



Digital Wellbeing & Online Gambling

Identifying Conceptual & Empirical Relationships

Contents

01

Executive summary	4
--------------------------	----------

02

Foreword	9
-----------------	----------

03

What is digital wellbeing?	12
-----------------------------------	-----------

Digital wellbeing is the product of both the person & design features	14
---	----

Digital technology can support digital wellbeing by fostering autonomy, competence, & relatedness	15
---	----

Digital technology has positive as well as negative impacts on wellbeing	16
--	----

Pulling it all together: outlining a shared definition of digital wellbeing	18
---	----

04

How does online gambling fit into digital wellbeing?	20
---	-----------

Online gambling aligns with other online behaviours & provides opportunities for supporting digital wellbeing	22
---	----

Online gambling as a form of design for pleasure	23
--	----

Gambling can meet psychological needs	24
---------------------------------------	----

05

What does digital wellbeing look like in Canada, the US & the UK?	26
--	-----------

Online behaviours & digital confidence are moderately high	27
--	----

Wellbeing beliefs are high, behaviours are moderate, & resource use is low	28
--	----

Digital wellbeing is low & lower for certain groups, beliefs & behaviours	29
---	----

06

What does online gambling look like in Canada, the US & the UK?	31
--	-----------

Online gambling participation & level of play is moderate	32
---	----

Online gambling fulfils psychological needs	33
---	----

Safer gambling beliefs & behaviours are high & online gambling resource use is low	33
--	----

Gambling harm & problems are higher for certain groups, beliefs & behaviours	34
--	----

07

How is online gambling associated with digital wellbeing?	37
--	-----------

Digital wellbeing is linked with online gambling behaviours, beliefs & psychological needs	38
--	----

Online gambling harms & problems are linked with lower digital wellbeing	39
--	----

08

Key considerations and next steps	40
--	-----------

09

Methodology	46
--------------------	-----------

Literature review	47
-------------------	----

Online survey	48
---------------	----

Ethical approval	49
------------------	----

10

Acknowledgements	50
-------------------------	-----------

11

Detailed results	52
-------------------------	-----------

Digital wellbeing	53
-------------------	----

Online gambling	56
-----------------	----

Associations between online gambling & digital wellbeing	61
--	----

12

References	63
-------------------	-----------

Executive summary

01 Executive summary

02 Foreword

03 What is digital wellbeing?

04 How does online gambling fit into
digital wellbeing?

05 What does digital wellbeing look
like in Canada, the US & the UK?

06 What does online gambling look
like in Canada, the US & the UK?

07 How is online gambling
associated with digital wellbeing?

08 Key considerations
and next steps

09 Methodology

10 Acknowledgements

11 Detailed Results

12 References



01

01 Executive summary

02 Foreword

03 What is digital wellbeing?

04 How does online gambling fit into digital wellbeing?

05 What does digital wellbeing look like in Canada, the US & the UK?

06 What does online gambling look like in Canada, the US & the UK?

07 How is online gambling associated with digital wellbeing?

08 Key considerations and next steps

09 Methodology

10 Acknowledgements

11 Detailed Results

12 References

Executive summary

Context and rationale

Digital wellbeing and online gambling are currently at the forefront of many discussions internationally. Our need to rely on digital technology throughout the COVID-19 pandemic has highlighted both the positive as well as negative outcomes of spending extensive time online. Concurrently, limitations on and closures of land-based gambling venues as well as some governments' desires to offset the financial repercussions of the pandemic have led or fast tracked both the gambling industry and policy makers to considerably expand online gambling across many jurisdictions. The interconnections between these areas, however, have received limited attention.

Purpose and approach

Our previous piece of work on purposeful collaboration for supporting the digital wellbeing of young people outlined key areas of need at this nexus between digital wellbeing and online gambling, some of which include a shared definition of digital wellbeing, the inclusion of online gambling in this definition, and holistic digital wellbeing initiatives that include online gambling. In order to begin to address these important gaps, the current piece of work considers the following question: How does online gambling relate to digital wellbeing?

It is our hope that this report will spur collaboration across digital entertainment sectors, provide knowledge for shaping goals and initiatives, and generate practical next steps for stakeholders working in digital wellbeing and online gambling spaces.



This report uses research literature and results from an online survey in Canada, the United States, and the United Kingdom to begin to identify **the conceptual and empirical links between digital wellbeing and online gambling**. It outlines a definition of digital wellbeing that includes online gambling, provides the only population-level look at digital wellbeing in these three countries, and offers the first examination of how online gambling is associated with digital wellbeing.

01

01 Executive summary

- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

Key insights

1. **Digital wellbeing** is defined as a personal experience of both the positive and negative impacts of spending time in various online spaces. It is fostered by personal factors, like digital literacy and resilience, and design factors, like positive design approaches that meet psychological needs.

2. Online gambling can be understood within digital wellbeing as a form of **design for pleasure** that meets psychological needs similar to those captured within digital wellbeing.

3. **Digital wellbeing is lower** among certain groups and those with certain beliefs and behaviours.

Lower Digital Wellbeing Groups	Lower Digital Wellbeing Beliefs & Behaviours
<ul style="list-style-type: none"> • 18-24 year olds • Those of Asian and other non-White backgrounds • Those with high school educations • Full time students • Those in the lowest income bracket • Those who are single 	<ul style="list-style-type: none"> • Being online for less than an hour or more than 5 hours a day • Lower digital confidence • Lower digital wellbeing beliefs • Lower digital wellbeing behaviours • More frequent use of information resources, time management features, pause features, and blocking features

4. **Online gambling harms and problems are higher** among certain groups and those with certain behaviours and beliefs.

High Online Gambling Harms & Problems Groups	High Online Gambling Harms & Problems Beliefs & Behaviours
<ul style="list-style-type: none"> • 18-24 year olds • Men 	<ul style="list-style-type: none"> • Playing any games • Playing frequently, particularly daily • Longer session lengths • Higher number of accounts • Higher monthly spend • Higher fulfillment of online gambling psychological needs • Lower safer gambling beliefs and behaviours

5. **Importantly, online gambling is associated with digital wellbeing.** Those who gamble online, have psychological needs met by their play, have more risky online gambling beliefs and behaviours, and experience gambling harms or problems have lower levels of digital wellbeing.

The conceptual and empirical links between digital wellbeing and online gambling identified in the current study warrant the development of digital wellbeing collaborations and initiatives that include **online gambling stakeholders and goals** to allow for a more holistic understanding of and focus on the risks, benefits, and overall impacts of online spaces, including the psychological needs being met.

01

01 Executive summary

02 Foreword

03 What is digital wellbeing?

04 How does online gambling fit into digital wellbeing?

05 What does digital wellbeing look like in Canada, the US & the UK?

06 What does online gambling look like in Canada, the US & the UK?

07 How is online gambling associated with digital wellbeing?

08 Key considerations and next steps

09 Methodology

10 Acknowledgements

11 Detailed Results

12 References

Implications and next steps

While this report takes important initial strides in outlining the conceptual justifications for and empirical evidence supporting the link between online gambling and digital wellbeing, future research is needed to confirm and expand on these findings. Further, strategic work is required to include gambling within the understanding of digital entertainment and initiatives to support digital wellbeing. The insights from this report are being taken forward in a series of **roundtable discussions** and a piece of **independent research** being conducted by RG Plus to examine how technology can be used to provide information and support to gamblers across the player spectrum, from low to high involvement and risk.

The following **next steps** can guide practical actions for building collaborations and creating initiatives for supporting digital wellbeing, with the inclusion of online gambling spaces.

Next steps

Collaboration

Use the outlined **definition of digital wellbeing**, that includes online gambling as a form of design for pleasure and digital entertainment, to develop a shared understanding of the problem and ways to address it

Use results on digital wellbeing and online gambling from the online survey to inform **collaboration goals**, to target the areas of greatest need

Use the **measures of digital wellbeing and online gambling harm** and baseline data for assessing progress against goals and evaluation of short and long term impacts of initiatives

Include **various stakeholders**, in particular those from the online gambling field, in collaborations to determine the best person- and design-led approaches for supporting digital wellbeing

Engage in **international collaborations** that address the identified similarities and differences in digital wellbeing and online gambling across countries

Industry

Cultivate a **culture of responsibility** where the wellbeing of those using their platforms is a priority within all digital entertainment industries, to address the results for low digital wellbeing and online gambling harms and problems

Complement and confirm general population online survey results with **industry data**

Prioritize **design for pleasure features** in digital entertainment platforms including online gambling, such as limiting unnecessary data collection, implementing user feedback features, and allowing customization (i.e. turn off push notifications, setting daily screen timers)



01

01 Executive summary

02 Foreword

03 What is digital wellbeing?

04 How does online gambling fit into digital wellbeing?

05 What does digital wellbeing look like in Canada, the US & the UK?

06 What does online gambling look like in Canada, the US & the UK?

07 How is online gambling associated with digital wellbeing?

08 Key considerations and next steps

09 Methodology

10 Acknowledgements

11 Detailed Results

12 References

Education & Safeguards

Develop **holistic education programs** across digital entertainment spaces that are focused on:

- 18-24 year olds
- Level of involvement
- Building digital literacy and resilience
- Increasing positive beliefs and behaviours

Create **tailored safeguards** and tools that are relevant across spaces targeting:

- 18-24 year olds
- Level of involvement
- Supporting positive beliefs and behaviours
- Positive design features



Regulation

Support the development and implementation of broad industry safeguards through **evidence-based regulation**



By implementing the **key insights** for digital wellbeing and online gambling and directing **next steps** to addressing the needs around collaboration, industry roles, education and safeguards, regulation, and research noted above, stakeholders will be well equipped to develop meaningful and holistic initiatives for supporting digital wellbeing across online spaces, including online gambling.

Research

Examine the **impact of mental health on digital wellbeing and vice versa** to further our understanding of the foundations of these outcomes, as the links between them are largely unexamined

Confirm and expand on online survey results with additional **follow up research** on similar and expanded topics



Foreword

01 Executive summary

02 Foreword

03 What is digital wellbeing?

04 How does online gambling fit into
digital wellbeing?

05 What does digital wellbeing look
like in Canada, the US & the UK?

06 What does online gambling look
like in Canada, the US & the UK?

07 How is online gambling
associated with digital wellbeing?

08 Key considerations
and next steps

09 Methodology

10 Acknowledgements

11 Detailed Results

12 References



02

- 01 Executive summary
- 02 Foreword**
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

Foreword

Digital wellbeing and online gambling are currently at the forefront of many discussions internationally. Our need to rely on digital technology throughout the COVID-19 pandemic and its related social restrictions has highlighted both the positive – community building, information sharing, reduced loneliness – as well as negative – excessive use, compulsive information seeking – outcomes of spending extensive time online. Concurrently, limitations on and closures of land-based gambling venues as well as some governments’ – like some US states and jurisdictions in Latin America – desires to offset the financial repercussions of the pandemic have led or fast tracked both the gambling industry and policy makers to considerably expand online gambling across many jurisdictions. The interconnections between these areas, however, have received limited attention.

Our previous piece of work on purposeful collaboration for supporting the digital wellbeing of young people outlined key areas of need at this nexus between digital wellbeing and online gambling, some of which include a shared definition of digital wellbeing, the inclusion of online gambling in this definition, and holistic digital wellbeing initiatives that include online gambling. In order to begin to address these important gaps, the current piece of work considers the following question: **How does online gambling relate to digital wellbeing?**



This report uses research literature and results from an online survey in Canada, the United States, and the United Kingdom to begin to identify the conceptual and empirical links between digital wellbeing and online gambling. It outlines a definition of digital wellbeing that includes online gambling, provides the only population-level look at digital wellbeing in these three countries, and offers the first examination of how online gambling is associated with digital wellbeing.

02

- 01 Executive summary
- 02 Foreword**
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

It is our hope that this report will spur collaboration across digital entertainment sectors, provide knowledge for shaping goals and initiatives, and generate practical next steps for stakeholders working in digital wellbeing and online gambling spaces.

Finally, we would like to thank all online survey participants for sharing their information and experiences, and Playtech plc for their support.

Dr. Sasha Stark
Senior Researcher, RG Plus



The **Responsible Gambling Council (RGC)** is a non-profit organization dedicated to promoting safer gambling by influencing positive change and advancing responsible gambling standards in Canada and around the world. For over 35 years, RGC has worked with regulators, operators, and the gambling public to ensure that gambling safeguards are in place to support the wellbeing of people and communities. **RG Plus**, a division of RGC, offers strategic consultation services across all lines of business from online betting and gambling to land-based operations. RG Plus guides operators and regulators towards a sustainable business model by evaluating the impact of programs; benchmarking responsible gambling initiatives; contributing evidence to strategy development; offering cutting edge responsible gambling turnkey training solutions; and undertaking independent research and public health consultations.

What is digital wellbeing?

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?**
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References



03

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?**
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

What is digital wellbeing?

