

Youth Mental Health in the Digital Age: Youth Perspectives on the Relationship Between
Digital Technology and their Mental Health

by

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B.A., University of Victoria, 2018

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Abstract

New generations of youth are coming of age at a time when digital technology is omnipresent, where devices are our constant companions, extensions of ourselves. It is not yet fully known what effect this mass consumption of digital technology will have on current and future generations. Although not entirely negative, dramatic shifts in human interaction and well-being have already presented themselves, begging understanding. Among these shifts are rising rates of youth struggling with mental health – especially since the COVID-19 pandemic. Various international and domestic governing bodies highlight the importance of this burgeoning field of research, turning in part to our technology-loaded ecosystems for answers. Early research has established associations between increased digital screen usage and youth mental ill-health. Questions remain, however and there exist large gaps in counselling psychology research as to how we can best support youth in the digital age.

Situated within this debate, the current study establishes a theoretical basis as to the role digital technology plays in youth mental health. The study employs a qualitative methodology, including semi-structured interviewing and thematic analysis. Eight youth were interviewed and asked to share their experiences of the relationship between their devices and their well-being. Thematic findings highlight a conflictual relationship between digital technology use and youth mental health, affecting their relationships with others, themselves, and the world around them. Because digital technology consumption on this scale is so new, this is one of the first available cohorts of youth to actively participate in the exploration of this topic, offering their unique voices in ways that will benefit broader societal understandings of technology and mental health.

Keywords: youth mental health, digital technology, qualitative research, semi-structured interviews, thematic analysis, COVID-19

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Dedication

Cousin Gilly, this work is dedicated to you. Thank you for everything you offered this world, and all that you gave to those lucky enough to have been in your orbit. You will always be my forever inspiration in this work.

CHAPTER 1: INTRODUCTION

Youth in the 21st century are avid consumers of technology. Digital technology (digital devices such as smartphones, tablets, and laptops etc.) is omnipresent, whereby devices are their constant companions, extensions of themselves (Organisation for Economic Co-operation and Development [OECD], 2017; Pew Research Centre, 2018). It is not yet fully known what effect this mass consumption of digital technology will have on current and future generations.

Although not entirely negative, dramatic shifts in human interaction and well-being have presented themselves since the dawn of digital technologies, begging understanding (Keles et al., 2019; OECD, 2018). Among these shifts are rising rates of youth struggling with mental health, seen in emerging correlational research (Canadian Paediatric Society, 2019; Canadian Society for Exercise Physiology [CSEP], 2017; Twenge & Campbell, 2018; United Nations International Children's Emergency Fund [UNICEF], 2017). This study set to explore youth mental health in the context of today's uncertain world, diving deeply into the lived experiences of youth to explore how they understand the relationship between their mental health and digital technology use.

General Problem Statement

The purpose of this study was to explore youth perspectives on the relationship between their digital technology use and their mental health. Not only is research in this field limited, but it is severely lacking in youth voice (Martin et al., 2020; Middaugh et al. 2017; Mental Health Commission of Canada, 2015). To me, we are at a fascinating point in time in which no generation has experienced this level of digital technological consumption from such a young age (Hooft Graafland, 2018, United Nations, 2014). Youth in middle-school to high-school today (ages 11-18) are the first age group to grow up not knowing life without digital devices

(Canadian Paediatric Society, 2019; CSEP, 2017). Yet research in the field thus far employs methodologies that regard youth as observable subjects, reported on and spoken about, often by informants (McCartan et al., 2012; Middaugh et al., 2017). This study aimed to center youth voices in their understandings of the relationship between their mental health and their digital technology use. As this thesis will delineate, it is understood that youths' lived experiences with digital technology and mental health are most appropriately studied from their perspective.

Before delving into this study's research question, it is important to situate the study within the context of the coronavirus pandemic (COVID-19) and the state of the world at the time of writing. Never before have humans leaned so heavily on digital technology as a mechanism for connection, work, play, and study (Bansal, 2020; The Centre for Addiction and Mental Health [CAMH], 2020a; Government of Canada, 2020a). Our ability to communicate with others, do our jobs, go to school, access healthcare, food, and social supports is now *reliant* on our smartphones, laptops, and tablets (Bansal, 2020; Bartlett et al., 2020; Smith, 2020). While our devices have been instrumental in our day-to-day functioning, the influences of this rapid, dramatic increase in digital technology consumption are beginning to be seen in emerging correlational research (Huckins et al., 2020; Nagata et al., 2020; Xiang et al., 2020). Combined with physical distancing, youth in particular struggled with the sudden virtual reality for schooling and socializing during COVID-19 lockdowns (Bartlett et al., 2020; Boisvert, 2020; Galea et al., 2020; Smith, 2020; UNICEF, 2020; Xiang et al., 2020). Graduations have been cancelled, sporting events postponed, life plans on hold and up in the air, and connection to others restricted. According to the most recent research (Cost et al., 2021; Mental Health Commission of Canada, 2020; UNICEF, 2021), life as a teen in 2020/2021 appears to be

unsettling, unsure, and isolating, making research on youth mental health appear more pressing than ever.

Although this research was conceived of before COVID-19, the events of 2020/2021 have fundamentally informed the continuation of this project. The global pandemic, in addition to the ongoing cries for racial justice in our country and beyond have been sewn into the fabrics of this project – informing every idea, conversation, decision, and reflection. For example, conversations between participants and myself frequently cycled back to the events of 2020/2021, it seemed we could not discuss mental health nor digital technology without couching those discussions in the context of COVID-19, social and racial justice movements across the United States and here at home, as well as the ongoing ecological crises associated with global climate change. Not a single word spoken, thought had, nor statement written was done without the recognition of the cultural and societal significance of this past year; significance that beckons projects such as this to centre the voices of those most affected by our social systems and structures to learn how we can best support those struggling in the context of today's digital (and uncertain) world.

Research Question

Situated in the context of the aforementioned concerns, this research explores the following question: *How do youth understand the relationship between digital technology use and their mental health?* This qualitative research gives voice to those most impacted by the subject matter of the study, centering youth perspective as central to understanding their experiences. In this study, eight British Columbian youth were interviewed to better understand how they define the relationship between their digital technology use and their mental health. In partnering with youth who are accustomed to this new technological experience and its

relationship with mental health, the qualitative methodology used ensures that youth voices are being heard in future discussions and practice regarding the support of youth mental health in a technological and ever-changing world. The primary rationale for employing qualitative methods in this study, as discussed later in this thesis, was to yield well-grounded, rich descriptions of how youth understand the relationship between digital technology use and their mental health.

Ultimately, technology's effect on youth mental health is still relatively unknown. Several larger scale quantitative studies (see Przybylski & Weinstein, 2017; Twenge & Campbell, 2018) have examined the relations between digital screen use and adolescent mental health, but questions remain unanswered (Mental Health Commission of Canada, 2015; Twenge & Campbell, 2018; UNICEF, 2017). By asking: *How do youth understand the relationship between digital technology use and their mental health*, the current study seeks to involve youth directly, in order to understand the relationship between their screen use and their mental health. By exploring how youth understand the relationship between their digital technology use and their mental health, this research is better positioned to elucidate possible pathways for growth alongside tech in a meaningful, productive, and healthy way.

Researcher Positionality

Before delving into the literature in the field and methodology of this study, it is important to attend to my position as a researcher in this particular project. Born in 1995, I straddle an interesting generational divide. To a certain extent, I both know what it is like to live with and without digital technology. For example, my older cousin (by only a few years) has always been amazed by the rate at which I naturally assumed digital technology. Compared to my brother who is only three years younger than me, however, I feel years behind. He and his peers' breadth and depth of technological consumption is staggering, and I constantly find

myself asking questions and needing help. In our experience, this three-year age gap even within family has signaled a divide not only in knowledge, but our values, beliefs, lived experience, and worldviews.

Of course, digital technology is not the only factor at play; gender, interests, and skills all play a part in our adoption of technology and subsequent experiences of the world. There is no doubt, however, that my personal experience has fueled my interest in this topic and raised some interesting empirical questions for me. Beyond my familial observations, working with struggling youth in a clinical capacity has further solidified my passion for supporting youth in this digital age. Furthermore, I have personally felt and seen the influence of digital technology on my own mental health and the health of my peers, family, and clients. I, like many of my peers and loved ones, find there to be a relationship between time spent on my device and my well-being. The more time I spend scrolling through my phone or staring at my computer, the less I feel good about myself.

Beyond my personal experience with digital technology use and my mental health, an increasing number of young people are accessing mental health support for digital technology related concerns, visible both through recent media investigations (The Wall Street Journal, 2021) and seen in my own clinical work. Working with youth in a clinical capacity over the past several years has forced me to reflect professionally on how digital technology use may be playing into children and adolescents' presenting concerns – exacerbating already-existing issues, and spurring others. From body-image concerns in increasingly young girls, to teens feeling isolated, anxious, and stressed-out parents asking how to reduce their child's screen-time. As part of our clinical intake assessments today, we now ask how many hours a day the child/teen is spending on screens to help inform case conceptualizations and treatment planning.

While digital technology is by no means the only reason young people and families are struggling today, it seems to be at least a contributing factor, based on observations and reports by families and youth, and in my clinical opinion. My interest in pursuing this project has been in part to learn how to best support these youth, improving my clinical practice and those of my colleagues in this digital age.

CHAPTER 2: LITERATURE REVIEW

Youth in the 21st century are avid consumers of technology (OECD, 2019; UNICEF, 2017; World Health Organization [WHO], 2015). In 2017, teens reported spending more than two hours every weekday on a device after school (an increase of over 40 minutes since 2015), and more than three hours every weekend day (OECD, 2017; Pew Research Centre, 2018). Not only are youth on devices more, they are also doing so at increasingly younger ages (Hooft Graafland, 2018; United Nations, 2014). For example, some research suggests that preschoolers become familiar with digital devices before they are exposed to books (Hopkins et al., 2013), with recent figures from the OECD (2019) showing that 52% of 3-4-year-olds and 82% of 5-7-year-olds are frequently using digital technologies in the United Kingdom (Ofcom, 2019). In the U.S., a national survey of children's technology use reported that 85% of parents with children under the age of six allow their young children to use digital technology regularly in the home (Erikson Institute, 2016). Closer to home, the Canadian Paediatric Society (2017) reports that children three to five years old spend an average of two hours per day in front of screens. These figures show that children are using technology at increasingly younger ages, even compared to five years ago (OECD, 2019; Public Health Agency of Canada, 2019; Statistics Canada, 2018). These youth are also increasingly in crisis, as diagnoses of child and adolescent anxiety, in particular, have risen exponentially in the past ten years (Canadian Paediatric Society, 2019; CSEP, 2017; Twenge & Campbell, 2018; UNICEF, 2017).

This chapter is broken up into three sections. The first provides a historical overview of extant literature in the field of youth mental health and technology use, highlighting five relevant subfields. The second identifies general methodological and conceptual approaches to understanding this topic. The final section specifies the current state of knowledge in the field,

identifying gaps and highlighting the importance of this study in the context of existent knowledge.

Commonly Used Terms

At this point, it is important to delineate common concepts and terms used in the research and throughout this thesis. Digital technology use is typically defined quantitatively, as hours a day spent on screens. Screens could be cell phones, tablets, computers, electronic devices, electronic games, and television (Hoge et al., 2017; Pierce, 2009; Twenge & Campbell, 2018). The majority of recent research in this field, however, looks at smartphones as the primary screen-time measure (Twenge et al., 2018). Also used in this study and beyond is the term technological ‘consumption’. The consumption of technology refers to the emotional, behavioural, patterned, ‘ingestion’ of digital technologies we see today (Belk, 2014; Haig, 2019; Hari, 2019; Pitta et al., 2012). In this research, however, the term *consume* will simply be synonymous with *use*.

It is important to note that in the literature and this study, the term ‘well-being’ is used as a *broad* term describing the overall experience of satisfaction with life, fulfilment, and sense of meaning or purpose (WHO, 2001). I generally agree with this definition and posit that as well-being is not a monolithic enterprise unto itself, a singular definition can be elusive. The WHO definition, however, provides a strong backbone for this project. As such, it can include psychological well-being, physical well-being, economic well-being, social well-being, emotional well-being, i.e., it is *more* than just a state of mind (Centers for Disease Control and Prevention [CDC], 2018).

By contrast, ‘mental health’ is defined as the *specific* signs and symptoms that signify a state of psychological and emotional well-being (Government of Canada, 2020a). Specifically, it

is defined as an array of measures including emotional stability, relationships with caregivers, self-control, diagnoses of mood disorders, and treatment of mental health issues (Government of Canada, 2020a; United Nations, 2014; WHO, 2002). This project primarily assumes the World Health Organization's (WHO) definition of mental health, as it is the most widely known. According to the WHO, mental health is a state of well-being in which the individual realizes their own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to contribute to their community (WHO 2001, p. 1). I would also add a relational element to this definition, whereby mental health signifies so much more than the absence of struggle (Keyes, 2002), but the feeling of connectedness to ourselves, those around us, and the world we live in (Galderisi et al., 2015; Gopalkrishnan, 2018; Siegel, 2019).

As 'youth' can often be a broad and nebulous term, it is important to clarify its meaning within this study. Research in this field typically uses 'youth' as a general term to convey the early stages of an individual's life. This study assumes the United Nations definition of youth as individuals between the ages of 15 and 24 years (United Nations General Assembly, 1989). Within the category of 'youth' (United Nations General Assembly, 1989), it is also important to distinguish between adolescents (13-18) and young adults (19-24) as there exist significant developmental distinctions between the two (e.g., the effects of puberty in adolescents, pre-frontal cortex maturation in young adults) (Blum, 1998; WHO, 2001).

