

## A Systematic Literature Review of Social Media Usage among People with Intellectual Disability

Udeme Samuel Jacob\*<sup>a</sup> & Jace Pillay<sup>a</sup>

\* Corresponding author:

Email: [udeme01@gmail.com](mailto:udeme01@gmail.com)


a. South African Research Chair in Education and Care in Childhood, Faculty of Education, University of Johannesburg, South Africa.

### Article Info

Received: May 23, 2023

Accepted: August 15, 2023

Published: September 9, 2023

 10.46303/jcve.2023.19

### How to cite

Jacob, U. S., & Pillay, J. (2023). A systematic literature review of social media usage among people with intellectual disability. *Journal of Culture and Values in Education*, 6(3), 42-61.

<https://doi.org/10.46303/jcve.2023.19>

### Copyright license

This is an Open Access article distributed under the terms of the Creative Commons Attribution 4.0 International license.

### ABSTRACT

Many people are still excluded from participating in the digital world because of their intellectual disabilities. Participation in the digital world is, however, essential to meaningful contributions to society. This systematic literature review examined 13 articles published between 2015 and 2023 about social media usage among persons with intellectual disability. A combination of keywords and terms was used to search PubMed, Scopus, PsycINFO, Cochrane, and Medline databases. According to a thematic analysis of the included studies, the following themes emerged: usage, inclusion, risk and benefit, and training support. Based on these themes, we found that some people with intellectual disability used social media positively for social interactions. This is one of the best things about the Internet. People with intellectual disability need support to engage in social interactions through social media effectively.

### KEYWORDS

Social media; people with intellectual disability; digital world; review.

## INTRODUCTION

Social media refers broadly to Internet-based applications used by individuals for facilitating the sharing of text and multimedia through virtual networks and communities. Essentially, they are Web 2.0 Internet-based applications that allow users to create and share personal content (Kaplan & Haenlein, 2010). A social media site is a website for blogging (e.g., Facebook), social networking (e.g., Twitter), collaboration (e.g., Wikipedia), content-creating communities (e.g., YouTube), or virtual game worlds (e.g., World of Warcraft) (Kaplan & Haenlein, 2010). In 2004, Facebook was created, resulting in a steady increase in social networking site usage. Globally, Internet use and social media are becoming more popular. Among American adults, Fox and Rainie (2014) found that 87% had access to the Internet, while 73% used social networking sites.

Two-thirds of Australian adults who used the Internet at home went online for social networking (Australian Bureau of Statistics, 2014). In Western Europe, 54% and in Eastern Europe, 44% of the population used social media (Dixon, 2017). Youth and children are particularly affected by this. In Europe, children have access to the Internet at an earlier age and in a more diverse manner, which is concerning. It is important to recognise that there are both advantages and risks associated with social networking sites. Children's safety on social networking sites should be protected by laws that help minimise harm (EU Kids Online, 2014). In recent years, the Internet has become increasingly helpful in disseminating information because it can reach a massive audience (Sturm & Quaynor, 2020).

Individuals differ in their intellectual abilities and perceptions when it comes to using digital media. There has been a significant advancement in data-driven urbanism regarding urban governance and smartness (Abella et al., 2017; Kitchin, 2016, 2019). Several researchers have, however, expressed concern regarding the widening digital divide, resulting in substantial social disparities (Vanolo, 2014). A recent study by Graham (2002) asserts that urban polarisation and technological distancing of the powerful from the less powerful is exacerbated by using social media and information and communication technologies (ICTs). In the age of rapid digitalisation of society, daily activities are increasingly performed through social media (Carretero et al., 2017; Kilinc et al., 2023). In addition, it influences what people do and how they engage in occupations (Larsson-Lund, 2018; Larsson-Lund & Nyman, 2020). It is especially surprising that this has occurred in a technological revolution in which devices have become smaller, faster, cheaper, and easier to operate (Foley & Ferri, 2012).

People with disabilities, especially those with limited intellectual ability, may find that internet use provides flexibility which allows them to perform activities in different ways. This results in a less stressful everyday life (Larsson-Lund & Nyman, 2020). Conversely, people with intellectual disabilities (ID) may also find using the Internet more difficult because it involves cognitive skills (Lussier-Desrochers et al., 2017). Technology usage varies greatly between people with and without disabilities (Hoppestad, 2013). Generally, digital competencies are grouped into five categories: (1) information and data literacy; (2) using the Internet to

collaborate and communicate; (3) creating digital content; (4) Internet safety; and (5) problem-solving (Carretero et al., 2017). Learning digital competencies online may be particularly beneficial for young people with ID. Leisure activities, higher education, and employment are already largely out of reach for the group (Lussier-Desrochers et al., 2017).

The likelihood of an individual with intellectual and developmental disabilities obtaining employment or completing postsecondary education is low, and they may also be at risk of poverty and social exclusion (Manzoor & Vimarlund, 2013). People with ID can, however, now become consumers, employees, and voters, thanks to assistive devices, computers, tablets, smartphones, and social media (Johnson et al., 2013; Leopold et al., 2015). It is also possible for people with intellectual and developmental disabilities to benefit from this type of technology by gaining increased health literacy and directing their health care (O'Hara et al., 2008). The use of social media by people with ID has also been shown to be beneficial. Through social media, people can develop relationships, express themselves, and gain self-confidence and self-esteem (Caton & Chapman, 2016; Evans et al., 2018). A few studies examined specific topics, including how people with ID access and use social media (Caton & Chapman, 2016; Rustan, 2020; Shpigelman, 2018; Shpigelman & Gill, 2014), how they use digital devices (Hoppestad, 2013), and how they deal with other viewpoints regarding their Internet usage (Molin et al., 2015).

