Internet Use and Online Behaviour of Adults with Intellectual Disability: Support Workers’ Perceptions, Training and Online Risk Mediation

Abstract

The aim of this study was to examine support workers’ perceptions of the benefits and risks of Internet access by adult service users with intellectual disability and their online activities and behaviours. It also aimed to explore support workers’ training needs and mediation strategies implemented to prevent and address online risks. A cross-sectional survey design was conducted including 135 Spanish support workers participating in the study. Findings show that support workers perceive the Internet as an unsafe environment, emphasising online risks over benefits for people with intellectual disability. Support workers reported undesirable online behaviours (e.g. cyberbullying) experienced and engaged in by service users. Although support workers declared the use of active mediation strategies to prevent online risks, they lacked training on Internet safety. Training programs should be designed and implemented by service providers to provide their support workers with strategies to promote the safe use of the Internet.

Keywords: intellectual disability, Internet, support workers, training, mediation.
Introduction

The construct underlying the term intellectual disability has evolved from a medical model of disability, that focuses on the characteristics and limitations of individuals and places the impairment as the central problem of the person with intellectual disability (Mckenzie 2013), to a social model. The social model considers disability a socially constructed phenomenon (Retief and Letšosa 2018) and places the key of the intellectual disability in the individual's environment (Oliver 1983). In this sense, intellectual disability is understood as a ‘multidimensional state of human functioning in relation to environmental demands’ (Thompson et al. 2009,135). This is the approach adopted by the authors of this article. We consider that disability is not an inherent fact of the subject, but the result of the requirements for the functioning that the person cannot develop due to the lack of accessibility in the environments, services or products and / or in the inadequate or insufficient supply of the necessary supports.

Consequently to this social model approach of disability, the beliefs and attitudes of the social environment are, among others, determining factors that can limit the full participation of the person with intellectual disability in society by not providing the right supports or not performing the necessary accessibility actions in the environment. Although the social model of disability has also received some criticism (Shakespeare and Watson 2001), this vision of disability continues in force (Oliver 2013). Consistent with this approach, intervention in the environments to favour access and participation should focus also on cognitive accessibility, understood as the strategies to make products or services easy to use as well as to make explicit or implicit information of a given environment understandable for all (Wehmeyer 2010). It should also focus on establishing a profile of support needs as well as a program to provide support for the time required. Support means any resource and strategy that promotes the development,
education, well-being, etc., with the aim of improving the overall functioning of the individual (American Association of Intellectual and Developmental Disabilities 2010). In the Spanish context, associations specialising in people with intellectual disabilities and their families represent a crucial source of support of various types (e.g. vocational training, labour intermediation, home support), benefitting the personal and social autonomy of people with intellectual disability (Plena Inclusión 2019), such as training for digital literacy and Internet use. However, the professionals of these associations may also present prejudices that could affect the interventions they carry out and the supports they provide.

**Use of the Internet**

Internet is a key tool in today's society to access information, training, news, social networks, games, etc. People with intellectual disability are gradually accessing the Internet (Jenaro, Flores, Vega, et al. 2018; Chiner, Gómez-Puerta and Cardona-Moltó 2017a; Feng et al. 2008; Gutiérrez and Martorell 2011), although not in the same proportion as the population without intellectual disability (Chadwick, Wesson, and Fullwood 2013). Thus, the presence of a digital divide that limits the inclusion of all citizens is still a reality (Lussier-Desrochers et al. 2017). The digital divide is a discriminatory fact consisting of the difficulty, such as people with intellectual disability, experience in using digital devices and accessing resources on the Internet which affects their opportunities to participate in the so-called information society (Duplaga 2017). Initially, the barriers that favoured the digital divide were the limited accessibility or usability of devices and software (Wehmeyer, Smith, and Palmer 2004), the lack of Internet access (Gutiérrez and Martorell 2011) and even the lack of knowledge of the families to provide adequate support for use of digital devices or Internet for individuals
with intellectual disability (Blackburn and Read 2005). In addition to these barriers, Tsatsou (2020) has recently identified other difficulties reported by people with disabilities related to biomedical, social and psychological aspects (e.g. technology is not designed to meet the needs of people with disabilities, the design for all approach is not sufficiently taken into account). In this sense, the Convention on the Rights of Persons with Disabilities (United Nations 2006), the World Report on Disability (World Health Organization 2011) or the 2030 Agenda for Sustainable Development (United Nations 2015) have already stressed the importance of promoting access for people with disabilities to new information and communication systems and technologies, including the Internet, through measures for positive action in order to limit or eliminate the digital gap.