Specifically, this study focuses on the adolescent population (with participants ranging from 13 to 18). Derived from Latin, adolescence roughly translates into "to grow up" (Macmillan Dictionary for Students, 1981, p. 14). As such, adolescence is a transitional stage of physiological, psychological, and emotional development (UNICEF, 2017; United Nations, 2014). The rationale for working with adolescents is that this developmental stage is rich with

budding personal and social insights, thoughts on emotion and behaviour, and reflections on mental health and society (Best et al., 2014; Canadian Paediatric Society, 2019; Keles et al., 2019; McCreary Centre Society, 2018). Further, from a pragmatic standpoint, students at this age were still within the BC Secondary School system and, thus, more available to commit to this type of inquiry.

Overview of Existing Literature

Although in its infancy, research in this field is gathering momentum as governments, schools, parents, and mental health professionals search for answers as to whether technology could be partially responsible for the observed increase in youth mental health concerns (McCreary Centre Society, 2018; WHO, 2015). Studies in the field have revealed significant, positive correlation between time spent on screens and heightened levels of social disconnectedness and anxiety (Keles et al., 2019; Naslund et al., 2020; OECD, 2018; Pierce, 2009; Stiglic & Viner, 2019; Twenge & Campbell, 2018). Similar studies have found that increased time on screens is correlated with decreases in general psychological well-being: lowering self-control, curiosity, and emotional stability (Hoge et al., 2017; Stiglic & Viner, 2019; Twenge et al., 2018). For example, anxiety is now the leading cause for mental health concern among youth worldwide, seeing a 20% increase in diagnoses between 2007 and 2012 (correlating with the dawn of the smartphone), and researchers suggest it is rising (McCreary Centre Society, 2018; OECD, 2019; WHO, 2015).

This research has led to governmental enactment of ‘screen-time guidelines’ for young people. The only screen-time guidelines set in Canada are for young children, and they are widely and increasingly unheeded (Bansal, 2020; CAMH, 2020a; Nagata et al., 2020). The Canadian Paediatric Society (2017) and Public Health Agency of Canada (2019) recommend less

than one hour a day of screen time for children aged two to five years, and no screen time for children younger than two years.

COVID-19 and Screen Time: Implications

Since this research is situated in the context of a global pandemic, it is important to first comment on recent findings within the field of screen-time and mental health. COVID-19 has affected many aspects of human lives in the developed world, including the patterns of digital screen use. It is no surprise that since the start of the pandemic, researchers began seeing noticeable upticks in screen-time, most notably due to stay-at-home restrictions (Moore et al., 2020; Nagata et al., 2020; Sultana et al., 2020; Vanderloo et al., 2020). The remote operations of schools, workplaces, and other organizations have resulted in constant use of digital technologies such as desktops, laptops, tablets, and mobile devices for both personal and professional communications (Robbins et al., 2020; Ting et al., 2020).

Several early studies during COVID-19 have focused on young people's rising screen time use, with younger individuals regarded as particularly vulnerable due to less developed brains and self-regulation skills (Janssen et al., 2020, Vanderloo, 2020). For example, a study of 254 Canadian families with young children reported an increase of recreational screen time in mothers, fathers, and children during COVID-19 as 74%, 61%, and 87%, respectively (Carroll et al., 2020). Moreover, a study conducted in China found that about 70% of 1033 participants spent more time looking at screens after the COVID-19 outbreak (Hu et al., 2020). It is thought that this increase in digital technology consumption may be affecting physical, psychological, relational, and social health, especially of children (UNICEF, 2020). Ultimately, however, research is still ongoing and no significant causal or correlational claims have been necessarily made. This qualitative study aims to contribute to the growing volume of research that may help

society learn how to support young people's mental health in this uncertain and highly digital time.

Physical Health

The inception of research in this field emerged as a response to physical health concerns of youth screen use (referring to an individual's physical activity level, diet, nutrition, sleep cycle, and level of consumption of alcohol or drugs) (CSEP, 2017; Carson et al., 2016; Saunders & Vallance, 2017). This research did not focus on smartphones specifically, but the physical health impacts of high screen (mostly T.V.) use (Tremblay et al., 2011). Alongside the accumulation of evidence of increased screen-based activity, came the realization that youths' lives were becoming increasingly sedentary. As such, researchers began studying the physical health effects of digital technology use, specifically smartphones, as they were becoming an increasing staple in young people's lives (Kim et al., 2015).

Overall, studies and subsequent systemic reviews suggest that screen time is deleteriously associated with numerous physical health indicators in child and youth populations, including adiposity, aerobic fitness, quality of life, academic achievement, and sleep (Carson et al., 2016; Kim et al., 2015; Saunders & Vallance, 2017). The majority of these early physical health researchers assumed a public health lens: advocating for policy aimed at minimizing the hazardous health consequences associated with screen time among children and youth (CSEP, 2017). Ultimately, research in this field (see Kim et al., 2015; Saunders & Vallance, 2017) is guided by the assumption that physical health is inextricably connected to mental health – that you cannot study one without the inclusion of the other.

Psychological Health

Around the same time as the public was awakening to the physical effects of digital technology use, other researchers were diving into the psychological effects. The majority of this research highlights the threatened psychological well-being of youth as avid consumers of screens (Abi-Jaoude et al., 2020; Pierce, 2009; Twenge & Campbell, 2018; Twenge et al., 2018). There is a large amount of research centering smartphone use and its correlation with youth stress, sleep disturbance, inattention, hyperactivity, depression, anxiety, feelings of isolation, self-efficacy, self-esteem, emotional regulation, behavioural issues, and suicide (Cho, 2020; Pierce, 2009; Volkmer & Lerner, 2019). Whilst published studies have shown associations between digital technology use and mental health symptoms or diagnoses (Twenge & Campbell, 2018; Twenge et al., 2018), causality has not been established (Thomée, 2018). In fact, some studies have shown the positive correlational effects of technology on youth mental health, particularly in the creation of accessible online interventions (Firth et al., 2017; Mental Health Commission of Canada, 2014).

Ultimately, however, most statistical findings (Abi-Jaoude et al., 2020; Cho, 2020; Twenge & Campbell, 2018; Twenge et al., 2018) in the field of youth psychological health suggest that digital technology use is at least playing some role in declining youth mental health – it is just unclear as to what, or how large, that role is.

Relational Health

Closely related to psychological health, is the smaller portion of research devoted to studying relational consequences and broader social effects of youth digital technology use. The predominant theory behind this research is that youth who are being raised as a generation of avid smartphone users are spending so much time on their devices that in-person human interaction is decreasing (Collier, 2016; McCreary Centre Society, 2018; OECD, 2018).

Researchers in this domain are concerned with the larger-scale implications of this theory, primarily the relational/emotional/human cost of disconnection. Studies in this field have focused primarily on romantic relationships, exploring how phones affect the quality of the relationship. For example, Lapierre and Lewis (2018) studied college students in committed relationships and found smartphone dependency was significantly linked to relationship uncertainty, with partners' perceived smartphone dependency predicting less relationship satisfaction. Interestingly, most research in this area finds that smartphone use itself does not affect relational health, rather the perceived psychological *reliance* on their device that affects the relationships (Lapierre, 2020; Lapierre & Lewis, 2018; Sbarra et al., 2019). In other words, relational health is affected when individuals become threatened by their partner's relationship to their smartphone. In addition, the phrase *technoference* (McDaniel & Radesky, 2018) has emerged within this domain, referring to the ways digital technology interferes and interrupts everyday social interactions, thus affecting the overall quality of relationships.

Ultimately, the relational health discussion has been a part of a wider societal conversation as to the role digital technology plays in human relationships. Several seminal authors (see Colier, 2016; Haig, 2019; Hari, 2019; Newport, 2019) have written eloquently on this debate, too, sparking international conversation around digital technology's role in our relationships, both with others and ourselves.

Merits of Digital Technology Use

It is also important to highlight the portion of research in this field that focuses on the merits of spending time on digital technology. As this study explores the *relationship* between digital technology and youth mental health, it acknowledges that the advantages of digital technology are relevant to the conversation. In the physical, psychological, and relational streams

mentioned above, researchers have praised advancements in digital technology for our enhanced well-being (Chassiakos & Stager, 2020; Haig, 2019; OECD, 2018; O'Keeffe & Clarke-Pearson, 2011; Tartari, 2015). Several of these authors have pointed to our improved quality of life with tech: increased opportunity for social connection, convenience of communication, ease of medical attention, increased understanding of other cultures, maintained and strengthened familial relationships etc. (Chassiakos & Stager, 2020; O'Keeffe & Clarke-Pearson, 2011; Tartari, 2015).

Another area of research regarding the merits of technology and youth well-being is within education, specifically considering the advantages of incorporating tech into the classroom. Technology is typically incorporated into education in two ways. The first, is integrating digital technologies into the classroom. Here, researchers study the effects of technology in the classroom on youth well-being, and have found that with structure and attentive supervision, students largely enjoy this form of learning and find it benefits their education (Eiland & Todd, 2019; Mykhnenko, 2016). In particular, teachers have found tech to increase student engagement, knowledge retention, collaboration, and help with specialized individual learning (Eiland & Todd, 2019).

The second, is moving the classroom online. This field is called *e-learning*, and prior to COVID-19, few people were aware of its increasing prevalence (Radha et al., 2020; Liaw, 2008). E-learning, also referred to as online learning, utilizes electronic technologies to access educational curriculum outside of a traditional classroom (Rosenberg & Foshay, 2002). Research on e-learning carried out before COVID-19 emphasized the benefits of e-learning for students, highlighting increased freedom, more personalized learning, portability of school, self-paced learning environment, and in some cases improving educational outcomes (Rosenberg & Foshay,

2002; Zhang et al., 2004). We are beginning to see research from the past year indicating the effectiveness of e-learning for students worldwide (Smith, 2020; Ting et al., 2020; UNICEF, 2020; Xiang et al., 2020). Radha et al.'s (2020) study was one of the first to survey student attitudes towards e-learning, and found a general positive attitude among students, although many do not wish for e-learning. In other words: it is an okay alternative, but not a first choice (Radha et al. 2020). It is not yet known, however, whether e-learning and the rapid uptake of digital technology has had a helpful effect on youth mental health, beyond some youth expressing their dissatisfaction with online learning (Boisvert, 2020; Smith, 2020).

Methodological, Conceptual, and Theoretical Approaches

This section explores the key methodological, conceptual, and theoretical approaches to research in this field.

Primary Methods

Upon a review of relevant literature in this field, multiple methodological themes were presented. This section will offer a brief overview of common methodological designs, populations and sampling, data collection methods, and results of studies of youth mental health and digital technology.

Study Designs. The large majority of studies in this field employ observational cross-sectional designs. Data are primarily quantitative in nature, although some studies employ a mixed methods approach to examine both hours of screen use and subjective experiences of mental health (Pierce, 2009; Twenge & Campbell, 2018; Twenge et al., 2018). Few offer interventions to study participants (one group before-after study design without control group) – both monitoring smartphones and youth insomnia (Bartel et al., 2019; Werner-Seidler et al., 2019). Interestingly, very few longitudinal studies have been conducted, and those that have,

focused on assessing physical health indicators (Suchert et al., 2015). As such, multiple authors suggest the need for research involving repeated observations of the same variables over meaningful periods of time (Hale & Guan, 2015; Martin et al., 2020), as there can be value in engaging individuals from a young age and over time to understand the best ways of supporting their mental health in the digital age.

Populations and Sampling. Most studies in this field are based on child (through parent reports), adolescent, and/or emerging adult populations, and are administered through schools. The majority of samples are from university or college student populations, as researchers acknowledge the ease of studying this population (Martin et al., 2020). Characteristics of these populations have been primarily female, of white/European ethnicity (Martin et al., 2020). Sample sizes have ranged from 50 to 40,337 participants, with most falling between the 100-20,000 range (Stiglic & Viner, 2019). Given this, the current study seeks to fill notable gaps in the literature by departing from the conventional population focus of large samples of older adolescents/young adults (or children through parent reports) and instead focus on a younger population (ages 13-18) and the current study employed a smaller sample size to gain more in-depth, qualitative data.

Data Collection Methods. Most studies in this field collect data through self-report questionnaires and/or surveys. Some studies have used interviews (Harkin & Kuss, 2021; Yang et al., 2019), but due to the quantitative focus of data in this field, most have used self-reported assessments of screen time correlated with evaluations of well-being (Twenge & Campbell, 2018; Twenge et al., 2018). While self-report surveys are an effective tool for gathering large amounts of data, the mechanisms built into these types of questionnaires (e.g., rating scales) can be restrictive thereby limiting nuance in participant responses (Creswell, 2009). Qualitative

interviews, however, such as those applied in the current study, prioritize nuance in participant descriptions of their experiences (Creswell & Miller, 2000; Denzin & Lincoln, 2018; Filstead, 1979). In addition, due to the young age of study participants, most measures in the field thus far have involved informant-reports (i.e., parent reports). Implications of a focus on informant reports will be discussed more in detail below. Ultimately, through the use of qualitative semi-structured interviews with those *directly* affected (i.e., youth), I seek to move away from the informant-report model established by research in this field and centre the voices of young people in this digital age.