Digital Entertainment Stakeholders' Working Definition of Digital Wellbeing

Digital wellbeing is the balance between time spent online and offline and the maximization of positive and reduction of negative uses of digital tools and spaces that lead to an overall positive impact for the person and those around them.



Academic Definition of Digital Wellbeing

"Digital wellbeing is a subjective individual experience of optimal balance between the benefits and drawbacks obtained from mobile connectivity. This experiential state is comprised of affective and cognitive appraisals of the integration of digital connectivity into ordinary life. People achieve digital wellbeing when experiencing maximal controlled pleasure and functional support, together with minimal loss of control and functional impairment." (Vanden Abeele, 2020: 13)

At first glance, the term digital wellbeing seems intuitive – it's about our welfare in relation to technology, or more specifically online spaces. But in speaking with stakeholders in digital entertainment and wellbeing fields (Stark, 2021), we learn that **a shared definition of digital wellbeing is lacking**. Defining terms like digital wellbeing is important because it allows us to take steps to support it. To build collaborations and creative initiatives to foster digital wellbeing, we need to know what we are striving for, which can provide insights on how to get there. When evaluating the impact of our efforts, we also need to be able to measure progress towards that goal.

Conceptual discussions of what terms mean are frequently occurring in the research literature, where the foundations of terms and their associations with other concepts are considered. Luckily, some work has begun to outline a conceptualization of digital wellbeing. Surprisingly though, the concept has only very recently received research attention.

03

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?**
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

The academic literature tells us that, broadly, digital wellbeing is “the effects of carrying out activities and tasks online on a person’s wellbeing” (Dowthwaite et al., 2020: 22). More specifically, digital wellbeing is “**a subjective individual experience of optimal balance between the benefits and drawbacks obtained from mobile connectivity**” (Vanden Abeele, 2020: 13). So digital wellbeing is a personal experience of both the positive and negative impacts of spending time in various online spaces.

People achieve digital wellbeing when they maintain their self-control and when digital technologies are used optimally, to maximize positive and minimize negative experiences (Gander et al., 2016; Greyson et al., 2014; Spenhoff et al., 2013).



Now that we have a better understanding of what we mean by the term, we will unpack in more detail **where digital wellbeing comes from**: how technology leads to digital wellbeing and the benefits and drawbacks that are encompassed by it. These considerations are important for creating impactful initiatives that aim to support digital wellbeing.

Digital wellbeing is the product of both the person & design features

Although digital wellbeing is experienced on a personal level, it is the result of both the person’s actions and abilities as well as the design of the online spaces with which they interact (Cecchinato et. al, 2019). At the **person** level, digital wellbeing can be influenced by one’s digital literacy and digital resilience (Renyolds & Parker, 2018; Vissenberg & d’Haenens, 2019). **Digital literacy** – the ability to navigate and stay safe online – allows the person to gain competence in online spaces (Dowthwaite et al., 2020). **Digital resilience** – the ability to deal with negative experiences online – can help the person to recover from harm and protect themselves from future harm (Alutaybi et al., 2020).

The **design** of online spaces also has important effects for those who use them. **Positive design** refers to designers’ conscious efforts to embed features, tools, and information that support positive user impacts (Calvo & Peters, 2017). For example, Google’s Digital Wellbeing features and Apple iOS’s Screen Time are designed to allow people to control the time spent on their device, like setting limits or completely blocking access to certain applications and websites. Studies show that these features allow people to regulate their online behaviours in a proactive way (Saariketo, 2019; Rooksby et al., 2016).

03

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?**
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

Digital technology can support digital wellbeing by fostering autonomy, competence, & relatedness

How can design influence digital wellbeing? By creating **online spaces that meet people's psychological needs** (Abeebe et al., 2018; Burke et al., 2010; Creswick et al., 2019; Dowthwaite et al., 2020; Duplaga & Szulc, 2019; Hill et al., 2015; Sutcliffe et al., 2018). The definition of digital wellbeing outlined above applies existing psychological concepts of wellbeing – for human to human interactions – to digital technologies – so human to computer interactions (Dowthwaite et al., 2020; Peters et al., 2018). Most often Self-Determination Theory (SDT) is used (Ryan & Deci, 2000), which identifies three basic psychological needs that are essential to a person's psychological wellbeing – neglecting them can lead to anxiety, distress, and low self-esteem (Peters et al., 2018; Ryan & Deci, 2000). These basic psychological needs are:



Autonomy: The perception of being the cause of one's own actions. Wellbeing is threatened when one perceives external forces are shaping one's actions (Hassenzhal et al., 2013).



Competence: The feelings of capability and mastery over actions, as compared to feelings of incompetence or ineffectiveness (Hassenzhal et al., 2013; Shove et al., 2012).



Relatedness: A general feeling of connection to others and a sense of belonging, compared to feelings of isolation and loneliness (Lin, 2016; Ryan & Deci, 2000).



When these basic psychological needs are met online, people can achieve high levels of pleasure and satisfaction in their digital experiences (Peters et al., 2018). Each of the psychological needs can be met by various design features. **Autonomy** can be fostered by digital technologies that are interactive, are able to be personalized, and provide an appearance of choice (Peng et al., 2012; Velez et al., 2018). **Competency** can be increased by setting attainable goals and manageable challenges, features that allow as sense of accomplishment and positive feedback (i.e., digital achievements), and opportunities for learning (i.e., tutorials or guides on how to use the platform; Klapperich et al., 2019; Peters et al., 2018; Rigby & Ryan, 2011). Lastly, **relatedness** can be encouraged through cooperative features in video gaming (i.e. online matchmaking, party chats; Velez et al., 2018) and direct forms of communication between two people or small groups on social media (i.e. wall posts, group chats; Burke et al., 2010; Sutcliffe et al., 2018).

03

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?**
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

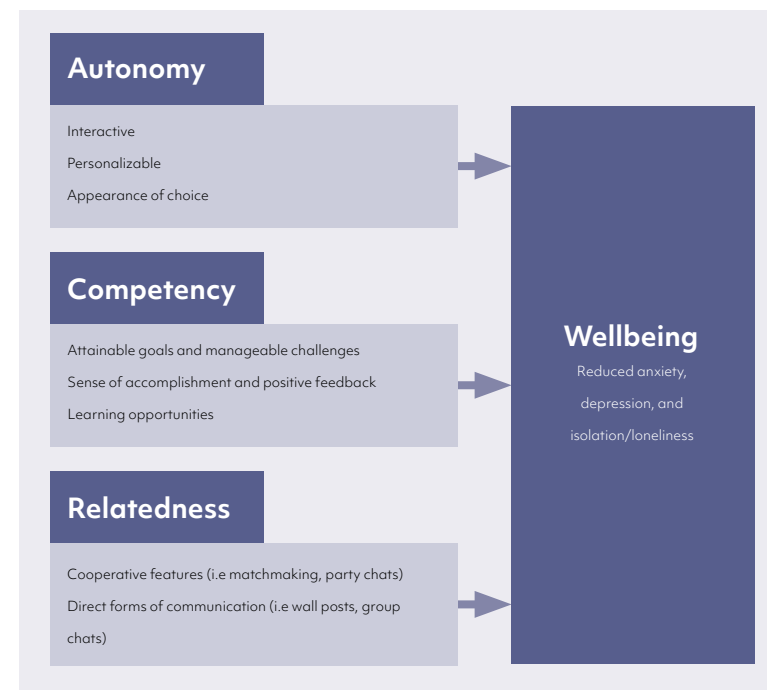
Digital technology has positive as well as negative impacts on wellbeing

A unique and critical feature of digital wellbeing is that it considers both the benefits and drawbacks of time spent online. Most research focus to date has been on the **negative** impacts, as digital technology is often framed as inherently dangerous (Orben, 2020). Notable drawbacks include scams, privacy invasion, exposure to distressing and disturbing imagery, the development of the fear of missing out, reductions in autonomy, cyberbullying/harassment, excessive use, depression, low self-esteem, and anxiety (Alutaybi et al., 2020; Alter, 2017; Dhir et al., 2018; Giraldo-Luque et al., 2020; Houghton et al., 2020; Lin et al., 2016; Primack et al., 2017; Rozgonjuk et al., 2020; Vanden Abeele et al., 2018; Vissenberg & d’Haenes, 2020; White et al., 2017). During the COVID-19 pandemic, studies have also reported increased levels of digital procrastination and compulsive information seeking (Elhai et al., 2020; Sun et al., 2020).

In the last few years, there has been a push to reframe digital technology as a net **positive** for wellbeing and day to day functioning (Granic et al., 2020). For example, complete removal of digital technologies would likely cause social isolation, loss of employment, or inability to access critical resources (Cecchinato et al., 2019). Notable benefits include access to information, ability to connect socially with others, building personal identities, professional collaboration, streamlined education, entertainment, reduced loneliness, and lower suicidal ideation (Bers, 2012; Duplaga & Szulc, 2019; Finlay-Jones et al., 2020; Hill et al., 2015; Lewis & Seko, 2015; Widdicks, 2020). Studies during COVID-19

have contributing to this positive reframing of digital technologies, finding that their use allowed for the maintenance of relationships, reduced loneliness, and the use of digital entertainment as a coping mechanism (Boursier et al., 2020; Cauberghe et al., 2020; Granic et al., 2020; Orben, 2020; Zhu, 2020).

Links between Psychological Needs, Design Features, & Wellbeing

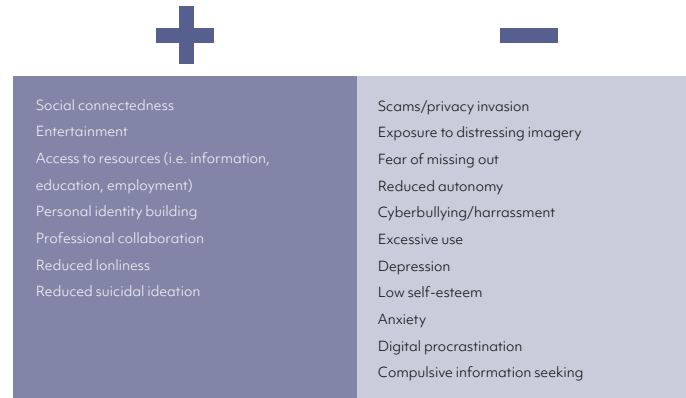


Consideration of the positive impacts does not ignore or diminish the harms that digital technologies can cause. Instead, it provides a more balanced view that acknowledges how online spaces can provide positive outcomes when safely used and offers a more comprehensive set of outcomes for targeting digital wellbeing initiatives.

03

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?**
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

Positive & Negative Impacts of Spending Time Online



Pulling it all together: outlining a shared definition of digital wellbeing

We know from the academic literature that digital wellbeing can be conceptualized as “a subjective individual experience of optimal balance between the benefits and drawbacks obtained from mobile connectivity” (Vanden Abeele, 2020: 13).

The conceptualization of digital wellbeing in the literature – how it’s defined, where it comes from, what its key outcomes are – confirms and builds on the key features of digital wellbeing that were described by stakeholders in our previous work around collaboration for supporting the digital wellbeing of young people (Stark, 2021). (The italics in the list below denote what is specified or added by the literature).

From these various sources, we know that digital wellbeing is:

- **A person-level** concept,
- **Heterogeneous**, being experienced differently by each person,
- A balance between time spent **online and offline** – *in the context of controlled use*,
- *The result of **person and design** features*,
- Supported by **industry and government** – *specifically through the use of positive design approaches and features*,
- The result of **awareness and mitigation** of risks in online spaces – *in particular digital resilience and literacy*,
- *Supported through the satisfaction of three psychological needs by digital technologies – **autonomy, competence, and relatedness***,
- The maximization of **positive** – *e.g. social connectedness, access to resources, entertainment* – and reduction of negative uses – *e.g. cyberbullying, excessive use, compulsive information seeking, and*
- **A net positive impact** on the person and those around them – *with the focused placed on the person themselves*.

Equipped with this fulsome understanding of what digital wellbeing is and the processes that support it (see figure below), we can more effectively design and evaluate initiatives to foster it. We are also well positioned to continue pursuing the goal of considering how digital wellbeing relates to online gambling in the following sections.

03

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?**
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

Processes that Support the Development of Digital Wellbeing



How does online gambling fit into digital wellbeing?