Intellectual disability (ID) is characterised by a developmental disorder that occurs early in life (before age 18) (Jacob & Pillay, 2020). Individuals with ID have a low intellectual capacity combined with deficiencies in multiple adaptive areas, such as social, mental, and physical skills (Littlejohn, 2002), and their IQ is below 70. People with ID have deficits in intellectual and adaptive functioning in everyday life's conceptual, social, and practical domains (American Psychiatric Association, 2013; Tassé et al., 2016). A person's ID level, which ranges from mild to severe, is determined by their cognitive abilities, such as solving problems or communicating. Furthermore, they cannot respond satisfactorily to social and conceptual situations (American Psychiatric Association, 2013). Several strategies have been used by young people with mild and moderate ID to participate in web-based activities, including personalising devices that can access the Internet and seeking support from others (Ågren et al., 2020a).

Evidence suggests that social media can enhance the quality of life and coping abilities of individuals with ID (Shpigelman, 2018). Persons with ID can develop Internet skills and use digital technology, including smartphones, for communication and informational purposes (Setyawan & Wulandari, 2022). Due to its capacity to provide resources, information, and social and support opportunities, Internet access is crucial. Chadwick et al. (2013) revealed that individuals with cognitive, physical, and sensory impairments find it difficult to use the Internet. Nevertheless, cyber security and safety frameworks for online social media platforms were proposed (Chang et al., 2021) to protect vulnerable individuals in society, especially those with ID.

People with ID face the most significant obstacles to accessing the Internet (Chadwick et al., 2013). In addition to financial difficulties, societal attitudes that can lead to exclusion and a lack of support from the government and stakeholders are some barriers faced by people with ID. Hoppestad (2013) also identified inadequate caregiver support and lack of knowledge or training as obstacles to accessing social media among persons with ID. In Ramsten et al. (2017), it was stated that “there appears to be a lack of organisational support and comprehensive strategies for using ICT in municipal health care for individuals with ID” (p. 712). The lack of organisational support and an integrated approach is common in many social institutions despite the apparent need for assistance by persons with ID (e.g., workshops, training, or information) (Ramsten et al., 2017).

## METHODS

### Literature search

The systematic literature review examined articles published between 2015 and 2023 about social media usage among people with ID. A combination of keywords and terms was used to search PubMed, Scopus, PsycInfo, Cochrane, and MEDLINE. Search criteria included two elements: population of interest (ID) and outcome (social media and Internet use) (see Table 1). The screening criteria were derived from the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) checklist (Ghafari et al., 2016; Jacob et al., 2022b). Bibliographic data managers were used to remove duplicates from articles that were retrieved from databases. Reviewers identified relevant articles based on titles and abstracts. A blind review of each article was conducted by two raters. If full-text articles were available, they were retrieved and blindly rated. Independently, two blind raters recorded inclusion and exclusion criteria. Prior to making a final decision on inclusion or exclusion, blind raters discussed whether the study was eligible.

### Table 1.

#### *Keyword search terms*

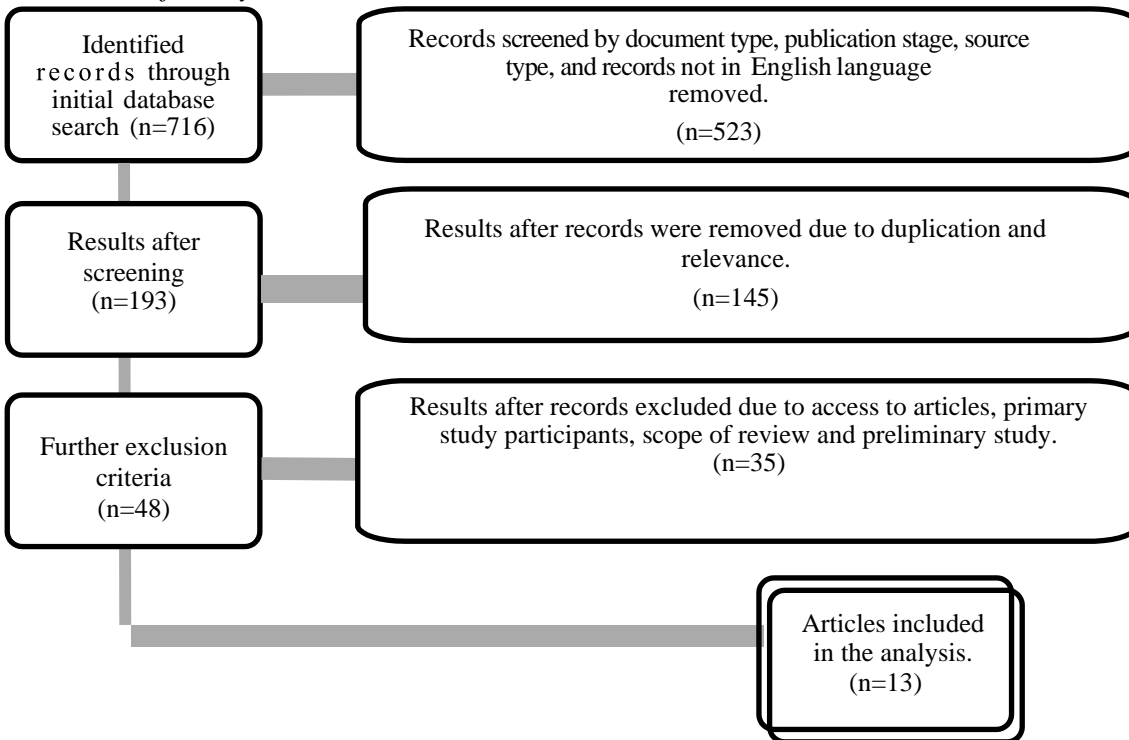
1	“social media”, “intellectual disability”, “intellectual and developmental disability”
2	“social media” AND “intellectual disability”
3	“social networking” AND “intellectual disability”
4	“social networking” AND “intellectual and developmental disability”
5	“social networking” OR “social media” AND “intellectual disability”
6	“social networking” OR “social media” AND “intellectual disability”, “intellectual and developmental disability”