The data available so far indicate that people with intellectual disability tend to use the Internet to play online, send emails (Didden et al. 2009), listen to music, watch videos, chat with friends, and interact on social networks (Chiner, Gómez-Puerta and Cardona-Moltó 2017a). However, previous research has certain biases with respect to our target population. First, most of the studies have focused on children or teenagers with intellectual disability in educational settings and to a lesser extent on adults with intellectual disability. The findings of these investigations may not represent people of other ages especially those adults with intellectual disability that are already out of the educational system and take part in other types of activities (e.g. vocational centres, day centres). Second, certain studies have focused on specific aetiologies of intellectual disability, such as Williams syndrome (Lough and Fisher 2016). Finally, various studies presented in this literature review analyse data from people with varying degrees of IQ, including some people whose characteristics may not strictly correspond to the commonly accepted concept of intellectual disability (American Psychiatric Association 2013;
American Association of Intellectual and Developmental Disabilities 2010) in which IQ should be equal to or less than 70 (e.g. Didden et al. 2009). In order to address these issues, in our study we focus on adults with a mild and moderate intellectual disability that attend different services and programs.

**Online Benefits and Risks**

Online navigation, like many other facets of life in society, implies various benefits that often coexist with potential risks (Sallafranque-St-Louis and Normand 2017). Conceptually, the benefits are conceived as opportunities that are obtained from the use of the Internet, whereas the risks represent aspects of Internet use that may have a harmful effect on the individual. Among the potential benefits of Internet access for people with intellectual disability are social interaction, civil participation, learning (Molin, Sorbring, and Löfgren-Mårtenson 2015), development of agency for youths and adults (Näslund and Gardelli 2013), or identity development (Bannon et al. 2015). The most relevant risks identified are related to actions that the individual with intellectual disability can perpetrate or experience. Regarding the first type, the most prominent risks derived from the person's actions, are insulting or threatening online, making illegal downloads, or sharing inappropriate sexual content (Livingstone and Haddon 2009). The risks that the person may encounter are linked to excessive Internet use, (Jenaro, Flores, Cruz, et al. 2018), theft of personal information online, cyberbullying (Didden et al. 2009; Jenaro, Flores, Vega, et al. 2018), receiving unwanted sexual advances from strangers (Buijs et al. 2017; Normand and Sallafranque-St-Louis 2016) or being exposed to inappropriate or manipulative content (e.g. misleading advertising, racist and violent websites, or inciting the use of drugs) (Chiner, Gómez-Puerta and Cardona-Moltó 2017a; Livingstone and Haddon 2009; Molin, Sorbring, and Löfgren-Mårtenson 2015). These risks should be
considered in detail in populations susceptible to abuse, such as young children (El Asam and Katz 2018; Livingstone et al. 2011; Lough and Fisher 2016) or people with intellectual disability (Chadwick, Quinn, and Fullwood 2017). In the case of people with intellectual disability, this susceptibility to abuse derives from their limited social ingenuity (Luckasson et al. 2002) and their limited ability to identify the credibility of the information they receive (Salmerón, Fajardo and Gómez-Puerta 2019; Salmerón, Gómez-Puerta and Fajardo, 2016).

**Caregivers’ role in Internet Access of People with Intellectual Disability**

People with intellectual disability need support of different types and intensities to perform daily tasks (American Association of Intellectual and Developmental Disabilities 2010). In this regard, caregivers (e.g. teachers, support workers in associations) are facilitators for the development of personal autonomy of these individuals through the provision of specific supports, as in the case of Internet access. On this issue, several studies have shown that caregivers tend to perceive the behaviour of people with intellectual disability as more susceptible to online risks (Lough and Fisher 2016; Chadwick, Quinn, and Fullwood 2017). A study by Chiner, Gómez-Puerta and Cardona-Moltó (2017a), by means of a questionnaire administered to 77 adults with intellectual disability and 68 caregivers (40 family members, 28 support professionals), found that people with intellectual disability routinely used smartphones, giving them great versatility and autonomy to access the Internet in different environments and with little control. However, caregivers considered that the Internet was a more dangerous environment for these individuals than for the population without intellectual disability.

