Do young people with Asperger syndrome or intellectual disability use social media and are they cyberbullied or cyberbullies in the same way as their peers?

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Abstract

Background: The aim of the present study is to explore how youth with intellectual disability or Asperger syndrome use new technologies and social media in comparison with their peers without disability. **Method:** Participants were 181 adolescents with a mean age of 16 years old (SD=3.7) who completed the "Cyber-aggression Questionnaire for Adolescents", the "Cyber-victimization Questionnaire for Adolescents" and a questionnaire on social media and new technologies. **Results:** Percentages of use of new technologies (61% tablets, 93% computers, 97% mobiles) are similar among groups but adolescents with Asperger syndrome or intellectual disability have been using them since more recent times and their uses are more limited. They also use social media less; the group with Asperger syndrome uses them the least. There are no significant differences in the frequency of cyberbullying. **Conclusion:** Despite using social media less, the frequency of cyberbullying is similar to their peers. Besides, the observed prevalence of cyberbullying is higher than that mentioned in previous studies in which informants were not the youths themselves.

Keywords: cyberbullying, social media, new technologies, intellectual disability, autism spectrum disorder.

Resumen

¿Las personas jóvenes con síndrome de Asperger o discapacidad intelectual utilizan las redes sociales y son ciberacosados o ciberacosadores como sus pares? **Antecedentes:** este estudio se centra en explorar el uso que hace la juventud con discapacidad intelectual o síndrome de Asperger de las nuevas tecnologías y las redes sociales en comparación con sus pares sin discapacidad. **Método:** los participantes fueron 181 jóvenes con una edad media de 16 años (DT= 3.7 años), quienes cumplimentaron el "Cyber-aggression Questionnaire for Adolescents", el "Cyber-victimization Questionnaire for Adolescents" y un cuestionario sobre el uso de redes sociales y nuevas tecnologías. **Resultados:** los porcentajes de uso de las nuevas tecnologías (61% tablet, 93% ordenador y 97% móvil) son similares entre los grupos, pero los jóvenes con síndrome de Asperger y discapacidad intelectual las usan desde hace menos tiempo y hacen un uso más limitado de ellas. También usan menos las redes sociales, siendo el grupo con síndrome de Asperger el que menos las usa. No existen diferencias significativas en la frecuencia de ciberbullying. **Conclusión:** a pesar de que utilizan menos las redes sociales, la prevalencia de ciberbullying es similar a la de sus iguales. Además, la prevalencia observada en todos los grupos es más elevada que la apuntada en otros estudios en la que los informantes no suelen ser los propios jóvenes.

Palabras clave: ciberbullying, redes sociales, nuevas tecnologías, discapacidad intelectual, trastorno del espectro del autismo.

The use of new Information and Communication Technologies (ICTs) has become so widespread in everyday life that some studies report that between 58% and 97% of young people use a computer and the Internet daily, for an average of 71 minutes per day (Garmendía, Garitaoinandia, Martínez, & Casado, 2011; Ministerio de Educación, 2015). In fact, it is so widespread that 91% of young people use the Internet as a means of socialization (Royal Society for Public Health, 2017). Furthermore, up to 63% of minors have a mobile phone (Latorre, 2014); this percentage is

higher among students in the Principality of Asturias, where it is reported that up to 86.6% use a mobile phone daily (González-Cabrera, Balea, Vallina, Moya, & Laviana, 2017). In the case of people with intellectual disability (ID), however, the numbers drop dramatically. The recently published Olivenza Report on the general situation of disability in Spain (Jiménez & Huete, 2017) found that: 59% of people with ID do not use mobile phones, and, if they have one, the vast majority of them use it to speak on the phone; 80% do not use the Internet, and, when they do, most use it to look for information; in addition, 75% do not use chat systems or participate in online forums and 41% do not use social media.

The online world and access to the latest ICTs represent a new setting that provides opportunities to develop academically and socially, as well as to develop one's own identity (Talwar, Gómez, & Shariff, 2014), but this situation in turn brings with its significant potential dangers, of which cyberbullying is the main manifestation.