**Selection criteria**

Research articles on social media and Internet usage among the underlying population were included. There was no restriction on age groups. In the data extraction, the selection stages and attributes were as follows: (1) Participants were parents, caregivers and teachers of persons with ID and children and adults with ID and only participants with mild or moderate ID levels were included; (2) the study needed to be qualitative, quantitative or mixed methods; and (3) articles without explicit references to ID were excluded. Inclusion was limited to full-text articles written in English. A study design, such as cross-sectional or cohort, was not a determining factor for study inclusion, however, studies lacking a case definition or a sufficient explanation of the methodology used to calculate prevalence or incidence were disqualified. Figure 1 is the flowchat of the selected and included numbers of articles.

**Figure 1.**

*Flowchart of the systematic literature search*



**RESULT and DISCUSSION**

The results from Table 2 show that all the articles reviewed were published between 2015 and 2023. Also, in all the countries where the sample studies were conducted, there were no Internet issues. This is an indication that the problem of remote Internet connection is subsiding irrespective of the location.

**Table 2.**

*Summary of the study participants and major findings (see Appendix)*

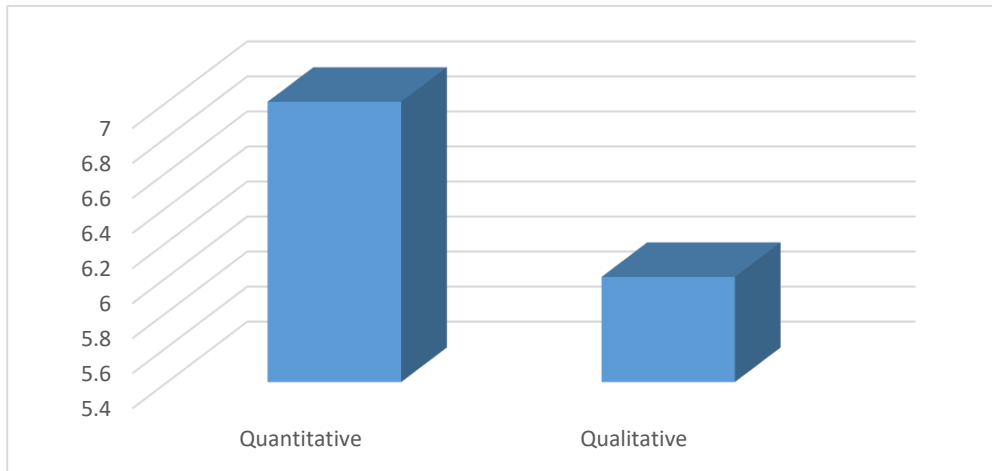
**Figure 2.***Proportion of data collection methods used in the selected articles*

Figure 2 shows the types of methods used for studies in the articles selected. It was observed that 53.8% of the articles used quantitative methods while 46.2% used qualitative ones. Therefore, the proportion of articles that used quantitative methods was higher than those using qualitative methods.

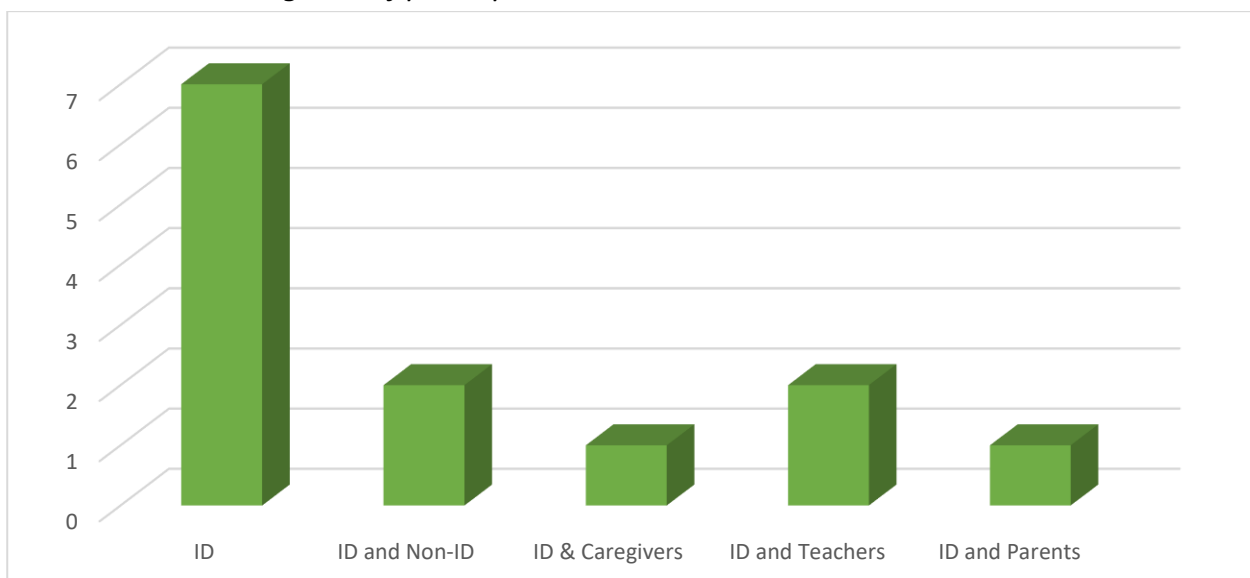
**Figure 3.***Articles and the categories of participants*

Figure 3 presents the results of the categories of participants used in the studies conducted in the selected articles. The results, revealed that 53.83% of the articles selected used people with ID, 15.38% used people with intellectual and non-ID, 7.69% used people with ID and their caregivers, 15.38% used people with ID and their teachers, and 7.69% used people with ID and their parents. It was observed that a larger percentage of the articles used people with ID

only. However, the proportion of articles that used people with ID and their caregivers is the same as those that used people with ID and their parents. Also, the proportion of articles that used people with ID and non-ID is the same as those that used people with ID and their teachers.

