



Mobile phone use by persons with intellectual disabilities: literature review

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Suggested Citation:

Arsic, B. & Gajic, A. (2024). Mobile phone use by persons with intellectual disabilities: literature review. *International Journal of Special Education and Information Technology*. 10(1), 13-29. <https://doi.org/10.18844/jeset.v10i1.9440>

Received from July 11, 2024; revised from August 18, 2024; accepted from October 14, 2024.

Selection and peer review under the responsibility of Prof. Dr. Adile Askim Kurt, Editor-in-Chief, Anadolu University, Turkey

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iThenticate Similarity Rate: 13%

Abstract

The objective of this paper was to review the research conducted to investigate the use of mobile phones by people with intellectual disability (ID). The available literature was collected through Google Scholar, Scopus, Web of Science, and ProQuest search engines, and the review included those articles that were published in the last ten years. The lack of functional literacy, digital literacy, and the price of the mobile phone stand out as the causes of insufficiently prevalent use. People with ID use mobile phones to make calls, send messages, play games, take photos, watch movies, and use social media. The most common predictors of problematic mobile phone use are mental health problems adolescent age, female gender, a lower degree of ID, higher frequency of daily use, and lower level of social support, while mental health problems, cyber violence, social relations problems, increased use of psychoactive substances, deterioration of academic performance, and sleep disorders are most common consequences. The instruments for measuring problematic mobile phone use are presented, and the interventions implemented to reduce the problematic use of mobile phones by people with ID. In conclusion, the study provides recommendations for future authors, based on the results of the literature review.

Keywords: Digital literacy; intellectual disability; measurement; mobile phone.

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1. INTRODUCTION

In the last few decades, more and more people have used mobile phones, that is, more than 90% of the typical population own phones and use them every day (Busse & Fuchs, 2013; Harris et al., 2020). Research shows that people spend between 10 and 12 hours a day using a mobile phone (Liu et al., 2019; Yang et al., 2017), which is troublesome. People with intellectual disability (ID) have been using phones to a greater extent in recent years (Arun & Jain, 2022; Jenaro et al., 2018a; Stephenson & Limbrick, 2015). Research shows that over 85% of people with ID use a mobile phone every day (Alfredsson Agren et al., 2020a; Lopez-Fernandez et al., 2014). What has emerged as a concern is the frequency of mobile phone use by people with ID. Older studies indicate that people with ID use the phone for about three hours a day (Smith et al., 2016), while more recent research highlights the fact that people with ID spend most of the day on a mobile phone (Jenaro et al., 2018a; Prefontaine et al., 2019).

Problematic cell phone use refers to excessive, compulsive, or maladaptive cell phone use patterns that interfere with an individual's daily functioning, social interactions, professional or academic obligations, and the individual's general well-being, and also includes the inability to control or regulate daily cell phone use, preoccupation with said device, neglect of others important activities, withdrawal symptoms when the phone is not used and continued use despite negative consequences (Amiri et al., 2020; De-Sola et al., 2019; Gallimberti et al., 2016; Krajewska-Kulak et al., 2012).

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The American Psychiatric Association (APA, 2013) in its fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) does not include the use of mobile phones as a special type of addiction. However, it classifies the potential excessive and problematic use of mobile phones, that is, any type of technological device, as an addictive disease under the term *Internet Gaming Disorder* (IGD). This disorder is characterized by persistent and repetitive participation in online gaming, which leads to distress and functional impairment (Batko, 2023; Liu & Sun 2023; Li & Ren 2024).

According to the tenth International Classification of Diseases (ICD-10) published by the World Health Organization (WHO, 1992), problematic use of mobile phones or addiction to the use of phones is also not included as a separate disorder. However, this classification recognizes the potential for this term under a broader category that refers to other disorders (Other disorders of psychological development - F98.8) and includes various addiction diseases, such as addiction to the use of the Internet, which also includes the use of mobile phones phone. While in the eleventh International Classification of Diseases (WHO, 2018) this term is also classified under the category of gaming disorder, but under the diagnostic criteria it also includes the use of other digital media, such as the mobile phone. Although problematic cell phone use is not considered a separate and isolated disorder, all of the above classifications classify cell phone problem use as an addictive behavior involving a cell phone.