Different studies estimate that between 37% and 70% of young people have experienced cyberbullying (Microsoft, 2012; Royal Society for Public Health, 2017). Such disparity in the data could be explained by the lack of consensus in defining and measuring the construct (Beltrán, Zych, Ortega, & Llorent, 2018). While there is no widely agreed upon definition (Dalla Pozza, Di Pietro, Morel, & Psaila, 2016), in this study, we understand cyberbullying to mean a form of bullying "in which the harassment is performed through information and communication technologies, mainly the Internet and mobile phones" (Garaigordobil & Machimbarrena, 2017, p. 335). The characteristics of cyberbullying are: (a) the anonymity of the cyberbully (Dalla Pozza et al., 2016; Garaigordobil, Martínez, Maganto, Bernarás, & Jaureguizar, 2016; Kowalski & Limber, 2013; Slonje, Smith, & Frisén, 2013); (b) greater potential to harm with a single action, the effects of which can be repeated over and over again, like a snowball (e.g., posting a photo on a social networking site) (Brody & Vangelisti, 2017; Garaigordobil, Martínez, Páez, & Cardozo, 2015; Heiman & Olenik-Shemesh, 2015; Nixon, 2014); (c) reduced interaction between victim and perpetrator (Sticca & Perren, 2013); and (d) increased insecurity in the victim (bullying stops once outside the school gates; cyberbullying follows you everywhere) (Estévez, Villardón, Calvete, Padilla, & Orue, 2010; Slonje et al., 2013).

Given its considerable prevalence, it is important to note that cyberbullying is a phenomenon that can affect anyone. If it is common in the general population, it is likely to be equally or more so in groups that are vulnerable or at risk of social exclusion, as can be the case for people with autism spectrum disorder (ASD) or with ID. Research into the phenomenon among these groups, however, remains very limited, despite the fact that these conditions may be a risk factor in themselves. People with ASD present difficulties in communication and social interaction (American Psychiatric Association, 2013), which means that they may not be able to discern if the situation they are experiencing is cyberbullying (Cappadocia, Weiss, & Peppler, 2011; Kowalski, Morgan, Drake-Lavelle, & Allison, 2016). In addition, they tend to engage in fewer social interactions with their peers, having fewer friends, which increases their vulnerability (Cappadocia et al., 2011; Kloosterman, Kelley, Craig, Parker, & Javier, 2013; Screckovic, Brunsting, & Able, 2014). Also, their possible restricted and repetitive patterns of behavior, and restricted interests and activities, may seem annoying to their peers (Kasari, Locke, Gulsrud, & Rotheram-Fuller, 2011; Screkovic et al., 2014). People with ID, owing to their limitations in intellectual functioning and adaptive behavior (Schalock et al., 2010), may be more vulnerable

to bullying, particularly because of their lower ability to analyze social situations, the consequences of their actions and the veracity of the information that circulates on the Internet (Christensen, Fraynt, Neece, & Baker, 2012; Salmerón, Gómez, & Fajardo, 2016; Zikl, Silhankova, & Manenova, 2013).

In light of the above, the purpose of this study is to examine how young people with ID or ASD use ICTs and social media compared with their neurotypical peers, with particular emphasis on comparing the frequency of cyberbullying in the different groups.

Method

Design

The method was a cross-sectional study with a case-control study, comparing a group of young people with ID, a group of young people with ASD but without ID (more specifically, people with Asperger syndrome, hereafter AS) and, for comparison, a control group of young people with neurotypical development (i.e., without ASD or ID).

Participants

The sample consisted of 181 young people in Spain, 53% of whom were male (n=96). The mean age was 16 years (SD=3.7; Md=15; Mo=14; Min=10; Max=25). A total of 25% were young people with ID (n=45) and 17% (n=31) were young people with AS. The two study groups thus totaled 76 people (42%). The comparison group (i.e., neurotypical development) accounted for 58% of the sample (n=105) As for schooling, 77.3% (n=140) were students in mainstream schools, 20.4% (n=37) attended special schools, and 2.3% (n=4) were in a combined educational setting. Further details on the three groups that formed the sample are presented in Table 1.

