Cyberbullying among adults with intellectual disabilities: Some preliminary data

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Abstract

Background. Recent studies show that youth with disabilities are at risk of experiencing cyberbullying. Nevertheless, the nature of this phenomenon among adults with intellectual disabilities has not been investigated. Therefore, the purpose of this study is to analyze the frequency and characteristics of cyberbullying and its correlates in individuals with intellectual disabilities attending training centers for adults with intellectual disabilities. Methods and Procedures. A convenience sample of 269 participants (54.3% men and 35.7% women), aged 18 to 40 years was recruited from Chile (14.1%), Mexico (32%), and Spain (53.9%). Results. The findings showed that 15.2% have been cyberbullied and 8.6% are currently being cyberbullied. Being different was the main reason (97.7%) for being cyberbullied. The behaviors happen in educational settings (46.67%), leisure/free time activities (31.11%), and associations for people with disabilities (15.56%). Verbal aggressions (74.53%) were the most common cyberbullying behaviors. Those who were cyberbullied reported more inadequate use of mobile phone and Internet, as well as more unhealthy behaviors and depressive mood. Conclusions and implications. These findings support the need for further studies on adults with intellectual disabilities, as well as the need for implementing primary, secondary, and tertiary prevention programs.

Keywords: Cyberbullying; Victimization; Adults; Intellectual disabilities; Correlates

What this paper adds

This paper provides data on cyberbullying in adults with intellectual disabilities, a subject that has not been studied before. Findings suggest that people with intellectual disabilities are at higher risk for cyber-victimization due to a combination of personal and social variables. Thus, personal variables, such as overusing Internet and cell-phones, carrying out unhealthy behaviors, together with being socially rejected for being different, are factors that help understand this issue. Additional findings on those who have been or are being cyberbullied, as well as the profile of the victims, support the need for primary, secondary, and tertiary interventions.

1. Introduction

Although the Internet has transformed the way people communicate, it has also given rise to phenomena such as cyberbullying (Kowalski, Giumetti, Schroeder, & Lattanner, 2014). Cyberbullying, or online bullying, is a type of relational aggression that seeks to injure the relationships and social situation of others using electronic means (Ang, 2016; Postorino, 2015). Mocking, degrading or harassing another less powerful (Beauchere, 2014; Smith, Steffgen, & Sittichai, 2013), it is carried out by an individual or group who, using information and communication technologies (ICT) (mobile phones, e-mail, social networks, blogs, websites, etc.), deliberately and repeatedly attacks someone who cannot easily defend him/herself (Lucas, Pérez, & Giménez, 2016; Patchin & Hinduja, 2006; Smith et al., 2008). Cyberbullying is characterized by sending insults, threats, spreading false rumors, manipulating photographs and violating privacy by stealing passwords to allow access to personal information, emails, messages, etc. (Lanzillotti & Korman, 2014). From these definitions we can extract the key components of cyberbullying: it (1) is a relational aggression; (2) is intentional; (3) occurs in asymmetrical situations; (4) is repeated over time and not a single event; (5) is carried out via ICTs so that authorship is not always obvious. This last characteristic distinguishes this modality of bullying via technology means, whose negative consequences are equally relevant (Avilés, Irurtia, García-Lopez, & Caballo, 2011; Caballo, Arias Martínez, Calderero, & Irurtia Muñiz, 2011; Caballo et al., 2012; Hernandez Rodriguez, Gregus, Craig, Pastrana, & Cavell, 2014).

As mentioned, anonymity is one of the key elements that distinguish traditional bullying from cyberbullying and it is an important risk factor. Anonymity eliminates inhibitions that would otherwise prevent people from harming others (Ang, 2016; Barlett, Gentile, & Chew, 2014; Postorino, 2015). The age of social media and Smartphones has added new forms and expanded

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the reach of this risk to adolescent health (Davis, Randall, Ambrose, & Orand, 2015b). As Smith

and Steffgen (2013) state, cyberbullying is one of the most problematic and obscure aspects

related to the increasing access to new technologies (Smith & Steffgen, 2013). In addition, changes

in how young people use the Internet, especially the disproportionate increase in online

communication with friends, offers more opportunities for conflict (Jones, Mitchell, & Finkelhor,

2013). These behaviors appear to be stable over time, underlining the importance of

psychoeducational interventions to prevent or eliminate peer violence through technology

(Garaigordobil, 2015; Garaigordobil & Martinez-Valderrey, 2015).

