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## Digital Insights

# Digital well-being: the relationship between technology use, mental health and interpersonal relationships

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# Digital well-being: the relationship between technology use, mental health and interpersonal relationships

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## Introduction

Digital technologies have created many new opportunities for individuals to overcome barriers and challenges in their personal lives and at work. As the utility of digital technologies, like smartphones, continues to rise, individuals are spending an increasing amount of time online. The 2022 Canadian Internet Use Survey (CIUS) found that one-quarter of Canadians spent 20 hours or more per week using the Internet for general purposes, up at least 4 percentage points from 2018 (21%) and down only slightly from the beginning of the COVID-19 pandemic in 2020 (27%).<sup>1</sup>

In the 2022 CIUS, Canadians reported that their online activities helped them make more informed decisions (51%) and saved them time (47%). However, the use of digital technologies was not always associated with positive outcomes; Canadians also reported that their online activities sometimes made them feel anxious, depressed or envious of the lives of others (22%), interfered with their relationships (8%) and interfered with other aspects of their lives, such as sleep, physical activity, and work- or school-related activities (24%).

This article highlights new data from the 2020 and 2022 CIUS, examining the complex relationship between digital technology use and various measures of well-being. Section 1 explores the relationship between time spent online and self-reported mental health, Section 2 examines how increased smartphone use is related to satisfaction with interpersonal relationships and self-reported mental health, and Section 3 explores the relationship between online communications and in-person interactions.

## Section 1: Time spent online and self-reported mental health

### Younger Canadians spend the most time online

About two-fifths of Canadians aged 15 to 24 (42%) reported spending 20 hours or more per week on general Internet use in 2022, the highest among all age groups, followed by those aged 25 to 34 (38%). The percentage of Canadians aged 15 to 24 spending this amount of time online for general purposes was about the same as during the pandemic in 2020 (43%), but at least 10 percentage points higher than before the pandemic in 2018 (32%).

Almost 9 in 10 Canadians watched content online in 2022 (87%) and 17% watched content online for 20 hours or more in a typical week. Watching online content includes activities such as watching television series or movies, watching eSports or other video game streaming services, or watching user-generated content on platforms such as YouTube or TikTok. Again, use was highest for younger Canadians, with 26% of those aged 15 to 24 and 23% of those aged 25 to 34 spending 20 hours or more per week watching online content.

About 37% of Canadians played video games online in 2022, with only 6% doing so for 20 hours or more per week. As with other online activities, those aged 15 to 24 were the most likely to play online video games during a typical week (73%) and spend 20 hours or more per week on this activity (15%).

In 2022, just over 1 in 5 Canadians (22%) reported taking a break from using the Internet or decreasing their time spent on the Internet because they felt they were using it too often or for too long. This was not significantly different from 2020 (24%) or 2018 (21%). In 2022, Canadians aged 15 to 24 (36%) were the age group most likely to report taking a break from or reducing time spent on the Internet.

1. The 2020 and 2022 CIUS asked about time spent on general Internet use, which includes, but is not limited to, browsing the web, social media, communicating online, emails, online shopping, accessing the news and online banking. General Internet use excludes time spent on business- or school-related use, streaming video content and using video gaming services. The 2018 CIUS only asked about total time spent using the Internet.