Thomee et al. (2011) obtained data that, around 10% of young people exhibit elements of problematic mobile phone use. The authors of later research Lopez-Fernandez et al., (2018), came to similar results, that is, they concluded that the prevalence of problematic use of mobile phones among adolescents is 8.9%. In a meta-analysis conducted by Elhai and colleagues (2017), the authors found that the prevalence in young people is 23% and that it varies depending on the culture and type of population included in the sample. Because of all the above, it is of great importance to examine the use of mobile phones by people with ID.

1.1.Purpose of study

Therefore, this paper aims to make an overview of the research conducted to investigate the use of mobile phones by people with ID.

2. METHODS AND MATERIALS

The available literature was collected through Google Scholar, Scopus, Web of Science, and ProQuest search engines. The following keywords were used for the literature search: intellectual disability, mobile phone or cellphone, problematic mobile phone use, prevalence, predictors, assessment instruments, consequences, digital literacy, and the internet. Keywords were combined.

The review part included those articles that are of a review and research nature, which included people with ID and other developmental disorders that include the presence of ID, and which were published in the last ten years (2013-2023).

3. RESULTS

3.1. Prevalence of mobile phone use by people with intellectual disabilities

People with ID use mobile phones to a lesser extent than their typically developing peers. The results of a study conducted in Sweden show that only 67% of adolescents with ID have a phone, compared to 98% of typically developing adolescents, and there is also a significantly higher number of those who do not have access to any technological device that allows access to the Internet (Alfredsson Agren et al., 2020a).

When it comes to the population of adults with ID, research results also indicate that they are less likely than their typically developing peers to have access to the Internet or mobile phones (Engwall, 2023). Patrick et al., (2020) researched a large sample of 370 respondents who have the presence of ID and are older than 18 years and concluded that only 44.6% of people with ID use a mobile phone. Brunet et al., (2019) conducted research on an even larger sample of people with ID and came to the results that of the 403 respondents included in the research, only 65.8% use a mobile phone every day. However, a study (Lough & Fisher, 2016) conducted on a sample of 28 adults with Williams syndrome comorbid with mild ID, with an average age of 27 years, found opposite results. The authors found that 85.7% of adults with Williams syndrome use the Internet daily on their mobile phone, of which almost half use more than two hours a day, and a quarter more than four hours a day (Lough & Fisher, 2016). The prevalence of mobile phone use in a study that included people with more severe forms of ID indicates that more than half of people with severe ID have access to the Internet at home and access the Internet most often via a mobile phone (Caton et al., 2023).

When using mobile phones, people with ID encounter various problems that may be the cause of insufficiently prevalent use of mobile phones by people with ID. One of the most frequently reported problems that may be the cause of the insufficient frequency of mobile phone use by people with ID is the lack of functional literacy necessary for the adequate use of a mobile phone (Stephenson & Limbrick, 2015), which manifests itself through insufficiently developed reading skills, writing, and spelling (Alfredsson Agren et al., 2020b), as well as reading comprehension (Johansson et al., 2021). In addition, insufficient development of the skills to use a mobile phone in an adequate way (Engwall, 2023), that is lack of digital literacy (Tohara, 2021) is a major obstacle to the successful and independent use of a mobile phone for people with ID. Insufficiently developed digital literacy for the successful use of a mobile phone occurs due to the inadequacy and non-adjustment of the mobile

device to the abilities of people with ID (Boot et al., 2018), then the lack of skills necessary to use various important applications (Price et al., 2018), and frequent changes in the digital platforms and applications they use every day (Alfredsson Agren et al., 2020a). A meta-analysis conducted by Boot et al. (2018) found that the main reason for the reduced frequency of mobile phone use by people with ID is the price of the mobile phone, which is in agreement with other older studies (Stephenson & Limbrick, 2015).

3.2. Purposes of using mobile phones by people with intellectual disabilities

People with ID use mobile phones for similar purposes as the typical population, namely making phone calls (Bryen et al., 2007), then making video calls through certain applications (Caton et al., 2023), sending SMS messages (Palmer et al., 2012), playing games (Alfredsson Agren et al., 2019; Nepo et al., 2021), then for making photos (Palmer et al., 2012), watching videos (Mechling, 2011) and watching films (Caton et al., 2023). However, research indicates that despite the aforementioned similarity, people with ID are less likely than typically developing peers, to meaningfully use a mobile phone (Alfredsson Agren et al., 2020b), and also very few people with ID search for information which are of interest to them and which are of importance (Ayres et al., 2013). In the research of Brunette et al., (2019), the authors came to the result that over 75% of people with ID from the sample point out that they would like to use a mobile phone to learn new content, which also indicates insufficient functionality of using mobile by persons with ID.