As to the "size of the problem", the research on the general population report important

differences. For example, a recent study carried out in the US with a random sample found a 6.6%

probability of being a cyberbullying victim and 5% probability of being a perpetrator, as well as a

4.3% possibility of being both perpetrator and victim (Rice et al., 2015). One European study

reported a 5% prevalence of being involved in cyberbullying of which 4% were perpetrators and

2% were victims and perpetrators (Laftman, Modin, & Ostberg, 2013). However, in another study,

data suggest that 37.8% of students experienced cyberbullying, and 56% were bystanders (Pilkey,

2012). In addition, a review found that 20%-40% of children and adolescents experienced

cyberbullying, with girls and sexual minorities being more likely to have been victims (Aboujaoude,

Savage, Starcevic, & Salame, 2015). These percentages are similar to those reported in the

Tokunaga study (2010), where between 20% and 40% of adolescents experienced cyberbullying.

Yet another recent review by Lucas et al.(2016) found prevalence rates at the international level

range from 9% (Ybarra, Mitchell, & Kosciw, 2015) to 72% (Juvonen & Gross, 2008).

There are also important differences in Spain. The study with the lowest rates suggests that from

2.5% to 7% of secondary school students have been victims and 2.5% to 3.5% have been

perpetrators (Díaz-Aguado, Martínez-Arias, & Martín, 2013). At the other end, the study from

Buelga et al. (2010) found that 24.6% of adolescents had been bullied by mobile phone and 29%

via the Internet. The absence of a precise definition for what it means to be "repetitively attacked"

help explain the large differences in prevalence estimations. It also makes it difficult to distinguish

between isolated vs. reiterative episodes of bullying through electronic means.

Access to technologies has increased rapidly which has also increased the chances of their misuse.

Thus, the excessive use or dependency on such technologies has been found associated with

physical, psychological and social issues (Canan et al., 2013; Canan et al., 2014; Jenaro, Flores,

Gómez-Vela, González-Gil, & Caballo, 2007; King, Delfabbro, Zwaans, & Kaptsis, 2014; Koc &

Gulyagci, 2013; Lepp, Barkley, & Karpinski, 2014; Li, Wang, & Wang, 2009; Rodgers, Melioli, Laconi,

Bui, & Chabrol, 2013). Likewise its inadequate use, namely cyberbullying, is associated to

depression, suicide, among other negative emotional repercusions, as well as to physical and

behavioral issues, such as sleep disorders, headaches, and conduct problems (Bailin, Milanaik, &

Adesman, 2014; Farber, Shafron, Hamadani, Wald, & Nitzburg, 2012).

People with a disability are at greater risk of experiencing cyberbullying, as has been shown with

middle and high school students with disabilities (Simpson, Rose, & Ellis, 2016), with young people

with Tourette syndrome (Zinner, Conelea, Glew, Woods, & Budman, 2012) and physical disabilities

(Wells & Mitchell, 2014). In addition, research on students with ADHD found that they are more

likely to be victims and perpetrators of cyberbullying (Heiman, Olenik-Shemesh, & Eden, 2015; Yen

et al., 2014), and that children with learning disabilities in special education are also more likely to

be involved in both behaviors, with girls being more likely to be cybervictims, and boys being more

likely to be cyberperpetrators (Heiman & Olenik-Shemesh, 2015). The situation of University

students with disabilities has also been analyzed and they were found to be at greater risk, especially if the disability is more visible (Kowalski, Morgan, Drake-Lavelle, & Allison, 2016).

The cyberbullied are targeted because they do not behave like the majority or they have their own values (Davis, Randall, Ambrose, & Orand, 2015a). As Alhaboby et al. (2016) state, people with disabilities face hostility and harassment in their socio-cultural environment, and the use of electronic communications creates an online context that further reshapes this discrimination. As far as intellectual and developmental disabilities is concerned, a study of students with intellectual and developmental disabilities revealed that between 4 and 9% have experienced cyberbullying at least once a week. There were also significant associations between cyberbullying and IQ, frequency of computer use, self-esteem and depressive feelings, but no association was found between cyberbullying and age or gender. This study suggests that cyberbullying is prevalent in special education settings and supports the importance of launching programs with these students, their teachers and their families (Didden et al., 2009). In addition, a systematic review has found prevalence rates of cyber-victimization of 38.3% in youth with intellectual disabilities (Maïano, Aimé, Salvas, Morin, & Normand, 2016).

In contrast to the large number of studies on cyberbullying in the general population, studies focused on population with disabilities are very scarce, with a lack of studies focused on adults with intellectual disabilities attending special training centers. As Houchins et al., stress in their systematic review (Houchins, Oakes, Houchins, Oakes, & Johnson, 2016), one clear area of the bullying paradigm that is missing from all studies on bullying and students with disabilities is a focus on cyberbullying. From the few existing studies it can be noted that, although being older appears to be a protective factor in the general population, intellectual disability is a developmental disability characterized by limitations in intellectual functioning and adaptive

behavior, resulting in the need for extraordinary supports for a person to participate in activities

involved with typical human functioning (Schalock et al., 2010). This definition suggest that they

may require additional supports when using technologies and that they may be at risk of

experiencing cyberbullying derived from their disadvantaged situation and their belonging to a

minority group. However, as far as we know, cyberbullying in adults with intellectual disabilities

has not been the subject of research.