01 Executive summary

02 Foreword

03 What is digital wellbeing?

**04 How does online gambling fit into
digital wellbeing?**

05 What does digital wellbeing look
like in Canada, the US & the UK?

06 What does online gambling look
like in Canada, the US & the UK?

07 How is online gambling
associated with digital wellbeing?

08 Key considerations
and next steps

09 Methodology

10 Acknowledgements

11 Detailed Results

12 References



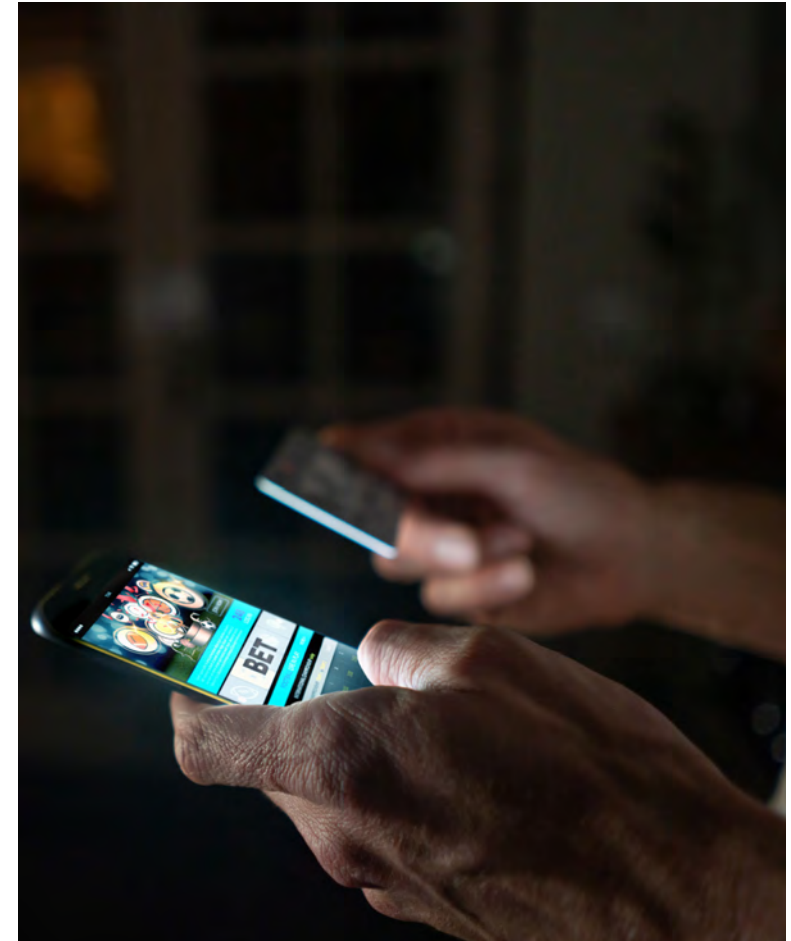
04

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?**
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

How does online gambling fit into digital wellbeing?

As shown in the previous section, digital wellbeing is about the positive and negative impacts experienced by the person across online spaces. To provide a full assessment of digital wellbeing, it is necessary to examine the impacts of all online spaces. Most often, digital wellbeing work focuses on areas like social media and video gaming (Cauberghe et al., 2020; Zhu, 2020). Of unique interest is the consideration of online gambling. As discussed in Section 6, a sizeable percentage of people participate in online gambling, so **including online gambling in examinations of digital wellbeing is necessary for a holistic approach**. Further, online gambling includes unique features compared to many other online activities – like chance based outcomes and financial loss– that may have distinct impacts for digital wellbeing.

To date, few studies of and initiatives targeting digital wellbeing have included online gambling. Gambling is often framed as an inherently harmful activity (Parke et al., 2019), which contributes to gambling being left out of discussions of digital entertainment. As a result, online gambling is also absent in examinations of digital wellbeing. Below, the reasons for including online gambling in approaches for digital wellbeing are summarized and a way to move the field in this direction is outlined.



04

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?**
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References



Online gambling aligns with other online behaviours & provides opportunities for supporting digital wellbeing

As outlined in our previous work on collaboration for supporting the digital wellbeing of young people, there are several reasons to include online gambling in considerations of digital wellbeing, as well as benefits of doing so (Stark, 2021). Stakeholders in digital entertainment and wellbeing fields indicated that online gambling should be incorporated into understandings of digital wellbeing because:

- Online gambling is **intertwined** with other digital spaces, like social media (i.e. accounts focused on reporting betting behaviours, influencers) and gaming (i.e. gambling features),
- Like other online behaviours, gambling has both **positive** (among those of legal age, i.e. socializing) **and negative impacts** (i.e. financial and personal difficulties) that should be fully understood,
- Like for other digital behaviours, people need to know when they

are at **risk** of harm from online gambling and how to get **after support** and,

- Problematic online gambling behaviours can be a **cause** of poor mental health and wellbeing as well as one of many presenting **symptoms** of underlying mental health difficulties.

By including online gambling alongside other online behaviours, we can develop **support** for the behaviours, risks, and harms that are present across online spaces. Online gambling also provides an (additional) **opportunity** to promote digital wellbeing to those who spend time online.

04

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?**
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

Online gambling as a form of design for pleasure

We can begin to bring online gambling into considerations of digital wellbeing by framing it as **design for pleasure**. The positive design framework (Desmet & Pohlmeier, 2013) mentioned in Section 3 outlines three cornerstones for positive design, each of which fosters subjective wellbeing: design for personal significance, design for virtue, and design for pleasure. **Design for personal significance** is focused on supporting the achievement of goals and aspirations (Desmet & Pohlmeier, 2013), like wellness and teaching apps designed to produce a sustained skill or behaviour (Peters et al., 2020). **Design for virtue** focuses on promoting an “ideal mode of behaviour” (Desmet & Pohlmeier, 2013), like the development of wisdom or knowledge through the access to large amounts of information provided by the internet.

Most importantly here, **design for pleasure** focuses on creating positive feelings like “being relaxed, having fun, being free of problems” (Desmet & Pohlmeier, 2013: 8) or reducing negative ones like pain, discomfort, or sadness. Design for pleasure can support wellbeing through the creation of frequent, momentary pleasurable experiences, which can lead to sustained feelings of accomplishment and happiness (Hassenzahl et al., 2013). The instant psychological gratification offered by design for pleasure has been examined for a variety of online spaces, such as social media, online gaming, and a variety of other forms of digital entertainment (Burr et al., 2020; Sutcliffe et al., 2018; Tamborini et al., 2011; Zhu, 2020).

Online gambling can be understood as form of design for pleasure as it is a product designed to create positive feelings like excitement. Through these positive feelings, leisure activities like gambling can have a beneficial effect on health and wellbeing (Newman et al., 2014). Several **benefits of gambling** have been identified, including the development of social connections (Basham & Luik, 2011; Hilbrecht & Mock, 2019); inducing positive emotions such as joy, happiness, and accomplishment (Collins & Lapsley, 2003; Delfabbro et al., 2020); and improving pattern recognition as well as memory (Winstone, 2002). In some cases, benefits are more often reported by those who are also experiencing severe harms from their gambling (Delfabbro et al., 2020).



04

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?**
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

Psychological Needs Fulfilled by Gambling in Parke et al. 2019

Detachment

- Relax
- Escape
- Release stress

Excitement

- Take risks
- Test luck
- Show courage

Mastery

- Test abilities
- Stimulation
- Decision making
- Learning

Affiliation

- Socializing
- Meeting people

Self-affirmation

- Self image
- Self esteem

Gambling can meet psychological needs

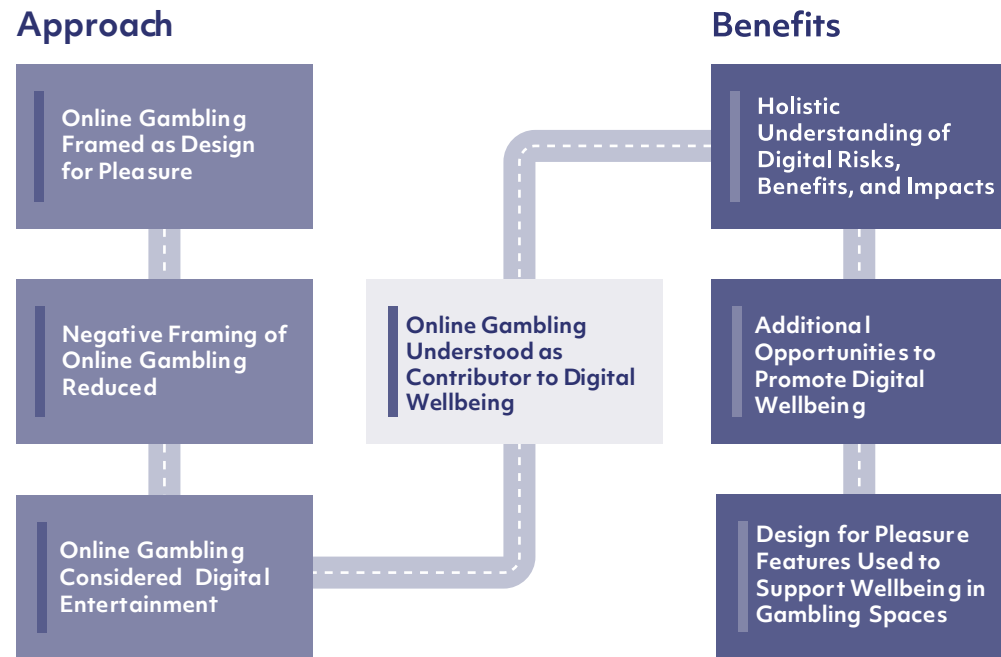
As outlined in Section 3, digital wellbeing is supported by design features that fulfil three basic psychological needs: autonomy, competence, and relatedness. A further justification for including online gambling in the understanding of digital wellbeing is that **gambling has also been found to meet psychological needs**. In fact, leisure activities like gambling can meet specific psychological needs (i.e., immediate gratification) that may not be met through other non-leisure activities (Chick & Hood, 1996). Recent research has found that online gambling meets some type of psychological need for over half of players (Parke et al., 2019). More specifically, participants report having the following five basic psychological needs satisfied by their gambling: **detachment, excitement, mastery, affiliation, and self-affirmation**. In Section 6, we examine how these psychological needs are met among adults who gamble online in Canada, the US, and the UK.

04

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?**
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

This section has provided an outline of both the benefits of including online gambling in the understanding of digital wellbeing as well as an approach for doing so (see figure below). Situating online gambling within the design for pleasure model can facilitate viewing this online leisure activity alongside other forms of digital entertainment. The understanding of online gambling as a form of digital entertainment can then support its inclusion in examinations of digital wellbeing. Including online gambling in approaches for digital wellbeing will allow for a more holistic understanding of the risks, benefits, and overall impacts of online spaces, including the psychological needs being met. Online gambling also provides another avenue for promoting digital wellbeing and a focus on design for pleasure can encourage designers of online gambling spaces to consider positive design features that can better promote digital wellbeing among players.

A Framework for Including Online Gambling in Digital Wellbeing



What does digital wellbeing look like in Canada, the US & the UK?

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?**
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References



05

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?**
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

What does digital wellbeing look like in Canada, the US & the UK?

With the definition of digital wellbeing itself being so new, we have limited knowledge of what digital wellbeing looks like out in the world: what level of digital wellbeing is there, what types of people have low or high levels, what types of beliefs and behaviours are associated with it. With a definition in place, scholars have recently begun to develop ways to measure digital wellbeing (Peters et al., 2018; Dowthwaite et al., 2020). These tools, though, haven't been widely used across broad populations, including Canada, the US, and the UK.

To start to create an empirical picture of digital wellbeing, we use a newly developed measure to examine **how digital wellbeing differs across countries, demographic groups, and digital wellbeing beliefs and behaviours** using an online survey of over 6,000 people in Canada, the US, and the UK (see Section 9 for detailed methods). These results bring to life the concepts from the literature discussed in Sections 3 and 4 and provide a critical first look at digital wellbeing for informing ways forward in supporting it.

Online behaviours & digital confidence are moderately high

Results show that people spend a considerable **part of their day online**. Almost a third typically spend 3-4 hours a day online (32.4%), with another 1 in 5 spending 5-6 hours (21.1%).

Canadians are more likely to spend 2 hours or less online and Americans are more likely to spend 7 hours or more.

When online, people are most often finding information (67.9%), socializing (56.4%), or watching videos or playing games (51.1%). Overall, people tend to report engaging in the various online activities at a moderately frequent level (19.34 on a scale of 6-30). Canada scores lower on **online activity levels** (18.47) than the US (19.75) and the UK (19.80; see Section 11 for more details on online activity).

On average, people tend to have a moderate to high level of confidence in their ability to navigate and stay safe online (3.64 on scale of 1-5). **Digital confidence**, a concept similar to digital literacy mentioned in Section 3, is higher in the US (3.72) and lower in Canada (3.53; UK – 3.68).

Time Online

- 32.4% 3-4 hours a day

Online Activity

- Moderate
- 67.9% finding information
- 56.4% socializing
- 51.1% watching videos/playing games

Digital Confidence

- Moderate to high

05

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?**
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

Wellbeing beliefs are high, behaviours are moderate, & resource use is low

In addition to digital confidence, we examined two other personal factors that may influence digital wellbeing: 1) digital wellbeing beliefs and 2) digital wellbeing behaviours.

Digital wellbeing beliefs are **thoughts about how to spend time online:**

- Not being online longer than planned,
- Setting time limits,
- Not being online at expense of other obligations,
- Not having negative impact on private life, and
- Using the internet to a personally appropriate extent.

