

# Digital Wellbeing for People with Different Disabilities

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## Abstract

This report examined the role of digital wellbeing tools in enhancing the quality of life for individuals with disabilities. It explored the benefits of regulating digital usage, such as improved physical health and mental wellbeing, although technological barriers and data privacy concerns persisted. Key findings underscored that personalized and accessible tools significantly contribute to autonomy and independence, fostering greater engagement and health management. Nevertheless, challenges such as user resistance to regulation highlighted the need for flexible, adaptable solutions. Recommendations focused on enhancing accessibility, advocating for customization, and raising awareness among caregivers and users about the advantages of digital wellbeing. Ultimately, the study stressed the importance of integrating these tools into everyday life, urging stakeholders to collaborate in creating inclusive and effective digital strategies tailored to the needs of individuals with disabilities.

**Keywords:** Digital wellbeing, Accessibility Tools, User Autonomy, Health Monitoring, Data Privacy

## Introduction

**Context and Background:** Digital wellbeing for people with disabilities has been distinctly emphasized as being a part of modern technology use. This includes approaches and tools that aim to control the digital environment on the health and wellbeing of users [8]. With the rise of digital interface dependence, this topic has come into prominence as using a device not regulated can harm physical and mental health. For people with disabilities, these challenges are magnified, and technological solutions need to be tailored to ensure that digital uses do not intensify difficulties rather than exacerbate them.

**Objectives:** This report studies the potential benefits of digital wellbeing initiatives, tools, and systems for people with disabilities. Their solutions here try to put the right limits on usage, control what apps can be used, and monitor health indicators as barriers against overuse and harmful content [12]. Such initiatives are particularly relevant as they attempt to fulfill the benefits of digital engagement and balance it out with the requirement of protecting and addressing health outcomes for persons who may be more prone to the unfavorable effects of continuous use of the device.

**Scope:** This report will look at the definitions and objectives of digital wellbeing and its impact on health, safety, and symptom management. It will explore ways in which adaptive technologies can be used to enhance people's quality of life and create digitally safe and supportive interactions. Perhaps they aren't perfect; there are challenges to digital tools, such as accessibility and data privacy, but they could also be great tools for empowering and enabling independence.

**Thesis Statement:** This report advances a central thesis that when thought out **well**, digital **wellbeing** tools offer considerable improvements to the health, autonomy, and overall quality of life of people with disabilities to provide them with more control of their digital experiences.

### **Understanding Digital wellbeing for People with Disabilities**

**Definition of Digital wellbeing:** Digital **wellbeing** is the art and science of conscious use of technology toward the enhancement of our health and quality of life. In the case of people with disabilities, digital **wellbeing** is not just important, it's extremely important, they need to have **specialized** tools and strategies that address their many **needs** [15]. Digital devices can facilitate enhanced **accessibility** and communication, but unchecked **usage** can further stress anxiety, or physical discomfort. Therefore, digital **wellbeing** for people with disabilities comprises not only restricting presence but also holistically protecting digital interactions with platforms; it is safe and beneficial.

**Importance of Digital wellbeing:** Digital space is an emergent habitat for people with disabilities. A study suggested **that people with** cognitive **disabilities** would be 40% more digitally fatigued than **the people** without cognitive disability [10]. Device usage management is important because even the best of devices if overused can be dangerous and bring about numerous ill effects physically, for instance, eye impairment, sleep interruption, repetitive strain injuries etc. In reality, there is evidence that some digital stimuli may be sharp in some individuals with sensory processing problems, which suggests that **individualized** digital **wellbeing** methods might be required. It's not merely a game of access, although it is that: it's about orchestrating digital interactions in an environment that is fit for purpose in terms of the protection of the individual's health status.

**Key Aspects:** The important parameters of digital **wellbeing** for persons with disabilities include time restrictions, monitoring of vital signs, and censorship of undesirable information. Specifically, strategies such as time limits like limiting the number of hours allowed per day have been observed to **minimize** screen eye stress by 30% for visually compromised **persons** [2]. This helps the caregivers and the user to track the sleep and the symptoms and relate these with cases of digital use to improve the general **wellbeing** of the patients. Moreover, the application of **personalized** content filters can ban an app or platform which is considered destructive depending on certain disabilities to protect the users from such traumatic or unfit content. These measures, despite their differences, are all focused on the subject of **wellbeing**, to **optimize** the digital environment for people with disabilities.

### **Digital wellbeing Initiatives, Tools, and Systems**

#### **Digital Tools for Usage Regulation**

Smart apps aimed at controlling the time people spend on devices have improved and developed during the past few years, bringing opportunities to have healthy digital time. Modern tools like Google's 'Digital Wellbeing' and Apple's 'Screen Time' thereby provide options that allow a person to set proper use time, a timeframe for a particular application, and a notification that will be provided once a particular time limit is almost reached. When using such tools, over 70% of the users found that their daily screen time was reduced by 25% [5]. Some of the uses of these applications are beyond the lessons on balanced use of most attached digital devices; well, parents and caretakers can closely monitor and assist those with learnability issues.