**Table 3.**

*Thematic areas in the selected articles*

Authors and year	Usage	Inclusion	Risk & Benefits	Support	Training
Patrick et al. (2020)				√	√
Ågren et al. (2020a)		√			
White and Forrester-Jones (2020)		√			
Heitplatz et al. (2021)	√				
Caton et al. (2022)	√				
Lussier-Desrochers et al. (2017)		√			
Chadwick et al. (2022)				√	
Chadwick et al. (2018)				√	
Ågren et al. (2020b)			√		
Yang and Lee (2022)	√				
Chadwick et al. (2016)	√		√		
Arun and Jain (2022)	√			√	
Molin et al. (2015)				√	

Table 3 presents the popular themes highlighted by the articles selected. It was observed that there were five themes common to the articles selected which included: Usage of social media; inclusion of people with ID; risk and benefits of social media; support received when using social media; and the training of people with ID on the use of social media.

**Usage of social media among people with ID**

From the selected articles, it could be observed that five out of the total articles highlighted the theme of social media usage and their findings revealed that interest in the use of education programmes, digital media, and a variety of social media applications determined social media usage among people with ID (Heitplatz et al., 2021). According to Yang and Lee (2022), Chadwick et al. (2016), and Arun and Jain (2022), disability increases the correlation between different determinants of mobile internet usage. In addition, people with ID were considered more likely to be online than those without disabilities. Moreover, if parents or siblings provided proper training and assistance, people with ID could learn academically like others if smartphones were available during the daytime. Addressing the interest and training in social media can mitigate the risks associated with social media usage.

**Inclusiveness of social media for people with ID**

Among the selected articles, three focused on inclusion based on the results. For instance, Ågren et al. (2020a) noted that all participants used the Internet in various ways that enabled them to participate in online activities. Furthermore, White and Forrester-Jones (2020) concluded that adolescents with ID used social media to interact with fewer social contacts. In addition, Lussier-Desrochers et al. (2017) found that the use of social media by people with ID depended on the fit between their resources and their environment. Therefore, it could be deduced that disabilities are not barriers to social media use for people with and without ID.

**Benefits and risks of social media usage by people with ID**

Another thematic area observed in the selected articles was the benefits and risks associated with using social media. Two of the selected articles considered the benefits and risks of the use of social media. Ågren et al. (2020b) reported that parents of adolescents with ID perceived the benefits of social media usage but paid less attention to the associated risks. Also, Chadwick et al. (2016) reported that people with ID were perceived to be more at risk from being online than those without. Thus, social media interaction for people with ID may be associated with high risk. Some perceived online risks to individuals with ID are being intimidated, deceived, or harassed online, revealing personal information to others, and being vulnerable to online fraud (Chadwick et al., 2016).

**Support for social media usage by people with ID**

The results showed that five out of the 10 selected articles reported that people with ID require assistance interacting with others on social media. For example, Molin et al. (2015) highlighted the need for teachers' and parents' perspectives on supporting young people with ID. Also, Chadwick et al. (2018) believed that people with ID shared online identities that did not emphasize or conceal impairment, challenging notions of dependency with participants providing and receiving support. In addition, Patrick et al. (2020) reported that a lack of support prevented many adults with intellectual and developmental disabilities from using technology and social media that could promote self-determination and participation in their healthcare. In conclusion, social media use by people with disabilities largely depends on getting support from people around them.

**Training people with ID on the use of social media**

From the results, it could be observed that only one article highlighted the need to train people with ID on the use of social media. Although other articles reported the risks, only Patrick et al. (2020) reported that if the people with ID were well-trained, the use of technology and social media could promote self-determination and participation in their healthcare. This is an indication that more studies need to be conducted on the training of people with ID on the use of social media.



## Discussion of findings

This systematic literature review evaluated articles related social media use among people with ID. The predetermined inclusion criteria identified 13 potentially relevant studies from 716 studies. In the included studies, five significant themes emerged. Social media usage differed between studies in terms of access, devices, and duration. Moreover, there was no single outcome measure used in the studies. According to the studies, ID was referred to using relatively consistent terminology. Seven studies adopted quantitative research methods (54%), while six (46%) adopted qualitative research methods. Increasing internal and external validity requires larger samples. To the best of our knowledge, the use of social media by persons with ID has yet to be extensively investigated. According to the analysis of selected articles, social media use among people with ID is associated with some thematic areas.

These factors were considered to inhibit the effective adoption of social media by people with ID. Internet use can be complex for people with ID since they may have deficits in cognitive, social, and adaptive functioning (American Psychiatric Association, 2013; Jacob et al., 2022a; Tassé et al., 2016). A person's cognitive ability affects their ability to process words, which is an essential digital competency when using the Internet (Wu et al., 2014). Among adolescents in the general population, online interaction is associated with improved friendship quality (Desjarlais & Willoughby, 2010). Adolescents with ID might be able to benefit from this since they experience labelling and discrimination during face-to-face interaction with other members of their community (Holmes & O'Loughlin, 2014). It is also possible to develop new friendships, date, share opinions, and re-establish friendships using social networking sites (Holmes & O'Loughlin, 2014). In addition to reciprocity, empathy, and shared life experiences, social media may reinforce aspects of friendship (Vallor, 2012).