Instruments

All groups were administered the same battery of assessments, consisting of: (a) an ad hoc questionnaire on data of a sociodemographic nature; (b) the Cybervictimization Questionnaire for Adolescents (CYVIC; Álvarez-García, Barreiro, & Núñez, 2017); and (c) the Cyberaggression Questionnaire for Adolescents (CYBA; Álvarez-García et al., 2017).

The ad hoc questionnaire comprised 55 items on sociodemographic data (e.g., gender, age, type of schooling), use of

Table 1
Sociodemographic data by subgroups

Group	Male (n)	Female (n)	M years old (SD)	Type of education		
				Ordinary (n)	Special (n)	Combined (n)
NOR	43.8% (n=46)	56.2% (n=59)	15 (SD=3.1)	100% (n=105)	–	–
AS	74.2% (n=23)	25.8% (n=8)	15 (SD=3.9)	93.5 (n=29)	3.2% (n=1)	3.2% (n=1)
ID	60% (n=27)	40% (n=18)	19 (SD=3.1)	17.8% (n=8)	80% (n=36)	2.2% (n=1)

Note: NOR= Neurotypical; AS= Asperger syndrome; ID= Intellectual disability

new technologies (tablet, smartphone, computer) and social media (e.g., favorite social media, how they are used), and unpleasant situations experienced as a result of using these technologies and social media (e.g., receiving or sending sexist, racist or violent photos).

Both the CYBA and the CYVIC are self-report questionnaires composed of 19 items with a Likert-type response format; the respondent is asked to indicate, for the period covering the previous three months, the frequency with which they have received or produced the cyberbehavior described in each statement (from 1=never to 4=always). The structure of the CYBA consists of: (a) three factors: impersonation (α=.87), visual-sexual cyberaggression (α=.79), and verbal cyberaggression and exclusion (α=.91); and (b) four additional indicators of visual-mocking cyberaggression/happy slapping. As for the CYVIC, it has a structure of: (a) four factors: impersonation (α=.81), visual-sexual cybervictimization (α=.77), verbal cybervictimization (α=.87), and online exclusion (α=.73); and (b) four additional indicators of visual-mocking cybervictimization/happy slapping. The factorial structure of the CYVIC is therefore the same as the CYBA, except for one difference: in the CYVIC, the items on "verbal cybervictimization and exclusion" are distributed across two differentiated factors (i.e., verbal cyberaggression and online exclusion).

Given the characteristics associated with people with ASD or ID, not to mention the constant evolution of social media, we modified some items to bring them up to date and to make them easier to read and interpret for all groups (whether they had ASD/ID or not). For this reason, we deleted "Tuenti" from all the items where it was mentioned (since it no longer exists as a social networking site) and we added specific examples to items 6 and 3 in both questionnaires (e.g., "naked/in underwear" were included as examples of "compromising"; the word "doctored" was replaced with "modified").

Procedure

Convenience sampling was used to select participants; anyone who was contacted, knew the objectives of the study and had provided their informed consent (or that of their legal guardian) could participate if they wished to. To satisfy the inclusion criteria, potential participants had to: (a) be a user of social media (e.g., Facebook, Twitter, WhatsApp, Instagram) and/or use ICTs (e.g., mobile, computer, tablet); (b) be aged between 10 and 25 years; and (c) provide informed consent.

A number of educational establishments and organizations were contacted; those which expressed an interest in participating were sent a letter outlining the study and a template of the informed consent to be obtained from all participants (or their legal guardians). Most data were obtained online (n=162), although some organizations preferred participants to use the paper format (n=19).

The study was carried out in compliance with current ethical standards and the principles of the Declaration of Helsinki. To ensure confidentiality and anonymity of the data, each person was assigned an identification number that could not be traced by the researchers.

Data analysis

As was the case in the study conducted by Álvarez-García et al. (2017), given the low frequency of the different cyberbehaviors,

questionnaire responses were recoded into two options: "never" and "at least once", with the latter encompassing the original response options of "sometimes", "often", and "always".

For the analysis of qualitative variables, chi-square (χ^2) tests were run (applying a Bonferroni correction for multiple comparisons in variables with more than two categories), and Cramer's V statistic was calculated to measure the strength of associations. As for the quantitative variables, since they did not meet the criteria of normality and homogeneity, we used the Hochberg value adjusted specifically for this type of data, via the procedure advanced by Vallejo and Ato (2012). Variables with p<.05 and V≥0.25 were considered to be significant.