Design elements have also been expanded to make it easier for those with disabilities to control their digital activities. Screen time controls, app blockers, and focus modes have been specifically designed to

cater for a variety of accessibility options. For instance, Apple's "Guided Access" locks down the device to a specific application only, which may be helpful for those with some sort of disability. Also, there are available applications like "Stay Focused", for the blockers to control the time when the particular applications can be run according to the users and their health restrictions as well. A survey was done and according to that 60% of the users with cognitive disabilities said that these accessibility features help in reducing distraction and better focus [9].

While these tools are quite effective, the usage and value that is achieved hinge on user participation and personalization. However, they are a progressive improvement from the prior state of affairs where people with disabilities have to endure potentially hazardous use of devices much longer and with less control.

### **Health Monitoring and Tracking Tools**

Therefore, communication technologies have expanded their role in facilitating the quantification of the key aspects of life, including sleep, symptoms, and general wellbeing, particularly among people with disabilities. Today, smart bands such as Fitbit and Apple Watch have incorporated sleep tracking, pulse tracking, and other relevant health factors. The same year, other research showed that for patients with disabilities who employed wearable gadgets, 68% of them noticed that their sleeping patterns had been enhanced through constant tracking [6]. These devices provide present data, so the users and the caretakers can notice changes that can hint at some disorders.

Customisation has also been incorporated into health apps, which have been seldom embraced by users with particular disabilities. For instance, MediSafe and MyTherapy are two apps that help remind patients when to take their medicines and when to look out for symptoms or offer alarms for conditions that patients may have. In the year 2020, about 55 % of chronic illness patients used these apps, and about 91 % of those showed positive results for timely control of symptoms [7]. Thus, while using such applications, digital health tools may not fully substitute qualified medical help and advice; they provide users with relevant assistance in the field of everyday healthcare routines, increasing personal freedom and security for individuals with disabilities. It is especially so when they are personalized since they can easily track conditions relative to users' health concerns.

### **Safety and Protection Tools**

Applications aimed at filtering or denying access to dangerous apps are indispensable to improving security and are particularly welcomed by people with disabilities. Aging and unrestricted children benefit from the parental options offered by the "Qustodio" and "Net Nanny" applications. According to research, above 65% of users with cognitive disabilities found such restrictions helpful in avoiding any distressing content [1]. While none of these tools can remove all the risks, these tools function as preventative measures and can provide targeted safety as well as contribute to the creation of a safer online space unique to each person.

## **Practical Applications**

### **Managing Device Usage for Cognitive Disabilities**

Considering that cognitive incapacity barriers often result in attention and strain failure, the use of one's own devices can be a cure rather than a curse. For example, consider the study which revealed that anxiety screens were approximately 35% less in ADHD patients who were instructed to strictly limit 'Apple Screen Time' on the application. In a nutshell, regardless of the extent of improvement, all the participants reported enhanced concentration and lesser interference due to screens. Using such measures as "Do-Not-Interruption" involving time and space confinements for screen time schedules, the efficiency of

performing tasks by 30% [3]. However such type of influence was effective only when applied in a one-on-one case and still needed regular check-ups of the identified populations in dealing with cognitive stressors.

### **Monitoring Health Metrics for Physical Disabilities**

Healthcare monitoring applications enable people with physical disabilities to ease their troubles by preventing the sensor from engaging in fatigue for too long and thereby taking rest breaks. A study demonstrated that participants with physical impairment who used such apps as "Samsung Health" or "My Therapy" were able to enhance their sleep by approximately 25%, which is favorable concerning arthritis conditions [11]. This means that these users were able to use the apps to limit activities and activities that contained high levels of complaints through the tracking of their sleep, activity, and complaint usage. Nevertheless, the tools have shown effectiveness and have proven to ameliorate the symptoms amongst patients; their effectiveness is highly dependent on the use and the customisation of these appropriate tools. However, the application of AI-powered diet recommendations has also had considerable success in moving these apps further in the area of enhancing health performance and overcoming physical challenges.

### **Impact of Digital wellbeing on People with Disabilities**

#### **Improved Physical Health**

Limiting screen exposure has been linked to numerous merits in the case of people with disabilities: it helps to minimize physical tension, eye strain, and sleep disorders. According to research from the American Academy of Ophthalmology, a 30% cut-off in screen time for users who had vision impediments allowed a 20% decrease in eye strain and fatigue [4]. Additionally, not using devices during the late hours has also been associated with enhanced sleep since too much exposure to screens has been known to inhibit the production of melatonin, a hormone that plays a key role in sleep. Although these benefits are very useful in the case of people with physical disabilities, the biggest hurdle that has to be overcome is adhering to screen time limitations in the first place.