Using online interaction as a primary method of social contact may, however, impede the benefits of this form of social connection. In addition, the results indicate that people with ID experience both benefits and risks when using social media (Chadwick et al., 2016). The Internet may seem like a luxury for many people, however, for some groups it can be a valuable tool for their integration into society and for experiencing many of the benefits of full citizenship. Several barriers are likely to be reduced or eliminated by the Internet, which makes it possible for people with ID to participate in numerous daily online activities (Hoppestad, 2013). Although people with ID stand to benefit most from this technology, they are traditionally the group least likely to be able to access and use it fully. Undoubtedly, this mirrors the inequalities faced by people with ID in other spheres of their lives as well.

Similarly, Buijs et al. (2016) reported cases of financial exploitation and sexual harassment of people with ID while using social media. According to Livingston and Haddon (2009), people with ID are at risk of uploading inappropriate photos, having harmful contact online (e.g., being bullied, groomed, and being unwelcomely persuaded), and being exposed to harmful, manipulative, or exploitative content (e.g., advertising, violent or hateful material,

sexually harmful material, extremism). The results suggest that people with ID were more likely to have been warned by their parents about the risks of the Internet than their peers without disabilities (Lathouwers et al., 2009). The included articles also stress the need for training and support for people with ID using social media. The risks associated with social media may be one of the reasons for this. Molin et al. (2015) and Löfgren-Mårtenson (2008) highlighted the importance of teachers and parents supporting young people with ID through social media training and guidance. People with ID often rely on family members for support when using technology (Palmer et al., 2012).

### **CONCLUSION**

This article reviewed the use of social media among people with ID. In recent years, social media has become more popular and is used by people with ID for educational and social purposes that result in positive experiences. Furthermore, the review found that people with ID have a higher risk of being bullied, threatened, or harassed online, giving out too much personal information to others, and being swindled online by marketers. It may not be possible to directly compare the present review with existing literature due to the small sample sizes in the included studies. Several research avenues could be explored in the future. More extensive studies with a more methodologically rigorous approach are necessary to: (1) determine whether there is gender-based harassment; and (2) determine the best way to protect people with ID from online scams and make sure people with ID get the most out of social media platforms.

Further research is also needed to determine whether individuals with ID should have unlimited social media access regardless of age and gender. There are several limitations to our review. The only publications we included were those written in English due to resource constraints. In addition, we adopted a reductionist approach by excluding articles that did not provide open access to social media usage among persons with ID. The goal was to improve study homogeneity, however, this means that we were unable to investigate the potential mediating and moderating mechanisms that may play a role in the use of social media by those with other disabilities that are not necessarily ID. The third limitation was that we excluded material published in newspapers or books, so publication bias could still exist (e.g., omitting unpublished studies). A limitation of the study pool should also be emphasised.

### **Funding**

This work was supported by the South African Research Chairs Initiative of the Department of Science and Innovation and National Research Foundation of South Africa, South African Research Chair in Education and Care in Childhood, Faculty of Education, University of Johannesburg, South Africa (grant number: 87300, 2017).

## Disclosure and Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

## REFERENCES

- Abella, A., Ortiz-de-Urbina-Criado, M., & De-Pablos-Heredero, C. (2017). A model for the analysis of data-driven innovation and value generation in smart cities' ecosystems. *Cities*, 64, 47-53. <https://doi.org/10.1016/j.cities.2017.01.011>
- Ågren, K. A., Kjellberg, A., & Hemmingsson, H. (2020a). Access to and use of the Internet among adolescents and young adults with intellectual disabilities in everyday settings, *Journal of Intellectual & Developmental Disability*, 45(1), 89-98. <https://doi.org/10.3109/13668250.2018.1518898>
- Ågren, K. A., Kjellberg, A., & Hemmingsson, H. (2020b). Internet opportunities and risks for adolescents with intellectual disabilities: A comparative study of parents' perceptions. *Scandinavian Journal of Occupational Therapy*, 27(8), 601-613. <https://doi.org/10.1080/11038128.2020.1770330>
- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). <https://doi.org/10.1176/appi.books.9780890425596>
- Arun, P., & Jain, S. (2022). Use of smart phone among students with intellectual and developmental disability. *Journal of Psychosocial Rehabilitation and Mental Health*, 9, 447-452. <https://doi.org/10.1007/s40737-022-00279-3>
- Australian Bureau of Statistics. (2014, February 25). 8146.0 - Household use of information technology, Australia, 2012-13. <http://www.abs.gov.au/ausstats/abs@.nsf/mf/8146.0>
- Buijs, P. C. M., Boot, E., Shugar, A., Fung, W. L. A., & Bassett, A. S. (2016). Internet safety issues for adolescents and adults with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, 30(2), 416-418. <https://doi.org/10.1111/jar.12250>
- Caton, S., & Chapman, M. (2016). The use of social media and people with intellectual disability: A systematic review and thematic analysis. *Journal of Intellectual and Developmental Disability*, 41(2), 125-139. <https://doi.org/10.3109/13668250.2016.1153052>
- Caton, S., Hatton, C., Gillooly, A., Oloidi, E., Clarke, L., Bradshaw, J., Flynn, S., Taggart, L., Mulhall, P., Jahoda, A., Maguire, R., Marriott, A., Todd, S., Abbott, D., Beyer, S., Gore, N., Heslop, P., Scior, K., & Hastings, R. P. (2022). Online social connections and Internet use among people with intellectual disabilities in the United Kingdom during the COVID-19 pandemic. *New Media & Society*. <https://doi.org/10.1177/14614448221093762>

