P., Peter, J., & Schouten, A. (2006). Friend networking sites and their relationship to adolescents' well-being and social self-esteem. *CyberPsychology & Behavior*, 9(5), 584-590. <https://doi.org/10.1089/cpb.2006.9.584>
- Vaux, A., Phillips, J., Holly, L., Thomson, B., Williams, D., & Stewart, D. (1986). The social support appraisals (SS-A) scale: Studies of reliability and validity. *American Journal of Community Psychology*, 14(2), 195-218. <https://doi.org/10.1007/BF00911821>
- Viñas, F. (2009). Uso autoinformado de Internet en adolescentes: Perfil psicológico de un uso elevado de la Red. *International Journal of Psychology and Psychological Therapy*, 9(1), 109-122.
- Weinstein, A., & Lejoux, M. (2010). Internet addiction or excessive Internet use. *The American Journal of Drug and Alcohol Abuse*, 36(5), 277-283. <https://doi.org/10.3109/00952990.2010.491880>
- Who (Ed.) (2014). World health organization Statistics. <https://goo.gl/vv8xQe>



# Comunicar

Media Education Research Journal



## ANNIVERSARY

1.740 research and studies articles published  
 574 academic reviewers from 45 countries  
 The journal appears in 618 international databases

## Next Issues



Comunicar 57 (2018-4)

### **Artivism: Art and Social Engagement in a Digital World**

#### **Thematic Editors:**

Dr. Eva Aladro-Vico, Complutense University of Madrid (Spain)

Dr. Olga Bailey, Nottingham Trent University (United Kingdom)

Dr. Dimitrina Semova-Jivkova, Complutense University of Madrid (Spain)

Last call: February 28, 2018



Comunicar 58 (2019-1)

### **Digital Media and Learning. Emergent forms of participation and social transformation**

#### **Thematic Editors:**

Dr. Moisès Esteban-Guitart, University of Girona (Spain)

Dr. Javier González-Patiño, Autonomous University of Madrid (Spain)

Dr. James Gee, Arizona State University (USA)

Last call: May 30, 2018



Comunicar 59 (2019-2)

### **Emerging mobile media. Convergence in the new media arena**

#### **Thematic Editors:**

Dr. Xosé López, University of Santiago de Compostela (Spain)

Dr. João Canavilhas, University of Beira Interior (Spain)

Dr. Oscar Westlund, University of Gothenburg (Sweden)

Last call: September 30, 2018



Comunicar 60 (2019-3)

### **How to become a genius. Personalized learning and high capacities in the connected society**

#### **Thematic Editors:**

Dr. Sylvia Sastre i Riba, University of La Rioja (Spain)

Dr. Antoni Castelló Tarrida, Autonomous University of Barcelona (Spain)

Dr. Christopher Perleth, University of Rostock (Germany)

Last call: December 30, 2018

«Comunicar» is an open platform for participation and collaboration of all professionals in communication and education. If you are interested in collaborate on the next issues (both in Monographic and in Miscellaneous) send us your manuscripts. Guidelines in: [www.comunicarjournal.com](http://www.comunicarjournal.com)



# Comunicar



"Comunicar" is a quarterly, bilingual Spanish-English research journal, with Chinese and Portuguese abstracts.

Articles, authors and topics have a decidedly international outlook.

The journal is now in its 25th year and has published 1,750 research and studies articles.

The journal appears in 623 international databases, journal impact assessment platforms, selected directories, specialized portals and hermerographic catalogues...

Rigorous and transparent blind system of manuscript evaluation, audited in RECYT, International Scientific Council and a public network of 591 reviewers from 45 countries from all over the world.

Professional management of manuscripts is undertaken via the OJS platform (FECYT), with ethical commitments that ensure transparency and timeliness, antiplagiarism (CrossCheck), alternative metrics (PlumX, Altmetrics)...

It has a high visualization level with numerous search engines, dynamic pdfs, epub, DOIs, ORCID... with connections to Mendeley, RefWorks, EndNote, Zotero and scientific social networks like AcademiaEdu or ResearchGate.

"Comunicar" specializes in educommunication: communication and education, ICT, audiences, new languages; there are specialized monographic editions on the most updated topics.

It has a double format: printed and an online; in the digital edition there is access to the entire text, in a free way, for all the scientific community and researchers around the world. It is co-edited in English and Spanish for readers all over the world; edited by Comunicar, a professional, non-profit association, veteran in Spain (29 years) in educommunication, which collaborates with multiple institutions and international universities.

In active indexations (2017/2018), "Comunicar" is Q1 in JCR: 1st Spanish journal in Education and 1st in Communication (IF 2,21). In Scopus (Cite-Score and SJR) is Q1 in 'Education', in 'Communication', and in 'Cultural Studies'. (1st Spanish); Is a Journal of Excellence RECYT 2016-19. In Google Scholar Metrics is positioned as the 1st and best journal indexed of all areas in Spanish.



UNIVERSIDAD DE  
MURCIA



Universidad  
de Huelva  
Grupo Inv. Agora PAI-HUM648

Edited:



**Grupo Comunicar**

[www.comunicarjournal.com](http://www.comunicarjournal.com)  
[info@grupocomunicar.com](mailto:info@grupocomunicar.com)

ISSN: 1134-3478 / e-ISSN: 1988-3293