When it comes to the use of social media through mobile phones, the prevalence in different studies varies. Patrick et al., (2020) in their research conducted on a sample of 370 people with ID who are older than 18 years, concluded that over 90% of respondents from the sample do not have a profile on social networks, which is why they emphasize the need for greater participation of people with ID on social media, with an emphasis on the importance of having their own mobile devices, which would enable them to have greater participation in social media. However, research from an earlier date comes to the opposite results. Brunet et al., (2019) found that 67.8% of people with ID use social media daily due to having a personal mobile device and that 53.6% of people with ID have internet on their mobile phone. Also, research from an even older date found that 85.2% of people with ID have a profile on one of the social networks, of which the most used social network by this population is Facebook (Lough & Fisher, 2016).

3.3. Predictors of excessive and problematic use of mobile phones by people with intellectual disabilities

When it comes to the predictors of excessive and problematic use of mobile phones by people with ID, they differ in research depending on the characteristics of the people with ID included in the sample. The most prominent predictors are a high degree of psychological distress in the form of mental health problems previously present in people with ID, as well as some personality traits such as a high degree of impulsivity and lack of self-control (Elhai et al., 2017). In addition, it was shown that adolescents with mild ID who use a mobile phone for a longer time during the day, as well as adolescents who use psychoactive substances, have a higher degree of problematic use of the mobile phone (Arsić & Gajić, 2024).

The age group that spends most of the day using a mobile phone is adolescents, both when it comes to the typical population, but also when it comes to people with ID (Arsić & Gajić, 2024; George & Odgers, 2015). Therefore, the adolescent age is also can be considered one of the significant predictors. One group of authors (Johansson et al., 2021) came to the result that the female gender

can also be one of the predictors because they came to the result that people with ID who are of the female gender use a mobile phone to a greater extent compared to people with ID who are male.

A study conducted in Sweden on a sample of 771 people with different types of ID and different types of developmental disabilities found that people with autism spectrum disorder and people with attention deficit hyperactivity disorder who had fewer intelligence deficits used mobile phones to a greater extent than people with ID (Johansson et al., 2021), so the presence of severe forms of ID can be considered a protective factor for the emergence of problematic use of mobile phones. Other factors with strong predictive value are a higher frequency of mobile phone use during the day, a lower level of social support, as well as the presence of other addictive behavior patterns (Panova & Carbonell, 2018; Roberts et al., 2014).

3.4. Consequences of mobile phone use by people with intellectual disabilities

Problematic and excessive use of mobile phones can have numerous implications for an individual's well-being and lead to negative consequences in various areas of their life. One of the most frequently studied consequences of excessive mobile phone use by people with ID is the emergence of mental health problems, in the form of anxiety (Meerson et al., 2024; Desouky & Abu-Zaid, 2020), depression (Elhai et al., 2017; Jenaro et al., 2018a, 2018b; Du et al., 2024) or stress (Kuss, et al., 2018; Vahedi & Saiphoo, 2018; Višnjić et al., 2018). In a study conducted in the Republic of Serbia, it was shown that adolescents with mild ID who have a higher degree of problematic use of mobile phones have more mental health problems and that the presence of these problems in one domain positively correlates with the presence of other mental health problems (Arsić & Gajić, 2024).

Jenaro et al., (2018b) conducted a study on a sample of 269 adults aged 18-40 with ID who come from three different Spanish-speaking countries and found that over 15% had experience with cyberbullying, and the main reasons for it are problematic and excessive mobile phone use. Other authors also come to the data on the increased prevalence of cyber violence against people with ID, that is, that 23% of people with ID have experiences with violence in cyberspace due to the excessive use of mobile phones and social networks on the same, compared to 11% of typically developing peers (Alfredsson Agren et al., 2020b).