- Carretero, S., Vuorikari, R., & Punie, Y. (2017) *DigComp 2.1: The digital competence framework for citizens with eight proficiency levels and examples of use*. Luxembourg Publications Office of the European Union. <https://data.europa.eu/doi/10.2760/38842>
- Chadwick, D. D., Buell, S., Burgess, E., & Peter, V. (2022). "I would be lost without it but it's not the same" experiences of adults with intellectual disabilities of using information & communication technology during the COVID-19 global pandemic. *British Journal of Learning Disabilities*, 51(2), 148-162. <https://doi.org/10.1111/bld.12522>
- Chadwick, D. D., & Fullwood, C. (2018). An online life like any other: Identity, self-determination, and social networking among adults with intellectual disabilities. *Cyberpsychology, Behaviour, and Social Networking*, 21(1), 56-64. <https://doi.org/10.1089/cyber.2016.0689>
- Chadwick, D. D., Quinn, S. & Fullwood, C. (2016). Perceptions of the risks and benefits of Internet access and use by people with intellectual disabilities. *British Journal of Learning Disabilities*, 45, 21-31. <https://doi.org/10.1111/bld.12170>
- Chadwick, D. D., Wesson, C., & Fullwood, C. (2013). Internet access by people with intellectual disabilities: Inequalities and opportunities. *Future Internet*, 5(1), 376-397. <https://doi.org/10.3390/fi5030376>
- Chang, Y., Sitbon, L., & Simpson, L. R. (2021). Towards a secured and safe online social media design framework for people with intellectual disability. *Proceedings of the 23rd International ACM SIGACCESS Conference on Computers and Accessibility*. <https://doi.org/10.1145/3441852.3476540>
- Desjarlais, M., & Willoughby, T. (2010). A longitudinal study of the relation between adolescent boys and girls' computer use with friends and friendship quality: Support for the social compensation or the rich-get-richer hypothesis? *Computers in Human Behavior*, 26(5), 896-905. <https://doi.org/10.1016/j.chb.2010.02.004>
- Dixon, S. (2017, June 21). *Social media – Statistics & facts*. <https://www.statista.com/topics/1164/social-networks/>.
- EU Kids Online. (2014). *EU Kids Online: Findings, methods, recommendations*. The London School of Economics and Political Science. <https://lsedesignunit.com/EUKidsOnline/html5/index.html?page=1&noflash>
- Evans, K., Russell, W., Furgione, B., & Sheridan, A. (2018). "Won't You be my Neighbor?". *Journal of Culture and Values in Education*, 1(2), 1-22. <https://doi.org/10.46303/jcve.01.02.1>
- Foley, A., & Ferri, B. A. (2012). Technology for people, not disabilities: Ensuring access and inclusion. *Journal of Research in Special Educational Needs*, 12(4), 192-200. <https://doi.org/10.1111/j.1471-3802.2011.01230.x>
- Fox, S., & Rainie, L. (2014, February 27). *The Web at 25 in the U.S.* <http://www.pewinternet.org/2014/02/27/the-web-at-25-in-the-u-s/>

- Ghafari, M., Baigi, V., Cheraghi, Z., Doosti-Irani, A. (2016). Correction: The prevalence of asymptomatic bacteriuria in Iranian pregnant women: A systematic review and metaanalysis. *PLoS One*, *11*(10), e0165114.  
<https://doi.org/10.1371/journal.pone.0165114>
- Graham, S. (2002). Bridging urban digital divides? Urban polarisation and information and communications technologies (ICTs). *Urban Studies*, *39*(1), 33-56.  
<https://doi.org/10.1080/00420980220099050>
- Heitplatz, V. N., Bühler, C., & Hastall, M. R. (2021). Usage of digital media by people with intellectual disabilities: Contrasting individuals' and formal caregivers' perspectives. *Journal of Intellectual Disabilities*, *26*(2), 420-441.  
<https://doi.org/10.1177/1744629520971375>
- Holmes, K. M., O'Loughlin, N. (2014). The experience of people with learning disabilities on social networking sites. *British Journal of Learning Disabilities*, *42*(1), 1-5.  
<https://doi.org/10.1111/bld.12001>
- Hoppestad, B. S. (2013). Current perspective regarding adults with intellectual and developmental disabilities accessing computer technology. *Disability and Rehabilitation: Assistive Technology*, *8*(3), 190-194.  
<https://doi.org/10.3109/17483107.2012.723239>
- Jacob, U. S., & Pillay, J. (2020) Impact of virtual learning space in teaching learners with moderate intellectual disability. *Psychology and Education Journal*, *57*(9), 1120-1126.  
<http://psychologyandeducation.net/pae/index.php/pae/article/view/417>
- Jacob, U. S., Edozie, I. S., & Pillay, J. (2022a). Strategies for enhancing social skills of individuals with intellectual disability: A systematic review. *Frontiers in Rehabilitation Sciences*, *3*, 968314. <https://doi.org/10.3389/fresc.2022.968314>
- Jacob, U. S., Pillay, J., Oladipupo, O. O., Eni-Olorunda, T., Asiru, A. B. (2022b) Music therapy for individuals with intellectual disability: A systematic review. *International Journal of Early Childhood Special Education*, *14*(2), 49-59. <https://www.int-iecse.net/article/Music+Therapy+for+Individuals+with+Intellectual+Disability%253A+A+Systematic+Review+811/>
- Johnson, J. W., Blood, E., Freeman, A., & Simmons, K. (2013). Evaluating the effectiveness of teacher-implemented video prompting on an iPod Touch to teach food-preparation skills to high school students with autism spectrum disorders. *Focus on Autism and Other Developmental Disabilities*, *28*(3), 147-158.  
<https://doi.org/10.1177/1088357613476344>
- Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of Social Media. *Business Horizons*, *53*(1), 59-68  
<https://doi.org/10.1016/j.bushor.2009.09.003>