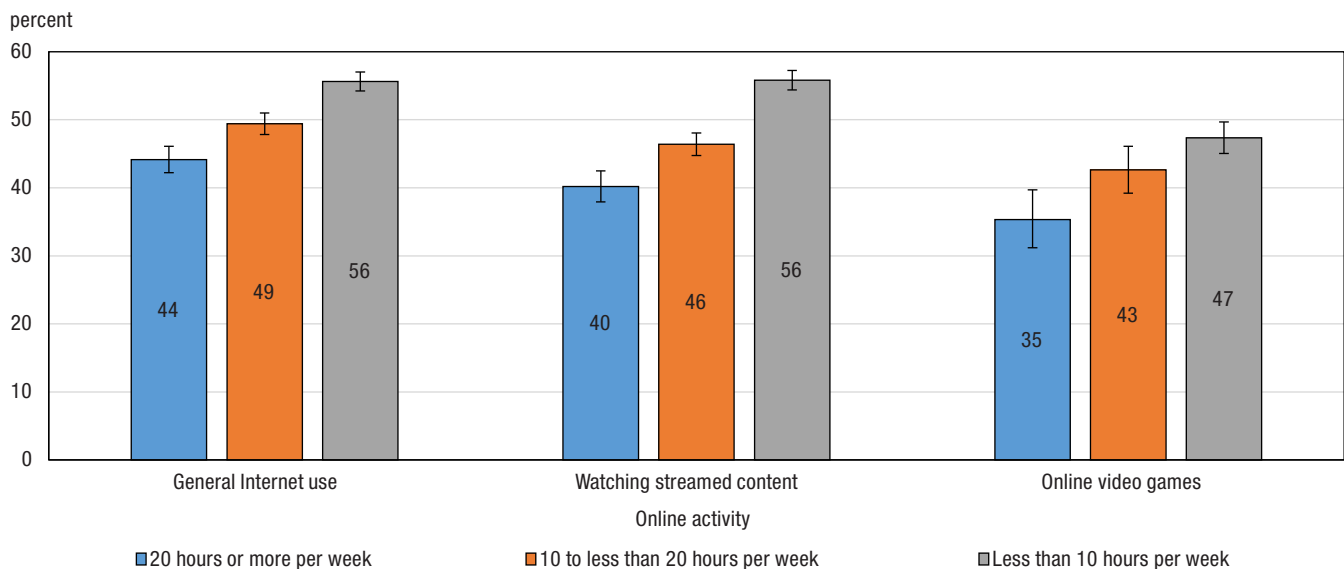
## Taking a break from the Internet was not associated with better mental health, but spending less time online was

Of those who took a break from the Internet in 2022, 44% reported having very good or excellent mental health. Conversely, among those who didn't take a break from the Internet, the percentage reporting very good or excellent mental health was almost 10 percentage points higher (53%). The 2022 CIUS also found that the percentage of Canadians who spent 20 hours or more per week online (regardless of activity) was not significantly different between those who took breaks from the Internet and those who did not. This could be related to a disconnect between the desire to take a break from the Internet and the willingness to actually do so. In the *Young Canadians in a Wireless World* study conducted by MediaSmarts in 2021, most surveyed school-aged children reported that they were worried about spending too much time online, and also that they would be unhappy if they couldn't use the Internet for a week.<sup>2</sup>

Although taking a break from the Internet wasn't found to be associated with better mental health in the 2022 CIUS, a correlation between less time spent online and better mental health was identified. The percentage of Canadians reporting very good or excellent mental health was 16 percentage points higher for those who watched content online for less than 10 hours per week, compared with those who watched online content for 20 hours or more per week.<sup>3</sup> For general Internet use, the percentage of Canadians reporting very good or excellent mental health was 12 percentage points higher among those who spent less than 10 hours per week online, compared with those who spent 20 hours or more online per week.<sup>4</sup>

The percentage of Canadians reporting very good or excellent mental health was significantly lower for all amounts of time spent playing video games online, compared with general Internet use. For example, nearly half (44%) of Canadians who spent 20 hours or more per week on general Internet use reported very good or excellent mental health, compared with 35% of those who spent 20 hours or more per week playing video games online. These findings demonstrate that factors other than time spent online can contribute to the relationship between Internet use and mental health, such as the type of online activity, and the age, sex and gender of the user.

**Chart 1**  
**Canadians with very good or excellent mental health, by online activity and duration of use, 2022**



Source: Statistics Canada, Canadian Internet Use Survey, 2022.

2. See MediaSmarts (2021) in the "External references" section for more information.  
 3. The category of "less than 10 hours per week" excludes Canadians that don't play video games online during a typical week.  
 4. The category of "less than 10 hours per week" excludes Canadians that don't use the Internet for general purposes during a typical week.

In another study recently conducted by Statistics Canada, which examined data on mental health in adolescents aged 12 to 17 from the 2019 Canadian Health Survey on Children and Youth, video game use by girls was found to be associated with lower self-reported mental health, even when controlling for other factors. For boys, no relationship between video game use and mental health could be identified. Similarly, for social media or instant messaging use, no differences in mental health could be identified when controlling for other factors, regardless of sex.<sup>5</sup> These findings further demonstrate the importance of considering the type of activity and personal characteristics when examining the relationship between Internet use and mental health.

## **Section 2: Smartphone use, relationship satisfaction and self-reported mental health**

### **Smartphone use is steadily increasing among Canadians**

The 2020 CIUS found that most Canadians (84%) had a smartphone for personal use, up 4 percentage points from 2018 (80%).<sup>6</sup> The increase was even larger for seniors aged 65 and older (+11 percentage points), despite lower overall use (54%). Meanwhile, smartphone use by teenagers and adults aged 15 to 24 (96%), 25 to 34 (97%) and 35 to 44 (96%) was nearly universal in 2020.