Results. The vast majority of research that has studied relationships between digital technology and mental health outcomes have found associations between device use and adverse mental health in young people (Abi-Jaoude et al., 2020; Busch & McCarthy, 2020; Stiglic & Viner, 2019; Volkmer & Lerner, 2019). Most have found that after one hour of screen time daily, young people show signs of reduced well-being (physical, psychological, social). Most authors note that more studies of high quality are needed in order to draw valid conclusions about mechanisms and causal directions of associations (Hale & Guan, 2015; Martin et al., 2020; Stiglic & Viner, 2019). In general, studies in this field appear to be thorough (Busch & McCarthy, 2020; D'Arienzo et al., 2019; Keles et al., 2020), albeit with a heavy focus on numbers as opposed to experiences. While the purpose of the current study is in-depth qualitative – as opposed to quantitative – analysis, generalizability of results from established research has brought needed attention to the issue and has prompted further research.

Key Conceptual Approaches

In reviewing the literature, I have been able to organize four prevalent lenses researchers are employing when examining youth digital technology use in regard to mental health:

addiction, social media, quality vs. quantity of screen time, and limiting screen time. The following section explores these identified themes.

Addiction. A common conceptual approach to this research is through the lens of addiction. Here, psychological and behavioural effects of smartphone use are analyzed through addiction criteria, such as excessive use, significant functional impairment, loss of control, physical consequences, issues with impulse control, tolerance, salience, withdrawal, and relapse (Chiang et al., 2019; Kim et al., 2018; Ihm, 2018; Volkmer & Lerner, 2019). I noticed that this ‘addiction’ language permeates literature on smartphone use and mental health, especially in regard to youth tech use. Researchers suggest that youth today are especially vulnerable to the effects of addiction, being the first generation to carry mobile smartphone devices on them from an extremely young age (Chiang et al., 2019; Ihm, 2018). Thus, the observed negative mental health effects not only correlate with the increasing time spent on our devices, but the nature of their ‘addictive’ relationship with these devices (D’Arienzo et al., 2019). Some of these researchers point to the addition of the first non-substance-related addictive disorder, gambling, to the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5) and make a case for smartphone addiction to be added as well, particularly considering “internet gaming disorder” was added to the most recent DSM-5 as well (Bian & Leung, 2015; Chiang et al., 2019; Kim et al., 2018; Ihm, 2018).

Other researchers acknowledge the potentially addictive qualities of smartphones, yet propose moving away from addiction framework when studying technology use and using other terms such as “problematic use” (Loid et al., 2020; Panova & Carbonell, 2018). I generally prefer to use the term problematic use as well, as I find that ‘addiction’ language in the case of youth mental health may function to place blame and/or stigma on the young person and instead

of acknowledging the very real external factors that contribute to high smartphone use. Here, I am referring to the fact that the majority of these digital technologies themselves are purposefully designed to be habit-forming, for the sake of “Big Tech’s” industry success (D’Angelo, 2020; Harris, 2019; McLean, 2020). The design of smartphones and smartphone apps is extremely complex, involving formulas employed to rivet attention and foster behavioural patterns that make it very difficult to not keep coming back (Montag et al., 2019; The Wall Street Journal, 2021). This study has this conceptual knowledge in the background, recognizing both the potentially stigmatizing nature of ‘addiction’ language, and the gentler ‘problematic’ smartphone use that encompasses the broader, *powerful* forces at play when discussing high smartphone use. Ultimately, the study holds space for the youth participants to define the relationship between their smartphones and their mental health.

Concentration on Social Media. It was evident upon reviewing literature that researchers in this field focus primarily on social media use. Researchers such as Berryman et al., (2018), Keles et al., (2019) and others emphasize social media as having the greatest impact on decreasing mental well-being among youth. In particular, studies point to symptoms of depression, suicidal ideation, loneliness, bullying, self-esteem, body image, social anxiety, and decreased empathy as being a result of high social media use (Berryman et al., 2018; D’Arienzo et al., 2019; Keles et al., 2019; Kelly et al., 2018). Specifically, researchers’ attention to facets of social media that tend towards unhealthy social comparison, increased isolation, self-absorption, and risky behaviour in order to ‘get likes’ throw light on the above symptoms (Barry et al., 2017; Berryman et al., 2018; O’Reilly, 2020; Vogel et al., 2014). These same studies have noted, however, that social media use is not entirely predictive of impaired mental health functioning (Berryman et al., 2018). While some associations may be present (the magnitude of which may

be mediated by gender; Kelly et al., 2018), systematic reviews of social media and youth mental well-being reveal little-to-no evidence that social media alone is responsible for young peoples' declining mental health (D'Arienzo et al., 2019; Keles et al., 2019). I agree that social media cannot be the sole focus of our investigation, believing that as this technology is so new, and youth mental health so dire, it is incumbent upon research to explore all avenues of tech use to better understand the concerns and learn we can best help. As such, the current study intended to encompass more than social media use. For example, when interviewing participants, questions were holistic in nature, focusing on more than just youth's use of social media and embracing an array of aspects of digital technology that may influence their well-being.

Quality vs. Quantity of Screen Use. As a response to the previous theme, another conceptual debate within this field is the quality vs. quantity of screen time use. Here, researchers argue it is not *how long* youth are spending on their devices that implicates mental health, but *what they are doing* on their devices (Kelly et al., 2018; Thomée, 2018). This is an interesting debate that is fueling more research at this very moment, primarily pulling from the theoretical perspectives of the quality vs. quantity of our in-person social interactions and well-being (Cho, 2020; Gao et al., 2020; Rotondi et al., 2017). Researchers here highlight the need for more research to determine relationships between quality and quantity of screen use (Cho, 2020; Thomée, 2018).

End Goal: Limiting Screen Time. A final conceptual thread that permeates literature in this field is the overarching goal of limiting screen time. Most of the research studying the effects of digital technology on youth mental health is grounded in the presumption that reduced screen time lessens negative mental health consequences (Twenge & Campbell, 2018; Twenge et al., 2018). This research is typically carried out by way of informant report, asking parents their

opinions and experiences of their child's screen time and their observed well-being (Domoff et al., 2019; Gao et al., 2020; Twenge & Campbell, 2018; Twenge et al., 2018). The vast majority of parents in these studies note their children spend 'too much' time on their devices, which they believe influences their child's well-being (Domoff et al., 2019; Tandon et al., 2012; Schmidt et al., 2012; Twenge et al., 2018). The debate is still ongoing, however, and researchers suggest more studies are needed, especially those that engage young peoples' lived experiences of screen use in relation to their well-being (Gao et al., 2020; LeBlanc et al., 2015). The conceptual basis of this current study was designed in part to honour this call, and others, for more youth-centric research.

Ultimately, researchers within this conceptual framework stress the importance of establishing clear guidelines around young people and screens – often using large sample sizes to make clear the need for organizational involvement in the creation and implementation of these guidelines. For example, researchers like Twenge and Campbell (2018) note that organizations such as the American Academy of Pediatrics (AAP) should be involved on all levels to administer screen time limits for children and adolescents. Other organizations such as the WHO (2015) and United Nations (2014) have also been involved in this campaign, stressing the importance of attending to 'excessive' screen use with young people.

Key Theoretical Approaches

This research is situated within three primary theoretical approaches: *attachment theory*, the *mental health continuum*, and *ecological positive youth development*. These theories can help make sense of youth mental health in this digital age, as they explain how interactions with and experiences of the world impact young people's well-being. This section will delineate these three theories and their pertinence to this study.

Attachment Theory. An interesting theoretical framework that is becoming increasingly applied to digital technology use and youth mental health, is attachment theory (Cizmeci, 2017; Mannion, 2018; Parent & Shapka, 2020). Attachment theory (Bowlby, 1969) is traditionally defined as a theory focused on the relationships and bonds between people. According to Bowlby (1969), bonding with others is a biological predisposition and fundamental human need, and our tendency to seek proximity to caregivers is amplified when uncomfortable or threatened.

Although attachment was initially conceptualized to understand bonding relationships between individuals, it has since been applied to bonding relationships with objects (e.g., photographs, clothing, stuffed animals, blankets) (Keefer et al., 2012) and thus has important implications for understanding human relationships with digital technology (Mannion, 2018; Parent & Shapka, 2020). As with human attachment figures, an attachment object offers a source of comfort, providing connection and security in life. Researchers like Konok et al., (2016) have measured the level of anxiety one feels when separated from their device, creating a Mobile Attachment Scale with items that sought to capture the *need for proximity* ("If I left my phone at home, I return to get it") and the *need for closeness* ("I find myself nervous when I am not reachable by phone") (p. 540). Findings from Konok et al. (2016) and others (Cizmeci, 2017; Mannion, 2018; Parent & Shapka, 2020) highlight young people's attachment to their devices, expressed by proximity-seeking and separation stress behaviour.

This study is informed in part by an attachment framework for conceptualizing youth relationships to their devices and subsequent mental health, as it seeks to answer: *How do youth understand the relationship between digital technology use and their mental health?* This study holds that relationships are central to mental health and acknowledges that youth are in some capacity *in relationship* with their devices. Similar to the concept of *Relational Health*, the aim

of this study is to understand how youth conceptualize their relationship with their devices, and in turn, how that impacts their relationship with themselves and others.

The Mental Health Continuum. As discussed earlier, I mostly accept the WHO's (2006) definition of mental health to inform this study, only adding/emphasizing a sense of connectedness to ourselves, those around us, and the world we live in as being central to mental wellness (Galderisi et al., 2015; Gopalkrishnan, 2018; Siegel, 2019). The WHO defines health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (p.1). Two central ideas are present in this definition, (a) mental health is intimately connected to all other forms of health; physical, emotional, and relational, and (b) mental health is more than the absence of illness. Mental health as more than the absence of illness is central to Keyes (2002; 2005) model of the mental health continuum, a theoretical approach to mental health in which this study is situated. Here, Keyes (2002) asks the question, are those who remain free of mental illness always mentally well? He argues that mental health and mental illness are not merely opposite ends of one single measurement, but on two continuums: (a) the mental health continuum, and (b) the mental illness continuum (Keyes, 2002; Westerhof & Keyes, 2010). In his (2002) model, Keyes' plots mental health on a vertical line and mental illness on a horizontal line, reflecting the range of experiences one can have regarding well-being. At the top of the vertical continuum is the peak of well-being, or "flourishing", where an individual experiences a strong sense of meaning, connection, and capacity to handle life's challenges (Keyes, 2002, p. 210). On the opposite end of the continuum is "languishing", or the absence of well-being. Here an individual might experience a sense of emptiness, loneliness, or lack of vitality (Keyes, 2002). Importantly, our experience of mental well-being on this vertical continuum can be recognized without attachment to mental illness. Here, "mental illness" is

reflected on a separate horizontal line. This means that although mental well-being and the experience of mental health or illness are connected, they are also distinct (Westerhof & Keyes, 2010). In other words, an individual without a diagnosis of mental illness can still struggle with their mental health and an individual with a diagnosable mental illness can be mentally well. The four spaces in the model, created by the two crossed lines – flourishing (without mental illness), flourishing (with mental illness), languishing (without mental illness), languishing (with mental illness) – reflect the humanness of diverse experiences of well-being. An individual can shift along the continuum at any time depending on their circumstances or larger societal factors (for example, COVID-19; Grant, 2021).

To Keyes (2002; 2005) mental well-being is comprised of (a) emotional health (feelings of happiness and satisfaction with life), (b) psychological health (positive individual functioning in terms of self-realization), and (c) social health (sense of belonging in community and ability to contribute to society). This research is informed by this approach, insofar as I assume mental well-being to be far more than purely psychological health, but encompassing ones' relational, emotional, environmental, and social health as well. As such, this study operates within a mental health continuum model, as it views mental health as the foundation for well-being and effective functioning both for individuals and communities. It also considers mental health to be more than the absence of mental illness, including the ability to enjoy life emotionally, psychologically, and socially (WHO, 2001). Aligned with Keyes' (2002) concepts of flourishing and languishing, this study also acknowledges that although some participants may not be clinically depressed or anxious, they still may not feel mentally well. I find this a helpful component of the model as it leaves room for the in-between, the descriptions of aimlessness, emptiness, dulled motivation, and joylessness that are especially relevant in today's world

(Grant, 2021; OECD, 2021; Oswald et al., 2021). In addition, participants did not have to have struggled with their mental health to participate in the current study. Informed by Keyes (2005), this project adheres to the assumption that an individual is still able to reflect on the relationship between their screens and their well-being without having endured significant mental ill-health. Ultimately, I acknowledge the usefulness of the openness of the model – that there is a place for everyone on a continuum, regardless the state of mental health or mental illness.

Ecological Positive Youth Development. The final theoretical approach that informs this research is positive youth development (PYD), specifically as it sits within Bronfenbrenner's (1989) ecological systems theory. Bronfenbrenner's (1989) theory suggests that a child's environment is a nested arrangement of structures, each contained within the next, organized in order of how much of an impact they have on the child. These multiple environments, also known as ecological systems, are essential to consider when attempting to understand youth development. Bronfenbrenner's (1989) systems are the *microsystem* (immediate environment e.g., parents, siblings, teachers, peers, religious organizations), *mesosystem* (the interactions between the child's microsystems), the *exosystem* (social structures that indirectly influence the child e.g., social services and health care, school boards), *macrosystem* (cultural elements that affect a child's development e.g., socioeconomic status, race, ethnicity), and the *chronosystem* (the environmental changes that occur over the lifetime that influence development e.g., historical events, life transitions). This model informs this research insofar as it acknowledges that a young person may develop through interactions with their social environments and relationships, and as such, their development may be influenced by larger societal systems such as new technologies, social movements, ecological crises, and economic peaks and valleys (Ajrouch et al., 2015).