- Kilinc, E., Tarman, B., & Yussupova, S. (2023). The Association Between College Students' Participation Behavior and Social Media Use. *Research in Social Sciences and Technology*, 8(2), 55-67. <https://doi.org/10.46303/ressat.2023.11>
- Kitchin, R. (2016). The ethics of smart cities and urban science. *Philosophical Transactions of the Royal Society A*, 374, 20160115. <https://doi.org/10.1098/rsta.2016.0115>
- Kitchin, R. (2019). The timescape of smart cities. *Annals of the American Association of Geographers*, 109(3), 775-790. <https://doi.org/10.1080/24694452.2018.1497475>
- Larsson-Lund, M. (2018). The digital society: Occupational therapists need to act proactively to meet the growing demands of digital competence. *British Journal of Occupational Therapy*, 81(12), 733-773. <https://journals.sagepub.com/doi/pdf/10.1177/0308022618776879>
- Larsson-Lund, M., & Nyman, A. (2020). Occupational challenges in a digital society: A discussion inspiring occupational therapy to cross thresholds and embrace possibilities. *Scandinavian Journal of Occupational Therapy*, 27(8), 550-553. <https://doi.org/10.1080/11038128.2018.1523457>
- Lathouwers, K., de Moor, J., & Didden, R. (2009). Access to and use of Internet by adolescents who have a physical disability: A comparative study. *Research in Developmental Disabilities*, 30(4), 702-711. <https://doi.org/10.1016/j.ridd.2008.09.003>
- Leopold, A., Lourie, A., Petras, H., & Elias, E. (2015). The use of assistive technology for cognition to support the performance of daily activities for individuals with cognitive disabilities due to traumatic brain injury: The current state of the research. *NeuroRehabilitation*, 37(3), 359-378. <https://doi.org/10.3233/NRE-151267>
- Littlejohn, A. H. (2002). Improving continuing professional development in the use of ICT. *Journal of Computer Assisted Learning*, 18, 166-174. <https://doi.org/10.1046/j.0266-4909.2001.00224.x>
- Löfgren-Mårtenson, L. (2008). Love in cyberspace. Swedish young people with intellectual disabilities and the Internet. *Scandinavian Journal of Disability Research*, 10(2), 125-138. <https://sjdr.se/articles/10.1080/15017410701758005>
- Lussier-Desrochers, D., Normand, C. L., Romero-Torres, A., Lachapelle, Y., Godin-Tremblay, V., Dupont, M.-È., Roux, J., Pépin -Beauchesne, L., & Bilodeau, P. (2017). Bridging the digital divide for people with intellectual disability. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, 11(1). <https://doi.org/10.5817/CP2017-1-1>
- Manzoor, M., & Vimarlund, V. (2018). Digital technologies for social inclusion of individuals with disabilities. *Health and Technology*, 8(5), 377-390. <https://doi.org/10.1007/s12553-018-0239-1>
- Molin, M., Sorbring, E., & Löfgren-Mårtenson, L. (2015). Teachers' and parents' views on the Internet and social media usage by pupils with intellectual disabilities. *Journal of Intellectual Disabilities*, 19(1), 22-33. <https://doi.org/10.1177/1744629514563558>

- O'Hara, D. M., Seagriff-Curtin, P., Levitz, M., Davies, D., & Stock, S. (2008). Using personal digital assistants to improve self-care in oral health. *Journal of Telemedicine and Telecare*, 14(3), 150-151. <https://doi.org/10.1258/jtt.2008.003016>
- Palmer, S. B., Wehmeyer, M. L., Davies, D. K., & Stock, S. E. (2012). Family members' reports of the technology use of family members with intellectual and developmental disabilities. *Journal of Intellectual Disability Research*, 56(4), 402-414. <https://doi.org/10.1111/j.1365-2788.2011.01489.x>
- Patrick, P. A., Obermeyer, I., Xenakis, J., Crocitto, D., & O'Hara, D. M. (2020). Technology and social media use by adult patients with intellectual and/or developmental disabilities. *Disability and Health Journal*, 13(1), 100840. <https://doi.org/10.1016/j.dhjo.2019.100840>
- Ramsten, C., Marmstål Hammar, L., Martin, L., & Göransson, K. (2017). ICT and intellectual disability: A survey of organizational support at the municipal level in Sweden. *Journal of Applied Research in Intellectual Disabilities*, 30(4), 705-713. <https://doi.org/10.1111/jar.12265>
- Rustan A.S. (2020). Communication in Indonesian social media: Avoiding hate speeches, intolerance and hoax. *Journal of Social Studies Education Research*, 11(2), 174 – 185.
- Setyawan, S., & Wulandari, A. A. (2022). Internet skills in using smartphones for children with intellectual disability at SLB Negeri Wonogiri. International Conference on Community Empowerment and Engagement (ICCEE 2021). *Advances in Social Science, Education and Humanities Research*, 661, 61-70. <https://doi.org/10.2991/assehr.k.220501.008>
- Shpigelman, C. N. (2018). Leveraging social capital of individuals with intellectual disabilities through participation on Facebook. *Journal of Applied Research in Intellectual Disabilities*, 31(1), e79-e91. <https://doi.org/10.1111/jar.12321>
- Shpigelman, C. N. & Gill, C. J. (2014). How do adults with intellectual disabilities use Facebook? *Disability & Society*, 29(10), 1601-1616. <https://doi.org/10.1080/09687599.2014.966186>
- Sturm, E., & Quaynor, L. (2020). A Window, Mirror, and Wall: How educators use twitter for professional learning. *Research in Social Sciences and Technology*, 5(1), 22-44. <https://doi.org/10.46303/ressat.05.01.2>
- Tassé, M. J., Luckasson, R., & Schalock, R. L. (2016). The relation between intellectual functioning and adaptive behaviour in the diagnosis of intellectual disability. *Intellectual Developmental Disabilities*, 54, 381-390. <http://aaidjournals.org/doi/abs/10.1352/1934-9556-54.6.381>
- Vallor, S. (2012). Flourishing on facebook: Virtue friendship and the new social media. *Ethics and Information Technology*, 4, 185-199. <https://doi.org/10.1007/s10676-010-9262-2>
- Vanolo, A. (2014). Smartmentality: The smart city as disciplinary strategy. *Urban Studies*, 51(5), 883-898. <https://doi.org/10.1177/0042098013494427>