Consistent with this perception of risk, caregivers tend to be overprotective, establishing restrictions on Internet use for people with intellectual disability and deciding
the appropriateness of content or websites (Seale 2003), as well as controlling the type of activities they perform online (Löfgren-Mårtenson 2008; Löfgren-Mårtenson, Sorbring, and Molin 2015). Indeed, the total restriction to Internet access on the part of some caregivers has been verified when they perceive that its use involves more risks than benefits (Gutiérrez and Martorell 2011). This fact is significant because the support that caregivers provide to people with intellectual disability directly conditions their use of technologies (Palmer et al. 2012; Alfredsson Ågren, Kjellberg, and Hemmingsson 2018) and these supports derive from perceptions that these caregivers have, on the one hand, online risks and, on the other, the ability of people with intellectual disability to manage them (Seale 2014). This perception of greater vulnerability can lead to less positive behaviour and prejudices regarding the teaching of skills that favour personal autonomy or the inclusion of people with intellectual disability because caregivers consider that people with intellectual disability are not able to achieve them, generating a vicious circle that impedes their development by not training them the necessary skills (O’Brien 1985). This overprotective attitude limits the potential for development of the person with intellectual disability and, in particular, hinders the capacity and provision of supports for digital inclusion, issues that have been shown essential to facilitate their access to the Internet (Kydland, Molka-Danielsen, and Balandin 2012; Näslund and Gardelli 2013). In this regard, access to and the use of the Internet seems to be modulated by caregivers who, first, fear that the potential risks may negatively affect the individual and, secondly, have an overprotective attitude towards the person with intellectual disability (Seale 2007).

Other studies indicate that attitudes prone to Internet use may be conditioned by (a) the age of support workers, with the youngest being the most likely to support it (Löfgren-Mårtenson 2008), (b) the organizational culture and its position regarding
Internet access and use by people with intellectual disability, and (c) the age and degree of disability of the person, considering that Internet use is less suitable for older people and people with a greater degree of disability (Parsons et al. 2008). Finally, support workers tend to provide support in the centre where the service is provided rather than promoting the generalization of these supports and learning to other environments, such as the home (Parsons et al. 2006), despite evidence that family members also need training and guidance on how to support Internet use by their children with intellectual disability (Palmer et al. 2012; Blackburn, Read, and Hughes 2005).

Barton (2009) remarked that the implications of the social model of disability favour that people with disabilities actively participate in research that affects them. Therefore, it is advisable to involve them in the research process (Clough and Barton 2995; Goodley and Moore 2001) through an emancipatory perspective that favours their self-determination to develop studies of, for and with people with disabilities (Barnes and Sheldon 2007). Likewise, the importance of focusing research on environmental difficulties or barriers, such as the beliefs of people in the environment that can limit the development or participation of people with disabilities has been emphasized (Corbett 1998; Riddell, Wilkinson, and Baron 1998). The scarcity of research available so far (Chadwick 2019), as well as the relevance of the trends identified (Lough and Fisher 2016; Chiner, Gómez-Puerta and Cardona 2017a; Chadwick, Quinn, and Fullwood 2017), underlines the importance of studying these perceptions and beliefs specifically in those who provide support to people with intellectual disability in an effort to develop strategies for the eradication of prejudices (Morin et al. 2013; Scior 2011).

**Support Workers’ Training and Mediation**
Support professionals represent a fundamental support for people with intellectual disability in learning the use of information and communication technologies (ICT) (Ramsten et al. 2017). Therefore, it is essential to know the training they have received, as well as the risk mediation strategies implemented as a basis for developing training programs and support strategies focused on the acquisition of skills for the safe and responsible use of the Internet (Buijs et al. 2017). Mediation means a set of strategies, techniques and practices that are socially modulated which aim to interact between two parties, for example, between an individual and an environment (Kalmus 2013). Internet mediation strategies can be grouped into four categories (Livingstone et al. 2011): active mediation (e.g. sitting with service users while using the Internet, sharing online activities, talking with them about what they do online), restrictive mediation (e.g. prohibiting service users certain uses of the Internet or allowing them only under supervision), monitoring mediation (e.g. checking browser history, checking emails, checking social media profile) and technical mediation (e.g. installing blocking filters on certain content or websites, installing software against spam, malware or viruses). It should be noted that although these mediation strategies may be useful and even essential for minors, nevertheless, they may infantilise adults (Chadwick and Wesson 2016; Seale and Chadwick 2017). Thus, it is essential to adapt the strategies to the individual and his/her age.