This is not to say that youth are entirely at the mercy of their environments, but the interaction between a child and their social environment is reciprocal, thus, and development does not simply happen to youth (Bronfenbrenner, 1989; 1994). On the contrary, young people are actively involved in shaping their own development and in fact, influence the events that happen around them. They are participants, not just recipients. This is the nexus between ecological systems theory and PYD, and where they, together, apply to this study. PYD, informed by ecological systems theory, stresses that engaging youth by emphasizing their strengths and providing them with opportunities to cultivate relationships can help them thrive (Edberg et al., 2017). As such, this project was intentional in its selection of a prosocial methodology to engage youth in conversations regarding the health and development of themselves, but also their communities, schools, families, and peer groups in a way that is productive and constructive (Damon, 2004; Lerner et al., 2009). By interviewing youth on a topic that is not only relevant to their well-being, but that of their communities and their futures, this research centres youth voice as essential to understanding this topic.

Current State of Knowledge

Given the context of the literature, this research intends to fill certain identifiable gaps. This section will identify those gaps and delineate how the study fills a significant gap in the current literature.

Youth Voice: The Primary Gap

In this section, I argue the primary gap in existing research is the lack of youth voice. In conversations of youth mental health and digital technology, it appears the main epistemological and methodological approaches focus on proving theory and making claims. For example, the primary method of instrumentation in studies in this field is through informant reports. While

parents and caregivers likely have a good sense of their child's technology use/mental health, their experience is not the experience sought. Further, studies have focused heavily on generalizability – seeking large-scale attention and change. Though this is helpful given certain research purposes, the consequences of implementing measures for generalizability is that researchers are pulled further and further from individual meaning, detail and nuance of understanding, which are crucial for understanding youth experiences through their own eyes (Cammarota & Fine, 2008; Kidd & Kral, 2005).

For example, in their systematic literature review of smartphones and youth insomnia as an outcome of mental health, Martin et al., (2020) highlight this gap. They note that the “voice of young people is not well represented in the literature”, and “it remains unknown to what extent young people perceive the negative consequences of screen time on sleep as a mechanism that affects their mental health and wellbeing (p. 45). The next section will highlight this study's intent on centering youth experiences at the heart of this research.

Furthermore, Allemang et al. (2021) highlight the need for youth engagement in Canadian mental health research, especially given the context of COVID-19. The authors note that youth “perspectives, strength, and skills” need to be considered to provide effective and appropriate mental health services in light of the pandemic, especially “given the potential implications of COVID-19 on youth mental health” (Allemang et al., 2021, p. 124). As youth have been disproportionately affected by COVID-19 (Allemang et al., 2021; CAMH, 2020b; de Figueiredo et al., 2021; Gruber et al., 2021; Imran et al., 2020; Jiao et al., 2020; Loades et al., 2020; Sahoo et al., 2020), it appears more important than ever to include their voices in research pertaining their experiences. If not for their own well-being, then for the successful development

of programs, services, and policies that serve to build back resilient communities post-COVID-19 (OECD, 2020; OECD, 2021).

Where This Research Fits in

As briefly mentioned above, Gen Z (youth born between 1995 and 2015) are the first generation to consume digital technology from birth. These individuals *have not experienced a world without digital technology* (Canadian Paediatric Society, 2019; OECD, 2018). The consequences of this are completely unknown: what effect will this mass consumption of digital technology have on these youth in 5 years? 10 years? 50 years? We have *no idea*. How can these youth be supported in understanding their relationship with digital technology, and how it may relate to their mental health? To me, centering youth in this knowledge-generating process is essential. Beyond filling a gap in the literature, centering youth perspectives on this subject is a way of honouring the lived experience of those who are directly affected by the research topic. As adults, we are outsiders to youth experience with digital technology. By asking youth how *they* understand the relationship between their digital technology use and their mental health, we can ethically and meaningfully answer the research question, and begin to understand how we can best support youth struggling with their mental health today. In addition, by employing a qualitative framework, the insights garnered from youth can be in their own words, descriptions of their experiences as they would define them. Ultimately, youth today are the only ones who know what it is like to be a young person struggling with their mental health in the digital age, why would we not enlist their insights?

Chapter Summary

This chapter lays the foundation of this study, highlighting important literature in the field of digital technology and youth mental health. It first provided a historical overview of

existing literature, highlighting five relevant subfields. The second identified the general methodological and conceptual approaches to understanding this topic. The final section specified the current state of knowledge in the field, identifying gaps and highlighting the importance of this study in the context of existent knowledge. In the next chapter, I outline the methodology for the current study including its philosophical foundations, theoretical leanings, technical procedures, and ethical considerations.

CHAPTER 3: METHODOLOGY

This chapter is divided into four sections. The first section, *qualitative research positioning*, explores the philosophical underpinnings of the qualitative methodology used in this study. The second section, *research methods positioning*, delineates semi-structured interviews and thematic analysis, the methods modelled throughout the study. Next, *methods in action*, outlines the specific methodological collection, procedures, and analysis of data in this study. Finally, important *ethical considerations* are discussed, especially as they pertain to research with adolescents.

Qualitative Research Positioning

When approaching scientific inquiry, the specific route a researcher takes is dependent on their assumptions about the world, reality, human beings, meaning, and knowledge (Denzin & Lincoln, 2011). As such, it is important to situate my chosen research methods within the larger realm of science and philosophy. Before diving into study design, this important step intends to expose notions of empiricism and highlight my rationale for the application of a general scientific method, positioning my selected qualitative approach within the larger scope of research methodologies.

In order to explore a qualitative method of inquiry, one must first understand the sharp distinctions between qualitative and quantitative methods of understanding. Although both methods are equally valid, they are vivid departures of one another in terms of how ‘truth’ is known. Generally speaking, philosophers of science agree that empirical science depends on subjective and intersubjective structures from which data is comprised (Wilber, 1998). Ken Wilber’s Integral Theory (1998, 2006) suggests that all human knowledge and experience lands within one of four quadrants, along axes of interior-exterior and individual-collective. For

example, the *collective/exterior* domain encompasses experiences of the five senses and located in the physical world – observable, measurable, and quantifiable (e.g., temperature of the ocean, weight of an elephant, speed of a vehicle, or height of a tree). Contrarily, the *individual/interior* domain refers to the subjective, internal perspective of an individual that are invisible to the physical senses – thoughts, feelings, experiences, perceptions (e.g., memories, historical narratives, personal worldview, feeling of falling in love).

Wilber (1998) describes the process by which social science has misunderstood and misrepresented the relationship between these multiple forms of data. He indicates that *objective* data is collected through sensory processes, interpreted subjectively, and represented by symbols (language, numbers, words) (Wilber, 1998). This representation often fails to acknowledge the interaction between the exterior and interior domains by which this data is apprehended – claiming objectivity and favouring tangible exterior data while disregarding the interior subjective experience. Black (2008) illustrates this by describing:

Individual subjective interiors are invisible to the physical sense, and as such, are invisible to the hard sciences. To illustrate this invisibility we can take the experience of sadness as an example. The experience of sadness does not have simple location in the world. One may observe tears, a downward turned mouth, and sobbing. One may measure the chemicals released in a tear, the angle at which the mouth turns down, and the increase in blood pressure with each heave and sob, but none of these can tell the observer about the individual's interior experience of sadness. Interior subjective experiences (e.g., thoughts, emotions, beliefs, values) are not visible to the physical sciences, but that does not mean they are not real. (p.3)

Wilber (1998, 2006) asserts that the dominance of this empirical position can be traced back to a fundamental mis-definition of the term *empiricism*. That is, empiricism to Wilber (1998) should be further delineated between *narrow* and *broad* empiricism. Black (2008) argues that the common view of ‘empiricism’ is in fact Wilber’s (1998) *narrow empiricism*. Here, legitimized evidence is that which derives from the objective domain, reducing knowledge to only that which can be observed and measured with the physical senses (Black, 2008). *Broad empiricism*, on the other hand, embraces both interior and exterior domain data as equally legitimate facets of scientific inquiry. Insofar as qualitative social science data is ‘seen’ in both domains, it falls into the realm of broad empiricism.

Broadening the definition of empiricism does not diminish the quality of scientific inquiry *so long as* the qualitative researcher rigorously adheres to logical, systematic and transparent sets of procedures. Wilber (1998) holds that legitimate science is conducted provided the researcher is following the guidelines of an overarching method of inquiry, known as the *three strands of valid knowledge*. Extending from his broadened definition of empiricism, Wilber (1998) describes a fundamental three-step model of the scientific method applicable to all forms of inquiry. These steps include:

1. Injunction: The contemplation, exemplar, paradigm, experiment, ordinance. A prescription for attaining knowledge in a question.
2. Apprehension. The direct experience or attainment of knowledge brought forth by the injunction; i.e., the apprehension of data.
3. Confirmation (or rejection). The social consensus as to the validity, credibility, and veracity of the knowledge attained; the checking of the results, data, evidence, with others (i.e., those who are adequately trained and experienced in qualitative

methodologies, as well as participants themselves – the co-creators of knowledge) (p. 155-156).

According to Wilber (1998) research following these three strands of knowledge constitutes sound methodological procedure and is scientific in the strictest sense. Black (2008) adds that Wilber's (1998) logic effectively resolves the methodological and philosophical conflicts between quantitative and qualitative paradigms in the social sciences. Here, he argues the debate should not be which set of methodological injunctions is regarded as *real science*, but which methodology is most appropriate for the goals of the inquiry.

As we expand our conceptualizations of the term empiricism, we see that knowledge derived from experiential and emotional accounts and personal experiences is regarded as valid as descriptions of sensory perceptions. Similar to Black's (2008) illustration of sadness, this study focuses on the interior subjective experience of the perceived relationships between digital technology and youth mental health, allowing for deep interior exploration of subjective (in addition to objective) experiences. It is qualitative in nature because it asks descriptive questions quantitative research cannot answer. Rather than seeking generalizability, this qualitative research is interested in highly contextual, rich, and experiential data to understand how people experience the world.

This, in essence, is qualitative research. Denzin and Lincoln (2011) further define it as a set of complex practices and driven by multiple theoretical paradigms, which overlap and intersect with various academic disciplines. Creswell (2009) highlights further characteristics of qualitative research as taking place in a natural setting (i.e., as opposed to a laboratory), using multiple sources of data (e.g., interviews, observations), having an emergent design (i.e.,

elements may change as the process evolves), the researcher as instrument/interpretive in nature (i.e., the researcher is present throughout the process and data is interpreted through their subjective frame of reference), holistic in stance (i.e., speaking to multiple perspectives to develop a complex and contextual picture of the research), and inductive analysis (i.e., aim is to develop theory rather than test existing theory (deductive)). After outlining the methodological paradigm within which this study sits, I will describe the methodological coherence Wilber (1998), Black (2008), and others describe as the crux of rigorous qualitative research.

Methodological Paradigm

A paradigm is a set of assumptions and philosophical orientations that shape understandings of the world (Filstead, 1979, as cited in Ponterotto, 2005, p. 127). The philosophical anchors that inform paradigms are *ontology*, the nature of reality and being; *epistemology*, the study of knowledge and the relationship between the research participant and researcher; *axiology*, the role of values in the research process; and *methodology*, the process and procedures of the research (Ponterotto, 2005, p. 130). These anchors inform the entire research process, guiding the selection of tools, instruments, participants, and methods used in the study (Denzin & Lincoln, 2011). According to Ponterotto (2005), the different research paradigms include positivism, post-positivism, interpretivism (social constructionism), and critical-ideological. This qualitative study lands within the framework of the constructivist-interpretivist paradigm and is discussed below.

Constructivism-Interpretivism. In many ways, the constructivist-interpretivist position exists as an alternative to positivism's assertion of single, objective, external realities. As the still-dominant quantitative paradigm (Hunter & Leahey, 2008), positivism is based on the belief that there is one objective reality that is observable, quantifiable, and factual. This positivist

stance implies that there are objective, independent laws of nature to which a researcher's job is to 'reveal' or 'discover' through use of the scientific method (Schwandt, 1994). Here, a true reality is attainable, identifiable, and measurable (Ponterotto, 2005). Further, positivism adheres to deterministic views of causality, where reality can be empirically derived and understood (Creswell, 1998; Wilber, 1998). The constructivist-interpretivist paradigm, however, complements the positivistic stance in its ability to inform the upper and lower left quadrants of Wilber's (1998) model – the interior world of a person.

Grounded in relativist ontology, the constructivist-interpretivist paradigm posits multiple, distinguishable, equally valid social realities (Ponterotto, 2005; Schwandt, 1994).

Epistemologically, this study assumes a social constructionist stance to understanding how reality is known. To this end, knowledge in social constructionism depends on human practices and is constructed and transmitted through interaction between individuals and the world (Burr, 2003; Stelmach, 2016). Constructivism coincides with this, but more specifically refers to an individualistic position that emphasizes the unique experience of individuals' sense-making in the world (Haverkamp & Young, 2007). Constructivists hold that individuals construct their own unique understanding and knowledge of the world through experience and reflection upon those experiences (Hansen, 2004; Ponterotto, 2005). Interactive participant-researcher dialogue acts as the mechanism for prompting this reflection – highlighting an elemental facet of the constructivism-interpretivism paradigm: interaction and reflection is the vessel for creating meaning (Hansen, 2004; Schwandt, 1994). This is visible in qualitative methodologies such as this thesis, where the co-creation of meaning is done via interactive dialogue and reflection.

Ultimately, this study is grounded in the qualitative, interpretive research tradition, best suited to research in social settings in which the aim is to explore a problem, interpret

experiences and co-create solutions. Ponterotto (2005) notes that proponents of constructivism–interpretivism emphasize the goal of understanding “lived experiences” from the perspective of those who live it day to day (p. 129). In this study, youth experience the relationship between their digital technology use and their mental health every day. Their unique insights are important pieces of the historical social reality of our time, and by enlisting their perspective through interactive dialogue, this study is methodologically founded in the constructivist–interpretivist paradigm.