Therefore, in this study we intend to: (1) analyze the frequency and characteristics of cyberbullying

behaviors experienced by adults with intellectual disabilities attending special training centers; (2)

determine the impact of these experiences in those who have been cyberbullied; (3) analyze the

associations between cyberbullying and the use of the technologies by this population; (4) Identify

similarities and differences in relation to the use of technologies and other healthy and unhealthy

behaviors, and between those who have experienced cyberbullying and those who have not.

We expect to find: (1) higher rates of cyberbullying in the population with disabilities than in the

general population, since this is a particularly vulnerable group; (2) lower psychosocial adjustment

(i.e., greater problems with the use of technologies, more unhealthy behaviors, and higher

depression scores) in people who have been cyberbullied versus those who have not.

2. Material and methods

2.1. Participants

The convenience sample is composed of 269 participants of whom 146 were men (54.3%) and 123

were women (45.7%), aged between 18 and 40 years (M=22.49; SD=3.27). The participants are

from Chile (14.1%; *n* = 38), Mexico (32%; *n* = 86) and Spain (53.9%; *n* = 145), three countries where

instant messaging services and social platforms are used to a higher extent than other comparable

countries (European Commission, 2016; Global Web Index, 2016). All participants were attending

educational facilities consisting of training centers for adults with intellectual disabilities, where

having this diagnosis is a requirement for being eligible to attend the center. All participants

receive training in occupational and academic skills and it is expected that in the near future some

of them could enter a job in a sheltered workshop or the like. The level of intellectual disability in

these centers ranges from mild to severe disability, with moderate levels of intellectual disability

being the most frequent diagnosis.

Although current manuals, such as the DSM 5 (APA, 2013) and the Manual published by American

Association on Intellectual Developmental Disabilities (2010) do not define severity levels based on

IQ scores but on adaptive functioning, according to previous classifications (APA, 2000), the

intellectual disability levels can be approximately grouped into Borderline = 71-80; Mild = IQ 55-

70; Moderate = IQ 40-54; Severe IQ 25-39, and Profound IQ < 25. According to this classification,

the current sample was composed of 20.4% participants with limit intellectual disability, 63.9%

with mild intellectual disability, and 15.6% with moderate intellectual disability. Although high

percentages of users of these centers cannot read or write (Agost, 1999), percentages between

88.8% and 100% in our current study have sufficient literacy skills to read, comprehend, and write

simple sentences. Chi square analysis (p> 0.05) indicated that men and women were similarly

distributed among the samples from the three countries. In addition, analysis of variance indicated

that the three subsamples had similar ages (p> 0.073). Participation was voluntary after explaining

the purpose of the study and obtaining the consent from parents/guardians and the individuals

with disabilities. The assessment was done using an interview format since some of the

participants lack sufficient literacy skills. The interviews were conducted in offices to ensure the

confidentiality of the information collected. Each interview took one hour on average. Additional

visual aids (amplified text, emoticons, color coding) were used when required to clarify the meaning of Likert type responses.

2.2. Measures

In addition to sociodemographic information and data on the use of the technologies, the first section asked about healthy and unhealthy behaviors (e.g. smoking, drinking, doing exercise, eating well, gambling, etc.). Next, the Spanish validation (Vázquez & Sanz, 1997) of the Beck Depression Inventory (BDI) (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961) was administered. Each item includes four self-report statements scored on a scale from 0 to 3. The scale designates levels of severity: Normal (0–13); Mild (14–19); Moderate (20–28); and Severe (29–63) (Beck, Steer, & Garbin, 1988). A Cronbach's alpha =.92 was obtained for the present study. That index is higher than those obtained in previous studies with general population (Vázquez & Sanz, 1997, 1999; Vázquez Morejón, Vázquez-Morejón Jiménez, & Zanin, 2014).

The Internet Over-use Scale (IOS) and Cell-Phone Over-use Scale (COS) (Jenaro et al., 2007), were administered next. The measures on Internet and Cell-Phone Overuse have been used in previous studies with the general population (Jenaro et al., 2007, O'Connor et al., 2013) and consists of 24-items that assess (by way of parallel forms) the characteristics associated with pathological Internet (computer) and cell phone overuse. Both measures have a six-point Likert type response format: 1= "Never", 2= "Almost never", 3="Sometimes", 4= "Often", 5="Almost always", 6= "Always". High scores reflect higher overuse. The scale items include 7 of the 9 criteria used to diagnose addictive disorders in the DSM5. Criteria 6 (attempts to recover losses) and 9 (relies on others to provide money to relieve their financial situation) are not included.