Despite the caregivers’ concerns about online risks, previous studies have shown an important lack of knowledge (39%), regarding the online behaviours that people with intellectual disability experience or engage in (Chiner, Gómez-Puerta and Cardona-Moltó 2017a). Given the increasing use of mobile phones in this population (Gutiérrez and Martorell 2011), the most appropriate strategies are, in principle, active mediation strategies, especially those related to providing information, training and negotiating with
the person with intellectual disability about the online risks, how to manage these risks and how to ask for help in the event of problems that they do not know how to face alone. The implementation of these active mediation strategies both foster autonomy and self-determination of the individual and provide a way of primary prevention of the main risks. However, a prior study conducted by these same authors in a specialized association found that only 43% of the caregivers claimed they felt qualified to prevent online risks and 48% perceived that they were capable to intervene in problem cases (Chiner, Gómez-Puerta and Cardona-Moltó 2017b). This fact is a matter of concern because caregivers are a key support for the prevention of online problems (Wright 2017).

Given the importance of associations specialized in providing support, including those related to Internet learning and use, and the limited research conducted in this field, the objective of this study was to examine support workers’ perceptions about Internet use by adults with intellectual disability and their knowledge about the online activities and behaviours carried out by their service users. In addition, the aim was to determine the level of preparation and training and the mediation strategies implemented by support workers to prevent and manage potential online risks. Specifically, the following research questions were raised:

1) What perceptions do support workers have about the benefits, risks and level of safety on the Internet for adult service users with intellectual disability?  
2) According to support workers, what activities and behaviours do adult service users with intellectual disability engage in when they access the Internet?  
3) What level of preparation and training do support workers have about the safe use of the Internet by adults with intellectual disability?  
4) What mediation strategies do support workers use or promote to prevent and / or manage risks online?
Method

Participants

A convenience sample of 135 support workers of organizations and agencies that provide support services to adults with intellectual disability in the Valencian Community, Spain, participated in the study. The majority of the sample were female (66.7%, n = 90) and the mean age was 41.37 years. The participants provided support in sheltered workshops (65.9%, n = 89), group homes (12.6%, n = 17), residential centres (7.4%, n = 10), labour intermediation services (5.2%, n = 7), care centres (5.2%, n = 7), and leisure services (3.7%, n = 5). Their average work experience in support services to people with intellectual disability was 14.13 years.

Instruments

An ad hoc questionnaire that collected information on Internet use by people with intellectual disability and the perceptions of support workers in this regard was designed for the study. The work carried out by the European network EU Kids Online (Dürager and Sonck 2014; Livingstone et al. 2011) and by Chadwick, Quinn and Fullwood (2017) was taken as reference, adapting some items to the characteristics of the population under study. The instrument consisted of four sections:

a) Perceptions about Internet use by people with intellectual disability. Support workers had to assess, on a 5-point Likert-type scale, 29 online benefits (e.g. skills development, maintaining contact with acquaintances), 30 online risks (e.g. bullying, social media addiction, exposure to inappropriate content) and the Internet safety level for adults and children with and without intellectual disability.
b) Online use and behaviour of people with intellectual disability. In this section respondents had to indicate, on the one hand, the frequency with which they consider that people with intellectual disability use the Internet and the activities they normally carry out when they are online (e.g. watching films, playing online games, participating in social networking sites). On the other hand, they had to respond if they were aware of their participation, as victims or perpetrators, in 15 online behaviours deemed inappropriate (e.g. bullying, sending / receiving inappropriate content).

c) Internet training and online safety. Support workers were asked if they had received training courses related to the subject and the number of hours. In addition, they had to specify, from a list of seven sources, those from which they had obtained information or training on the topic, as well as the sources from which they would like to obtain it (e.g. national and/or regional government training programs, workplace, family and friends).

d) Internet risk prevention and management strategies. Respondents had to indicate, on a 5-point Likert scale, the perceived degree of preparation they had to prevent and manage risks online. Next, they had to designate, from a list of 23 mediation strategies, those that they had promoted in their workplaces or with the families of people with intellectual disability to prevent online risks (e.g. talk about certain Internet risks, be close when the service users access the Internet, install Internet access control programs).