Research Methods Positioning

Rationale for Qualitative Research

Situated within and informed by these paradigmatic assumptions, qualitative methodologies are the basis of this study. As discussed above, qualitative research is characterized by the importance attached to interpretive and holistic inquiry (Denzin & Lincoln, 2018). Although there exists a wide variety of qualitative loci, practices among qualitative researchers typically share assumptions about the existence of multiple, intangible social realities, that are contextually located and shaped, maintained, or transformed by the experiences and meanings of participants (Henry, 2015). In this sense, qualitative methodologies were appropriate for this study for several reasons. First, as highlighted in this study’s literature review, there is a significant absence of youth perspective in discussions of mental health and digital technology. Through semi-structured interviews, youth who participate in this research are able to bring critical, personal experience to the table. This qualitative data then provides the backbone for an attentive thematic analysis, whereby themes will be constructed based on participant responses and our shared conversation. By enlisting qualitative methodologies and

asking youth about their experiences with tech use and their mental health, epistemological and methodological gaps in the research can begin to be filled and youth voice upheld.

Second, is the nature of this data. As discussed above, central to the theory and paradigms that underpin qualitative research is the context within which issues can be examined (Creswell, 1998; 2009; Denzin & Lincoln, 2011). Through interactive dialogue, the participants and I are able to discuss their experiences of mental health and digital technology in depth. The richness of this dialogue and data can then provide a deeper and more contextual understanding of the topic, in a way that would be challenging for quantitative approaches. More on the appropriateness of rich, qualitative data can be found in the subsequent semi-structured interview section.

Finally, as is iterated in above sections, youth are increasingly affected by mental health struggles (Unicef, 2017; United Nations, 2014; WHO, 2015). It is also becoming clear that digital technology is at least playing *some* role in this increase in mental ill-health, particularly in adolescent girls' body-image concerns, tech and "gaming addiction", and children's increasing social anxiety (see McCreary Centre Society, 2018; OECD 2018; OECD, 2019; The Wall Street Journal, 2021). By participating in reflective research, youth are offered a space in which to reflect upon their relationship with technology and how it influences their well-being. The interview process and subsequent member-checking procedure can then be validating and normalizing, as youth reflected on the fact that their experiences *matter* by way of my empathy and concern, the study's themes, as well as seeing our broader-society's growing interest in this subject.

Ultimately, these qualitative methodologies underline the importance of enlisting youth perspective on matters of their own well-being. Not only that, but the chosen methodologies align with the research question, offering crucial method-question fit to rigorous qualitative

research. The methods employed (semi-structured interview and thematic analysis) represent a rich, holistic, and helpful approach to data acquisition and analysis that serves not only participants, but this research's ability to meaningfully answer its question. The following sections provide a methodological basis for enacting a qualitative approach.

Semi-Structured Interview

This section will offer a brief overview of the semi-structured interviewing protocol and a rationale for this chosen method of inquiry. Before delving into the semi-structured interview, however, it is important to first understand where it falls on the continuum of qualitative interview techniques.

Qualitative interviews can be seen as existing on a continuum, ranging from free-form discussions to highly structured interviews (Creswell 2007; Creswell & Guetterman, 2019). On one end is unstructured interviewing, whereby a researcher's protocol is fluid and changes with each response, as well as differing from one participant to the next (Creswell, 2007; Fylan, 2005). On the other end of the continuum lies structured interviews, highly standardized and rigid sets of questions and responses that do not divert from the structure of the predetermined protocol (Creswell, 2007). In the middle falls a hybrid approach, and the choice method for this research: the semi-structured interview.

As the social sciences shift away from adherence to positivist methodologies and toward recognition of more contextualized approaches, it has made way for interpretive qualitative approaches like the semi-structured interview (Rubin & Rubin, 2005). As noted above, the paradigmatic assumptions of constructivism-interpretivism acknowledge that studied experiences are complex and do not adhere to a single interpretation. For example, cultural and contextual variables are becoming more readily recognized as influencing scientific inquiry, accepted into

the research process rather than ignored (Magaldi & Berler, 2018; Rubin & Rubin, 2005). In recognition of this, the semi-structured interview allows for exploration and meaning making in such a way that complexity and nuance are not overlooked (Galletta, 2013). The interview in this case can then become a reflective dialogue that centers the lived experience of the interviewee, however intricate it may be.

As mentioned in Chapter One, this research seeks answers to the question: *How do youth understand the relationship between digital technology use and their mental health?* Perhaps noticeably, this question begets answers that are qualitative in nature, intentionally yielding rich descriptions of youth's first-hand experiences with technology and well-being and providing the opportunity for co-construction of meaning. The hybrid approach of the semi-structured interview functioned to uphold this richness, allowing for ideas to flow naturally as the conversation unfolded. Each interview followed a pre-set interview protocol comprised of seven open-ended questions that were asked of each participant (Creswell, 2007; Knox & Burkard, 2014). Although there exist pre-set questions in a semi-structured interview, the hallmark of the approach is in the researcher's ability to probe and follow different directions as the conversation progresses, with flexibility in the sequence of questions asked (Knox & Burkard, 2014; Rubin & Rubin, 2005). It is important to note that due to COVID-19 limitations, this research was online using videoconferencing technologies.

Rationale for 'e-Interviews': Online Qualitative Inquiry. The primary rationale for implementing this research online is the state of the world at the time of this study's inception. The COVID-19 pandemic has brilliantly upset the ways in which we typically function, pulling the proverbial rug of everything we know from underneath us. Individuals, communities, and systems around the world have quickly recoiled from in-person contact work, study, play, and

research (Bansal, 2020; CAMH, 2020b; CDC, 2020; Government of Canada, 2020b; UNICEF, 2020). While British Columbia did well in fighting the initial surges of the virus, the province was becoming increasingly locked-down as of the proposal of this study (Harris, 2020; McElroy, 2020; Migdal, 2020). As such, research planned for early 2021 (when this study took place) was not even possible in-person. Furthermore, the WHO (2020), in their guidelines for COVID-19 state that if avoidable, in-person contact in any form is strongly unadvised as the world continues to battle this deadly virus.

Given this, the second rationale for implementing this qualitative research online is its feasibility (Janghorban et al., 2014; Mann & Stewart, 2000; Salmons, 2015). According to systematic reviews of using technology in qualitative research, online methods are not only achievable, but quickly on the rise (Salmons, 2014, 2015; Gray et al., 2020). Rapid advances in technology are creating opportunities for researchers to produce relevant, applicable research in an accessible way. For example, the proliferation of new video conferencing tools offers unique data generation opportunities for qualitative researchers (Cachia & Millward, 2011; Lourenco & Tasimi, 2020). While in-person interviews have been the typical mainstay of data generation in qualitative studies, video conferencing programs, such as Zoom Video Communications Inc. (Zoom), provides researchers with cost-effective and convenient alternatives to in-person interviews (Gray et al., 2020; Lourenco & Tasimi, 2020).

Finally, even before COVID-19, there was legitimate rising precedent for the use of e-interviews as a method of qualitative inquiry. Now, researchers across the globe are providing examples for the employment of e-interviewing protocols. Dodds (2020), Gray et al. (2020), Lourenco and Tasimi (2020) and Son et al. (2020) are just a few examples of researchers adapting to the changing times by embracing e-interviews over Zoom. Further, other researchers

are looking to online research methods as a way of ‘meeting youth [participants] where they are at’ (Amdeselassie et al., 2020; McDermott et al., 2013). Here, technological methods are employed in research to promote youth's self-expression, communication, and skill-building while critically researching their worlds and developing strategies for social change (Flicker et al., 2008, p. 287). New developments (Gibbs et al., 2020) have also expanded adult researchers' views on how technology can help incorporate young people's perspectives in research relevant to their lives.

As one of the first of its kind, this study aims to contribute to the emergent groundwork for executing ‘virtual’ qualitative research with youth. Not only will this benefit the future of qualitative research, but the young people involved. Researchers argue that technology in research has the ability to enhance and enrich the lives of youth by reflecting on its power and providing an accessible toolkit for acting on issues that affect and interest young people (Gibbs et al., 2020; Lombardo et al., 2002; Thackeray & Hunter, 2010). Especially as a study that examines the effects of digital technology on youth mental health *while youth are using digital technology*, there exists some epistemological merit to the use of the ‘e-interview’. By harnessing the salience of an online methodology, critical reflection and collaborative discussion can be enriched, simply through reflection on the medium itself. This has the potential to provide a ‘meta’ quality to the qualitative methodology. Digital technology (and in particular, social networking services) can provide a space for young people to become social participants (Flicker et al., 2008; Gibbs et al., 2020), whilst reflecting on its impact on their mental health.

Thematic Analysis

This study employed Braun and Clarke’s (2006) version, a *reflexive* form of thematic analysis that provides a flexible and useful way of constructing and interpretively representing

meanings generated across data sets in response to the research question. This was the chosen method of analysis in part due to its theoretical flexibility. Here, Braun and Clarke (2006) note that reflexive thematic analysis can be theoretically and conceptually malleable, able to align with various theories and epistemologies. This is only so long as the researcher is intentional and explicit about their commitments.

In this study, the subjectivist epistemology that informs the interpretive relationship of symbol and language in the co-generation of data extended to the construction of its themes. Therein, the analysis of thematic data was epistemologically constrained; as the themes were based on data that was co-constructed through my conversations with participants. In this way, thematic analysis constructs themes in response to salient aspects of constructivist data resulting from a particular research question. Braun and Clarke (2006, 2019) stress that themes do not emerge from qualitative data, rather are *conceptualized* based on the data, which is based on the research question. Themes express the meanings and representations participants hold *as interpreted by the researcher* who, according to Braun et al., (2019):

The researcher is a storyteller [...] interpreting data through the lens of their own cultural membership and social positionings, their theoretical assumptions and ideological commitments, as well as their scholarly knowledge. This subjective, even political, take on research is very different to a positivist-empiricist model of the researcher. Many reflexive TA researchers do indeed have some kind of social justice motivation – be it “giving voice” to a socially marginalized group, or a group rarely allowed to speak or be heard in a particular context, or a more radical agenda of social critique or change. (p. 848)

With this reflexive thematic analysis approach in hand, themes in this study were conceptualized as ‘meaning-based patterns’, patterns that were constructed in both explicit

(semantic) or conceptual (latent) ways and resulted from coding (Braun et al., 2019). Braun and Clarke (2006, 2019) make sure to note that coding is an organic and iterative process, not ‘fixed’, but evolving to capture the researcher’s developing conceptualization of the data. Ultimately, the aim of coding and theme development in thematic analysis is not to ‘accurately’ summarize the data, nor to moderate the influence of researcher subjectivity on the process, because to Braun and Clarke (2019) neither is considered possible *nor* desirable. The intent, however, is to “provide a coherent and compelling interpretation of the data, grounded in the data” (Braun et al., 2019, p. 848).

Method/Question Fit

Next, it is important to outline the rationale for the ‘fit’ of the methods in this inquiry. Semi-structured interviews and thematic analyses have a well-documented history in qualitative research, as they are an effective way of accessing people’s ideas, thoughts, and memories in their own words, rather than the words of the researcher (Creswell, 1998; Creswell & Guetterman, 2019). The researcher explores the general topic to assist in making sense of the participants’ perspectives but upholds the utmost respect for how the participant frames and languages their responses (Braun & Clarke, 2006).

The rationale for pairing semi-structured interviews with Braun and Clarke’s (2006) reflexive thematic analysis can be seen in the nexus of this study’s goals and qualitative research values: to understand the relationship between digital technology and youth mental health *from their perspective*, through collaboratively co-creating meaning with those directly affected to generate theory. In other words:

1. To center youth voices, experiences, and feelings
2. To explore issues of shared societal importance

3. To reflect on ideas for supporting youth in the digital age

Ultimately, as attitudes and opinions are socially informed, semi-structured interviews and thematic analyses can not only provide youth a social environment in which to articulate them, but generate deeper understandings of the problem (Creswell, 1998; Creswell & Guetterman, 2019; Krueger, 2014).

A final rationale for using semi-structured interviews and thematic analysis is the adaptability to online formats (Irvine et al., 2013; Oates, 2015; Roy et al., 2020). According to Creswell (1998) and Blee and Taylor (2002), as qualitative research methods, semi-structured interviews are comparatively easy to conduct due to their flexible nature. Pre-set interview questions focus on the responses of each participant and constitute the structure of the semi-structured interview (Creswell, 1998). Participants are then free to respond to these open-ended questions as they wish, and the researcher may probe these responses. This framework and flexibility of the responses constitute the *semi-structured* aspect of this method (Blee & Taylor, 2002; Creswell, 1998). This makes it unique among interview methods for the degree of relevancy it provides the topic while remaining responsive to the participant (Bartholomew et al., 2000; Oates, 2015; Reinhartz, 1992; Shapka et al., 2016). Further, thematic analysis can be carried out wherever one has the ability to record and transcribe interview data, as I do.

Methods in Action

Participants

As noted in Chapter One, participants in this study were eight adolescents between the ages of 13 and 18 who reside in British Columbia. All eight youth were students, 50% of them were white, all spoke English, and all from middle-upper class families. The involvement of minors as participants in research required pronounced transparency, attentiveness to

methodological procedures, and strict adherence to ethical standards. Chiefly, matters related to informed consent, confidentiality, power, and privacy were of primary concern to me throughout the process. In conjunction with UVic Human Research Ethics Board (HREB) approval (Appendix I), guidelines and standards set by the Tri-Council Policy Statement (TCPS 2, 2018) regarding ethical conduct for research involving humans as well as the expectations of the British Columbia Ethics Harmonization Initiative (BCEHI) were adopted. Relevant topics are discussed in this section.