We find that overall people tend to have high (positive) digital wellbeing beliefs (5.26 on a scale of 1-7; see Section 11 for more details on digital wellbeing beliefs). Beliefs are generally higher in Canada (5.41) and lower in the UK (5.15; US – 5.21). The two least strongly supported beliefs are not being online longer than planned and setting limits on the amount of time spent online.

Digital wellbeing behaviours are **actions taken while spending time online:**

- Feeling in control of online behaviours,
- Setting limits on time, and
- Not spending more time than planned.

Overall people tend to report moderate levels of digital wellbeing behaviours (4.80 on a scale of 1-7; see Section 11 for more details on digital wellbeing behaviours). Behaviours are generally higher in the US (5.00) and lower in the UK (4.62; Canada – 4.79). The behaviour most frequently engaged in is feeling in control of online behaviours.

Alongside these personal factors, we examined use of some positive design features that are available to support people in navigating online spaces (as discussed in Section 3). Overall, resources use is low. The most frequently used **online resources** are notification customization features (26.8%) and blocking features (23.2%; see Section 11 for more details on use of online resources). Use of all resources was higher in the US.

Digital Wellbeing Beliefs

- High
- Popular beliefs: no negative impacts on personal life and personally appropriate use level

Digital Wellbeing Behaviours

- Moderate
- Popular behaviours: feeling in control of online behaviours

Use of Online Resources

- Low
- Popular resources: custom notification and blocking features

05

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?**
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

Digital wellbeing is low & lower for certain groups, beliefs & behaviours

As outlined in Section 3, digital wellbeing is the result of satisfying three psychological needs: relatedness, autonomy, and competence. We find that **each of these needs are being satisfied, although at a low level** (≈ 1 on a scale from -4 to 4). Autonomy has the highest level of satisfaction (1.81), relatedness has the lowest (.84), and competence falls in between (1.16). Relatedness and competence are higher in the US (.98 and 1.22, Autonomy – 1.80), while autonomy is higher in the UK (1.88, Relatedness - .79, Competence –1.12). (Scores for Canada: Relatedness - .75, Autonomy – 1.73, Competence – 1.14)

We also saw in Sections 3 and 4 that psychological needs are met through momentary positive emotions, which is why emotional wellbeing is assessed alongside the psychological needs in examining digital wellbeing. Findings show a **low level of positive feelings** (8.67 on a scale from -28 to 28). Emotion wellbeing is higher in the US (9.98) and lower in Canada (7.40; UK – 6.92).

In terms of **overall satisfaction** with time online, the majority of people are satisfied with how things have gone online (77.0%) and feel that the things they've done online have been meaningful (63.4%). Both are higher in the US (82.9% and 70.5%) and lower in Canada (69.0% and 57.6%; UK – 79.1% and 62.0%).

Relatedness	Autonomy
• Low	• Low
Competence	Emotional Wellbeing
• Low	• Low

To identify **groups that may be at most risk** for low digital wellbeing, we looked at each of the four measures by demographic factors. We also looked at how the measures of digital wellbeing vary by wellbeing beliefs and behaviours to identify **thoughts and actions that are linked with higher chances** for low digital wellbeing (see Section 11 for more details on high risk groups, beliefs, and behaviours). We identified several background, belief, and behavioural factors that are associated with low levels across multiple measures of digital wellbeing, as outlined in the table below.

High Risk Groups	High Risk Beliefs & Behaviours
<ul style="list-style-type: none"> • 18-24 year olds • Those of Asian and other non-White backgrounds • Those with high school education • Full time students • Those in the lowest income bracket • Those who are single 	<ul style="list-style-type: none"> • Being online for less than an hour or more than 5 hours a day • Lower digital confidence • Lower digital wellbeing beliefs • Lower digital wellbeing behaviours • More frequent use of information resources, time management features, pause features, and blocking features

05

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?**
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References



This first population-level look at digital wellbeing in Canada, the US, and the UK finds that **time spent and engagement** in various online activities is moderate and there is a high level of confidence in navigating and staying safe online. Canadians report lower levels across all of these items, with Americans showing higher rates of time online and digital confidence.

Levels of **digital wellbeing beliefs and behaviours** are moderate to high and use of online resources is low. Americans report higher levels of behaviours and resources use, but lower levels of beliefs. Beliefs are higher in Canada and behaviours lower in the UK.

Across all four measures, **digital wellbeing** is low. Relatedness, competence, and emotional wellbeing are higher in the US, while autonomy is higher in the UK.

In addition to illustrating the personal factors, design features, and psychological needs that make up digital wellbeing, these results begin to outline **key groups** – young adults, full time students, those of non-White backgrounds, with high school educations, in the lowest income bracket, who are single – as well as **beliefs and behaviours** – low or moderate time spent online, more frequent use of online resources, and lower levels of digital confidence and digital wellbeing beliefs and behaviours – that can be targeted through initiatives and programs for supporting digital wellbeing.

What does online gambling look like in Canada, the US & the UK?

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?**
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References



06

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?**
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

What does online gambling look like in Canada, the US & the UK?

Our existing knowledge of **what online gambling looks like** is more advanced than our understanding of what digital wellbeing looks like. However, to begin to consider how online gambling relates to digital wellbeing, it is useful to have a parallel picture of online gambling – one that considers comparable factors among the same group of people: what level of online gambling is there, what types of people have low or high levels of harm from participating, what types of beliefs and behaviours are associated with different levels of impact. Also, like for digital wellbeing, new measures have been developed recently for gambling that are useful to consider in our population-level examination of digital wellbeing, namely for the psychological needs met by gambling (Parke et al., 2019).

To provide this complementary picture of online gambling, we examine **how online gambling harm and problems differ across countries, demographic groups, and online gambling psychological needs, beliefs, and behaviours** in our sample of 6,000 people in Canada, the US, and the UK. These results will be useful for identifying ways forward in supporting safer online gambling specifically and digital wellbeing broadly.

Online gambling participation & level of play is moderate

Our results show that over half of people (51.0%) **have gambled online in the past year**, with rates higher in the UK (62.0%) and lower in Canada (43.8%; US – 47.3%). The most widely played **online games** are lottery tickets (25.5%), scratch tickets (19.5%), and betting on live sports on sports betting websites (15.7%; see Section 11 for more details on game types).

The majority of games are more popular in the US, though scratch and draw lottery, live sports betting, electronic gaming machines, and horse or

dog races are higher in the UK. All games are played the least in Canada, except raffles where Canada has the highest participation.

In terms of **gambling frequency**, roughly a third of online gamblers play between 1 and 6 days a week (37.3%) and less than once a month (32.6%). Those in the UK are more likely to gamble online once a week or more (52.6%).

On average, online gamblers spend just under 30 minutes per session. Average **length of session** is higher for the US (44 minutes) and lower for Canada (20 minutes; UK – 26 minutes). The average **number of accounts** is 2.16, with Americans having almost one more account on average (2.79) and Canadians one account less (1.05; UK – 2.46).

Two in five online gamblers (40.1%) spend the lowest amount measured per month gambling online, at less than \$17CAD/\$13USD/£10. **Monthly spend** was higher in the US, with 17.2% spending \$125CAD/\$100USD/£73 or more, and lower in Canada, with 52.4% spending less than \$17CAD/\$13USD/£10.

Online Gambling Participation
• 51.0% in then past year
Top Game Types
• 25.5% lottery tickets
• 19.5% scratch tickets
• 15.7% betting on live sports on website
Gambling Frequency
• 37.3% 1-6 days a week
• 32.6% less than once a month
Session Length
• 30 minutes on average
Number of Accounts
• 2.16 on average
Monthly Spend
• 40.1% less than \$17CAD/\$13USD/£10

06

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?**
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

Online gambling fulfils psychological needs

Similar to digital wellbeing broadly, gambling has been found to meet psychological needs for players.

Online gamblers in all jurisdictions report experiencing the five types of psychological benefits that (online) gambling can provide. Players report a moderate level of **challenge and mastery** (13.46/25) – test abilities, decision making, learning, stimulation; **affiliation** (7.52/15) – socializing and meeting people; **detachment** (8.55/15) – relax, escape, release stress; and **risk and excitement** (8.93/15) – show courage, test luck, take risks. Players also report a low level of **self-affirmation** (6.93/15) – self-image and self-esteem. For all five psychological needs, rates are higher in the US (16.86, 8.69, 9.70, 10.13, 10.43) and lower in Canada (10.81, 5.63, 6.12, 6.95, 7.46; UK - 12.70, 6.83, 8.46, 8.83, 6.49).

Challenge & Mastery	Affiliation
• Moderate	• Moderate
Detachment	Risk & Excitement
• Moderate	• Moderate
Self-Affirmation	
• Low	

Safer gambling beliefs & behaviours are high & online gambling resource use is low

As for digital wellbeing, there are personal – safer gambling beliefs and behaviours – and design factors – online gambling resources (others not measured here) – that can support safer (online) gambling by working in complement.

Safer online gambling (or Positive Play) beliefs and behaviours are **positive beliefs about gambling and behaviours towards gambling that are associated with playing at lower risk levels** that can be supported by design factors. The highest score was for **personal responsibility** beliefs (6.11 of 1-7) – I should be able to walk away, I should be aware of how much I spend, it's my responsibility to only spend what I can afford. Online gamblers also report high levels of **honesty and control** behaviours (5.72) – feel in control of gambling, honest with others about time and money spent, and **precommitment** behaviours (5.68) – consider time and money before gambling, only spend time or money can afford. Players report a slightly lower level of **gambling literacy** beliefs (5.31) – gambling is not a good way to make money, my chances are better after a loss, gambling more will help me win more. Precommitment (5.56), gambling literacy (4.66), and personal responsibility (5.90) are all lower in the US (5.6, 5.9; Honesty & Control – 5.66). Precommitment (5.76) and personal responsibility (6.24) are higher in the UK (Honesty & Control – 5.75; Gambling Literacy – 5.50) and gambling literacy is higher in Canada (5.77; Honesty & Control – 5.73, Personal Responsibility – 6.14, Precommitment – 5.70, Gambling Literacy – 5.77).

Safer Online Gambling Beliefs
• <u>Gambling Literacy</u> : High
• <u>Personal Responsibility</u> : High
Safer Online Gambling Behaviours
• <u>Honesty & Control</u> : High
• <u>Precommitment</u> : High
Use of Online Gambling Resources
• Low
• <u>Popular resources</u> : player account information, information on how games work/odds, money management features

06

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?**
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

To support safer gambling beliefs and behaviours, several resources are available to online gamblers to various degrees, depending on the jurisdiction and platform. Overall resource use is low. The most frequently used **online gambling resources** are player account information on transaction and play history (34.8%), information on how the games work/odds of winning (34.1%), and features for managing money spent (32.1%; see Section 11 for more details on use of online gambling resources). All online gambling resources are used more widely in the US and the least widely in Canada.

Gambling harm & problems are higher for certain groups, beliefs & behaviours

While digital wellbeing measures both the positive and negative outcomes of time spent online simultaneously, the benefits of online gambling – like the psychological needs reported above – and its drawbacks – the harms and gambling problems reviewed below – are assessed separately.

Online Gambling Harms
• 1.56 out of 10
Problem Online Gambling
• 21%

Results show that, on average, online gamblers report experiencing 1.56 out of a scale of 10 harms as a result of their online gambling in the past year, such as reduction in finances, regret, increased debt, spending less time with loved ones, etc. **Level of harm** is higher in the US (2.11) and lower in Canada (1.24), with the UK falling in between (1.36).

Overall 1 in 5 online gamblers classify as having a **gambling problem** (21.0%) in the past year. Figures are higher in the US (31.5%) and lower in Canada (15.6%), with the UK falling in between (16.8%).

As for digital wellbeing, we identified **groups that may be at most risk** by looking at online gambling harm and problems by demographic factors. We also considered how online gambling harm and problems vary by online gambling beliefs and behaviours to identify **thoughts and actions that are linked with greater risk** (see Section 11 for more details on high risk groups, beliefs, and behaviours). We identified several background, belief, and behavioural factors that are associated with gambling harm and problems across multiple countries, as outlined in the table below. (Bolded items indicate factors that are influential for both online gambling harms and problems.)

We find that both high levels of online gambling harms and problems are experienced more frequently by 18-24 year olds and men, and those who play any online gambling games, play on a daily basis, spend more time and money, have more gambling accounts, have psychological needs fulfilled by their play, and have lower safer gambling beliefs and behaviours.