Given the complexity and variability of conditions of people with intellectual disability, respondents were required to base their answers on adult users with mild or moderate intellectual disability using DSM-5 criteria (American Psychiatric Association 2013).
The instrument was reviewed by 10 experts from academic fields and support service providers for people with intellectual disability (e.g. day centres, leisure services, residential centres). Once the expert panel assessments were considered, a content validity index (CVI = .87) was obtained using Lawshe’s formula (1975). Reliability, calculated through its internal consistency, was also adequate with Cronbach's alpha values between .62 and .96 in all sections of the instrument.

**Procedure**

A cross-sectional study based on survey design was carried out. The approval of the Ethics Committee of the university (procedure UA-2017-11-15) was obtained, guaranteeing the ethical standards of an investigation by preparing an anonymous survey and requesting the informed consent of all respondents. For the online submission of the questionnaire, we had the collaboration of *Plena Inclusión Comunidad Valenciana* (Spain), an associative movement that integrates associations and entities that offer services to people with intellectual disability, which was responsible for sending the questionnaire to federated organizations in the region. The questionnaire had to be answered within a month and the time to complete it did not exceed 20 minutes. The response rate was low (25%) which may be related to support workers’ reluctance to participate in this type of study, since they may think that research is not connected to their daily work. Likewise, researchers may have failed to highlight the relevance of the study and to involve support workers in it. Despite the low response rate, subsequent analysis did not indicate bias in the respondents’ responses (Creswell 2012).

**Results**
Support Workers’ perceptions on Internet Use by People with Intellectual Disability

Regarding the benefits and opportunities offered by the Internet to adults with intellectual disability, support workers considered that the Internet was moderately beneficial for them. The greatest benefits included keeping in touch with friends and family (69.6%), developing technological skills (68.9%), developing communication skills (61.5%) and the opportunity to participate in social groups (59.3%). Likewise, 57.8% revealed that the Internet helped those with an intellectual disability to learn from other cultures, to keep in contact with friends, to develop functional academic skills and to develop comprehension and understanding of new information. To a lesser extent, support workers considered that the Internet was highly beneficial to support friends (51.9%), to learn about occupational and educational opportunities (53%) and to participate in advocacy groups (54.8%). In contrast, the least valued benefits for this group were the opportunity to say things that would be uncomfortable saying face to face (50.4%), flirting online (40.7%), developing their identity (34.8%) and skills that favour critical thinking (31.9%).

With regard to the degree of safety, the Internet was perceived by support workers as an unsafe environment for the entire population in general. A progressive decrease in the perception of safety was observed, where, compared to 42.2% of support workers who regarded that the Internet was safe for adults without intellectual disability, only 5.2% considered it safe for adults with intellectual disability, 3.7% viewed it safe for children without intellectual disability and only 2.2% perceived it safe for children with intellectual disability.

Regarding the risks of Internet access by service users with intellectual disability, support workers showed great concern with mean scores on a 5-point Likert scale ranging
between 3.61 and 4.43. Among the aspects that generated the greatest concern, 93.3% of respondents indicated the possibility of individuals with intellectual disability providing too much personal information, having difficulty discriminating the truthfulness of information on the Internet (90.4%), posting personal photos (88.1%), communicating with strangers (87.4%) and meeting up with people met online (86.7%). Likewise, participants were concerned about people with intellectual disability being susceptible to online marketing scams and inadvertently downloading spyware or malware onto their computer (85.2%), being exposed to inappropriate or offensive adult pornographic content (84.4%), having their personal data misused by other people (83%), being bullied or harassed (80.7%) and facilitating passwords to other people (80.7%). On the other hand, the risks with lower scores, although always with mean scores higher than 3.61, were the possibility that service users engaged in bullying (15.6%), the excessive use of the Internet affected their physical health (13.3%), they carried out online banking and shopping (13.3%) and they spent less time on work, learning or personal development, as well as with their family and friends (11.1%).

When comparing the participants’ responses in the three dimensions analysed (benefits, safety and risks), statistically significant differences were found. Support workers perceived the risks significantly higher than the benefits and the level of Internet safety\textsuperscript{1}.