Almost two-thirds of Canadians (64%) used their smartphone at least once per hour in 2020, including to check messages, use social networks and news sites, and check notifications, while one-fifth (20%) used their smartphone a few times per day or less. Younger individuals were more likely to check their smartphone more often—88% of those aged 15 to 24 and those aged 25 to 34 reported using their smartphone at least once per hour, with those aged 35 to 44 not far behind (82%). Many teenagers and young adults aged 15 to 24 (46%) and 25 to 34 (33%) reported using their smartphone as frequently as every 15 minutes.

As smartphone use grows steadily, some Canadians are trying to control their use. The 2022 CIUS found that 20% of Canadians reported modifying smartphone or application settings to manage time spent on their smartphone. This behaviour was most prevalent for those aged 15 to 24 and those aged 25 to 34, with 32% reporting they tried to control their smartphone use.

### **Increased smartphone use was linked to lower mental health and satisfaction in relationships with friends and family in 2020**

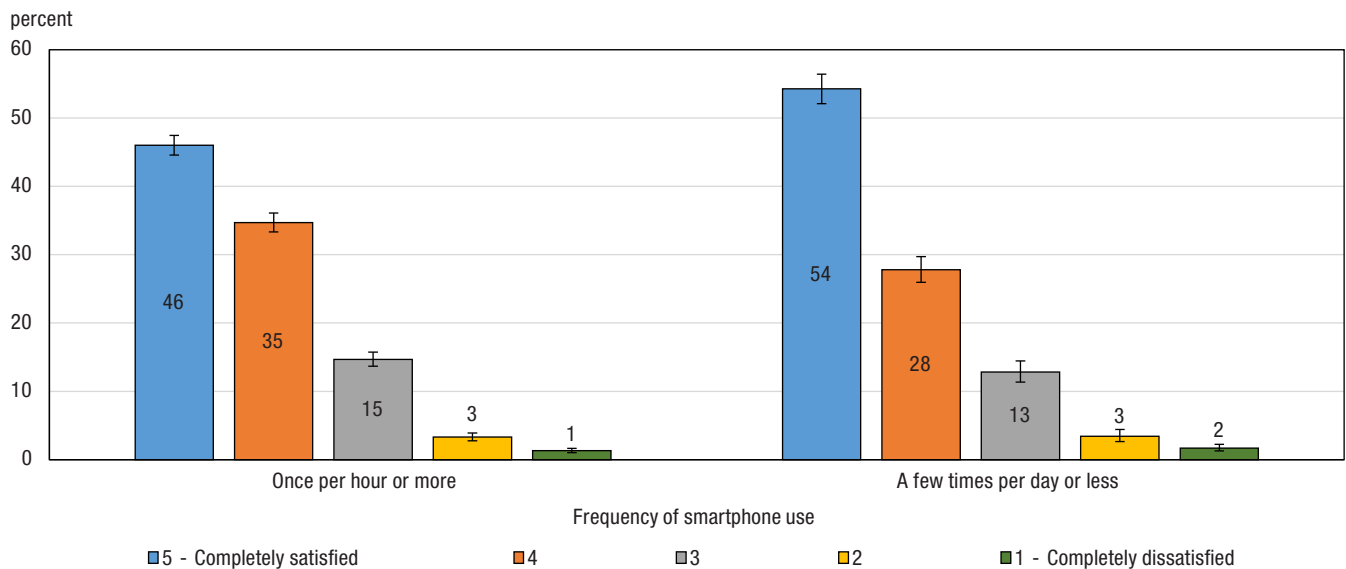
In 2020, Canadians who checked their smartphone once per hour or more were less likely to report being completely satisfied with their relationships with friends (46%) than those who checked their phone a few times per day or less (54%).<sup>7</sup> The same pattern was found when examining relationships with relatives or family members, excluding those the respondent lived with.