06

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?**
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

	Gambling Harms	Gambling Problems
High Risk Groups	<ul style="list-style-type: none"> • 18-24 year olds • Men • Full time students • Those who are single 	<ul style="list-style-type: none"> • 18-24 year olds • Men • Those of Asian backgrounds
High Risk Beliefs & Behaviours	<ul style="list-style-type: none"> • Playing any games • Playing frequently, particularly daily • Longer session lengths • Higher number of accounts • Monthly spend of \$167CAD/\$134USD/£96 and above • Higher fulfillment of all online gambling psychological needs • Lower safer gambling beliefs and behaviours • More frequent use of any online gambling resource 	<ul style="list-style-type: none"> • Playing any games • Playing daily • Longer session lengths (over 45 minutes) • Higher number of accounts (3+) • Higher monthly spend (\$167CAD/\$134USD/£96 and over) • Higher fulfillment of all online gambling psychological needs • Lower safer gambling beliefs and behaviours • Higher level of gambling harms (roughly 5)

06

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?**
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

This detailed look at online gambling in Canada, the US, and the UK finds that roughly half of people have **gambled online in the past year**. Online gamblers generally play 1-6 times a week or less than once a month, spend just under 30 minutes per session, have just over two gambling accounts, and spend less than \$17CAD/\$13USD/£10 a month. Online gambling participation and play frequency are higher in the UK while session length, number of accounts, and monthly spend are higher in the US.

Online gamblers are having various **psychological needs** met by their online play to a moderate degree, with higher levels of need satisfaction in the US.

Levels of **safer online gambling beliefs and behaviours** are high and use of online gambling resources is low. Americans report lower levels of safer online gambling beliefs and behaviours, while Canadians report lower levels of online gambling resource use.

Online gamblers report experiencing one or more **harms** from their play and one in five classifies as having a gambling **problem**, both of which are higher in the US.

Importantly, these results identify **key groups** – young adults and men – as well as **behaviours and beliefs** – playing any online gambling games, playing on a daily basis, spending more time and money, having more gambling accounts, having psychological needs fulfilled by their play (consistent with Delfabbro et al., 2020), and having lower safer gambling beliefs and behaviours – that can be targeted and supported by safer gambling initiatives as well as broader approaches for digital wellbeing.



How is online gambling associated with digital wellbeing?

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?**
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References



07

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?**
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

How is online gambling associated with digital wellbeing?

With an improved understanding of what digital wellbeing and online gambling currently look like in Canada, the US, and the UK we can now consider one of the key questions of this work: **how is online gambling associated with digital wellbeing?** We first consider how beliefs, needs, and behaviours in the online gambling realm are linked to digital wellbeing more generally. We then examine how the impacts in each area – online gambling harms and problems specifically and digital wellbeing broadly – are associated. Findings from this section are particularly useful for demonstrating the value of and areas of need for including online gambling in work to support digital wellbeing.

Digital wellbeing is linked with online gambling behaviours, beliefs & psychological needs

Those who **gamble online have lower levels of digital wellbeing** across all measures: relatedness, autonomy, competence, and emotional wellbeing. The results vary by country (see Section 11 for more details on the links between digital wellbeing and online gambling participation and psychological needs). Past year online gambling is linked with reduced levels of two or three measures of digital wellbeing in each country, with no measure of digital wellbeing linked to online gambling across all countries.

Online gambling psychological need fulfillment is associated with measures of digital wellbeing in various ways. Higher satisfaction of all psychological needs is linked with **lower levels of autonomy**

in all countries and **lower competence** in the UK and Canada. The associations with **relatedness and emotional wellbeing work differently in the UK and Canada versus the US**. While higher levels of need satisfaction are associated with lower levels of relatedness in Canada and emotional wellbeing in the UK and Canada, they are linked with higher levels of relatedness and emotional wellbeing in the US.

Online Gambling

- Lower digital wellbeing

Online Gambling Psychological Needs

- Autonomy: Lower
- Competence: Lower
- Relatedness: Lower Canada, Higher US
- Emotional Wellbeing: Lower Canada and UK, Higher US

Safer Online Gambling Beliefs & Behaviours

- Higher digital wellbeing

All measures of **safer online gambling beliefs and behaviours** – personal responsibility, gambling literacy, honesty and control, and precommitment – **are positively associated with all measures of digital wellbeing** – relatedness, autonomy, competence, and emotional wellbeing. These links largely hold across countries, with the exception of gambling literacy not being associated with relatedness or emotional wellbeing in the US.

07

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?**
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

Online gambling harms & problems are linked with lower digital wellbeing

Online Gambling Harms

- Lower wellbeing

Problem Online Gambling

- Lower wellbeing

We also find that **higher levels of online gambling harms are associated with lower levels of all measures of digital wellbeing** – relatedness, autonomy, competence, and emotional wellbeing. All digital wellbeing measures are also **lower among those with problems with their online gambling** (see Section 11 for more details on the links between problem gambling and digital wellbeing). Both of these associations hold across all three countries.

This first examination of how **online gambling is associated with digital wellbeing** finds that digital wellbeing is higher among those who have higher safer online gambling beliefs and behaviours and lower among those who gamble online, have psychological needs met by their play, and are experiencing harms from or a problem with their online gambling. In the US, though, gambling literacy is only linked with some measures of digital wellbeing, and having psychological needs met by online gambling is associated with higher wellbeing on some measures. These results are among the first to illustrate that digital wellbeing is impacted by the time spent in, needs met by, beliefs and behaviours around, and negative impacts of online gambling spaces. In doing so, they point to areas of focus for initiatives to support digital wellbeing that take into consideration online gambling.

Key considerations and next steps

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps**
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References



08

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps**
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

Key considerations & next steps



This report uses research literature and results from an online survey to begin to identify **the conceptual and empirical links between digital wellbeing and online gambling**. In doing so, it outlines a definition of digital wellbeing that includes online gambling, provides the only population-level look at digital wellbeing in Canada, the US, and the UK, and offers the first examination of how online gambling is associated with digital wellbeing. To build on these important first steps, future research is needed to confirm and expand on these findings. Further, strategic work is required to include gambling within the understanding of digital entertainment and initiatives to support digital wellbeing.

The insights from this report are being taken forward in a series of **roundtable discussions** with relevant stakeholders to identify

practical next steps for the development of collaboration and initiatives to support digital wellbeing with the inclusion of online gambling spaces. This work is also being used to inform a piece of **independent research** being conducted by RG Plus to examine how technology can be used to provide information and support to gamblers across the player spectrum, from low to high involvement and risk. Lastly, the online survey data is being used to **validate** the efficacy and accuracy of the measure of digital wellbeing used here – the Online Wellbeing Scale – in collaboration with two of the scale creators, Drs. Liz Dowthwaite and Elvira Perez Vallejos at the University of Nottingham.

08

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps**
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

Key insights

Several **key insights** have been identified by this work that are useful for informing future efforts in this space.

1. **Digital wellbeing** is defined as a personal experience of both the positive and negative impacts of spending time in various online spaces. It is fostered by personal factors, like digital literacy and resilience, and design factors, like positive design approaches that meet psychological needs.
2. Online gambling can be understood within digital wellbeing as a form of **design for pleasure** that meets psychological needs similar to those captured within digital wellbeing.
3. **Digital wellbeing is lower** among certain groups and those with certain beliefs and behaviours.

Lower Digital Wellbeing Groups	Lower Digital Wellbeing Beliefs & Behaviours
<ul style="list-style-type: none"> • 18-24 year olds • Those of Asian and other non-White backgrounds • Those with high school educations • Full time students • Those in the lowest income bracket • Those who are single 	<ul style="list-style-type: none"> • Being online for less than an hour or more than 5 hours a day • Lower digital confidence • Lower digital wellbeing beliefs • Lower digital wellbeing behaviours • More frequent use of information resources, time management features, pause features, and blocking features

4. **Online gambling harms and problems are higher** among certain groups and those with certain behaviours and beliefs.

High Online Gambling Harms & Problems Groups	High Online Gambling Harms & Problems Beliefs & Behaviours
<ul style="list-style-type: none"> • 18-24 year olds • Men 	<ul style="list-style-type: none"> • Playing any games • Playing frequently, particularly daily • Longer session lengths • Higher number of accounts • Higher monthly spend • Higher fulfillment of online gambling psychological needs • Lower safer gambling beliefs and behaviours

5. **Importantly, online gambling is associated with digital wellbeing.** Those who gamble online, have psychological needs met by their play, have more risky online gambling beliefs and behaviours, and experience gambling harms or problems have lower levels of digital wellbeing.

08

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps**
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

The conceptual and empirical links between digital wellbeing and online gambling identified in the current study warrant the development of digital wellbeing collaborations and initiatives that include **online gambling stakeholders and goals** to allow for a more holistic understanding of and focus on the risks, benefits, and overall impacts of online spaces, including the psychological needs being met.

Based on these key insights and building on the implications outlined in our previous work on purposeful collaboration for supporting the digital wellbeing of young people (Stark, 2021), the following **next steps** can guide practical actions for building collaborations and creating initiatives for supporting digital wellbeing, with the inclusion of online gambling spaces.

08

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps**
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

Next steps

Collaboration

Use the **definition of digital wellbeing** outlined above, that includes online gambling as a form of design for pleasure and digital entertainment, to develop a shared understanding of the problem and ways to address it

Use results on digital wellbeing and online gambling from the online survey to inform **collaboration goals**, to target the areas of greatest need

Use the **measures of digital wellbeing and online gambling harm** and baseline data included above for assessing progress against goals and evaluation of short and long term impacts of initiatives

Include **various stakeholders**, in particular those from the online gambling field, in collaborations to determine the best person- and design-led approaches for supporting digital wellbeing – industry, designers, people who use the products, government agencies, community organizations, etc. (Klapperich et al., 2018)

Engage in **international collaborations** that address the similarities and differences identified in the survey results across countries. For example, initiatives could focus on the higher level of online gambling harms and problems in the US, lower levels of digital wellbeing in Canada, and lower digital wellbeing beliefs and behaviours in the UK.

Industry

Cultivate a **culture of responsibility** where the wellbeing of those using their platforms is a priority within all digital entertainment industries, to address the results for low digital wellbeing and online gambling harms and problems reported above.

Complement and confirm the results obtained from the general population online survey with **industry data**

Prioritize **design for pleasure features** in digital entertainment platforms including online gambling, such as limiting unnecessary data collection, implementing user feedback features, and allowing customization (i.e. turn off push notifications, setting daily screen timers; Cecchinato et al., 2019; Peters et al., 2020).

08

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps**
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

Education & safeguards

Develop **holistic education programs** across digital entertainment spaces that are focused on:

1. 18-24 year olds
2. Level of involvement
3. Building digital literacy and resilience
4. Increasing positive beliefs and behaviours

Create **tailored safeguards** and tools that are relevant across spaces targeting:

1. 18-24 year olds
2. Level of involvement
3. Supporting positive beliefs and behaviours
4. Positive design features

Regulations

Support the development and implementation of broad industry safeguards through **evidence-based regulation**

Research

Examine the **impact of mental health on digital wellbeing and vice versa** to further our understanding of the foundations of these outcomes, as the links between them are largely unexamined

Confirm and expand on the online survey results with additional **follow up research** on similar and expanded topics.

By implementing the **key insights** for digital wellbeing and online gambling outlined in this report, and directing **next steps** to addressing the needs around collaboration, industry roles, education and safeguards, regulation, and research noted above, stakeholders will be well equipped to develop meaningful and holistic initiatives for supporting digital wellbeing across online spaces, including online gambling.

Methodology

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology**
- 10 Acknowledgements
- 11 Detailed Results
- 12 References



09

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology**
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

Methodology

Literature review

We conducted a literature review of grey and peer-reviewed studies to identify **research on wellbeing and digital entertainment**. Research from the last 20 years was identified using the Ryerson University online database, as well as Google Scholar, and Boolean keyword search of terms like “digital wellbeing,” “digital resiliency,” “positive computing,” “positive design,” “social media”, and “online gambling”.

Focus was placed on identifying existing work on:

- 1) the **conceptualization of digital wellbeing** as a preventative (vs. recovery [i.e. resilience]) and balanced (both positive and negative uses and impacts) concept, and
- 2) the **inclusion of online gambling** in the understanding and/or measurement of digital wellbeing.

As this literature review was concerned with online (digital entertainment) experiences, technologies designed to promote offline digital “wellness” (i.e., Fitbit, Headspace) or deliver specific health services (i.e., BetterHealth, CareAware Connect) are excluded. In total, 48 articles were included. The literature review focused on identifying the conceptual foundations of digital wellbeing, its applications, and its relationship to online gambling.

Online Survey

In order to address the research gaps identified in the literature review and generate new insights for informing future programming and research, an **online survey** (roughly 10 minutes) was conducted by with representative samples of 2,000 adults in each of Canada, the US, and the UK. The inclusion of these three jurisdictions provides an international perspective and allows for the examination of differences between regions with more versus less focus on digital wellbeing and more versus less mature online gambling markets.

The survey questions and analyses focused on 1) providing **a measure of levels of digital wellbeing in each population** and 2) **examining links between digital wellbeing and online gambling**. The questions included in the survey are outlined below.