In both cases, meeting four or more criteria identifies people with addiction to these technologies. The 24 items are grouped as follows: (1) four items for Tolerance [e.g. *"Do you feel the need to use*

the Internet/ mobile phone more and more?"] (α=.65 for the IOS and α=.71, for the COS; (2) six

items for Loss of control [e.g. *"Have you ever tried to not be connect/use the cell phone, and have

not succeed?"*] (α=.82 for the IOS and α=.81, for the COS); (3) nine items for Withdrawal [e.g. *"Do

you feel agitated or worried if you are not using the Internet/ mobile phone?"*] (α=.85 for the IOS

and α=.88, for the COS); and (4) five items for Risks and negative repercussions [e.g. *"Do you

refrain from going out with your friends in order to spend more time using the Internet/mobile

phone?"*] (α=.77 for the IOS and α=.78, for the COS).

Finally, a questionnaire, based on the survey on bullying and cyberbullying developed by Campbell

(Campbell, 2010, 2011; Tomşa, Jenaro, Campbell, & Neacşu, 2013), was utilized to collect

information on cyberbullying. The questionnaire collects detailed information on cyberbullying

through a series of open-ended, multiple choice, and closed-ended questions. Specifically, it asks

questions such as: Have you ever experienced cyberbullying? And, Do you feel you are currently

being cyberbullied?. Other questions are open-ended, such as: specify the reasons why you think

the cyberbullying took place, the contexts where it happened, the frequency, the duration, the

persons involved, and the modalities. Participants were also asked about the consequences of the

experience at that time and if they felt there was any impact from past experiences in the present.

2.3. Procedure

Contacts with centers for individuals with intellectual disabilities were established during 2015 by

means of letters with a description of the research, the measures to be used, the ethical cautions

and the required approvals. Direct interviews with professionals, as well as presentations to

parents and potential participants, were held to explain the aims of the study and the tasks to be

performed by all involved. Confidentiality notwithstanding, during data collection cases of abuse

were detected and the researchers contacted the necessary parties to handle the matter.

After permissions were granted, students with intellectual disabilities were invited to participate

and data gathering took place from December 2015 to March 2017 in the three countries involved.

Specifically, data from Chile were obtained from March 2016 to April 2017, data from Mexico were

obtained from March 2016 to March 2017, and data from Spain were gathered from December

2015 to June 2016. All the data gathering was made by the authors of the current paper.

Significant efforts were required to collect the sample, as data gathering was conducted using one-

on-one interviews in which each participant was helped to understand and to fill out the

measures. Visual aids (amplified text, emoticons, color coding) were used when required.

Participation was voluntary and anonymity was guaranteed. All the interviewers participated in

training sessions to ensure homogeneity in the application of the interview and in the use of the

previously mentioned extra aids.

2.4. Design and analysis

This is a cross-sectional study. It follows a descriptive and correlational design, with ex post facto

measures. In addition to Cronbach's alpha for reliability analyses, descriptive and inferential

parametric statistics were used, after verifying compliance with the parametric requirements.

Multivariate GLM tests were used to determine potential differences in the dependent variables

taken together. If the multivariate analysis was significant, univariate analysis of variance was

performed (Garson, 2015). Non-parametric tests (Chi square) were used for analysis of categorical

variables. An Alpha =.05 was set for all the analyses.

3. Results

Concerning the profile of technology usage and behaviors, healthy or not, of the total participants

19% (n = 51) had access to Internet for less than a year, 14.1% (n = 38) had access for 1-2 years,

27.1% (n = 73) had Internet for 2-5 years and 39.8% (n = 107) had access for more than five years.

As for the mobile phone, 78.8% (n = 212) have a mobile phone, 19.7% (n = 53) have more than one

mobile phone and 1.5% (n = 4) indicated not having a mobile phone and use a Tablet instead.

Regarding the type of phone terminal, 71% (n = 191) have a Smartphone, 23.4% (n = 63) have a

conventional mobile, 4.1% (n = 11) have both a Smartphone and a conventional mobile and 1.5%

(n = 4) have a Tablet. In addition, the preferred means of message exchange, etc., is WhatsApp;

81.8% (n = 220) of the participants use that application.