Lough & Fisher (2016) found that 95.7% of people with ID communicate on social media when using a mobile phone only with people they know personally, while 78.3% also communicate with unknown people. These data support the findings of other research that found that people with ID do not have the developed safety skills necessary to use a mobile phone, due to susceptibility to manipulation and victimization due to the very presence of ID (Caton & Landman, 2022). Excessive and problematic mobile phone use can have negative implications for the development of an individual's social and interpersonal relationships, and according to research, people with ID establish interpersonal relationships to a lesser extent than their typically developing peers and interact with fewer people daily (White & Forrester-Jones, 2020).

Research conducted by Roberts et al., (2014) found that excessive mobile phone use decreases satisfaction with face-to-face relationships and leads to a reduction in live communication. In addition, excessive mobile phone use leads to social isolation from peer groups (Gowthami & Kumar, 2016), a decrease in the quality and quantity of interpersonal relationships due to the preoccupation with mobile devices and the prioritization of interactions in the online space (Lopez-Fernandez et al., 2018) and increased feelings of loneliness (Lopez-Fernandez et al., 2018) through creating a false sense of belonging (Oberst et al., 2017). Apart from the above, an Asian group of authors (Kwon et al., 2013) found that excessive and problematic mobile phone use negatively correlates with the degree of

development of social skills and empathy, due to the lack of emotional connection with others and insufficient opportunities to practice non-verbal communication and social skills.

However, a large number of research come to the opposite result that the use of mobile phones enhances the social interactions achieved by people with ID because it allows them to establish social connections with others (White & Forrester-Jones, 2020), maintains existing interpersonal relationships with friends (Caton et al., 2023), connect with others, and have a sense of visibility, belonging and popularity (Shpigelman, 2018).

The most serious consequences of excessive and problematic mobile phone use among the population of people with ID are the increased use of psychoactive substances (Park et al., 2019; Rauschert et al., 2022; Simonato et al., 2017), deterioration of academic success (Dos, 2014; Ibrahim et al., 2018; Lopez-Fernandez et al., 2018; Yunita et al., 2018; Zare Bidaki et al., 2013), and in some more serious situations, excessive and problematic mobile phone use can lead to sleep disturbances and reduced sleep quality (Thomee et al., 2011).

3.5. Measuring problematic mobile phone use

It is emphasized that the instruments for assessing the problematic use of mobile phones must assess the four characteristics of behavioral addictive behaviors, which refer to the neglect of other life activities, loss of control, withdrawal symptoms if a person is unable to use a mobile phone, as well as negative consequences if excessive use occurs (Starčević, 2013; Bayor et al., 2023).

In a meta-analysis that focused on the categorization of instruments for measuring problematic mobile phone use (Harris et al., 2020), the authors pointed out that there are over 70 instruments for assessing the above-mentioned, and that they can be categorized into three groups: instruments for assessing the problematic mobile phone use, instruments for assessing the frequency of using mobile phones and instruments for assessing the motivation for using mobile phones. However, in the following part of the paper, we will highlight only a few of the most used instruments, which follow the criteria of behavioral addictive behaviors and which, according to previous research in which they were applied, proved to be reliable ($\alpha > 80$).

Mobile Phone Problem Use Scale (Bianchi & Phillips, 2005) consists of 27 items that are in the form of statements, where on a ten-point Likert-type scale respondents should indicate the degree of agreement with the stated statements. This scale examines the possibility of tolerance if the individual is not able to use a mobile phone, symptoms of avoiding other life problems when a person uses a mobile phone, withdrawal symptoms, the need for compulsive use of a mobile phone, as well as negative implications on an individual's life due to excessive use of a mobile phone.

The Problematic Mobile Phone Use Questionnaire (PMPUQ) is an instrument designed by Billieux et al., (2008). This instrument consists of 30 items, 29 of which are in the form of a four-point Likert-type scale and one additional question to which respondents give a dichotomous answer (yes/no). The domains of this instrument examine the use of a mobile phone for purposes that are not allowed or acceptable, then for purposes that put a person in danger, symptoms of addiction, and the resulting financial consequences for the individual due to the use of the mobile phone.

The Problem Cellular Phone Use Questionnaire (Yen et al., 2009) consists of 12 items to which respondents give dichotomous answers (yes/no), and examines the tolerance of respondents due to the inability to use a mobile phone, then withdrawal symptoms, negative consequences on the individual and his life and loss of control over various aspects of life due to the problematic use of mobile phones.