09

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology**
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

Online Survey Content

Sociodemographics

- Age, gender, cultural background, income, education, employment, marital status, country, region

Online Attitudes & Behaviours

- Online activity and digital confidence (Online Wellbeing Scale (OWS), Douthwaite et al., 2020)
- Amount of time spent online
- Controlled online behaviours and beliefs, and use of support resources

Digital Wellbeing

- Basic psychological needs, emotional wellbeing, and overall satisfaction (OWS)

Online Gambling Attitudes & Behaviours

- Online activities, frequency, time and money spent, number of accounts
- Psychological needs satisfied through gambling (Parke et al. 2019, modified for online focus)

- Safer gambling beliefs and behaviours (Positive Play Scale, Wood et al., 2017, modified for online focus)
- Use of safer gambling resources

Online Gambling Concerns

- Online gambling harms (Short Gambling Harms Screen, Browne et al., 2018, modified for online focus)
- Online gambling problems (Problem Gambling Severity Index, Ferris & Wynne, 2001; modified for online focus)

09

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology**
- 10 Acknowledgements
- 11 Detailed Results
- 12 References

In their thematic review of digital wellbeing, Burr and associates (2020) identified the Motivation, Engagement, and Thriving in User Experience (METUX; Peters et al., 2018) model as one of the best methods of measuring digital wellbeing currently available. The METUX is designed to measure the fulfillment of basic psychological needs (autonomy, relatedness, competence), using Self-Determination Theory (SDT) as a theoretical framework. Digital wellbeing is assessed in six spheres of experience, each with their own psychological needs and measurement strategy: adoption, interface, task, behaviour, life, society (Peters et al., 2018). While METUX provides a much needed and detailed assessment of digital wellbeing, its focus is on the impacts of specific technologies rather than the impacts of all digital technologies used by a person.

In the online survey, we used a measure developed by Dowthwaite and colleagues (2020) that assesses the overall impacts of all digital technologies used and measures both psychological and subjective wellbeing. The Online Wellbeing Scale (OWS), much like the METUX, is theoretically grounded in SDT and the notion that psychological wellbeing is accomplished through the satisfaction of autonomy, relatedness, and competence (Dowthwaite et al., 2020). However, in the OWS, subjective wellbeing is measured alongside psychological wellbeing to capture the short-term positive and negative emotions a person experiences when engaging in specific online practices.

The OWS is made up of five scales:

1. Basic **psychological needs** (a modified version of the Balanced Measure of Psychological Needs (Sheldon & Hilpert, 2012)),
2. **Emotional wellbeing** (modified version of the Scale of Positive and Negative Experience (Diener & Biswas-Diener, 2009)),
3. **Digital confidence,**
4. **Online activity,** and
5. **Overall satisfaction.**

Neither the METUX or OWS have been used in the gambling context, nor have they been examined in Canada, the US, or the UK.

Descriptive and bivariate analyses focused on providing a summary of digital wellbeing and online gambling levels and behaviours as well as identifying high risk groups for low digital wellbeing and online gambling harms and problems, links between online gambling and digital wellbeing, and jurisdictional differences.

Ethical Approval

RG Plus independently designed this study, completed all data collection, performed data analyses, and drafted the current document. This study received ethical approval from the Advarra Institutional Review Board (protocol number Pro00045611, obtained February 10th 2021). Advarra is a private, independent company that specializes in ethics reviews for research involving human subjects in Canada and other countries.

Acknowledgements

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements**
- 11 Detailed Results
- 12 References



10

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements**
- 11 Detailed Results
- 12 References

Acknowledgements

This report was authored by Dr. Sasha Stark, Senior Researcher, RG Plus.

We would like to thank all online survey participants for sharing their information and experiences as well as Jack Galligan, Research Assistant at RG Plus, for extensive support with the literature review and online survey. We would also like to thank Drs. Liz Douthwaite and Elvira Perez Vallejos at the University of Nottingham for providing us with the Online Wellbeing Scale for use in our online survey.



Playtech plc, a gambling software company, supported this independent research report by providing financial support as well as contributions to the scope, questions and identification of stakeholders. Playtech is pleased to support this important research and hope that these insights serve as a starting point for better understanding and exploring the intersection of mental health, safer gambling and digital wellbeing. We also hope that this report provides emerging good practices, insights and case studies that will be helpful as organizations across sectors explore how to collaborate to address a growing and significant social challenge.

Playtech is committed to working in partnership to generate new and practical insights to raise standards and forge cross sector partnerships to advance positive digital wellbeing, safer gambling, and mental health outcomes. Thank you all the contributors who provided their time, insights and perspectives.

Detailed Results

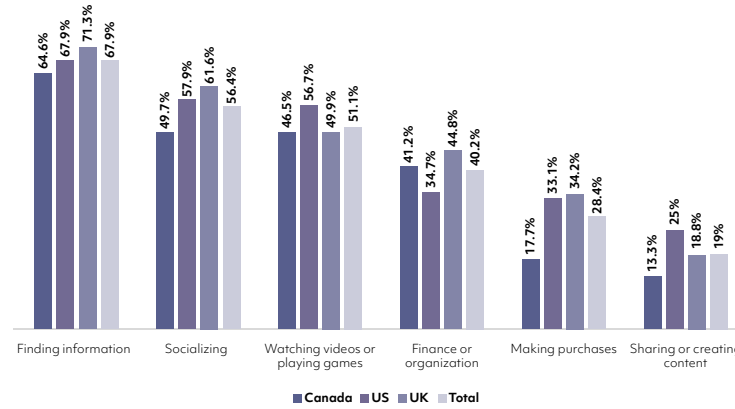
- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results**
- 12 References



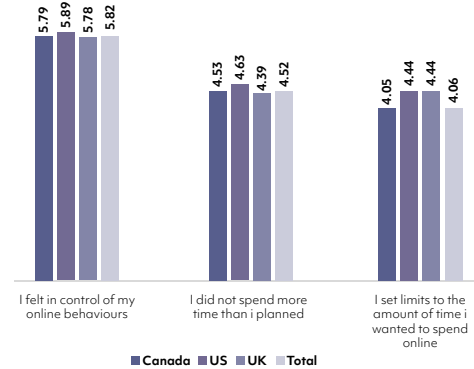
11

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results**
- 12 References

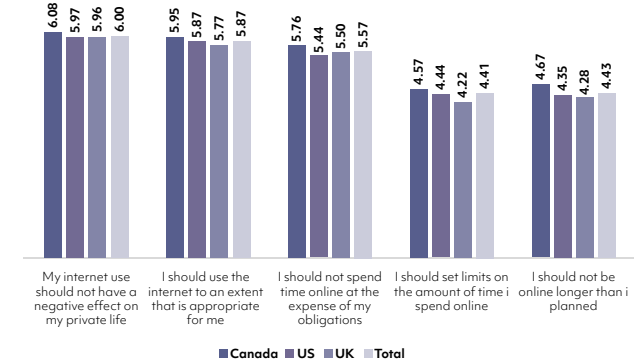
Digital wellbeing



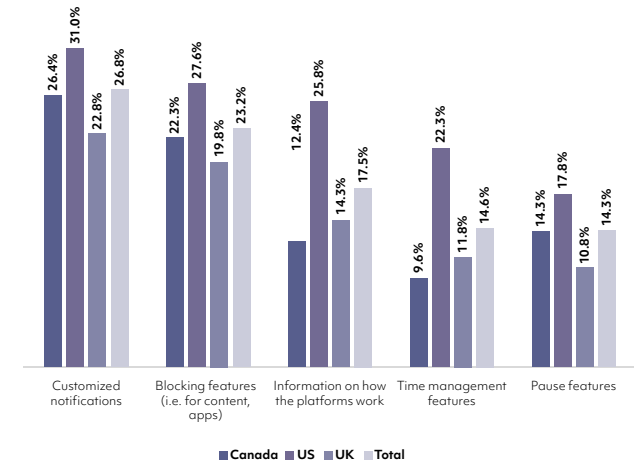
Participation (often or always) in online activities over past month



Mean level of agreement on digital wellbeing behaviour scale items (scale 1-7)



Mean level of agreement on digital wellbeing beliefs scale items (1-7 scale)



Use (most of the time or always) of online resources

11

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results**
- 12 References

Digital Wellbeing Outcomes and Demographic Groups with Lowest Scores

	Relatedness	Autonomy	Competence	Emotional Wellbeing
Age	Under 35 (Canada), 18-24 years (US and UK)	18-24 years (Canada and UK), Under 45 years (US)	18-24 year olds (Canada, US, UK); largely increases with age	18-24 year olds (Canada, US, UK); largely increases with age
Gender	Males (Canada, US)	Males (US)	Females (UK)	Females (US and UK)
Ethnic Background	Asian backgrounds and Hispanic/Latin American (Canada), Other ethnic groups (US, UK)	Asian backgrounds (Canada and UK), Multi-ethnic groups (US)	Asian backgrounds (Canada, US, UK)	Asian backgrounds and Hispanic/Latin American (Canada); Other ethnic backgrounds and Asian backgrounds (US); Multi-ethnic backgrounds (UK)
Education Status	Unrelated (Canada, US, UK)	University level degree and high school (Canada), no high school (US), high school (UK)	High school education (Canada and UK)	High school education (Canada)
Employment Status	Full time students (Canada and UK), unemployed (US)	Full time students (Canada, US, UK)	Full time students (Canada and UK), unemployed and full time student (US)	Full time students (Canada, US, UK)
Income	Lowest income bracket (UK)	Lowest income (Canada), \$150-199kCAD/\$119-159kUSD/£87-114k (US)	Lowest income bracket (Canada and UK)	Lowest income bracket (Canada and UK)
Marital Status	Single (Canada, US, UK)	Single (Canada, US, UK)	Single (Canada, US, UK)	Single (Canada, US, UK)

11

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results**
- 12 References

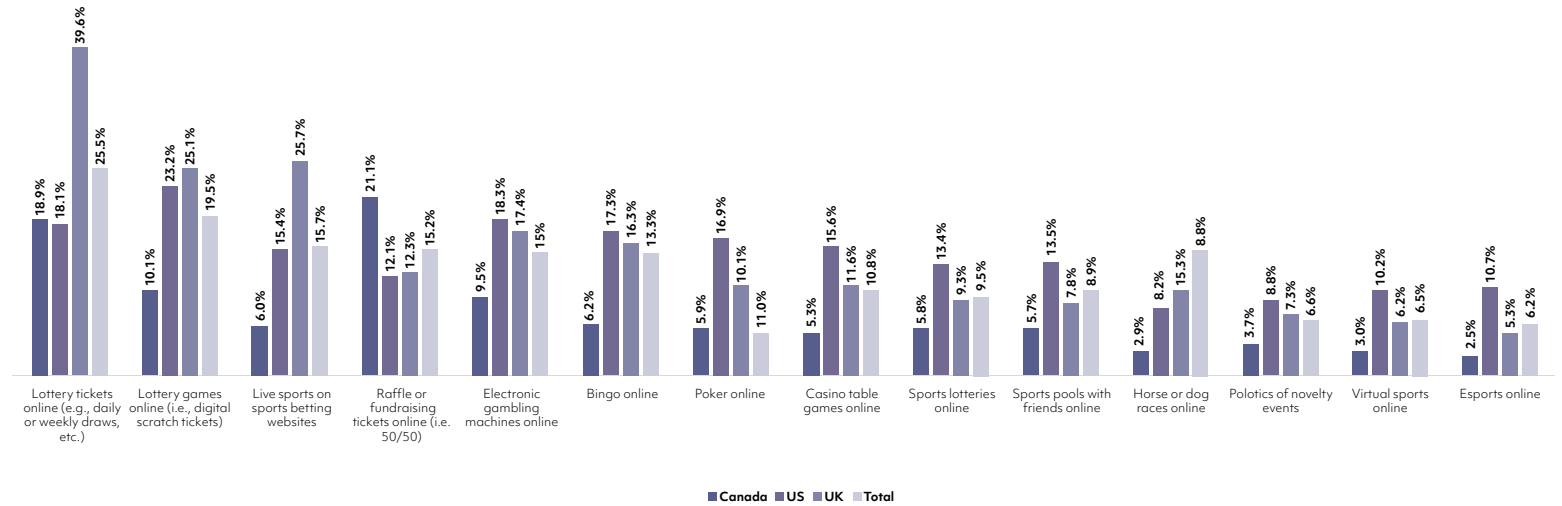
Digital Wellbeing Outcomes and Digital Wellbeing Beliefs and Behaviours with Lowest Scores