**Internet Use and Online Behaviour of People with Intellectual Disability**

According to 52.6% of support workers, their service users with intellectual disability went online between two and three hours a day and 30.4% considered that they connected

\textsuperscript{1} A complete statistical report can be requested by contacting the corresponding author of this manuscript.
maximum one hour a day. In addition, 89.9% of respondents indicated that users accessed the Internet mainly to watch videos, films or television, followed by activities such as chatting with friends (86.7%), listening to music (82.2%), participating in social networks (78.5%) and playing online games (55.6%). To a lesser extent, it is worth noting the consultation of websites (33.3%), chatting with friends met online (33.3%) and flirting (21.5%). Activities such as reading and writing e-mails (7.4%), gambling online (3%) and shopping online (2.2%) were hardly selected by respondents.

Regarding online behaviours carried out or encountered by users with intellectual disability, a high percentage of support workers did not know if such behaviours had occurred, especially in matters related to the sending or receiving inappropriate material related to drugs (94.8%), violence (89.6%), the promotion of antisocial behaviour (85.2%) or illegal access to online accounts (90.4%). Among the online behaviours that support workers claimed to have knowledge, bullying stood out, where 46.7% revealed that users with intellectual disability had experienced it at some point and 34.1% claimed they had carried it out. Likewise, 51.9% of respondents affirmed that people with intellectual disability had communicated with strangers on occasion and 37% indicated that they had been contacted by strangers. On the other hand, 37% of respondents revealed that people with intellectual disability had been asked for personal information and 34.8% claimed they had experienced threats, compared with 28.9% who indicated that the users with intellectual disability had carried out these behaviours. Finally, respondents claimed to have knowledge of frauds and scams (22.2%) and grooming (20.7%) experienced by users with intellectual disability.

Statistically significant differences were also found between the participants’ responses. In all behaviours (except online bullying) support workers expressed greater
ignorance than knowledge of online behaviours carried out or experienced by users with intellectual disability.

**Training on Internet and Online Safety for Support Workers**

The training received on Internet use and online safety was minimal, with 91.1% of the support professionals reporting that they had not received any courses on this subject. In this regard, only 30.4% and 24.4%, respectively, felt prepared to prevent and manage potential Internet problems.

Support workers claimed to have received information on the Internet primarily from the media (47.4%), family and friends (32.6%) and non-profit organizations (25.9%), while other sources such as workplace (17%), Internet service providers (9.6%), specialized websites (17%) and police (9.6%) were barely used. However, respondents would prefer to receive such information or training mainly from their workplace (61.5%) and from the national and regional governments (48.1%), and to a lesser extent from non-profit organizations (36.3%), specialized websites (28.9%), Internet service providers (24.4%) or family and friends (12.6%). Data analysis revealed a significantly greater preference for sources such as the workplace and the national and regional governments than the ones they had actually received the training from. Regarding media and family and friends, support workers received information from these sources more frequently than they would have actually preferred.

**Mediation Strategies to Prevent and Manage Online Risks**

Support workers reported the use of mediation strategies to prevent and / or manage risks on the Internet. Highlighted are the strategies related to active mediation of Internet safety, such as conducting talks or workshops on Internet use and online safety aimed at users with intellectual disability (51.9%), as well as talking with them about certain
aspects, such as their online activities (83.7%), the risks of chatting or flirting with strangers online (65.9%), misleading advertising on the Internet (52.6%), data and identity theft (50.4%), appropriate websites (49.6%) or their course of action if they were worried about an incident encountered online (38.5%). Support workers had also implemented or promoted with some frequency other active mediation strategies of Internet use, such as staying close to users when they use the Internet (44.4%), sitting with those with an intellectual disability while they are online (40.7%) or sharing online activities (30.3%).

Restrictive mediation strategies like prohibiting service users’ access to social networking sites (6.7%) and sharing personal information online (16.3%) were barely implemented. Other types of monitoring such as controlling the use of social networking sites (23.7%) and the time on the Internet (31.9%) were used moderately. Checking users’ browsing history (11.9%), their messages (12.6%) and the friendships or contacts added to their social media profile (11.9%) were also hardly used.

Finally, concerning technical mediation, support workers reported the use of antivirus or anti-spam programs (30.4%) as well as the activation of content control filters (16.3%) and navigation and access control programs to certain websites (17%).

Discussion

The aim of this study was to describe the perceptions of support workers of associations specialized in adults with intellectual disability about online benefits, risks and safety, the use of the Internet carried out by their users, and their perception about their training and ability to prevent or manage risks online for people with intellectual disability.