Concerning healthy behaviors, 85.50% (n=230) sleep enough; 62.83% (n=169) practice moderate

physical activity, and 58.74% (n=158) practice sports. Regarding unhealthy behaviors, 10.78%

(n=29) smoke, 9.67% (n=26) drink alcohol, 5.95% (n=16) play slot machines; 4.09% (n=11) consume

drugs, and 2.60% (n=7) gamble.

Results for the IOS and COS scales found that 3% (n = 8) met the criteria of pathological internet

use with another 3.3% (n = 9) meeting the criteria for pathological mobile phone use, and 1.5%

(n=4) who have an addiction to both technologies. To these is added 23.05% (n = 62) of

participants who met one to three mobile phone addiction criteria, and another 26.77% (n = 77),

who met one to three criteria for Internet addiction.

In response to the question, have you ever been cyberbullied, 15.2% (n = 41) responded

affirmatively. When asked if they have seen or heard of someone from their environment who had

been cyberbullied, 19% (n = 51) respond affirmatively.

The profile of cyberbullied victims corresponds to a female (53.7%), aged between 18 and 39 years

(M=22.93, SD=4.20) who has been using Internet for more than five years (53.7%), and who has a

Smartphone (78%) and is a WhatsApp (97.6%) user. The cyberbullying consisted of offensive

messages (87.8%; n=36) thru social networks (43.9%; n=18) and WhatsApp (36.6%; n=15). The

cyberbullying was carried out by someone who was known in real life (41.5%; n=17). A substantial

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percentage (53.7%, *n*=22) consider that this experience impacted them negatively and for a significant number (34.1%, n=14) it still does. Of those cyberbullied, 56.1% (n=23) reported being cyberbullied currently as well.

To the question, are you currently suffering cyberbullying, 9.7% (*n* = 26) responded affirmatively. The profile of these victims corresponds to a female (53.8%, *n*=14), aged between 19 and 39 years (M=23.81, SD=4.53) who has been using Internet for more than five years (38.5%), and who has a Smartphone (76.9%) and is a WhatsApp (96.2%) user. The cyberbullying behavior consists of offensive messages (69.2%*; n*=18) thru social networks (53.8%*; n*=14). The cyberbullying was carried out by someone who was known in real life (50%; *n*=15). Almost 60% (57.7%; *n*=17) consider that this experience affects them negatively. Note, the profiles of past and current victims are very similar.

As for the characteristics of the cyberbullying, it mostly (87.8%) consisted of offensive messages (insults, threats) [e.g. *'Harassment began in the first year of high school. At first everything was fine but then, they started to mess with me. They told me that I was fat, they called me Mongoloid, they pushed me and took away my school supplies*' Male, 20, Spain]. Other much less frequent cyberbullying behaviors were attempts to isolate a person from the group, which happened in two instances. Sexual harassment was reported by two participants as well [e.g. *'It started because she told me to give her money for sex, and I did not want to pay her. Then threats and lies started about me ',* Male, 39, Spain and, *'I was told I was cute, they liked me, they wanted me to show them my naked body on the camera'* Female, 19, Chile]. Additional behaviors, reported by only one participant in each case, consisted of the use of stolen photos to laugh at that person, and another received offensive phone calls.

When asked why they think they have been the target of cyberbullying, the vast majority (97.7%, *n* = 38) indicated that it was because they were different [*'They said that I was a* [expletive] *gay',* male, 32, Spain], by mentioning their intellectual disability in one way or another [e.g. *'Because they felt better and with more brains than me. They felt superior to me*' Male 20, Spain. And also: *'they bugged me and they laughed at me, they said silly, fat, ugly'* Female, 21, Chile]. These behaviors happened in secondary school, although in some instances it started during the last years of primary school, or during vocational training. In most cases these behaviors have taken place in regular educational centers.

As for the frequency with which they were cyberbullied, 41.5% (*n* = 17) stated that every day, compared to 58.5% (*n* = 24) indicating several times a week. The duration ranged from 1 to 78 months (M=8.01, SD=14.39). When analyzing the modalities of cyberbullying in more detail, 4.9% (*n* = 2) reporting photos taken with mobile phone cameras, 19.5% (*n* = 8) through chats, 43.9% (*n* = 18) through social networks such as Facebook, 36.6% (*n* = 15) through WhatsApp, 7.3% (*n* = 3) through email, 12.2% (*n* = 5) through texting, and another 12.2% (*n* = 5) stated other means. In addition, of those who claimed to be cyberbullied, 12.2% (*n* = 5) indicated that harassment also occurred in person. As for the number of sources through which cyberbullying was experienced, 36.6% (*n* = 15) indicated one source, 17.1% (*n* = 7) indicated two sources, 14, 6% (*n* = 6) indicated three sources and 7.3% (*n* = 3) indicated four or more sources. A significant percentage of the cyberbullied knew the person in real life (66.7%, *n* = 30), while 20% (*n* = 9) either knew him/her online or never knew who he/she was.