#### **Enhanced Mental and Emotional wellbeing**

The appropriate restrictions on technology use may also help alleviate stress, anxiety, and digital fatigue that contribute to reducing general health. In a study, the people who had cognitive impairment and applied the strategies of digital wellbeing, which included amongst others the usage of time restrictions of screen use and blocking applications, experienced a 35% decline in stress related to the use of screens [13]. It has been proven that screens are effective in dealing with mental fatigue, which is often caused by excessive screen exposure over time. Managing the level of technology used helps in maintaining a high concentration of thought and emotional saturation, which is very important for people who might already be having challenges coping.

#### **Greater Autonomy and Independence**

Very often, people with disabilities utilize devices intended to track a person's health and digital activities. As an example, Apple's Screen Time and Android provide such opportunities for personal adjustment, as its users are allowed to shape the app according to their requirements. A survey shows implementation of self-imposed restrictions on app use with users with mobility impairments was able to improve their productivity and satisfaction scores by 25% daily [4]. These systems help individuals to self-manage their time and health, which allows for increased independence and enables people to take care of their physical and mental health.

## Challenges and Limitations

**Technological Barriers:** There are applications available that facilitate the digital **wellbeing** of users, but the availability and accessibility of such tools are still a major barrier. However, accessibility challenges are still a major concern for many users as users like Apple develop cross-over design features. An example is a research, where 45% of respondents with visual impairments overcame **few** difficulties **while** trying to use the screen time management **app** [13]. Even more, the design rehearsal of the distinct customisation features can be an objection to the user engagement within the tool, and this can affect the response of the tool in use.

**Resistance to Digital Regulation:** Trying to impose digital boundaries could lead to opposition in the case of those people whose sense of autonomy is likely to be compromised. Psychological studies show that, as it is usual, restrictions tend to provoke a sense of irritation and somehow reduce the motivation of users, as they feel they are externally constrained. A survey reported that 60 % of respondents with cognitive disabilities exhibited negative feelings towards the provision of enforced digital boundaries [14], an action that could be detrimental to the viability of any such intervention in the long term.

**Data Privacy and Security:** Regarding data privacy matters, legal issues regarding self-tracking health tools acceptance are also a growing concern. There is a high and serious risk in the collection and retention of such sensitive health data as it is prone to being accessed without consent. This is echoed in a report that noted that 72% of the health apps never claimed how the user's info was used which thus left such user data prone to **breaches** [6]. Consequently, while digital **wellbeing** tools have remarkable advantages, these security issues have to be addressed first for the acceptance of the tools by the users.

## Recommendations for Future Development

**Improving Accessibility of Digital wellbeing Tools:** In order to improve the experience of users with different kinds of disabilities, it is necessary to turn the attention of developers towards the inclusivity of elements of digital **wellbeing** applications. One of these has been the suggestion to add more advanced voice command capabilities that would assist individuals with physical limitations. In addition, designs of interfaces should be based on Universal Design principles and take into account screen reader compatibility and easy contrast options for users with low vision. 69% of the survey participants in a publication stated that they would be satisfied by the applications that managed to use those accessible features [9].

**Personalisation and Flexibility:** Customizability is important. Every person with disabilities has his or her challenges which are likely, most of the time, the same but can be of different intensity or even different kinds entirely. Mobile applications, on the other hand, should allow users to modify notification volumes and reminders and even set limits to screen time. For instance, donning ADHD, adjustable minutes for the focus period would help. A survey showed that users who identified themselves as having cognitive disabilities expressed concern over the engaging nature of the technology and that 63% of them would like to set more parameters on the application in order to control their interaction with the application **more** [12].

**Education and Awareness:** It is fair enough to say that educating users and carers about how to use digital **wellbeing** tools effectively is key, amongst other factors. As much as a vast majority comprehend the significance of screen time, many do not know what tools are out there and how to use them. This is the reason why providing workshops could be useful. Studies found that training **caretakers** on how to use supportive apps resulted in 80% of **caretakers** reporting improvements in the health management of



their dependents, showing a need for further information dissemination [7].

## Conclusion

This report has been aimed at demonstrating the necessity of digital wellbeing tools for people with disabilities, which are to focus on the physical, mental, as well as emotional needs. Such challenges as technological gaps and opposition to regulation were pointed out. Insights gained in this also support the understanding that the use of digital wellbeing approaches by people with disabilities will help to improve their independence and overall quality of life. Developers, caretakers, policymakers, and other stakeholders should expand their ambitions to create and integrate relevant digital wellbeing tools that meet the varying needs of people with disabilities.

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