Results

Use of ICTs and social media

In total, 61.3% of participants used tablets, with no differences observed between the three groups being compared. There were, however, group differences in what the tablets were used for. Compared with the neurotypical group, the group of young people with AS made less use of the tablet to "talk with friends" (χ^2=9.372, p=.009, V=.291), while the group with ID used it less than the other two groups for "watching videos" (χ^2=28.000, p=.000, V=.502) or "studying" (χ^2=19.748, p=.000, V=.422). Both study groups (young people with AS or with ID) made greater use of the tablet for "solitary play" (χ^2=45.500, p=.000, V=.640), but used it significantly less for academic purposes, such as "looking for information" (χ^2=17.711, p=.000, V=.399), "doing homework" (χ^2=27.864, p=.000, V=.501) or doing "classwork" (χ^2=21.718 p=.000, V=.442).

The majority of participants (92.8%) had a computer. The 7.2% who did not have one all came from the group composed of people with ID (χ^2=42.329, p=.000, V=.484). With regards the number of computers in each home, we observed a greater number in the neurotypical comparison group (χ^2=76.733, p=.000, V=.460) than in the other two groups. Once again, differences were observed in what the device was used for: young people with AS used the computer less for activities such as "talking with friends" (χ^2=11.005, p=.004, V=.256) and "talking with family" (χ^2=12.414, p=.002, V=.272), while the group with ID made significantly greater use of the computer for "solitary play" (χ^2=66.438, p=.000, V=.629).

Almost all of the people surveyed had a mobile phone (97.2%). That said, respondents with AS or ID have had one for a shorter period of time than the young people from the comparison group (χ^2=28.289, p=.000, V=.283). The group with AS used it less to "talk with peers" (χ^2=21.868, p=.000, V=.352), and both study groups used it more for "solitary play" (χ^2=69.405, p=.000, V=.628). A total of 73.9% of respondents used their mobile phone while they were with other friends, with higher frequency observed in the neurotypical group (χ^2=17.216, p=.000, V=.313).

Altogether, 64.5% of the people with AS and 82.2% of the people with ID used social media, compared with 96.2% for the comparison group (χ^2=20.704, p=.000, V=338). The group with AS was the least likely to use social media "to communicate with friends" (χ^2=20.178, p=.000, V=.357).

As for WhatsApp (i.e., instant messaging service), it was used by only 76.7% of the sample with AS, compared with 91.1% of the group with ID and 96.2% of the comparison group (χ^2=12.875,

$p=.002$, $V=.270$). Respondents with AS and ID alike had fewer WhatsApp groups compared with neurotypical respondents ($\chi^2=79.964$, $p=.000$, $V=.470$).

Finally, as shown in Figure 1 and Table 2, statistically significant differences were observed in the number of different uses of: the three devices (e.g., talk to friends, send photos, play alone, learn, study, shop); social media (e.g., share content, communicate, meet people); and WhatsApp (e.g., talk, make plans, gossip). The comparison group had the largest number of different uses for computers, mobile phones, social media, and WhatsApp.

Of the people surveyed, 61.4% had experienced some sort of unpleasant situation, and there were no differences between the three groups in terms of the average number. The most common situations were: receiving racist content (40%), sexist content (29%) or violent content (25%); disclosing personal data over social media (40.5%); receiving humiliating content from their circle of friends and acquaintances (28%); and receiving calls from unknown callers (27%).

Finally, only 77.78% of the people with ID and 87% of the people with AS downloaded apps to their devices, compared with 100% of respondents in the neurotypical group ($\chi^2=22.996$, $p=.000$, $V=.357$). A total of 58.7% never asked parents for permission before downloading and only one-quarter (24%) stated that they read the permissions required by the app. Overall, and with no statistically significant differences between the groups, 77.1% of respondents were concerned about how the apps might use their personal information, which is why 76.2% had decided at least once not to download an app because of the permissions required.