Concerning the settings where these situations took place, almost half indicated educational settings (46.67%, *n* = 21), while 31.11% (*n* = 14) indicated leisure/free time situations, and 15.56% (*n* = 7) indicated associations for people with disabilities. The analysis of cyberbully profiles

indicates that they were classmates (46.67%), known individuals (37.78%), a boy (37.78%) or several girls (26.67 %), although a significant percentage of victims were also cyberbullied by people who they did not know (22.22%).

As shown in Table 1, the cyberbullying behavior toward the 45 victims consisted mostly of spreading rumors and lies, insults, physical threats, threats of physical aggressions, and, laughing about their physical appearance [e.g. *'Several people from this center send insults to me on the cellphone'*, Male, 33 years old, Mexico]. Taken together, 79 of the 106 (74.53%) reported cyberbullying experiences consisted of verbal aggression behaviors.

-----------------------------------Insert Table 1 about here----------------------------------

Regarding what they did after being cyberbullied, 64.44% (*n*= 29) indicated that they told an adult or a trusted person, 6.67% (n = 3) indicated having reported it to the police, and 13.33% (*n* = 6) indicated that they did nothing. Of those who were cyberbullied, 10.8% (*n* = 29) stated that they experienced a negative impact at the time of the incident. In addition, 6.3% (*n* = 17) stated that they still experience a negative impact [e.g. *'I still feel sad'.* Female, 21 years, Chile]; also: [*'I am very afraid of requests for friendship by Facebook',* Male, 22 years, Spain].

The analysis of the possible association between being cyberbullied or not and gender did not yield significant associations. Neither did the frequency, duration or intensity of Internet connections, nor the availability of one or more mobiles, or the type of mobile. The only significant association that was found was the use of WhatsApp (Chi square = 8,082; *df* = 1; p = .004) and while 18.2% of WhatsApp users were cyberbullied, only 2% of those who do not use WhatsApp were cyberbullied.

Multivariate analyzes revealed significant differences in the number of healthy and unhealthy behaviors, as well as in scores on the IOS, COS and BDI among those who claimed to have been cyberbullied or not in the past [Wilks' Lambda = .887; F (11, 257) = 2.972; p = .001; ŋ2p = .113], as well as between those who claim to be experiencing cyberbullying currently [Wilks' Lambda =. 854, F (11, 257) = 3.988, p <.001; ŋ2p = .146]. In Table 2, it can be seen how those who were cyberbullied made more use of the mobile but not of computers. They also scored significantly higher on the BDI. In addition, those who claim to be cyberbullied currently show even more significant differences than those who were cyberbullied in the past and they also show significantly more unhealthy behaviors, and more Internet risk behaviors than those who are not being cyberbullied.

---Insert Table 2 about here ---------------------------------------

4. Discussion

In this study we have made a first approximation to the study of cyberbullying in adults with intellectual disabilities who are receiving professional training in centers for this population. As a population with significant intellectual limitations, they require extraordinary supports in different aspects of daily life. The findings suggest, however, that extensive supports, both past and present, do not fully protect or prevent these people from experiencing vulnerability and bullying through technologies. Nor does it prevent them from engaging in unhealthy behaviors, with percentages being comparable to those obtained in general population (Jenaro et al., 2007). Just as studies with the general population have revealed (Bailin, Milanaik, & Adesman, 2014; Canan et al., 2013; Canan et al., 2014; Farber, Shafron, Hamadani, Wald, & Nitzburg, 2012; Jenaro, et al., 2007; King, Delfabbro, Zwaans, & Kaptsis, 2014; Koc & Gulyagci, 2013; Lepp, Barkley, & Karpinski, 2014; Li, Wang, & Wang, 2009; Rodgers, Melioli, Laconi, Bui, & Chabrol, 2013), an excessive and

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unsupported use of these technologies increases the chances of inadequate use and negative consequences. In our sample we found an association between being cyberbullied, making extensive use of the technology and other behaviors such as drinking or smoking. Without denying the potential contribution of additional uncontrolled variables (such as family supervision, cognitive ability, previous psychological adjustment), these findings stress the relevance of promoting learning environments that emphasize health care from a broad perspective. If we expect to improve their quality of life while promoting self-determination at the same time, training must go beyond vocational training to include other domains such as leisure time, community living, and health and safety and other practical support that a person with an intellectual disability may require (Thompson et al., 2009) to their support needs.