Inclusion Criteria. The fundamental inclusion criteria are listed below:

1. Between the ages of 13 and 18
2. Can commit to an hour-long recorded interview (with access to videoconferencing technology)
3. Interested in mental health and open to discussing topics surrounding mental health and digital technology

It was also important that participants were sufficiently fluent in English in order to give informed consent and participate in the research interviews. Given the virtual nature of this research, participants were able to reside anywhere in the province, as long as they had access to internet and videoconferencing technology. Of the eight participants interviewed, three lived on Vancouver Island, three in Metro Vancouver, and two on the Sunshine Coast. Other characteristics such as gender, ethnicity, and class varied. Two participants were aged 18, four were 17, one was 16, and one 14 years old. Six of the eight participants identified as female, and two as male.

Although it never occurred, participants could have been excluded from enrollment at the time of our scheduled interview if any of the following were present: psychosis, disassociation, and/or the inability to engage in interview process/inability to provide signed informed consent.

It is also important to note that participants did not have to have struggled with their mental health. This project assumes that an individual is still able to reflect on the relationship between their screens and their well-being without having endured significant mental ill-health.

Ultimately, participation in this study was completely voluntary, with specific sampling methods delineated below.

Recruitment

Sampling for this study was purposive, determined on the basis of appropriateness to the topic and willingness to participate (Creswell, 1998). A straightforward approach to recruitment was used following HREB approval. First, I sent a recruitment email (see Appendix C) to my personal and professional networks (teachers, school counsellors, colleagues etc.) in query of any youth they knew who might be interested in participation. An accessible summary of the study, description of the potential risks and benefits to participation, and an e-poster for recruitment (Appendix B) were included in this email. If any parents requested more information, I offered a *Letter to Parent or Guardian* (Appendix D) that further delineated the nature of their child's potential participation.

From these emails a form of snowball sampling format was used, whereby participants or informants with whom contact was already made used their social networks to refer other potential participants (Creswell, 1998). This was a great way of finding and recruiting youth who might not otherwise be accessible or findable through other sampling strategies.

Youth who were interested in participating were asked to contact me via email or phone (contact info was provided in the recruitment email), expressing their interest in participation. Once I began receiving emails and calls from potential participants, I arranged a phone call screening protocol (Appendix E) where I screened for inclusion criteria and capacity to consent¹. If youth met the criteria, I continued the phone call and asked potential participants if they were interested in participating. If they were, we arranged an interview time. Potential participants were made aware that scheduling the interview did not mean they had agreed to participate. They would first need to review the information within the Consent Form (Appendix A) to decide whether or not to participate, once fully informed and having discussed it with their parents/guardians if need be. Further detail of this study's informed consent process is delineated in the following section.

This recruitment procedure managed to secure the first six participants within one week. The criteria for determining sample size was based on data saturation, whereby the number of final participants was left open to account for data saturation as the interviews were taking place (Denzin & Lincoln, 2011). When it was clear a couple more interviews were needed beyond the original six, the procedure was repeated to find additional participants. The total number of participants in this study was eight, with data saturation met at the seventh participant.

Informed Consent. Given the youth of this study's participants, exceptional consideration to free and informed consent was given throughout this project. The exact steps

¹ It is important to note that youth were the first point of contact in this study, not parents/guardians. If the youth fell on the younger end of the age range (13-15), I asked for the parents/guardians contact information during my initial screening protocol with the child, so that I could send along the *Letter to Parent or Guardian*. This was so that the adult could be fully informed as to their child's potential participation in the study. If a potential participant wanted a chance to discuss the possibility of participating in the study with their parents/guardians prior to agreeing to participate, they were encouraged to do so.

taken in the process of explaining, obtaining, and documenting informed consent are briefly delineated below.

In the initial phone-call screening protocol, competence and decision-making capacity was assessed in the youth's ability to communicate (in English), their willingness and ability to self-reflect, and maturity to understand the nature of the project, as well as the risks, consequences, and potential benefits associated with participation. If the participant met inclusion criteria and was deemed competent to participate and capable of making a decision regarding participation and consent, the recruitment procedure as outlined above would continue. If they were not, they were thanked for their time.

Even if a participant was deemed capable of consenting and we had arranged an interview, they first needed to review the information within the Consent Form and decide whether or not to participate once they had read it through and discussed it with their parents /guardians. They were to then return the signed form to me or not in advance of our interview. At the start of each interview, I reviewed the signed consent form with each participant prior to beginning. Consent forms were returned electronically (e-signature and email) in advance of our interview. The documented form was then kept in an encrypted folder on my desktop.

Per TCPS 2 (2018) Article 3.2, for consent to be informed, prospective participants should be given adequate time and opportunity to digest the information provided, pose any questions they may have, and discuss and consider whether they will participate. This process was reviewed by HREB and redesigned several times so that individuals had adequate time to fully review the Participant Consent Form before they agreed to participate. The reflective time this consent process allowed, as well as the collaborative conversations between myself and each

participant intended to honour this critical component of a meaningful and ethical informed consent process.

Furthermore, in keeping with the TCPS 2 policy principle of Respect for Persons, participants not only provided their consent prior to engaging in research, but were offered opportunities to reflect on their willingness to consent throughout the project (e.g., in advance of the validation (member checking) procedure). They were also reminded of their right to withdraw without any negative consequences, at any point in the project (see Participant Consent Form, Appendix A).

Data Collection Procedures

As noted above, this study began with the recruitment of participants. Once adolescents were screened and consented to participation, I began arranging interview times. Each interview followed the pre-set Interview Protocol (see Appendix H, includes the pre-set interview questions). Interviews were held on Zoom over the span of two months. Each interview took approximately 45 minute each, and were audio recorded.

Transcription. As the interviews were being completed, the audio recordings were transcribed. A contract transcription firm based in Vancouver, B.C. was hired to help with transcriptions (please refer to Appendix F for the *Confidentiality and Non-Disclosure Agreement for Contracted Services* form signed by the transcriptionist). I completed the first transcript as a template for the transcriptionist, specifying the granularity with which the remaining transcriptions should be completed. Once the transcriptions were finished, I reviewed them for accuracy. My initial transcription and review of subsequent transcriptions, then, became a theory-laden process that involved my subjective interpretation of audio recorded data (Easton et al., 2000; Lapadat & Lindsay, 1999). The transcription process of this study is no less fallible

than others – whereby I reviewed and interpreted recorded interview data into constructed meaning. As such, several issues were attended to.

Issues as simple as mistyped, misheard, or misinterpreted words or inaccurate punctuation that may change the entire meaning of the sentence (Easton et al., 2000). For example, *is an* and *isn't* are similar-sounding phrases that have drastically divergent meanings, and if confused, may give the opposite impression from what was actually said (e.g. “*is an* issue” vs “*isn't* an issue”). Another problem that could have arisen would have to do with jargon or language barriers. In this project, unfamiliarity with slang terms or words specific to youth culture (or any diverse culture to my or the transcriptionist’s own) could lead to their misinterpretation or mistranscription.

Being scrupulous about clarity of transcription was integral to the accurate interpretation of meaning on behalf of the participant, and thus the avoidance of these pitfalls of transcription. The transcription methods in this study are an expression of the social constructionist epistemological stance that underpins this research – assuming that all data and meaning is co-constructed in the dialogical interaction between the participants and me. I am wholly aware of the subjective nature of my position as a researcher in this context – whereby my perspective, bias, and values are directly included in the transcription process. That said, throughout this entire process I was acutely and mindfully aware of the beliefs, assumptions, and experiences I brought forth as I interpreted, analyzed, and made meaning of data. For example, I reflected as much detail as possible in transcriptions, keeping filler utterances (e.g., *um*, *hmm*, *mmm*, and *ah*), nonverbal and paraverbal expressions (e.g., tone of voice), and any noteworthy variances or tendencies in speech (e.g., awkward laughter, slow or fast-paced speaking, deliberation or

pensiveness). Beyond the verbal expression of meaning through words, these nuances of speech provided context that became essential to the construction of knowledge.

Ultimately, through careful attention to each step of my qualitative data collection and transcription, along with transparent acknowledgment of my own involvement in the process, a greater degree of trustworthiness was established in this project, thus providing a high degree of methodological confidence.

Data Analysis. After the transcription of the recorded conversations, I began the thematic analysis. In particular, Braun and Clarke's (2006) six-phase process for thematic analysis was used in analyzing this research data, this includes:

1. Familiarizing oneself with the data
2. Generating initial codes
3. Searching for themes
4. Reviewing themes
5. Defining and naming themes
6. Producing the report

This reflexive approach to thematic analysis involves moving back and forth between phases of data analysis – finding rich and compelling meaning in the qualitative data.

Braun and Clarke's (2006) process involves finding patterns, applying codes, and defining themes within and across interview transcripts. Below I will delineate this study's process for each of their six steps.

Familiarizing Myself with the Data. The goal the first step was to become immersed in the data so as to gather a deep understanding of the entire data set. This began before transcription even started, with the listening and re-listening to each completed interview. With

headphones on and a notebook in front of me, I jotted down my observations as I acquainted myself with each word, phrase, and story the participant shared. Once transcriptions were complete, I printed each one and reviewed it with a highlighter, plugging back into the audio recorded interviews to check for accuracy of the transcription. This familiarization process allowed me to begin noticing patterns across the data, and was a foundational step to the continuation of the data analysis process.

Generating Initial Codes. Once each transcript was read, re-read, and audio recordings listened to, I began generating initial codes. Each interview transcript was uploaded to MAXQDA, a software program designed for computer-assisted qualitative data analysis. The software enabled me to sort, organize, and work efficiently in coding large amounts of text, allowing for depth and sophistication of analysis.

In Braun and Clarke's (2006) process, codes identify the smallest possible attribute of the raw data that signify meaning, allowing the researcher to simplify and focus on specific characteristics of the data. These codes are a "single idea associated with a segment of data, and consist of pithy labels identifying what is of interest in the data" (Braun & Clarke, 2009).

In MAXQDA, I read through each transcript and highlighted segments of text and attached labels, or 'codes', to index them as they related to the research question. In this step, I followed Braun and Clarke's (2006) advice in working systematically through the entire data set, retaining consistency in my coding approach. I adhered to a set of personal "coding rules" that I followed with each transcript to ensure consistency. For example:

- Label code as close to the meaning of the text as possible

- All codes should be the same ‘level of specificity’, not higher or lower than the one before (e.g., in the initial coding process, each code should be a ‘low-level’ code, as specific and descriptive in nature as possible)
- Codes should have explicit boundaries, ensuring they are not interchangeable or redundant
- Code extracts of the data inclusively (i.e., retain some of the surrounding data so that context is not lost)

Once each transcript was initially coded (and as less and less codes were being created as I worked through the transcripts), I used Braun and Clarke’s (2006, 2009) hierarchical coding process to begin thinking about higher-order codes or the slightly broader issues that were being discussed. Here, some codes were lost, others grouped together, and some sections uncoded or recoded as I began applying broad higher-order ‘categories’ that provided an overview of the context and meaning.

Searching for Themes. Once all the data were initially coded, collated, and several higher-order categories were arranged, I began focusing my attention beyond the individual codes to construct a collection of potential themes. In Braun and Clarke’s (2006) thematic analysis, a theme is considered an “idea or concept that captures and summarises the core point of a coherent and meaningful pattern in the data” (p. 89). It is essential to explicitly state how themes are defined, and to remain consistent throughout the process. In this study, themes were determined at the level of the data item (i.e., each interview) and defined on the basis of prevalence. Major themes were those that directly related to the research question and were “common, recurring patterns across the dataset around a central organising concept”, per Braun and Clarke’s (2009, p.89) recommendation.

This process was aided greatly by the creation of a colourful mind-map, where I could explore relationships between codes, between themes, and between different levels of themes (e.g., main overarching themes and subthemes within them). At this point, I made several higher-order categories into themes of their own, others subthemes, and many were discarded. Themes that did not seem to belong anywhere were placed in a “miscellaneous” category and until several were ultimately added to the *Incidental Results* section – those that did not directly relate to the research question but appeared in nearly every transcript and were of contextual interest (Braun & Clarke, 2006, p. 90).

Reviewing Themes. This step began once a sufficient set of themes had been devised, now requiring refinement and assessment as to their valid representation of the data set as a whole. I began by affirming or refuting each theme created in the previous step based on Braun and Clarke’s (2006) concepts of prevalence and coherence. First, I assessed whether each theme was prevalent enough to be considered a major theme. That is, was it a “common, recurring pattern across the dataset”, and “clustered around a central organising concept?” (Braun & Clarke, 2009, p. 89). Second, I assessed whether each theme was coherent and distinct. That is, did the codes within each theme cohere together meaningfully (internally homogenous), and was each theme clear and indefinably distinct from the others (external homogenous)?

Per Braun and Clarke’s (2006) method for this phase, this review and refinement was done on two levels. The first, were the coded extracts. Here, I revisited the data to read and collate all the extracts for each theme, considering them in terms of prevalence, cohesion, and distinction. By returning to the raw data, I was able to garner greater assurance that the themes in fact reflected the youth participant voice. At this point several extracts moved to new locations,

themes reconstructed, and some dissolved. The mind map, or “candidate thematic map” was then reworked to reflect the revisions at this level (Braun & Clarke, 2006, p. 91).

Level two involved a similar process, simply on a broader scale. Here, the validity of individual themes were considered in relation to the data set as a whole. In this phase I reviewed the entire data set to ascertain (a) whether the themes ‘worked’ in relation to the entire set, and (b) to code any additional data that may have been missed as well as review the initially set ‘miscellaneous’ themes to assess their fit. This step was particularly recursive and iterative, as I reflected on each theme’s validity and the ongoing the formal interpretation of the data as a whole. Mindful of Braun and Clarke’s (2006, p. 92) warnings against endless refinement, this step ended when the thematic map “fit” the data set, when I was confident in what the themes were, how they all fit together, and the general story they told about the data.