5. See Kerr & Kingsbury (2023) in the “Internal references” section for more information.

6. The percentage of Canadians who had a smartphone for personal use was not measured in the 2022 CIUS.

7. Only Internet users (95% of Canadians) were asked about their relationship satisfaction.

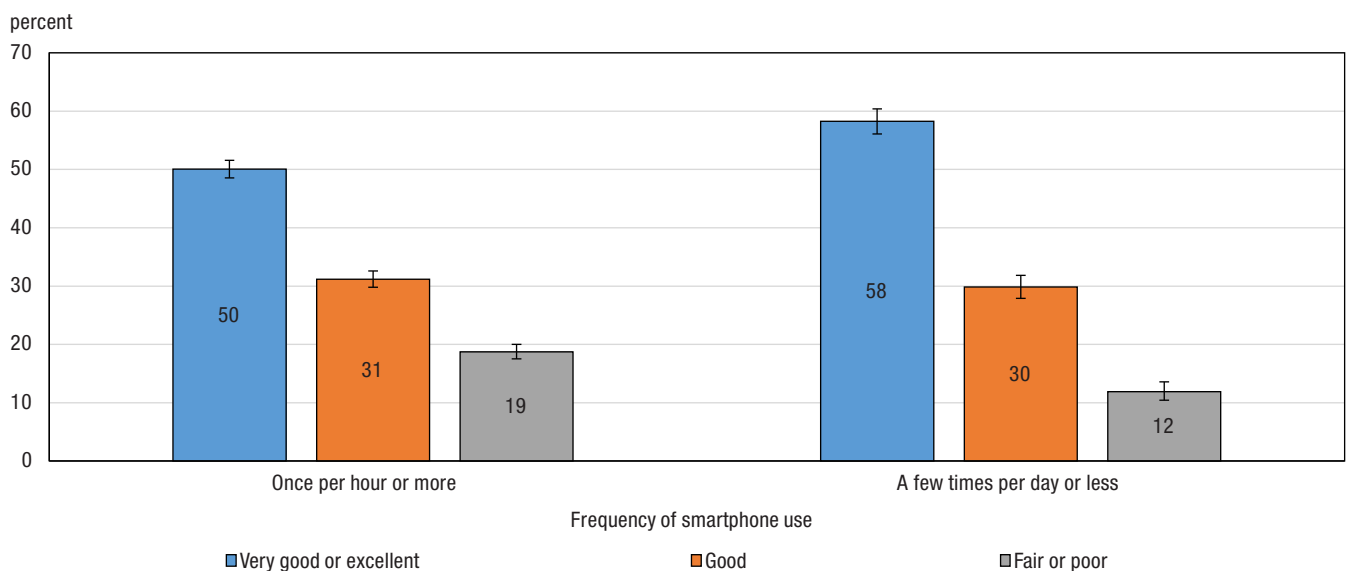
**Chart 2**  
**Level of satisfaction with relationships with friends, by frequency of smartphone use, 2020**



Source: Statistics Canada, Canadian Internet Use Survey, 2020.

Checking one’s smartphone more frequently was also associated with lower reported levels of very good or excellent mental health. Among Canadians who checked their phone a few times per day or less, almost 6 in 10 (58%) reported very good or excellent mental health, compared with 5 in 10 of those who checked their phone at least once per hour or more. The most frequent smartphone users also reported the highest level of fair or poor health (19%), compared with 12% of the least frequent users.

**Chart 3**  
**Level of mental health, by frequency of smartphone use, 2020**



Source: Statistics Canada, Canadian Internet Use Survey, 2020.

## Section 3: Online communications and in-person interactions

### The majority of Canadians communicate with others online at least once per week

As new digital technologies have become more readily accessible, Canadians have increasingly integrated new communication methods into their lives. The 2022 CIUS found that almost 8 in 10 Canadians (77%) communicated with friends online at least once per week (e.g., iMessage, FaceTime, Facebook Messenger, WhatsApp), and over 6 in 10 (65%) communicated with relatives or family members online at least once per week. Online communications with friends (+4 percentage points) and family (+2 percentage points) increased modestly from 2020 to 2022.

In 2022, teenagers and young adults aged 15 to 24 were most likely to communicate with friends via the Internet at least once per week (93%), with the likelihood decreasing among older age groups. However, for online communications with family, the likelihood of weekly interactions peaked with individuals aged 25 to 34 (79%) and then decreased for older age groups.

**Table 1**  
**Frequency of online communications with friends and relatives or family members, 2022**

	Canadians who use the Internet to communicate with friends		Canadians who use the Internet to communicate with relatives or family members	
	At least once per week	A few times per month to once per month	At least once per week	A few times per month to once per month
	percent			
<b>All individuals</b>	<b>77</b>	<b>8</b>	<b>65</b>	<b>16</b>
<b>Age groups</b>				
15 to 24	93	4 <sup>E</sup>	64	22
25 to 34	91	5	79	14
35 to 44	85	8	75	15
45 to 54	80	9	70	17
55 to 64	70	11	61	17
65 and older	54	11	50	15
65 to 74	62	11	57	16
75 and older	44	10	41	13

<sup>E</sup> use with caution

**Note:** Unless otherwise specified, all figures have a quality of "A," which corresponds to a coefficient of variation of 0 to 16.5%. An "E" indicator corresponds to a coefficient of variation of 16.6% to 33.3%.