The findings on the use of ICTs reveal that this population has access to these technologies and that their use is typical for their cultural environments. They also show that nearly 3% has dependence or addiction to these technologies, to which must be added an additional 20% who are at risk. Although these percentages are somewhat smaller than existing studies with the general population (Durkee et al., 2012; Jenaro et al., 2007; (Lopez, Freixa, & Honrubia, 2013; Lopez, Honrubia, Freixa, & Gibson, 2014), they stress the need to implement primary (i.e. educate for healthy use and promoting respectful interpersonal relations) and secondary prevention (i.e. programs aimed at risk population with intellectual disabilities who show signs of excessive use of technologies, lack of parental control, isolation, etc.,) interventions, in order to prevent the need for tertiary prevention (i.e. psychological treatment aimed at cyber addiction, cyberbullies, and cyberbullied patients).

The findings also indicate that around 15% have been cyberbullied and close to 10% are currently being cyberbullied, which exceeds prevalence data from several studies and countries (Laftman,

Modin, & Ostberg, 2013; Rice et al., 2015; Ybarra, Mitchell, & Kosciw, 2015), with rates even higher than the existing data for younger Spanish population (Buelga et al., 2010) although not as high as those found for youth with intellectual disabilities in review studies (Maïano et al., 2016). Also, women have a relatively higher risk, compared to their male peers, which agrees with findings from typically developed students (Rice et al., 2015). These data should lead us to reflect on the quality of services offered to people with intellectual disabilities and the safeguarding of healthy environments, especially in educational settings where most cyberbullying seems to happen. The vulnerable situation of students with disabilities in regular education contexts is highlighted in this study, and agrees with previous studies (Didden et al., 2009; Heiman & Olenik-Shemesh, 2015). These findings also suggest that cyberbullying remains a reality in centers for adults with disabilities, beyond special education.

Early detection and intervention are also key in these settings. Clear protocols of action are essential, considering that almost 15% of those who were cyberbullied said they did not do anything about it. The findings also indicate that certain types of technology, such as instant messaging (WhatsApp) applications, are associated with a greater risk of having been cyberbullied. The massive use of this application in Spanish-speaking countries and the ease (i.e. free) of access and use of this application exemplifies the risks that any technology can have if inappropriately used.

In the light of the data obtained, it seems that it is not so much the quantitative aspects (frequency, duration, intensity) of the use of technologies per se which puts these individuals at risk of experiencing cyberbullying, but rather more qualitative aspects, such as the type of application being used or accessed, which helps to explain higher or lower vulnerability in this regard. However, the data also show that excessive use, characterized by high tolerance, loss of

control, withdrawal and putting personal or interpersonal situations at risk, especially in the use of the mobile phone, is characteristic of those who have been or are currently victims of cyberbullying.

Taking all the findings together, it seems that cyberbullying is associated to higher depression scores, more unhealthy behaviors, as well as maladaptive behaviors related to technologies; results in line with adolescent population studies that indicate that cyberbullying is predictive of some significant psychological and behavioral health problems (Gamez-Guadix, Orue, Smith, & Calvete, 2013). The association to higher depression scores agrees with previous studies (Reed, Cooper, Nugent, & Russell, 2016; Wang, Nansel, & Iannotti, 2011; Wright, 2017). Although the cross-sectional nature of the study precludes us from establishing cause-and-effect relationships, the quantitative and qualitative information gathered about their patterns of use and past and present experiences allow us to stress the relevance of training for healthy use of these technologies.

It is important to point out that, in a strict sense, when we refer to the use of the Internet compared to the use of the mobile phone, we are actually alluding to Internet access through a computer versus Internet access through a mobile phone. The greater availability of mobile phone technology for people with disabilities, as for the general population, makes it an especially versatile instrument to access different Internet resources and to exchange textual, visual or audiovisual information. As in studies with younger populations, poor parental or adult control is associated with more inappropriate use of these technologies (Chen, Chen, & Gau, 2015; Lathouwers, de Moor, & Didden, 2009). In this regard, controlling mobile phones presents greater challenges than the control of a desktop computer or a laptop, to which this population usually has more limited access in more supervised contexts.

In addition, cyberbullying emotionally affects the cyberbullied, and this study also shows that percentages of around 10% experienced negative consequences (fear, sadness, isolation ...), which even persists in a non-minor percentage (6.3%) to the present. These data are congruent with the significantly higher scores obtained in the BDI by those who claim to have been cyberbullied in the past or in the present. In this regard it must be noted that, although these victims scored significantly higher than their non-victimized peers, the scores suggest dysphoric mood rather than clinical depression.