The Problematic Mobile Phone Use Scale (Guzeller & Conguner, 2012) is another instrument that consists of 18 items in the form of a five-point Likert-type scale and consists of three use domains that examine negative consequences of mobile phone use, then compulsive behavior aimed at using the mobile phone and withdrawal symptoms if the individual is unable to use the mobile phone.

Merlo and colleagues (Merlo et al., 2013) designed the instrument - *Problematic Use of Mobile Phones Scale* (PUMP) that complies with all the criteria of behavioral addictive behaviors. This instrument consists of 20 items, formulated in the form of a five-point Likert-type scale. It examines the ability to tolerate the lack of a mobile phone, abstinence symptoms, the use of a mobile phone by an individual to a greater extent than intended, the existence of an uncontrollable need to use a mobile phone, spending a large part of the day using a mobile phone, reduction of participation in certain activities due to excessive mobile phone use, persisting in using a mobile phone despite psychological distress and social problems, as well as the inability to perform daily activities.

Tao et al., (2013) designed an instrument for adolescents (*Self-rating Questionnaire for Adolescent Problematic Mobile Phone Use* - SQUAPMPU) that measures problematic mobile phone use and includes an assessment of the existence of an uncontrollable need to use a mobile phone, implications, and consequences of mobile phone use on the physical and mental health of the individual and symptoms of withdrawal crisis if the individual is unable to use the phone. This instrument consists of 13 items formulated in the form of a five-point Likert-type scale.

Pamuk & Anli, (2016) designed the *Problematic Mobile Phone Use Scale* (PMPUS), which consists of 26 items. This instrument is a five-point Likert-type scale, which also fulfills all the necessary criteria for the symptoms of behavioral addiction to mobile phones. The scale examines the impact of mobile phone use on social deprivation, avoidance of real-life interactions, problems in controlling one's behavior related to mobile phone use, and the consequences of mobile phone use on an individual's life.

Another instrument that includes all symptoms of behavioral addiction to mobile phones was designed and revised by Valderrama and colleagues (Valderrama et al., 2014) (*Problematic Smartphone Use Scale-Revised* – PSUS-R). This instrument consists of 19 items formulated in the form of statements, and respondents are expected to indicate the degree of agreement with the stated statements on a six-point Likert-type scale. The domains covered by this instrument refer to the degree of evaluation of one's importance when using social media, the degree of involvement in conflicts via mobile phone with peers, and symptoms of abstinence crisis for the mobile phone.

3.6. Interventions for reduction of problematic mobile phone use in people with intellectual disabilities

The research based on the reduction of problematic mobile phone use was focused on various aspects of increasing the competencies of people with ID, such as developing digital literacy and increasing the ability to think critically about the information that people with ID can access by using the Internet via mobile phones, as well as teaching people with ID on the use of the mobile phone for useful purposes, as opposed to problematic one.

Delgado et al., (2019) and Park, (2022) conducted an intervention aimed at increasing the skills of critical observation of information accessed by people with ID via the Internet. The research sample consisted of 33 young people with ID, with an average age of 19. The training consisted of seven modules, where the respondents were taught to identify the parameters by which they can assess the credibility of information by observing what information the text they are reading wants to convey,

then who is the author of the text, as well as the author's intentions. The results of the intervention showed that for seven meetings with respondents, they successfully identified sites that provide relevant information with almost 76% accuracy and that the results were maintained two weeks after the intervention. However, the authors point out that the success of the intervention would have been higher if there had been no attrition of the sample.

Raghavendra et al., (2018) researched to study the effectiveness of teaching the use of social media via mobile phone to nine young people with ID, with an average age of 17 years. The interventions were individualized and designed to follow the previously developed abilities of each of the participants, and the results showed that all respondents used social media on a mobile phone to a statistically significant extent more successfully, taking into account safety and without elements of problematic mobile phone use. In the concluding remarks, the authors emphasize the importance of teaching the skills of using social media to people with ID, especially those who live in rural areas, to increase the social interactions that people with ID develop. However, the authors also emphasize the importance of teaching safety when interacting on social media, to eliminate the problematic use of mobile phones.