**Source:** Statistics Canada, Canadian Internet Use Survey, 2022.

The use of video conferencing has also been growing in importance, particularly since the start of the COVID-19 pandemic. Over 6 in 10 (65%) individuals made online voice or video calls in 2022 (excluding business- and school-related use), up 17 percentage points from 2018 (47%) and seemingly stable since 2020 (64%).

### Weekly online communications with friends and family were associated with more frequent in-person interactions in 2022

Although there may be a connection between rising technology use and decreasing relationship satisfaction and mental health, the relationship between these factors may not be causal. Researchers have proposed that it's not the amount of time spent with technology that matters most when understanding the impact of technology on well-being, but rather the quality or content of the activities a person engages in.<sup>8</sup> Studies on social connectedness through technology have shown that technology use can be associated with positive outcomes; for example, during the COVID-19 pandemic, individuals who communicated more with others online were more likely to engage in positive behaviours, such as maintaining their physical health.<sup>9</sup>

8. See Royal et al. (2017) and Boers et al. (2019) in the "External references" section for more information.

9. See Charnock et al. (2021) in the "Internal references" section for more information.

Similarly, the 2022 CIUS found a correlation between the frequency of online and in-person interactions.<sup>10</sup> Among Canadians who said they interacted with their friends online weekly, over half (52%) reported seeing friends in person outside of work or school at least weekly as well. By comparison, among those who said they interacted with their friends online a few times per month or less, only 22% reported seeing friends in person at least weekly.

For interactions with relatives or family members, the same pattern was observed, but to a lesser extent. For those interacting weekly with family online, just under half (47%) saw family in person (excluding those they live with) at least weekly. Meanwhile, among those who interacted with family online a few times or less per month, only 16% saw their family at least weekly. These findings provide evidence that online interactions aren't necessarily replacing in-person interactions.

Compared with the overall population (52%), a higher percentage of individuals aged 15 to 24 who interacted weekly with their friends online reported seeing them in person at least weekly (61%). This is likely partly related to younger Canadians using the Internet to communicate with friends more often than older Canadians, and the fact that younger Canadians tend to have more opportunities to see their friends on a weekly basis.

Overall, regardless of the frequency of online interactions, a larger percentage of Canadians reported spending time in person with both friends (+21 percentage points) and family (+15 percentage points) at least weekly in 2022, compared with 2020. A large part of this trend can likely be attributed to the reduction of COVID-19 pandemic restrictions that limited in-person interactions in 2020.

## Conclusion

Results from the 2020 and 2022 CIUS demonstrate a complex relationship between technology use and measures of well-being, such as mental health, satisfaction in interpersonal relationships and time spent with others in person. The survey found that increased time spent online and smartphone use were associated with lower self-reported mental health and that increased smartphone use was also associated with lower satisfaction in interpersonal relationships. However, the survey also showed that spending more time with others online was linked to an increased likelihood of seeing others in person, and that the correlation between time spent engaging in online activities and self-reported mental health differed by type of online activity. As other studies have proposed, the quality of time spent online may be a better predictor of digital well-being than time spent online alone.

The CIUS is a rich source of information for understanding the impact of technology on the lives of Canadians. Further research could go beyond the analysis in this article by simultaneously controlling for multiple variables that may impact well-being, such as aggregate time spent online and the personal characteristics of technology users.

### Other articles based on the 2022 CIUS

Results for the 2022 CIUS were released in [The Daily](#) on July 20, 2023.

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10. Only Internet users (95% of Canadians) were asked about their in-person interactions.



## Methodology

This article uses data from the 2018, 2020 and 2022 iterations of the [Canadian Internet Use Survey \(CIUS\)](#). The CIUS aims to measure the adoption and use of digital technologies by Canadians aged 15 years and older, living in the 10 provinces.

Data for the CIUS were collected through an electronic questionnaire during the following periods:

- 2018: December 15, 2018 to March 21, 2019
- 2020: November 3, 2020 to March 3, 2021
- 2022: December 29, 2022 to April 5, 2023

In the 2018 survey, a sample of approximately 33,000 individuals was used and the response rate was 43.7%. In the 2020 survey, the sample size consisted of approximately 44,800 individuals and the response rate was 41.6%. Finally, in the 2022 survey, the sample size was approximately 55,700 individuals and the response rate was 45.3%.

Error bars on charts represent the 95% confidence interval.

## Acknowledgements

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