Cyberbullying

On the one hand, 61.3% of the sample reported that they had been subjected to some form of cyberbullying in the previous three months, with considerable variability according to type and frequency (Table 3). The percentages of respondents having
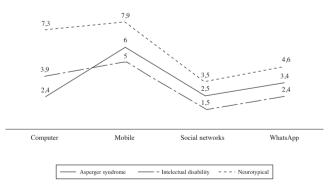

Figure 1. Average number of different uses according to group

experienced any type of cybervictimization were 51.6% for the group with AS, 64.4% for the group with ID, and 62.9% for the comparison group, although the differences were not statistically significant. The most frequent types of cybervictimization for the group with AS were verbal bullying ("received calls on my mobile but the caller stayed silent, just to annoy me"=38.7%; "I have been picked on/made fun of on social media"=22.6%) and online exclusion ("I have been removed from, or not accepted on, a social network, without having done anything, just for being me"=16%). For the other two groups (ID and neurotypical), the three most frequent types of cybervictimization were verbal (received calls on my mobile but the caller stayed silent=41.4% and 45.3%, respectively; received insults via text message or WhatsApp=24.4% and 14.9%; and picked on social media=22.2% and 14.9%).

On the other hand, 28.2% of respondents reported having committed some form of cyberbullying in the previous three months, with some variability according to the type and frequency of behaviors (Table 4). We found that 9.7% of respondents in the group with AS had engaged in cyberbullying, 33.3% in the group with ID, and 31.4% in the comparison group, although the percentages were not statistically significant. The type of cyberbullying most frequently committed by the group with AS was verbal ("I have mocked someone on social media with offensive or insulting comments"=6.6%; "to annoy someone, I have called a mobile and stayed silent when the person answered"=3.3%; "I have spread rumors about someone on WhatsApp or on social media"=3.3%). As for the group with ID, the most frequent type of cyberbullying related to online exclusion ("I have removed someone from, or not accepted them on, a social network or chat system, just because of who he/she was"=13.3%; "I have conspired with other people to ignore someone on social media"=8.9%).

Discussion

There is a dearth of research into cyberbullying among people with ID or ASD, and the few studies that have been conducted have important methodological limitations, such as the absence of a comparison group. There is, moreover, great disparity in the instruments used to evaluate the same construct. For these reasons, the objectives of this study focused on exploring the prevalence of cyberbullying in young people with ID or AS, as well as examining how these groups use ICTs and social media, comparing the results with those obtained for a sample of neurotypical peers.

First, usage percentages for the three devices (61% tablet, 93% computer, and 97% mobile) were similar across the groups; these figures are somewhat higher than those found in earlier studies (29% tablet, 89% computer, and 83% mobile) (Cánovas, García, Oliaga, & Aboy, 2014; Ministerio de Educación, 2015). These differences could be explained by the expected year-on-

	Computer			Mobile			Social networks			WhatsApp		
Comparedgroups	**F**	**p**	**H-ADJ**	**F**	**p**	**H-ADJ**	**F**	**p**	**H-ADJ**	**F**	**p**	**H-ADJ**
NOR-ID	161.9	.000	.000	20.5	.000	.000	9.82	.002	.005	13.7	.000	.001
NOR-AS	8.1	.007	.000	8.06	.002	.005	18.6	.000	.000	11.8	.001	.026

Table 2
Usage comparisons with adjusted Hochberg (H-ADJ)

Note: NOR-ID= Neurotypical-Intellectual disability; NOR-AS= Neurotypical- Asperger syndrome

Table 3
Percentage of people who have been subjected to some form of cybervictimization