	Relatedness	Autonomy	Competence	Emotional Wellbeing
Time Online	Unrelated (Canada, US, UK)	Lower for less than an hour (UK, US); 7 hours or more (Canada)	Lower for less than an hour, 5-6 hours (UK); 5 hours or more (Canada)	Lower for more than 8 hours (UK); 7-8 hours (Canada)
Level of Online Activity	Positively associated (Canada, US, UK)	Negatively associated (Canada, US, UK)	Unrelated (Canada, US, UK)	Positively associated (US); negatively associated (UK)
Digital Confidence	Positively associated (Canada, US, UK)	Positively associated (UK)	Positively associated (Canada, US, UK)	Positively associated (Canada, US, UK)
Digital Wellbeing Beliefs	Positively associated (Canada, US, UK)	Positively associated (Canada, US, UK)	Positively associated (Canada)	Positively associated (Canada and US)
Digital Wellbeing Behaviours	Positively associated (Canada, US, UK)	Positively associated (Canada, US, UK)	Positively associated (Canada, US, UK)	Positively associated (Canada, US, UK)
Online Resources (Most of the time or Always)	Lower for pausing features (UK and US) Higher for information resources, time management features (US)	Lower for information resources (Canada, US, UK), time management features (Canada, US, UK), pause features (Canada, US, UK), customized notifications (UK and US), and blocking features (UK and US)	Lower for information resources (UK), time management features (UK and Canada), and pause features (Canada, US, UK) Higher for customized notifications and blocking features (Canada)	Lower for information resources (UK), time management features (UK), pause features (UK and Canada), and blocking features (UK) Higher for information resources, time management features (US)

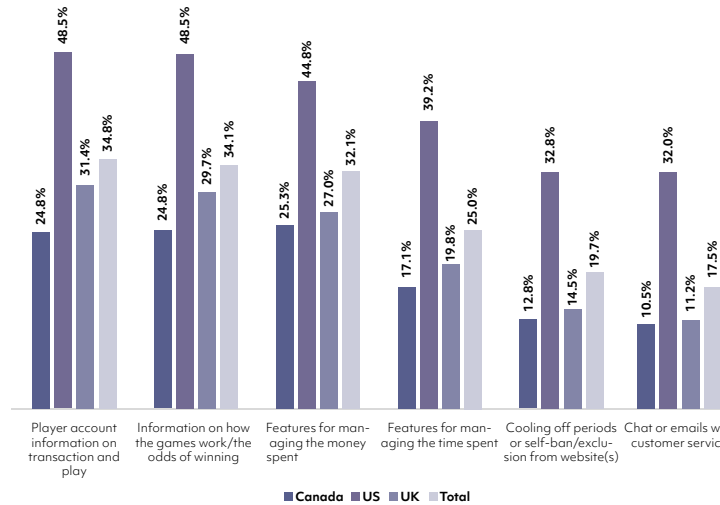
11

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results**
- 12 References

Online gambling



Online gambling games played in the past year



Use (most of the time or always) of online gambling resources

11

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results**
- 12 References

Online Gambling Harms and Demographic Groups with Highest Rates by Country

	Canada	US	UK
Age	18-24 years (2.11), followed by 35-44 years (2.00)	35-44 years (3.20)	18-24 years (2.75)
Gender	Males (1.46)	Males (2.44)	Unrelated
Ethnic Background	Asian backgrounds (2.55)	(low Ns)	(low Ns)
Education Status	(low Ns)	(low Ns)	Unrelated
Employment Status	Full time students (1.69)	Employed part (2.53) or full time (2.46)	Full time students (2.77)
Income	Lowest income bracket (1.70)	\$80kUSD/£58k80kUSD/£58k and above (2.63+)	Unrelated
Marital Status	Single (1.72)	Married/civil partnership (2.55)	Single (1.71)

11

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results**
- 12 References

Online Gambling Harms and Safer Gambling Beliefs and Behaviours with Highest Rates by Country

	Canada	US	UK
Game Type	All games, except raffles	All games	All games, except draw lottery
Frequency	Harms increase with frequency; highest among those who play every day (3.62)	Harms increase with frequency; highest among those who play every day (5.37)	Harms increase with frequency; highest among those who play every day (2.93)
Session Length	Positively associated	Positively associated	Positively associated
Number of Accounts	Positively associated	Positively associated	Positively associated
Monthly Spend	\$167CAD/\$134USD/£96 and above (4.63)	\$42-63CAD/\$33-50USD/£25-37 (3.64)	\$167CAD/\$134USD/£96 and above (3.23)
Psychological Needs	Positively associated with challenge and mastery, self-affirmation, risk and excitement, affiliation, and detachment	Positively associated with challenge and mastery, self-affirmation, risk and excitement, affiliation, and detachment	Positively associated with challenge and mastery, self-affirmation, risk and excitement, affiliation, and detachment
Safer Play Beliefs & Behaviours	Negatively associated with honesty and control, personal responsibility, precommitment, and gambling literacy	Negatively associated with honesty and control, personal responsibility, precommitment, and gambling literacy	Negatively associated with honesty and control, personal responsibility, precommitment, and gambling literacy
Online Gambling Resources (Most of the time or Always)	Use time management features, chat or emails with customer service, or cooling off periods of self-bans	Use information on how the games work, time management features, money management features, player account information, chat or emails with customer service, or cooling off periods of self-bans	Use information on how the games work, time management features, money management features, player account information, chat or emails with customer service, or cooling off periods of self-bans

11

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results**
- 12 References

Problem Gambling and Demographic Groups with Highest Rates by Country

	Canada	US	UK
Age	18-24 years (29.8%)	35-44 years (49.1%)	18-24 years (42.6%)
Gender	Males (20.0%)	Males (37.7%)	Unrelated
Ethnic Background	Asian background (38.7%)	Unrelated	Asian background (47.9%)
Education Status	(low Ns)	(low Ns)	(low Ns)
Employment Status	(low Ns)	(low Ns)	(low Ns)
Income	(low Ns)	\$150kCAD/\$119kUSD/£87k and above (43%+)	(low Ns)
Marital Status	(low Ns)	(low Ns)	Single (23.5%)

11

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results**
- 12 References

Problem Gambling and Safer Gambling Beliefs and Behaviours with Highest Rates by Country

	Canada	US	UK
Game Type	All games, except raffles	All games	All games, except draw lottery
Frequency	Once a week or more (54.2%)	Daily (15.3%)	Daily (9.4%)
Session Length	Spend more time per session (47 minutes)	Unrelated	Spend more time per session (50 minutes)
Number of Accounts	More accounts (2.87)	More accounts (5.19)	More accounts (4.07)
Monthly Spend	\$125CAD/\$100USD/£73 and over (23.4%)	\$167CAD/\$134USD/£96 and over (9.4%)	\$167CAD/\$134USD/£96 and over (11.1%)
Psychological Needs	Higher levels of challenge and mastery, self-affirmation, detachment, risk and excitement, and affiliation	Higher levels of challenge and mastery, self-affirmation, detachment, risk and excitement, and affiliation	Higher levels of challenge and mastery, self-affirmation, detachment, risk and excitement, and affiliation
Safer Play Beliefs & Behaviours	Lower levels of honesty and control, personal responsibility, precommitment, and gambling literacy	Lower levels of honesty and control, personal responsibility, precommitment, and gambling literacy	Lower levels of honesty and control, personal responsibility, precommitment, and gambling literacy
Gambling Harms	Higher harms (4.86)	Higher harms (4.65)	Higher harms (5.00)

11

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results**
- 12 References

Associations between online gambling & digital wellbeing

Digital Wellbeing Outcomes and Past Year Participation vs Non Participation in Online Gambling by Country

	Canada	US	UK
Relatedness	.66 vs. .82	No difference	No difference
Autonomy	No difference	1.51 vs. 2.06	1.78 vs. 2.05
Competence	1.05 vs. 1.21	1.10 vs. 1.33	No difference
Emotional Wellbeing	6.91 vs. 7.79	No difference	8.19 vs. 9.32

11

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results**
- 12 References

Online Gambling Psychological Needs and Digital Wellbeing Outcomes

	Relatedness	Autonomy	Competence	Emotional Wellbeing
Challenge & Mastery	Negatively associated (Canada), Positively associated (US)	Negatively associated (UK, US, Canada)	Negatively associated (UK and Canada)	Negatively associated (UK and Canada), Positively associated (US)
Self-Affirmation	Negatively associated (Canada and UK)	Negatively associated (UK, US, Canada)	Negatively associated (UK, US, Canada)	Negatively associated (UK and Canada)
Detachment	Negatively associated (Canada), Positively associated (US)	Negatively associated (UK, US, Canada)	Negatively associated (UK and Canada)	Negatively associated (UK and Canada), Positively associated (US)
Affiliation	Negatively associated (Canada), Positively associated (US)	Negatively associated (UK, US, Canada)	Negatively associated (UK and Canada)	Negatively associated (UK and Canada), Positively associated (US)
Risk & Excitement	Positively associated (US)	Negatively associated (UK, US, Canada)	Negatively associated (UK and Canada)	Negatively associated (Canada), Positively associated (US)

Past Year Problem vs. Non Problem Gambling and Digital Wellbeing Outcomes by Country

	Canada	US	UK
Relatedness	.15 vs. .76	.41 vs. 1.23	.24 vs. .88
Autonomy	.37 vs. 1.91	.45 vs. 2.00	.54 vs. 2.02
Competence	.25 vs. 1.20	.35 vs. 1.45	.29 vs. 1.23
Emotional Wellbeing	2.16 vs. 7.79	6.44 vs. 11.49	3.34 vs. 9.16

References

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References**



12

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References**

References

Alter, A. (2017). *Irresistible: The rise of addictive technology and the business of keeping us hooked*. New York: Penguin Press.

Altuqwairiqi, M., Jiang, N., & Ali, R. (2019). Problematic Attachment to Social Media: Five Behavioural Archetypes. *Environmental Research and Public Health*, 16(12), 1-36.

Alutaybi, A., Al-Thani, D., McAlaney, J., & Ali, R. (2020). Combating Fear of Missing Out (FoMO) on Social Media: The FoMO-R Method. *International Journal of Environmental Research and Public Health*, 17(17), 6128.

Andreassen, C. S., Billieux, J., Griffiths, M. D., Kuss, D. J., Demetrovics, Z., Mazzoni, E., & Pallesen, S. (2016). The Relationship Between Addictive Use of Social Media and Video Games and Symptoms of Psychiatric Disorders: A Large-Scale Cross-Sectional Study. *Psychology of Addictive Behaviors*, 30(2), 252-262.

Arnavut, A., Nuri, C., & Direktor, C. (2018). Examination of the relationship between phone usage and smartphone addiction based on certain variables. *Anales De Psicologia*, 34(3), 446-450.

Basham, P., & Luik, J. (2011). The Social Benefits of Gambling. *Economic Affairs*, 31(1), 9-13.

Bauman, S., & Rivers, I. (2015). *Mental health in the digital age*. Basingstoke: Palgrave Macmillan.

Bers, M. U. (2012). *Designing digital experiences for positive youth development: From playpen to playground*. Oxford: Oxford University Press.

Bostrom, P., & Broberg, M. (2017). Protection and restriction: A mixed-methods study of self reported well-being among youth with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, 31(1), 164-176.

12

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References**

- Budd, L., Fidler, L., & Anand, A. (2016). Gaining competence through social media. *Canadian Medical Association Journal*, 188(13), 311-312.
- Browne, M., Goodwin, B. C., & Rockloff, M. J. (2018). Validation of the Short Gambling Harm Screen (SGHS): A tool for assessment of harms from gambling. *Journal of Gambling Studies*, 34(2), 499-512.
- Burke, M., Marlow, C., & Lento, T. M. (2010). Social network activity and social well-being. In *International Conference on Human Factors in Computing Systems* (pp. 10-15). CHI 2010.
- Burr, C., Taddeo, M., & Floridi, L. (2020). The Ethics of Digital Well-Being: A Thematic Review. *Science and Engineering Ethics*, 26(4), 2313-2343.
- Calvo, R. A., & Peters, D. (2017). *Positive computing: Technology for wellbeing and human potential*. Cambridge, MA: MIT Press.
- Cauberghe, V., Wesenbeeck, I. V., De Jans, S., Hudders, L., & Ponnet, K. (2020). How Adolescents Use Social Media to Cope with Feelings of Loneliness and Anxiety During COVID-19 Lockdown. *Cyberpsychology, Behavior, and Social Networking*, 1(1), 1-9.
- Cecchinato, M., Hiniker, A., Munson, S. A., & Rooksby, J. (2019). Designing for Digital Wellbeing: A Research & Practice Agenda. In *2019 CHI Conference*. CHI.
- Collins, D., & Lapsley, H. (2003). The Social Costs and Benefits of Gambling: An Introduction to the Economic Issues. *Journal of Gambling Studies*, 19(1), 123-148.
- Coverdale, G. E., & Long, A. F. (2015). Emotional wellbeing and mental health: An exploration into health promotion in young people and families. *Perspectives in Public Health*, 135(1), 27-36.
- Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D., Oishi, S., & Biswas-Diener, R. (2009). New measures of well-being: Flourishing and positive and negative feelings. *Social Indicators Research*, 39(1), 247-266.
- Desmet, P., & Pohlmeier, A. (2013). Positive Design: An Introduction to Design for Subjective Well-Being. *International Journal of Design*, 7(3), 5-19.

12

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References**

Dhir, A., Yossatorn, Y., Kaur, P., & Chen, S. (2018). Online social media fatigue and psychological wellbeing—A study of compulsive use, fear of missing out, fatigue, anxiety and depression. *International Journal of Information Management*, 40(1), 141-152.