We do not wish to conclude without first mentioning a series of shortcomings of the present study. First, because it is a study with a cross-sectional design with ex post facto measures, it is not possible to establish cause-effect relationships between the variables studied. However, the combination of quantitative and qualitative data allow us to point out that in many cases, the condition of intellectual disability places these people at risk of rejection and cyberbullying, especially if they make intense, risky, and unsupervised use of these technologies without adequate support (information, training, supervision). A second limitation is related to the type of sample used, which is incidental and from three countries. In this regard, although it was not the aim of this study to obtain prevalence data but to initiate the study of an unaddressed reality and to show its cross-cultural relevance, the obtained percentages concerning cyberbullying and other issues should be taken with caution and no generalization is advisable. Even with these shortcomings, the findings support the scientific and applied relevance of this field of study in populations with intellectual disabilities. In short, this study highlights the need to offer support in the settings where people with disabilities study, work, and relax, in order to avoid victimization and to ensure a healthy use of ICTs.

4. Conclusions

This study shows that having an intellectual disability places the individual at risk of experiencing cyberbullying. The over use of ICTs, together with a lack of involvement in alternative healthy behaviors, underscores the relevance of providing appropriate supports and education to meet the needs of this population regarding these technologies, including how to respond to cyberbullying.

5. Conflicts of interest

The authors declare no actual or potential conflicts of interest that influenced the conduct of the study or the contents of the manuscript

6. References

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Table 1. Cyberbullying behaviors

Behaviors	N	%(n=45)
Rumors and lies about you	16	35.56
Insults	14	31.11
Threats	13	28.89
Threats with physical aggression directed at you	12	26.67
Laughing at your physical appearance	12	26.67
Trying to make you feel bad or to think you are not worthwhile	8	17.78
Blocking your access to social networks, chats or similar	7	15.56
Physical aggressions	7	15.56
Try to break up your friendships	6	13.33
Threats with physical aggression directed at your family or friends	4	8.89
Try to damage your reputation	4	8.89
Using your photos or videos to embarrass you	3	6.67
Total	106	

Table 2. Descriptive Statistics and significance of differences (Anova) by past or current

cyberbullying or not

Variables	ciberbullied	Past					Currently				
		N	M	SD	SE	F	N	M	SD	SE	F
Healthy behaviors						2.939					1.967
	Yes	41	1.98	.96	.15		26	1.96	.82	.16	
	No	228	2.24	.90	.06		243	2.23	.92	.06	
Unhealthy behaviors						1.374					6.302*
	Yes	41	.56	1.05	.16		26	.81	1.27	.25	
	No	228	.39	.79	.05		243	.38	.77	.05	
Tolerance (COS)						11.129**					8.231**
	Yes	41	2.91	1.10	.17		26	2.98	1.07	.21	
	No	228	2.27	1.15	.08		243	2.30	1.16	.07	
Loss of control (COS)						17.912**					18.290**
	Yes	41	2.70	1.13	.18		26	2.89	1.13	.22	
	No	228	1.97	1.00	.07		243	1.99	1.01	.06	
Withdrawal (COS)						11.867**					15.989**
	Yes	41	2.73	1.27	.20		26	3.00	1.26	.25	
	No	228	2.09	1.07	.07		243	2.10	1.08	.07	
Risks (COS)						4.668*					19.559**
	Yes	41	2.11	1.13	.18		26	2.58	1.19	.23	
	No	228	1.75	.94	.06		243	1.72	.92	.06	
Tolerance (IOS)						.499					.063
	Yes	41	2.54	1.10	.17		26	2.48	1.09	.21	
	No	228	2.41	1.14	.08		243	2.42	1.14	.07	
Loss of control (IOS)						1.841					.370
	Yes	41	2.47	1.13	.18		26	2.38	1.04	.20	
	No	228	2.21	1.15	.08		243	2.23	1.16	.07	
Withdrawal (IOS)						1.552					1.044
	Yes	41	2.26	1.02	.16		26	2.27	1.03	.20	
	No	228	2.04	1.03	.07		243	2.05	1.02	.07	
Risks (IOS)						.519					5.541*
	Yes	41	1.84	1.04	.16		26	2.15	1.22	.24	
	No	228	1.72	.93	.06		243	1.70	.91	.06	
Total COS						14.080**					19.329**
	Yes	41	2.63	1.05	.16		26	2.88	1.06	.21	
	No	228	2.02	.93	.06		243	2.03	.93	.06	
Total IOS						1.534					1.360
	Yes	41	2.27	.89	.14		26	2.31	.93	.18	
	No	228	2.08	.93	.06		243	2.09	.92	.06	
BDI						11.142**					16.831**
	Yes	41	11.07	10.41	1.63		26	13.58	10.27	2.01	
	No	228	5.96	8.77	.58		243	6.00	8.80	.56	

**significant with p<.01; *significant with p<.05