Items	NOR	AS	ID
Impersonation			
1. Someone has impersonated me on the Internet, posting comments as if they were me	12.4	6.4	11.1
12. Someone has impersonated me on *Twitter* or *Facebook*, creating a fake profile with which to ridicule me	1.9	6.4	4.4
18. Someone has gotten my password and sent annoying messages to someone I know, as if it were me, to get me into trouble	8.6	6.4	6.7
Visual-sexual			
2. Without my consent, someone has taken photos or made video recordings of me with sexual content and has disseminated them via mobile phone or the Internet	2.85	6.4	13.3
9. Without my permission, someone has disseminated, via mobile phone or the Internet, compromising pictures or videos that I had taken or made myself	1.9	3.2	2.2
14. Someone has pressured me into doing things that I did not want to do, threatening to disseminate my intimate conversations or images	2.85	3.2	11.1
Visual-mocking/happy slapping			
3. Someone has modified photos of me and posted them on the Internet or sent them via *WhatsApp* to hurt or make fun of me	14.3	9.6	13.3
6. Without my permission, someone has posted on the Internet or sent via *WhatsApp* groups real, compromising pictures to hurt or make fun of me	6.7	9.6	11.1
10. Someone has beaten me, had it recorded, and then disseminated the recording	0.9	–	6.7
15. Someone has forced me to do something humiliating, had it recorded, and then disseminated the recording to mock me	2	3.2	2.2
Verbal			
5. I have received calls on my mobile where the caller stays silent, I guess to annoy me	47.6	38.7	11.1
7. I have received calls to insult or mock me	5.7	13	17.8
8. Someone has picked on me, insulted me or made fun of me on social media	6.7	22.6	22.2
11. I have received insults via text message or instant messaging programs (e.g., *WhatsApp*)	12.4	9.6	24.4
17. I have received anonymous calls to threaten or frighten me	5.7	3.2	11.1
19. Someone has posted false rumors about me on social media or has spread them on *WhatsApp*	12.4	6.4	11.1
Online exclusion			
4. I have been removed from, or not accepted on, a social network or on *WhatsApp*, without having done anything, just for being me	9.5	16.2	13.3
13. Someone has made false complaints about me on a forum, social networking site or online game, and this got me kicked out	5.7	3.2	8.8
16. People have conspired to blank me (ignore me) on social media, *WhatsApp*...	2.9	9.6	15.6

Note: NOR= Neurotypical; AS= Asperger syndrome; ID= Intellectual disability

year increase in the use of ICTs. It should be noted, however, that people with AS or with ID have had less time to avail of tablets and mobiles in comparison with their peers, which can be indicative of greater difficulties and fewer opportunities to access these devices. In fact, it was observed that both people with AS and people with ID had on average fewer uses for each device and spent less time using them.

As regards respondents in the group with AS, they made less use of the different devices for social purposes, which would be expected given the diagnostic criteria for ASD. While both study groups (AS and ID) used a smaller number of social networking sites than their peers, respondents in the group with AS went on them the least, and, when they did, it tended to be for activities not directly related to social interaction, such as looking at what other people share. Less than half used them to communicate with friends or to meet new people. The assumption that people with AS tend to engage less in social interactions (Cappadocia et al., 2011) was also observed in the differential use of instant messaging service WhatsApp; people in this group used it the least, and when they did, they set up and had fewer groups than others.

Secondly, the prevalence of cybervictimization was higher in the neurotypical group, and the prevalence of cyberbullying higher in the group with ID, but these were not statistically significant. It is difficult to ascertain whether our results on the

prevalence of cybervictimization are in line with earlier studies, given the wide disparity of results, with prevalence figures ranging from 1% (Cappadocia et al., 2011) to 22% (Didden et al., 2009). That said, our figure for the group with AS (52%) was higher than that reported in other studies, where the highest prevalence to be observed was 21% (Kowalski & Fedina, 2011), although it should be stressed that this percentage corresponds to participants with AS and ADHD, so a true comparison is not possible. The same is true of the group with ID: our study recorded a prevalence figure of 64%, much higher than the maximum of 22% gleaned from the literature review (Didden et al., 2009). The percentage for the neurotypical group (62.5%) was also somewhat higher than those observed in other studies (46–50%) (Álvarez-García et al., 2017; González-Cabrera et al., 2017), although similar to that found by the Royal Society for Public Health (2017), which suggests that seven in ten young people in the world have experienced cyberbullying.