Defining and Naming Themes. The goal of this step was to identify the “story” that each theme told and consider how it fit into the “overall story” of the data in relation to the research question (Braun & Clarke, 2006, p. 92). To do this I wrote a detailed description of each theme, defining it with specific excerpts of data and in relation to the data as a whole. Themes were also considered in the context of underlying theory and content of the literature review. In addition, theme names were reworked so that they captured the essence of the theme and accurately portrayed its meaning. As a solo researcher, I consulted often with Dr. Chou throughout this stage to determine whether the themes were sufficiently clear and comprehensive to call a halt to further modification. This consultation also helped in clarifying my ability to clearly articulate “what themes [were] and what they [were] not”, per Braun and Clark’s (2006, p. 92) advice in recognizing when to end this step.

Once this step was complete, I completed the member checking protocol to assess the truthfulness and consensus amongst research participants regarding the proposed themes. Further discussion of this procedure is delineated in the following section.

Producing the Report. Once the final themes were established and member checking complete, I began the process of writing up the report. The goal of this final step was to provide a “concise, coherent, and logical” account of the data within and across themes (Braun & Clarke, 2006, p. 93). To this end, I attempted to synthesize and discuss the data as it related to the research question, highlighting its significance and meaning within the context of the literature. Here I presented each theme alongside exemplar data extracts to provide sufficient evidence and illustrate the story of the theme within the overarching data.

Ultimately, the presentation of this analysis procedure aims to transparently communicate the approach this study undertook. It acknowledges that rigorous qualitative research is clear about what is being done, why, and includes the awareness of the researcher as an instrument for analysis (Creswell, 2009; Denzin & Lincoln, 2011, 2018). Throughout this process I made judgements about coding, theming, contextualizing and recontextualizing the data so as to clarify its meaning and form a coherent narrative. The themes presented in the following chapter are an attempt to meaningfully respond to the question: *How do youth understand the relationship between digital technology use and their mental health?* First, however, a discussion of standards of quality and ethical considerations is necessary.

Standards of Quality

Essential to methodologies that involve the use of personal interpretation are discussions of trustworthiness, credibility, and rigour. As with most qualitative research, criteria for rigour are closely tied to the paradigmatic underpinnings of the discipline in which the research is

conducted (Guba & Lincoln, 1994; Morrow, 2005). As such, this study enlists the concepts of truthfulness and consensus to assess the validity of claims regarding intersubjective knowledge. Here, *trustworthiness* or *truthfulness* refers to the degree of sincerity with which youth describe their experiences, and *credibility* or *consensus* to the extent to which their experiences accurately through our shared understanding (Creswell & Miller, 2000; Wilber, 2000). In this study, several conditions were in place to ensure maximum trustworthiness, credibility, and overall rigour of the research process and findings.

Trustworthiness and Credibility. First, was the purposeful selection of a semi-structured interview protocol as an appropriate method of inquiry to engage youth. The choice of this straightforward approach was in part to enhance participant comfort in the process, fostering relational conditions that promoted truthfulness and consensus within each conversation (Blee & Taylor, 2002). Generally speaking, teens understand the nature of interviews, and upon building rapport and establishing trust through informed consent and natural conversation, they could feel at ease to share their experiences. The supportive and empathetic relational conditions fostered within the interview procedure were able to offer participants a space for the truthful description of their experiences. In addition, the reality of my age meant that I was not that much older than my participants. This likely contributed to a felt sense of familiarity during the interview process, supporting conditions of trust, safety, and non-judgement. This, in turn, meant participants were more able to contribute veracious and comprehensive descriptions of their experiences (Creswell & Miller, 2000). As such, the establishment of a collaborative and respectful relationship between myself and my young participants helped to promote the truthfulness and consensus of the results.

A second condition that ensured trustworthiness and credibility in the results had to do with the paradigmatic assumptions of qualitative research itself, highlight the engagement of those directly affected in the co-creation of data and meaning (Creswell, 2009; Denzin & Lincoln, 2011, 2018). Herein lies the member checking procedure. Upon the construction of themes, I returned to participants to check for validity. This process reflects the study's philosophical underpinnings, where Wilber (1998) states in his *three strands of valid knowledge* that confirmation (or rejection) provides social consensus as to the trustworthiness and credibility of the knowledge attained. Prior to an arranged phone call with each individual participant, I emailed a protected word document with the themes and descriptions to be reviewed. On the call, I asked participants to confirm or deny if the themes accurately represent their experience as gleaned from our conversation. Did the identified themes capture their experiences? Were they represented accurately? If so, that theme was noted as increasingly valid. If not, however, the participant was offered the opportunity to add or adjust meaning insofar as it allowed them to feel more satisfied (Birt et al., 2016; T. Black, personal communication, October 30, 2020). If a theme was common across many participants but not all, I asked those with whom the theme did not appear in their story if it might apply. If this additional theme was in fact representative of their experience (even though it was not discussed in our conversation), they were offered the opportunity to provide a post hoc endorsement for the theme, thereby enhancing its degree of consensus. The specific number of participant endorsements and post hoc endorsements for each theme can be found in *Table 1* of the following chapter.

This is a crucial step in this qualitative research, as it gives participants the ability to correct errors and challenge my interpretations of their experiences (Creswell & Miller, 2000; Morse et al., 2002). Especially in research with youth, this simple step acted as a way to shift

some of the power from me as the researcher to the young participants. If participants affirmed the accuracy and completeness of the themes, validity and credibility is further established (Creswell, 1998, 2009; Denzin & Lincoln, 2011; Simpson & Quigley, 2016). This process is not without fault, however, as Birt et al. (2016) describe the epistemological challenges steeped in malleable interpretation of data. They note the distinction between the formal transcription of a conversation and the conversation itself. Issues herein may lie in participant disagreement with the transcript itself, or with aspects of the conversation that do not resonate, upon review. Further, a concern regarding member-checking particularly with youth is the concern of social desirability. Participants may agree a theme resonates, or express to me what they believe I want to hear (Simpson & Quigley, 2016). Concerns such as these were addressed in part through transparency with young participants regarding the value of our veracity in the process.

Next, from the collection of data to member checking and post hoc endorsement, participants were offered a stake in the creation and implementation of knowledge. This direct involvement of stakeholders in the process, in addition to consistent cycles of reflexivity and action offer enhanced credibility and trustworthiness of data (Braun & Clarke, 2006; Krefting, 1991). The reflexive nature of thematic analysis is especially important as it allows for continual questioning of research action to yield a more trustworthy, credible, and rigorous dataset (Ponterotto, 2005). In addition, the research journal I kept throughout the process allowed for continual reflection on my own positionality, the process itself, as well as the interpretation of data. The researcher's personal and procedural reflexivity in interpretive research is central to the overall quality of the project.

Finally, were the procedural consultations with my supervisor Dr. Fred Chou to ensure trustworthiness and enhance credibility of the procedure and findings. One specific example was

offered in the previous section, but Dr. Chou was consulted at every stage in this process. For example, to ensure the veracity of data collection, Dr. Chou listened to the initial interview recordings, providing notes and suggestions for improvement. He was then consulted in bi-weekly research meetings throughout the rest of the process to allow for verbal and visual debriefing (e.g., of codes, themes), and to examine how my thoughts and ideas were evolving as I engaged more deeply with the data. Not only is this reflexivity in analysis central to Braun and Clarke's (2006) process, but expert consultation provides this study with the additional trustworthiness and credibility that rigorous qualitative research demands.

Ultimately, at each stage specific strategies were embedded to enhance the degree of trustworthiness, credibility, and therefore overall rigour of this research, and meeting Wilber's (1998) criteria for the *three strands of valid knowing: injunction, apprehension, and confirmation*. From purposeful semi-structured interviews to post hoc participant validation, reflexivity in thematic analysis, research journaling, and supervisory consultation, the credibility of methods, themes, and genuineness of findings was ensured throughout.

Ethical Considerations

In this section, ethical considerations unique to this study are highlighted. These include confidentiality considerations within online research, possible risks of harm specific to participants, and the power imbalances inherent in research with a vulnerable population.

Confidentiality

In accordance with TCPS 2 (2018) and HREB policy, all individuals conducting research involving human participants have a duty to keep their participants' information confidential. This duty entails that researchers implement safeguards to protect the confidentiality of their participants throughout all stages of the research cycle, particularly important in online research.

This includes the following stages of this project: (a) recruitment; (b) the initial collection of information/data; (c) the use of and analysis of the information/data collected; (d) the dissemination of the findings; (e) the storage and retention of information; and (f) the disposal of records or devices on which information was stored. As participant confidentiality in this process was protected, several procedures were in place to ensure the anonymity of participants and for preserving their confidentiality of their data.

First, other than myself and my thesis supervisor, Dr. Chou, at no time did anyone associated with this project or upon completion of this project know the identity of participants. In this project, strict safeguards were in place to protect the privacy of participants and their information from unauthorized access, use, disclosure, modification, loss, and theft.

Safeguards for protecting confidentiality and ensuring anonymity were as follows:

Physical Safeguards. Measures were taken to secure the location of participants' private and sensitive information. With COVID- 19 forcing all research online, I was unable to use the locked file cabinets within my department at UVic. To ensure the physical safety of participant files (including physical copies of signed participant consent forms, participant demographic and biographical information, and hard copies of interview transcripts etc.), I purchased a filing cabinet for my apartment, where physical files were kept under lock and key.

Administrative Safeguards. These measures aimed to protect the privacy of participants' information by clearly delineating who did and who did not have access to participants' information, and in what ways. By minimizing access to just myself and my thesis supervisor, Dr. Fred Chou, participant private and confidential information was additionally secure.

Technical Safeguards. These were the technological measures that protect the privacy of participants. As this research was virtual research, meaning it was almost entirely done via videoconferencing, additional measures were in place to protect the privacy of participant data stored on a computer. Specifically, the use of computer passwords, a firewall, a re-installed anti-virus software, and file encryption served to protect data from unauthorized individuals, loss, theft, or modification. All electronic data was password protected, and based on the sensitivity of qualitative (description and personal experience-rich) data, also encrypted.

Research Design Safeguards. Finally, measures intrinsic to this research were designed with the protection of participant privacy in mind, especially considering the virtual nature of this project. Specifically, anonymizing information (participants given a number/pseudonym and stripped of all direct identifiers except age e.g., name, school), transcribing raw data as soon as possible, coding, storing de-identified data separately from coding lists, and shredding all hard copies with sensitive information as soon as permissible.

Ultimately, it is important to note that the onus has been on me, as the primary researcher, to ensure adequate safeguarding of participant information at every step in the process. If for some reason a measure appeared inadequate or missing, I acted carefully and quickly to maximize participation safety in the research process and beyond.

Possible Risks of Harm

The process of conducting the interviews and member checking procedure of the current study posed a low risk of harm for participants. What risk did exist was mostly associated with possible emotional and psychological discomfort of discussing one's mental health, where it is always possible for difficult emotions/feelings to arise. In particular, there may have been specific aspects of digital technology (e.g., applications such as Instagram, Snapchat) that proved

particularly impactful on one's mental health. Reflecting on and discussing difficult situations that arise on social media was a part of this research, and may have provided discomfort or unease for participants.

There was also the risk that reflections on mental health stir emotion that would result in emotional expression during our interview (e. g., crying). While this emotion would have been met with empathy, validation, and normalizing from me, the resultant emotion may prompt embarrassment or discomfort for the young participant.

Finally, as with online interactions in general, there is always a risk of awkwardness, anxiety, and/or unease in advance of or during the interview process. The following sections of this application attend to the mitigation of these potential risks.

Minimizing Risk. Several specific measures were in place to minimize, mitigate, and prevent the aforementioned risks from arising. From the dawn of this project, research protocols were designed to avoid deceptive practices, promote transparency, and simplify the process for young participants. Conversations were designed to be a straightforward discussion of the relationship between one's mental health and their screen use, rather than an in-depth analysis of mental health topics. Further, participants were only expected to be present for a short, semi-structured interview (purposefully chosen to provide helpful structure to the interview so that participants felt less overwhelmed), followed by an even-shorter check-in to confirm or deny themes. Informed consent was obtained from participants in advance of participation in the interview, outlining the purpose of the research, the methods being used, the possible outcomes of the research, as well as associated demands, discomforts, inconveniences and risks they may face. Consent was also be reiterated verbally in advance of the interview, and prior to the 'check-in' validation of themes call.

An important measure in addition to attentive informed consent was the protection of participant anonymity and confidentiality. Especially in conversations of health, participant names, disclosures etc. remained entirely confidential throughout the research process as well as in the thesis write-up and eventual publication.

Further, participants were reminded of their right to withdraw from the process at any time. This right was made clear in the initial written and verbal consent, as well as throughout the interview. Especially if a participant was having a difficult time in the interview due to any of the possible risks noted above (overwhelming emotions as a result of conversations of mental health, embarrassment due to emotional expression, awkwardness/anxiety in advance of or during the interview process etc.).

Finally, it is important to note the parameters of this study. In research with youth, especially that involving discussions of mental health and digital technology, boundaries must be set for appropriate conversation (TCPS 2, 2018). Although this was a project that aimed to center youth voices and experiences, I was heavily involved in ensuring conversations were relevant and free from potential harm. If at any time dialogue were to begin moving in the direction of certain topics, I would have acknowledged the movement and reiterated our inability to discuss these subjects. These subjects were:

- Pornography (including sexting)
- Suicide
- Abuse (physical, emotional, psychological)
- Online Harassment (e.g., cyber-bullying)
- Drug use (cannabis, prescription, alcohol etc.)