Dowthwaite, L., Vallejos, E. P., Creswick, H., Portillo, V., Patel, M., & Zhao, J. (2020). Developing a measure of online wellbeing and user trust. arXivpreprint arXiv:2007.14273.

Duplaga, M., & Szulc, K. (2019). The Association of Internet Use with Wellbeing, Mental Health and Health Behaviours of Persons with Disabilities. *International Journal of Environment Research and Public Health*, 16(18), 3252.

Giraldo-Luque, S., Afanador, A., Nicolas, P., & Fernandez-Rovira, C. (2020). The Struggle for Human Attention: Between the Abuse of Social Media and Digital Wellbeing. *Healthcare (Basel)*, 8(4), 497-512.

Granic, I., Morita, H., & Scholten, H. (2020). Young People's Digital Interactions from a Narrative Identity Perspective: Implications for Mental Health and Wellbeing. *Psychological Inquiry*, 31(3), 258-270.

Grieve, R., & Watkinson, J. (2016). The Psychological Benefits of Being Authentic on Facebook. *Cyberpsychology, Behavior, and Social Networking*, 19(7), 420-425.

Elhai, J., McKay, D., Yang, H., Minaya, C., Montag, C., & Asmundson, G. J. (2020). Health anxiety related to problematic smartphone use and gaming disorder severity during COVID-19: Fear of missing out as a mediator. *Human Behavior and Emerging Technologies*, 57(1), 1-10.

Ferris, J., & Wynne, H. (2001). *The Canadian problem gambling index*. Ottawa, ON, Canada: Canadian Centre on Substance Abuse.

Finlay-Jones, A., Boyes, M., Perry, Y., & Sirois, F. M. (2020). Online self-compassion training to improve the wellbeing of youth with chronic medical conditions: Protocol for a randomised control trial. *BMC Public Health*, 20(1), 106.

Harding S., Morris R., Gunnell D., Ford T., Hollingworth W., Tilling K., Evans R., Bell S., Grey J., Brockman R., Campbell R., Araya R., Murphy S., Kidger J. (2019) Is teachers' mental health and wellbeing associated with students' mental health and wellbeing? *Journal of Affective Disorders*. 242 (1), 180-187.

Hassenzahl, M., Echoldt, K., Diefenbach, S., Laschke, M., Len, E., & Kim, J. (2013). Designing Moments of Meaning and Pleasure. *Experience Design and Happiness. International Journal of Design*, 7(3), 21-31.

12

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References**

Hensel, J. M., Ellard, K., Koltek, M., Wilson, G., & Sareen, J. (2019). Digital Health Solutions for Indigenous Mental Well-Being. *Current Psychiatry Reports*, 21(68), 68.

Higuchi, S., Mihara, S., Kitayuguchi, T., Miyakoshi, H., Ooi, M., Maezono, M., . . . Matsuzaki, T. (2020). Prolonged use of Internet and gaming among treatment seekers arising out of social restrictions related to COVID-19 pandemic. *Psychiatry and Clinical Neurosciences*, 74, 607-608.

Hilbrecht, M., & Mock, S. E. (2019). Low-risk, moderate-risk, and recreational gambling among older adults: Self-complexity as a buffer for quality of life. *Applied Research in Quality of Life*, 14(5), 1205-1227.

Hill, R., Betts, L. R., & Gardner, S. E. (2015). Older adults' experiences and perceptions of digital technology: (Dis)empowerment, wellbeing, and inclusion. *Computers in Human Behavior*, 48(1), 415-423.

Hui, B., Wu, A., Siu, N., Chung, M., & Pun, N. (2019). The Effects of Need Satisfaction and Dissatisfaction on Flourishing among Young Chinese Gamers: The Mediating Role of Internet Gaming Disorder. *International Journal of Environmental Research and Public Health*, 16(22), 4367.

Jackson, L. A., Zhao, Y., Koleniclll, A., Fitzgerald, H. E., Harold, R., & Von Eye, A. (2008). Race, Gender, and Information Technology Use: The New Digital Divide. *Cyberpsychology and Behavior*, 11(4), 2008th ser.

Klapperich, H., Laschkle, M., Hassenzahl, M., Becker, M., Curlis, D., Frackenpohl, T., . . . Cain, R. (2019). Mind the gap: A social practice approach to wellbeing-driven design. In *Design for Wellbeing*. New York: Routledge.

Klapperich, H., Laschke, M., & Hassenzahl, M. (2020). The positive practice canvas: Gathering inspiration for wellbeing-driven design. *The 10th Nordic Conference* (pp. 1-9).

Lin, L. Y., Sidani, J. E., Shensa, A., Radovic, A., Miller, E., Colditz, J. B., . . . Primack, B. A. (2016). Association between social media and depression among U.S. young adults. *Depression & Anxiety*, 33(4), 323-331.

McBride, D. L. (2017). Daily Digital Technology Use Linked to Mental Health Symptoms for High-risk Adolescents. *Journal of Pediatric Nursing*, 36(1), 254-255.

McGregor, S. C., Lawrence, R. G., & Cardona, A. (2016). Personalization, gender, and social media: Gubernatorial candidates' social media strategies. *Information, Communication & Society*, 20(2), 264-283.

12

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References**

Minchev, Z., Krastev, E., Hristov, Y., & Tagarev, N. G. (Eds.). (2019). *Future Digital Society Resilience in the Informational Age*. Sofia, Bulgaria: SoftTrade.

Naqshbandi, K. Z., Liu, C., Taylor, S., Lim, R., Ahmadpour, N., & Calvo, R. (2020). "I Am Most Grateful." Using Gratitude to Improve the Sense of Relatedness and Motivation for Online Volunteerism. *Journal of Human-Computer Interaction*, 36(14), 1325-1341.

Orben, A. (2020). The Sisyphean Cycle of technology panics. *Perspectives on Psychological Science*, 15(1), 1143-1157.

Orji, R., Mandryk, R. L., & Vassileva, J. (2017). Improving the Efficacy of Games for Change Using Personalization Models. *ACM Transactions on Computer-Human Interaction*, 24(5), 1-22.

Parke, J., Williams, R. J., & Schofield, P. (2019). Exploring psychological need satisfaction from gambling participation and the moderating influence of game preferences. *International Gambling Studies*, 19(3), 508-531.

Parry, D., Le Roux, D. B., Morton, J., Pons, R., Pretorius, R., & Schoeman, A. (2020). *Digital Wellbeing Applications: Adoption, Use and Perceived Effects* (pp. 1-34, Rep.). Stellenbosch University Press.

Peng, W., Lin, J., Preiffer, K. A., & Winn, B. (2012). Need Satisfaction Supportive Game Features as Motivational Determinants: An Experimental Study of a Self-Determination Theory Guided Exergame. *Media Psychology*, 15(1), 175-196.

Peters, D., Calvo, R. A., & Ryan, R. M. (2018). Designing for Motivation, Engagement, and Wellbeing in Digital Experience. *Frontiers in Psychology*, 9(1), 1-15.

Peters, D., Ahmadpour, N., & Calvo, R. A. (2020). Tools for Wellbeing-Supportive Design: Features, Characteristics, and Prototypes. *Multimodal Technologies and Interact*, 4, 1-18.

Primack, B. A., Shensa, A., Escobar-Viera, C. G., Barrett, E. L., Sidani, J. E., Colditz, J. B., & James, A. E. (2017). Use of multiple social media platforms and symptoms of depression and anxiety: A nationally representative study among U.S. young adults. *Computers in Human Behavior*, 69(1), 1-9.

Przybylski, A. K., Weinstein, N., Murayama, K., Lynch, M. F., & Ryan, R. M. (2012). The Ideal Self at Play: The Appeal of Video Games That Let You Be All You Can Be. *Psychological Science*, 23(69), 69-76.

12

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References**

Reynolds, L., & Parker, L. (2018). Digital Resilience: Stronger Citizens Online (Rep.). Institute for Strategic Dialogue.

Richards, M., & Dixon, L. B. (2020). Resilience. *Psychiatric Services*, 71(8).

Rigby, S., & Ryan, R. M. (2011). New directions in media. Glued to games: How video games draw us in and hold us spellbound. Praeger.

Rooksby, J., Asadzadeh, P., Rost, M., Morrison, A., & Chalmers, M. (2016). Personal tracking of screen time on digital devices, in: Proceedings of the 2016 CHI conference on human factors in computing systems, 284–296.

Rozgonjuk, D., Sindermann, C., Elhai, J. D., & Montag, C. (2020). Fear of Missing Out (FoMO) and social media's impact on daily-life and productivity at work: Do WhatsApp, Facebook, Instagram, and Snapchat Use Disorders mediate that association. *Addictive Behaviors*, 110(1), 106487.

Ryan, R. M., & Deci, E. L. (2000). Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being. *American Psychologist*, 55(1), 68-78.

Ryan, R. M., Rigby, C. S., & Pzybylski, A. (2006). The Motivational Pull of Video Games: A Self-Determination Theory Approach. *Motivation and Emotion*, 30(1), 344-360.

Saariketo, M., (2019). Encounters with self-monitoring data on ICT use. *Nordicom Review* 40(1), 125–140.

Sheldon, K., Abad, N., & Hinsch, C. (2011). A Two-Process View of Facebook Use and Relatedness Need-Satisfaction: Disconnection Drives Use, and Connection Rewards It. *Journal of Personality and Social Psychology* (100), 4th ser., 766-775.

Shove, E., Pantzar, M., & Watson, M. (2012). *The Dynamics of Social Practice: Everyday Life and How It Changes*. London, UK: SAGE Publications Ltd.

Stark, S. (2021). *Supporting the Digital Wellbeing of Young People: Recommendations for Moving forward using Purposeful Collaboration*. Toronto: RG Plus.

Sullivan, L. S., & Reiner, P. (2019). Digital Wellness and Persuasive Technologies. *Philosophy & Technology*, 1-12.

12

- 01 Executive summary
- 02 Foreword
- 03 What is digital wellbeing?
- 04 How does online gambling fit into digital wellbeing?
- 05 What does digital wellbeing look like in Canada, the US & the UK?
- 06 What does online gambling look like in Canada, the US & the UK?
- 07 How is online gambling associated with digital wellbeing?
- 08 Key considerations and next steps
- 09 Methodology
- 10 Acknowledgements
- 11 Detailed Results
- 12 References**

Suthcliffe, A. G., Binder, J. F., & Dunbar, R. I. (2018). Activity in Social Media and Intimacy in Social Relationships. *Computers in Human Behavior*, 85(1).

Sun, Y., Shi, J., Lu, L., Strang, J., Kosten, T., Schumann, G., . . . Li, Y. (2020). Increased addictive Internet and Substance Use Behavior During the COVID-19 Pandemic in China. *The American Journal on Addictions*, 29(4), 268-270.

Tamborini, R., Bowman, N. D., Eden, A., Grizzard, M., & Organ, A. (2011). Defining Media Enjoyment as the Satisfaction of Intrinsic Needs. *Journal of Communication*, 60(4), 758-777.

Taylor, C. B., Fitzsimmons-Craft, E. E., & Graham, A. K. (2020). Digital technology can revolutionize mental health services delivery: The COVID-19 crisis as a catalyst for change. *International Journal of Eating Disorders*, 53(7), 1155-1157.

Tough, H., Siegrist, J., & Fekete, C. (2017). Social relationships, mental health and wellbeing in physical disability: A systematic review. *BMC Public Health*, 17(414), 414.

van Dooren, M., Visch, V., Spijkerman, Gooseens, R., & Hendriks, V. (2016). Personalization in Game Design for Healthcare: A Literature Review on its Definitions and Effects. *International Journal of Serious Games*, 3(4).

Vanden Abeele, M., De Wolf, R., & Ling, R. (2018). Mobile Media and Social Space: How Anytime, Anyplace Connectivity Structures Everyday Life. *Media and Communication*, 6(2), 5-14.

Vanden Abeele, M. (2020). Digital Wellbeing as a Dynamic Construct. *Communication Theory*.

Velez, J. A., Ewoldsen, D. R., Hanus, M. D., Song, H., & Villarreal, J. A. (2018). Social comparisons and need fulfillment: Interpreting video game enjoyment in the context of leaderboards. *Communication Research Reports*, 35(5), 424-433.

Winstone, J. (2002). Centre for Visual Cognition, University of Southampton, presentation to the British Psychological Society annual conference, 11 July.

Wood, R. T., Wohl, M. J., Tabri, N., & Philander, K. (2017). Measuring responsible gambling amongst players: Development of the Positive Play Scale. *Frontiers in Psychology*, 8:227, 1-12.

Zhu, L. (2020). The psychology behind video games during COVID-19 pandemic: A case study of Animal Crossing: New Horizons. *Human Behavior and Emerging Technologies*, 1-3.



All in for Safer Gambling

ResponsibleGambling.org

411 Richmond Street East, Suite 205,
Toronto, ON, Canada M5A 3S5

Fax: +1 (416)-499-8260

Phone: +1 (416) 499-9800

Follow us    