Support workers perceived that the Internet was unsafe for people with intellectual disability. Moreover, they considered that the Internet was more unsafe for adults and
children with intellectual disability than without this characteristic. These results were consistent with those already described in previous studies (Lough and Fisher 2016; Chiner, Gómez-Puerta and Cardona-Moltó 2017a; Chadwick, Quinn, and Fullwood 2017). In line with this view, they perceived that the benefits people with intellectual disability could obtain online were moderate, whereas the risks to which they were exposed to were high, an aspect that greatly concerns support workers, as already noted in other studies (Chiner, Gómez-Puerta and Cardona-Moltó 2017a). The most relevant perceived benefits were related, on the one hand, with online social interaction (e.g. keeping in touch with friends and family, participating in social groups) and, on the other, with the development of online skills (e.g. technology management, communication skills). These data are consistent with the benefits indicated in prior studies (Molin, Sorbring, and Löfgren-Mårten 2015; Bannon et al. 2015), as well as the online activities that people with intellectual disability regularly engage in, regardless of the age group to which these studies were addressed (Didden et al. 2009; Chiner, Gómez-Puerta and Cardona-Moltó 2017a). However, these benefits are partly overshadowed by the potential online risks that, as indicated above, were perceived as predominant. The risks are mainly related to deceit or information theft (e.g. providing personal information, posting photos, difficulty discriminating the accuracy of the information) or contact with strangers (e.g. online contacts with strangers, meeting personally with strangers met online), as previously identified by other authors (Didden et al. 2009; Jenaro, Flores, Vega, et al. 2018; Buijs et al. 2017; Normand and Sallafranque-St-Louis 2016; Löfgren-Mårten, Sorbring, and Molin 2015).

Regarding Internet use, support workers perceived that Internet use by their service users was moderate, since the majority indicated that they used it for two to three hours a day. The use they make is related to leisure (e.g. watching films or TV, listening
to music, playing online games) or with online social contact (e.g. chatting with friends, participating in social networks). These findings were again similar to those previously found by other researchers (Didden et al. 2009; Chiner, Gómez-Puerta and Cardona-Moltó 2017a).

Concerning unwanted behaviour engaged in or experienced by people with disabilities, support workers mainly revealed their lack of knowledge about this issue, as previously identified ((Chiner, Gómez-Puerta and Cardona-Moltó 2017a). This does not happen in the case of cyberbullying. Specifically, almost half of the respondents claimed that their users had experienced online bullying at some point, whereas a third stated that they had knowledge of users who had carried out bullying. Cybervictimization of people with intellectual disability is a fact that has already been suggested by other studies (Normand and Sallafranque-St-Louis 2016; Jenaro, Flores, Vega, et al. 2018; Didden et al. 2009). However, in the context of the present study, the high rate of cybervictimization that support workers perceived is noteworthy. This data should be interpreted with caution for two reasons. First, respondents may misuse the concept, labelling behaviours as cyberbullying that in fact, may not be so extreme. Secondly, compared to other online problems that can be experienced or carried out, cyberbullying may be one of the most alarming, so it is likely that both families and users themselves communicate this situation to support workers. These reasons could be possible explications for the high rate of cyberbullying described in this study, although it is advisable to delve into this phenomenon in future studies.

Almost all respondents in the study stated that they lacked specific training regarding Internet safety. Moreover, regardless of the level of training, less than a third of the respondents considered themselves prepared to prevent or manage online risks. This data is in line with the previous findings by Chiner, Gómez-Puerta and Cardona-
Moltó (2017a, 2017b) and contradicts the relevance of support of these professionals to prevent online risks (Wright 2017). In this regard, the strategies that support workers claimed they had used are in the category of active mediation (e.g. conducting talks or workshops on online safety, talking with service users about their online activities) (Livingstone et al. 2011). These strategies would appear appropriate for primary prevention of online risks; however, sufficient implementation of intervention strategies for problems actually experienced has not been confirmed.