Lancioni et al., (2022) conducted a study to teach six participants with ID to use a mobile device to increase the quality of their leisure time. The respondents did not have developed reading and writing skills, so they were taught to use the Samsung smart mobile device individually by giving orders verbally to the device, to access different activities that they could do in their free time, such as sending messages or making phone calls. The results of the intervention showed that people with ID can be successfully taught to use a mobile phone for meaningful purposes that do not have elements of problematic use in just a few ten-minute sessions.

Another study was conducted by the same group of authors (Lancioni et al., 2023), to teach five adults with moderate ID to use a Samsung Galaxy Smartphone for useful purposes. Participants were taught to play their favorite songs or call friends via mobile phone. On the pre-test, none of the respondents could perform the above, while on the post-test, all subjects successfully performed the above-mentioned activities with great accuracy. In the concluding remarks, the authors emphasize the importance of teaching people with ID how to use a mobile phone to access the desired activities. In addition to the above, to reduce the problematic use of mobile phones by people with ID, it is necessary to carry out interventions aimed at increasing reading comprehension, so that they can critically observe the information they get by using mobile phones. Research (Khasawneh, 2021; Wood et al., 2018) shows that people with ID can be successfully taught to read with comprehension.

4. DISCUSSION

In a literature review related to the prevalence of mobile phone use by people with ID, it was found that the prevalence ranges from 44.6 to 85.7% (Alfredsson Agren et al., 2020b; Brunette et al., 2019; Engwall, 2023; Lough & Fisher, 2016; Patrick et al., 2020). Studies in which the prevalence is higher had a smaller number of respondents in the sample, which is potentially one of the reasons for the unevenness of the data obtained. In addition, another reason for the wide range of prevalence may be the range in the degree of ID of the respondents, that is, studies in which the respondents have a higher IQ result in a higher prevalence (Caton et al., 2023; Lough & Fisher, 2016).

The main causes of the low prevalence of mobile phone use among the population of persons with ID are a lack of functional literacy (Alfredsson Agren et al., 2020b; Johansson et al., 2021; Stephenson & Limbrick, 2015), lack of digital literacy (Alfredsson Agren et al., 2020a; Boot et al., 2018; Engwall,

2023; Price et al., 2018; Tohara, 2021), and mobile phone device prices (Boot et al., 2018; Stephenson & Limbrick, 2015).

People with ID use a mobile phone to make calls (Bryen et al., 2007; Caton et al., 2023), send SMS messages (Palmer et al., 2012), play games (Alfredsson Agren et al., 2020a; Nepo et al., 2021), take photos (Palmer et al., 2012), watch videos and movies (Caton et al., 2023; Mechling, 2011), but also use social networks (Brunette et al., 2019; Patrick et al., 2020; Lough & Fisher, 2016). However, frequent mobile phone use by people with ID is not for functional purposes (Alfredsson Agren et al., 2020b; Ayres et al., 2013; Brunette et al., 2019).

When it comes to predictors of excessive and problematic use of mobile phones by people with ID, literature review found that these are most often mental health problems and behavioral problems (Billieux et al., 2008; Elhai et al., 2017), adolescent age (George & Odgers, 2015; Sanchez-Martinez & Otero, 2009), female gender, lower degree of IO (Johansson et al., 2021), higher frequency of mobile phone use during the day and lower degree of social support (Panova & Carbonell, 2018; Roberts et al., 2014).

A review of the literature found that the most common consequences of problematic and excessive use of mobile phones by people with ID are mental health problems (Desouky & Abu-Zaid, 2020; Elhai et al., 2017; Jenaro et al., 2018a, 2018b; Kuss, et al., 2018; Vahedi & Saiphoo, 2018; Višnjić, et al., 2018), cyber violence and the safety concerns (Alfredsson Agren et al., 2020b; Caton & Landman, 2022; Jenaro et al., 2018a, 2018b; Lough & Fisher, 2016), and problems in the domains of social relations (Gowthami & Kumar, 2016; Kwon et al., 2013; Lopez-Fernandez et al., 2018; Oberst et al., 2017; Roberts et al., 2014; White & Forrester-Jones, 2020), increased use of psychoactive substances (Park et al., 2019; Rauschert et al., 2022; Simonato et al., 2017), academic success decline (Dos, 2014; Ibrahim et al., 2018; Lopez-Fernandez et al., 2018; Yunita et al., 2018; Zare Bidaki et al., 2013) and sleep disturbances (Thomee et al., 2011).