- White, P., & Forrester-Jones, R. (2020). Valuing e-inclusion: Social media and the social networks of adolescents with intellectual disability. *Journal of Intellectual Disabilities*, 24(3), 381-397. <https://doi.org/10.1177/1744629518821240>
- Wu, T.-F., Chen, M.-C., Yeh, Y.-M., Wang, H.-P., & Chang, S. C.-H. (2014). Is digital divide an issue for students with learning disabilities? *Computers in Human Behavior*, 39, 112-117. <https://doi.org/10.1016/j.chb.2014.06.024>
- Yang, E., & Lee, K. H. (2022). The moderating effects of disability on mobile internet use among older adults: Population-based cross-sectional study. *Journal of Medical Internet research*, 24(4), e37127. <https://doi.org/10.2196/37127>



---

**APPENDIX**
**Table 2.***Summary of the study participants and major findings*

<b>Authors and Year</b>	<b>Internet Issue</b>	<b>Country</b>	<b>Participant</b>	<b>Method</b>	<b>Major Findings</b>
Patrick et al. (2020)	No Internet issue	USA	370 adult patients with intellectual and/or developmental disabilities	Cross-sectional study (quantitative)	<p>Half of the respondents indicated they used a tablet, smartphone, desktop computer, laptop, or other device.</p> <p>According to the results, about 21% of respondents used some assistive technology (e.g., screen readers, alternative input devices).</p> <p>Eighty respondents indicated that they received immediate help in the following areas: communication, 70.9%; completing tasks faster, 62.5%; and acquiring new knowledge, 31.3%.</p>
Ågren et al. (2020a)	No Internet issue	Sweden	15 participants with ID	A qualitative content analysis	<p>The findings were divided into three categories: access to the Internet in different settings, challenges when using the Internet, and strategies to participate in Internet activities in the digital age.</p> <p>Several Internet-enabled devices and Internet connections were available to participants in this study.</p> <p>In their everyday lives, participants used the Internet in various ways, including using pictures, reducing Internet-enabled devices, and using pictures when doing Internet activities.</p>

---

White & Forrester-Jones (2018)	No Internet issue	UK	18 people with ID and control group (non-ID)	Quantitative (experimental)	<p>The social media usage of adolescents with ID is comparable, but they interact with fewer friends and peers on these sites. Friendship quality was the same between students who were typically developing and students who were not.</p> <p>There was a significant correlation between social media use and reported friendships, but not between social media use and critical remarks</p>
Heitplatz et al. (2021)	No Internet issue	Germany	24 formal caregivers and 50 people with ID.	Qualitative	Interest in educational programme, digital media, and a variety of social media applications used determined social media usage among people with ID.
Caton et al. (2022)	No Internet issue	UK	112 participants	Quantitative	<p>It is estimated that 89.8% of people used the Internet at home.</p> <p>The most common way people used the Internet was to stay in touch with family and friends (66.4%) and to use social media.</p> <p>Results show possible relationships between Internet usage indicators and age (in three age bands), gender, and living situation.</p>
Lussier-Desrochers et al. (2017) (E-inclusion)	No Internet issue	NR	161 people with ID	Documentary analysis (Qualitative)	The use of social media by people with ID depended on the fit between individual resources and environmental support.

Chadwick et al. (2022)	No Internet issue	UK	19 participants with ID	Qualitative	Giving media support to people with ID is important and had a fundamental positive effect on wellbeing their wellbeing.
Chadwick & Fullwood (2018)	No Internet issue	Sweden	11 adults with ID	Qualitative	Interaction with others was the first global theme. Online identities reported by participants did not emphasise or conceal impairment, challenging notions of dependency, and participants provided and received support.
Ågren et al. (2020b)	No Internet issue	Sweden	318 schools' principals or their administrative staff	Cross-sectional study (quantitative)	Parents of adolescents with ID perceived the benefit of social media usage but paid less attention to the associated risk.
Yang & Lee (2022)	No Internet issue	South Korea	2243 people without disabilities and 1386 people with disabilities	Quantitative	Disability created a stronger association between several determinants and actual mobile internet use.
Chadwick et al. (2016)	No Internet issue	UK	166 members of the	Quantitative	The risks and benefits of being online were believed to be greater for people with ID compared with those without ID.

---

			general population		
Arun & Jain (2022)	No Internet issue	India	415 students and their parents with developme ntal disabilities	Quantita tive	Providing their parents and siblings with proper training and assistance during the daytime allowed them to learn like others.
Molin et al. (2015)	No Internet issue	Sweden	Eight teachers in a special school with five pupils with ID	Qualitati ve	Teachers' and parents' views on how support could be provided for young people with ID were important.

---