With regard to specific cyberbullying behaviors, the most common were verbal, followed by social exclusion, in keeping with what has previously been observed in other studies with the general population (Álvarez-García et al., 2017; González-Cabrera et al., 2017). As for unpleasant situations experienced, the most common in our study were: receiving calls from unknown adults; disclosing personal data over social media; and receiving racist,

Table 4
Percentage of people who have committed some form of cyberbullying

Items	NOR	AS	ID
Impersonation			
1. I have impersonated someone on the Internet, posting comments under his/her name as if I was him/her	5.7	3.3	–
12. I have impersonated someone on *Twitter* or *Facebook*, creating a fake profile through which I have insulted or ridiculed that person	2.7	–	–
18. I have gotten another person's password and sent annoying messages to someone he/she knows, as if they were from him/her, to get him/her into trouble	5.7	–	2.2
Visual-sexual			
2. Without consent, I have taken photos or made video recordings with sexual content and have disseminated them via mobile phone or the Internet	1.8	–	2.2
9. Without permission, I have disseminated, via mobile phone or the Internet, compromising pictures or videos that the person had taken or made of him/herself	2.7	–	4.4
14. I have pressured someone into doing things that he/she did not want to do, threatening to disseminate his/her intimate conversations or images	1.8	–	2.2
Visual-mocking/happy slapping			
3. I have modified photos of someone and posted them on the Internet or sent them via *WhatsApp* to hurt or make fun of him/her	7.6	–	4.4
6. Without permission, I have posted on the Internet or sent via *WhatsApp* groups real, compromising pictures to hurt or make fun of someone	1.8	–	6.6
10. I have beaten someone, had it recorded, and then disseminated the recording	–	–	–
15. I have forced someone to do something humiliating, had it recorded, and then disseminated the recording to mock him/her	–	–	2.2
Verbal			
5. To annoy someone, I have called a mobile and stayed silent when the person answered	13.3	3.3	4.4
7. I have made calls to insult or mock someone	5.7	–	2.2
8. I have mocked someone on social media with offensive or insulting comments	7.6	6.5	6.6
11. I have insulted someone via text message or instant messaging programs (e.g., *WhatsApp*)	2.7	–	6.6
17. I have made anonymous calls to threaten or frighten someone	2.7	–	2.2
19. I have spread rumors about someone on *WhatsApp* or social media	4.8	3.3	4.4
Online exclusion			
4. I have removed someone from, or not accepted them on, a chat system, social network or *WhatsApp*, without him/her having done anything, but just because of who he/she was	16.2	–	13.3
13. I have made false complaints about someone on a forum, social networking site or online game, to get them kicked out	4.8	–	2.2
16. I have conspired with others to blank (ignore) someone on social media and/or *WhatsApp* groups...	1.8	–	9

Note: NOR= Neurotypical; AS= Asperger syndrome; ID= Intellectual disability

violent or sexist content. These results are in line with those of other large-scale surveys (Pérez et al., 2011).

Although our study found no statistically significant differences between the three groups, in terms of the prevalence of cyberbullying and the quantity of unpleasant situations experienced, we must bear in mind specific aspects regarding people with ID or AS. Despite the fact that they have less access to new technologies and social media, not to mention a more restricted use thereof, the percentages on cyberbullying are similar to the neurotypical population. It is inevitable, therefore, that the progressive incorporation of these groups into the digital world without any intervention tailored to their specific needs will lead to a considerable increase in these percentages.

This study is not without its limitations. Among these, we should point out that we used a convenience sample, and therefore only assessed people who were easily accessible and who had provided informed consent. This method gave rise to a certain imbalance in the sample sizes of the study groups and the comparison group, as well as imbalances in the sociodemographic characteristics of the groups. Consequently, the results cannot be generalized to all young people with AS or with ID, and we should bear in mind

that the differences may in part be explained by some of these uncontrolled variables. In addition, since participants were mostly concentrated in just one of Spain's autonomous communities, it would be advisable to increase not only the sample size but also its heterogeneity in terms of geographical origin.

Despite these limitations, it is important to highlight the key strengths of our research, which goes beyond the handful of previous studies into this population by including a comparison group and by directly involving the young people with ID or AS in the assessment (instead of the usual practice of obtaining information through informant-reports that give the view of parents). The results of this study make a significant contribution as they seek to respond to the emerging need to address this issue in people with disability (Jenaro et al., 2018). This work therefore serves as a necessary starting point to further investigate the differential use young people with ID or AS make of new technologies and social media, and how such uses relate to different potential risks. Only then will we be in a position to provide the necessary supports to make the right of equal access to the digital world a reality for all people, thereby eliminating the digital divide that exists across different groups.

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