In a literature review related to instruments that can be used to assess the problematic use of mobile phones, several instruments were presented, which were, however, used with individuals of a typical population. Also, it is important to point out that this part of the literature review did not refer only to instruments designed in the last 10 years, as stated in the methodological part of the paper. To make an adequate selection of the instrument that will be used for those purposes with people with ID, it is important to keep in mind the recommendations related to the use of instruments with this population, which consist of a smaller number of items (Kattari, 2020) due to a deficit in the prolonged maintenance of attention that is present in people with ID (Liu et al., 2023; Pirnazar et al., 2022). In a literature review of eight instruments for assessing problematic mobile phone use that were presented, five instruments had less than 20 items (Guzeller & Conguner, 2012; Merlo et al., 2013; Tao et al., 2013; Valderrama et al., 2014; Yen et al., 2009), while more than 20 items had only three instruments (Bianchi & Phillips, 2005; Billieux et al., 2008; Pamuk & Anli, 2016).

In addition to the above, the instruments must have as few offered responses as possible (Nicolaidis et al., 2020). Cummings (1997) believes that the best instruments are those that are of the Likert type and should be in the form of a three-point scale, as well as being maximum in the form of a five-point scale, due to the reduced number of choices. Of the instruments for assessing the problematic use of mobile phones that were presented in the review section of this paper, most of the instruments had less than five response options (Billieux et al., 2008; Guzeller & Conguner, 2012; Merlo et al., 2013; Pamuk & Anli, 2016; Tao et al., 2013; Yen et al., 2009), while only two instruments had more than five options (Bianchi & Phillips, 2005; Valderrama et al., 2014).

When it comes to interventions carried out on a sample of people with ID, research from a literature review shows that people with different degrees of ID can be successfully taught to assess the credibility of information they get using a mobile phone (Delgado et al., 2019), to successfully use mobile phone independently to increase socialization with peers (Raghavendra et al., 2018), as well as to spend quality free time (Lancioni et al., 2022a, 2023).

5. CONCLUSIONS

The results of this literature review indicate that the prevalence of mobile phone use by people with ID is variable and that there are no studies in our region that have studied this prevalence. Therefore, as a recommendation for future authors, the researchers recommend the examination of the prevalence of problematic mobile phone use by people with ID. In addition, it is important to examine the degree of functional literacy, digital literacy, and possession of a mobile phone of persons with ID when examining the prevalence, bearing in mind that the mentioned factors proved to be significant.

Also, as a recommendation for researchers, we highlight the examination of the purpose of using mobile phones by people with ID, as well as the functionality of their mobile phone use. It is also of great importance to examine the predictors of problematic use of mobile phones by people with ID, to identify potential risk factors, as well as design interventions aimed at preventing problematic mobile phone use by people with ID.

e phone use. It is also of great importance to examine the predictors of problematic use of mobile phones by people with ID, to identify potential risk factors, as well as design interventions aimed at preventing problematic mobile phone use by people with ID.

It is important to examine the consequences of the problematic and excessive use of mobile phones by people with ID; as a recommendation to authors who focus on the implementation of research in this area, inclusion in the research of instruments that examine the presence of mental health problems, cyber violence, the quality of socialization of people with ID is given, as well as other factors. When choosing an instrument to assess the problematic use of mobile phones, the authors must take into account the number of items on the instrument and the number of offered responses, to ensure that people with ID can understand the instrument. As another recommendation for future authors, the researchers emphasize the importance of implementing interventions aimed at increasing the use of mobile phones by persons with ID for functional purposes.

In conclusion, the present study emphasizes the importance of promoting healthy habits regarding the use of mobile phones and creating a balance between maintaining interactions with people through a digital device, such as a mobile phone, and real interactions, to prevent the negative consequences that excessive use of mobile phones can have on social relations. School curricula for people with ID must include the teaching of digital skills, as well as digital literacy skills, to prevent and reduce the potential negative consequences of using mobile phones. Those who work with people with ID need to understand the importance of teaching these skills to this population, to ensure the digital participation of people with all degrees of ID.

Conflict of Interest: The authors have no competing interests to declare, that are relevant to the content of this article.

Ethical Approval: The study adheres to the ethical guidelines for conducting research.

Funding: This research received no external funding.

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