**Implications**

From the present study a series of practical implications could be derived. For example, associations must develop and implement specific training programs on strategies providing support to people with intellectual disability for the safe and responsible use of the Internet, with the goal of maximising the benefits while limiting the associated risks. These programs should address preconceived ideas, prejudices and potentially existing stereotypes (Chadwick and Wesson 2016; Morin et al. 2013; Seale and Chadwick 2017), and pay attention to both the individual and organizational dimension (Palmer et al. 2012; Parsons et al. 2008). In addition, the role of the family should not be forgotten, so associations should include them in training programs based on mediation (Wright 2017; Kalmus, von Feilitzen, and Siibak 2012) and on positive risk management (Seale 2014; Seale, Nind, and Simmons 2013). This strategy is based on the recognition of risks and, on the one hand, the training of caregivers for the implementation of mediation actions and, on the other, the training of people with intellectual disability for the management of these risks, thus prioritising the potential benefits of the Internet against risks (Alaszewski and Alaszewski 2002) and limiting the restrictive control of the Internet that caregivers can exercise because of their lack of confidence in the person's ability to
manage risks (Chadwick and Wesson 2016; Seale 2014; Seale and Chadwick 2017). The training of users, as well as professionals and families, should prioritize the generalization of the learning acquired by people with intellectual disability, and the necessary support in all the environments in which they participate (Parsons et al. 2006).

**Limitations**

The findings of this study should be interpreted with caution as there are certain limitations in its design. First, the responses to the survey may not fully reflect the beliefs of the respondents for several reasons. On the one hand, being a self-administered questionnaire, some questions may not have been accurately understood. On the other, respondents may have a response bias towards those responses they perceived as most appropriate, regardless of their beliefs. Secondly, the type of sampling and the sample that was obtained reflected only the opinion of the respondents, since the size and form in which it was obtained does not ensure the representativeness of the population of support workers that it was intended to study; hence, these results cannot be generalized to other environments, such as associations, autonomous communities or countries. Thirdly, it should be remembered that the respondents’ perceptions may not coincide objectively with the reality they intend to describe and, thus, their views of the described phenomenon could be biased. Another limitation of the study has to do with the type of services in which the sample of support workers carry out their labour. Due to the characteristics of the services, there are support workers who spend much more time with adults with intellectual disability (e.g. residential centres, care centres), other workers who spend a moderate time (e.g. sheltered workshops, group homes), and other services in which workers spend less time with those with intellectual disability (e.g. labour intermediation services, leisure services). This fact could affect the reliability of the
perceptions of support workers, assuming that the more time support workers share with adults with intellectual disability the more reliable would be their perceptions.

Altogether, the data obtained in this study represent only the vision of a part of the people involved in the phenomenon described. In this sense, it is important to emphasize the importance of complementing these findings by conducting research focused on the voice of people with disabilities (Barnes and Sheldon 2007). A qualitative research approach in which people with disabilities themselves participate in its design, procedure and analysis to promote a dialogue and understanding of all the parties involved would provide information that is highly relevant to understanding reality (Corbett 1998).

**Future Lines of Research**

Future research could try to compensate for the weaknesses of this study, described above, extending the sample to other areas of Spain as well as to surrounding countries. Similarly, it would be interesting to verify the presence of these perceptions specifically in the various services offered by the specialised associations, in order to determine if this environment could be a contributing factor for these perceptions. Moreover, taking a step further, the design and assessment of training programs for risk management in this population is recommended in order to verify their effectiveness in eliminating prejudices and implementing mediation actions for safe Internet use (Karaseva, Siibak, and Pruulmann-Vengerfeldt 2015). In addition, and as previously noted by other authors (Chadwick, Wesson, and Fullwood 2013), it is relevant to develop studies on the relationship between the attitudes of caregivers and the promotion of Internet access for people with intellectual disability, as well as the effectiveness of training programs for changing attitudes. Likewise, the study would benefit from qualitative interviews and
focus groups to find out why support staff is sceptical about the use of the Internet by users with intellectual disability and what is needed to change it (Riddell, S. Wilkinson, and Baron 1998). Finally, researchers and people with intellectual disability should carry out specific studies on cyberbullying with the aim of deepening the description and analysis of this phenomenon.

**Conclusion**

Although more research is needed to achieve a better and more complete understanding of this issue, the findings of this study confirmed the great concern of support workers with regards to access to and use of the Internet by adults with intellectual disability, foreseeing greater risks than opportunities in this virtual environment. Furthermore, this study has revealed the limited knowledge that professionals have, on the one hand, of the problems that their users with intellectual disability have generated or encountered online and, on the other, on how to prevent or intervene in the face of Internet risks. Thus, the design and implementation of training programs in associations aimed at training their workers on mediation strategies for the safe use of the Internet is advisable.

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