These parameters were set in the initial consent process to ensure clarity, understanding, and agreement before we begin. Part of what inspired the collaborative approach elucidated in this thesis was the search for a process that was more ethical, in its empowerment rather than exploitative and meets the needs of the researched rather than the interests of the researcher. Although parameters were firm, the self-reflective and reflexive nature of this research hoped to facilitate youth agency to tackle conversations like ours – and beyond – elsewhere in their lives.

Power Imbalances With a Vulnerable Population

As individuals under 19 years of age are considered a vulnerable population, specific considerations were built into the protocol to act as safeguards to their protection.

First, it is important to note that by conducting research with an adult, youth were placed in a somewhat precarious position. As an adult engaging in research with a diverse array of youth, I was an outsider. The potential conflicts, power imbalances and competing role demands may have been highlighted in my work with these youth, as I did not belong to their group. Participant youth, however, were insiders to their experiences of age, places of study, play, and experiences of digital technology. Navigating the imbalances in insider-outsider relations by upholding youth experiences, language, values, behaviours, and beliefs throughout the research process was key to the ethical completion of this study (Denzin & Lincoln, 2018; Dwyer & Buckle, 2009).

Part of this was in creating a safe, open, and welcome space for youth to explore their experiences without fear of being misunderstood or misrepresented (Irvine et al., 2013). Building strong rapport was key to this process. As it is typically more difficult to read facial expressions, and nonverbal/paraverbal behaviour over Zoom, building rapport is often more challenging (Akamoglu et al., 2018; Ratliff, 2018). Clear language and transparency were key

here, as we both navigated the sometimes-ambiguous and awkward waters of online interaction. Especially with youth, it was important to name this potential awkwardness at the outset of our time together. In our interview, I was sure to normalize any awkward feelings, difficulties, or glitches that may arise when interacting online. Then, throughout our time together I used empathy, gentle humour and understanding to uphold safety in the interview and trust in the process as I safeguarded participant vulnerability.

Finally, it is important to acknowledge that not all adolescents want a high level of engagement, and that disengagement and subversion of research processes can in themselves be a form of agency and assertion of adolescent rights (Flicker et al., 2008). Attentiveness to each participant throughout the interview process was vital to ensuring safety mutual understanding (Flicker et al., 2008). Ultimately, I believe it was incumbent on me, the adult researcher in research with youth to adopt a reflexive approach to the processes to ensure the research environment was supportive and created opportunities for adolescent agency without compromising their social, emotional, or physical safety.

Chapter Summary

This chapter lay the groundwork as to the methodological basis of this project. It first positioned qualitative research philosophically, theoretically, and practically, while highlighting semi-structured interviews and thematic analysis as the primary methods of inquiry. After making explicit the method-question fit, it described the procedures followed for recruitment, data collection, analysis, and interpretation. It also discussed key standards of quality associated with this qualitative research, including the trustworthiness and credibility of data and findings. Finally, there was an important discussion of the key ethical concerns and considerations present in the study and the specific steps taken to minimize risks and mitigate harm.

CHAPTER 4: RESULTS

The eight youth participants in this study engaged in the interview process by answering each of the pre-set interview questions and reflecting on the relationship between their digital technology use and their mental health. The thematic analysis process described in the previous chapter led to the construction of six themes from the interview transcripts. Taken together, the themes respond to this study's question: *How do youth understand the relationship between digital technology use and their mental health?* The themes are (a) They Find That a Relationship Exists, (b) Screens are not Created Equal, (c) Digital Technology and Their Social Relationships, (d) Digital Technology and Their Relationship with Themselves, (e) They Feel the "Effects of a Bigger World", and (f) Digital Technology and Their Sense of Connection to Their Surroundings. The two additional incidental results (a) COVID-19, and (b) They are Feeling the Effects of the Digital Age are presented following this study's primary themes.

As briefly noted above, these themes, taken together, serve as the response to this study's research question. As opposed to each individual theme alone, it is the overarching gestalt of this chapter that answers how youth understand the relationship between their digital technology use and their mental health. This approach exists to reflect how the study's participants understood the relationship between their digital technology and their mental health, evidently not as any individual factor but an amalgamation of various factors that together, and with context, represent the relationship between their digital technology use and their mental health. By taking the whole of participants descriptions together, the chapter upholds meaning as contextual, holistic, and free from elemental theories (or themes) of reality (Denzin & Lincoln, 2011, 2018; Guba & Lincoln, 1994). The results themselves are meaningful in the sense that the whole

explains the parts, a direct reflection of how meaning was made through relational, contextual, and critical interactions between the participants and myself.

Before I delineate each theme, it is important to clarify the term “mental health” within the context of these results. Each of the themes below were constructed given participants’ definition of mental health, so as to honour their voice and uphold their experience. In our conversations, participants described mental health more broadly than portrayed in the literature review, more as a concept of “well-being”. That is, they described situations relating to their overall experience of satisfaction with life, fulfilment, and sense of meaning and purpose (WHO, 2001). More than just a state of mind, participants described being mentally well as feeling good about themselves, their relationships, their actions, as well as having confidence in their abilities, energy to do the things they want to do, sleeping and eating well, getting time outdoors, and spending quality time with others. Relationships with others were described as a necessary part of what keeps these participants mentally well, as Isabella noted, “Connecting with people I love is huge for my mental health ... I need those relationships to be okay”. Participants also highlighted feelings of contentment with their lives as a descriptor of mental health, not longing for more but being at peace with what they have and where they are at. For example, Jayden pointed out, “... Not worrying how people are looking at you, or what your screen is saying, or whether you’re working out as much as you should be. I feel like being mentally well is when you can be happy with who you are”. They also spoke to feeling best when they feel present in life, where Yui shared, “... Being present in actual life. I think it’s harder to be present in real life when, you know, a large part of life is online”. Finally, participants highlighted feelings of productivity, finding meaning in the things they do, and having purpose in life as being central to their mental health. As “mental health” is a term that assumes many diverse meanings and

assumptions, it is essential the reader understands these youth participants' definition of mental health to contextualize the themes. The examples above clarify how this thesis used the youth participants' definition of being mentally well (i.e., strong relationships with others, relationship with self, ability to be present, productive etc.) to situate how they understand the relationship between their digital technology use and their mental health. In the quotes presented throughout this chapter, the reader will see that some quotes represent participants' device usage itself (e.g., "I'm on my phone all day) and may not appear to directly relate to the mental health implications of that usage. In these instances, the quote has been specifically selected to provide context so that the reader can see how that usage may relate to mental health, per these participants' definition.

In addition, it is important to note the definition of "digital technology" used throughout these results. The results of this research reflect participants' consideration of the term 'digital technology' when judging the relationship between its use and their mental health. When reflecting on the relationship between tech use and their mental health, they referenced the physical use of phones, laptops, etc., as well as what is being done on those devices (i.e., social media). Both were described as affecting their mental health. For example, participants described the physical use of devices as sometimes negatively interrupting the in-person social interaction that keeps them mentally well (reflected in Theme 3, *Digital Technology and Their Social Relationships*). As well, the digital consumption of social media was reported to engender feelings of social comparison or competition amongst peers, reflected later in Theme 5, *They Feel the "Effects of a Bigger World"*. In conceptualizing how youth understood the relationship between their digital tech use and their mental health, this research acknowledges both the

physical use of digital technologies as well as the digital content that is being consumed – both, simultaneously, are reflected in the themes below.

Theme Names and Descriptions

The following are descriptions of this study’s primary themes, accompanied by exemplar quotes. To protect the confidentiality of participants, these quotes are identified by the pseudonyms: Teya, Yui, Isabella, Zoe, Jayden, Olivia, Nala, and Arjun (colour corresponds with their presented quotes). A brief statement indicating the number of endorsements each theme received upon member checking is also offered, including any post hoc endorsement received. As a reminder, the post hoc endorsement was a protocol allowing participants who did not originally speak to a theme in our interview to assess whether it did in fact apply. If it did, they offered a ‘post hoc’ endorsement for the theme. Participant endorsements and post hoc endorsements are summarized in Table 1.

Table 1

Total number of participant endorsements and post hoc endorsements

Theme Name	Total # of Endorsements	# of Post Hoc Endorsements
They Find That a Relationship Exists	8	
Screens are not Created Equal	8	1
Digital Technology and Their Social Relationships	8	
Digital Technology and Their Relationship with Themselves	8	
They Feel the “Effects of a Bigger World”	7	2
Digital Technology and Their Sense of Connection to Their Surroundings	7	1
Incidental Results		
COVID-19	8	
They are Feeling the Effects of the Digital Age	8	1

Theme 1: They Find That a Relationship Exists

All eight youth described that they feel a relationship exists between their digital technology use and their mental health. In one of my initial interviews, Yui said, “*of course our mental health is affected by our screens*”, as in, what is not affected by screens these days? At one point, she continued to describe how she felt her digital and real lives were entwined, and I reflected “... it’s almost like an enmeshment between the two”, she responded, “*Yeah, yeah, and it’s funny I never really thought of that until now. I think for sure that’s what it’s like.*” This word ‘enmeshment’ was mutually understood by myself and the participants to reflect why participants find that a relationship exists between their digital technology use and their mental health. That is, this relationship exists because of an enmeshment between their digital and real lives, where boundaries are permeable and unclear; what happens online directly impacts real life and vice versa. As such, digital technology influences their mental health because digital technology influences every aspect of their lives.

Olivia described the enmeshment between her digital and real life through the following contextual quote, where she illustrates an average day:

Okay my alarm wakes me up, and then I go on my phone because I’m reluctant to get up. I’ll watch YouTube until I’m like “okay, I can do this,” and then I’ll play music or a YouTube video while I’m getting ready. And then I download an episode or a podcast, and then I listen to that while I’m walking my dog or walking to school. And I have my AirPods in. And then in class I go on my phone once in a while. Throughout the day I’m Snapchatting my friends. And then I get home. I try to not go on my phone. And then I watch Netflix and YouTube and listen to podcasts for the whole rest of the day. And now

I'll sit and watch Netflix or pods or YouTube before bed for 40 minutes or until I'm really sleepy.

Referring to the relationship between this enmeshment and maintaining her well-being, Isabella noted, "... Like scrolling through Instagram or watching YouTube, those are two of the big things I do to try and relax, which I've noticed isn't actually very relaxing, but I do it anyway."

Jayden referred to the connection between his phone and his life as if the two are 'magnetized':

Okay, well, I wake up, I check my TikTok, my Instagram, my Snapchats, my text messages, and then I, I try to leave my phone in my room as much as I can, but it's just like it's magnetted to me, so I'll try to go eat breakfast and drink my coffee...

Nala also said:

But then there's just the everyday. How much everyone else is on their phone, how much I'm on my phone, and then how my personality has really changed, and I don't know how much of that is being influenced by being online ... I think about this all the time.

Teya shared, "... what causes so much of my frustration with myself, also the confusion, is my phone has no part in what would make me happy, but then I go on it all the time, because that is the reality of life it feels like". Ultimately, this theme illustrates that there is a relationship between participants' digital technology use and their mental health. This relationship is one that is described as 'enmeshed', with digital technology influencing every aspect of these teens' lives, including their mental health.

Theme 2: Screens are not Created Equal

Seven of the eight youth participants note that it is not the time they spend on screens but *what they are doing* on screens that implicates their mental health. The eighth participant post hoc endorsed this theme when it was presented to them in member checking. Teya said, “The amount of time spent on screens is not a good measurement, it’s definitely I think the content ... social media, which is where I spend a lot of my time and where a lot of people around me spend a lot of time, would I think be the biggest effect”. According to youth participants, social media and “addictive” apps such as TikTok, Instagram, and Snapchat bear the most upon their mental health. Yui noted “... But I think that’s [referring to Netflix] in a different category for me than scrolling through Instagram, ya know, you don’t get to just sit back and follow a storyline on social media, it’s in your hand and you’re just constantly flipping through things. And for some reason that feels so much worse.”

To this end, phones (where these apps reside) are the screens that youth label as being most relevant to conversations of their mental health. Laptops or tablets that typically involve “educational tasks or activities that benefit our brains”, according to Isabella, were not negatively described by participants. Arjun said:

I feel like different screens draw out like different things, ya know what I mean? I don’t know if you’re on TikTok or anything, but like TikTok, Snapchat or Instagram are all very different apps, but they live on our phones so those I try to stay off of as much as I can really 'cause they just affect my brain so much more than say my laptop or TV. So I don’t think it’s the screen, I think it’s the app.

Amongst the apps, most participants spoke to the app TikTok as being the most consuming in terms of their mental health. Jayden provided an example of this:

... So I'll go on break at work and I'll scroll through TikTok, and I'll feel like I didn't even have a break from anything, like my brain was still working or something, so like ... and I find when I put my phone down for the second half of my break, then I'll actually feel rested and able to go back to work, but if I spend my whole break on TikTok, I don't actually feel like I had a break.

Zoe added that she would “not classify a laptop or Netflix as a screen even though it is a screen”, she continued:

... like, here's the thing, if I didn't know the definition of a screen, I would call my phone a screen, but I would say that laptops and TVs are used for other things that aren't as bad ... I use my laptop to online shop, and I don't classify it as bad for my mental health or I use it to type an essay for school, TVs to watch a show, whereas my phone it has everything, so it's worse. So they aren't equal.

Theme 3: Digital Technology and Their Social Relationships

All eight participants noted how digital technology use impacts their relationships with others, which, as they described, can have considerable consequences on their mental health. The two subthemes below clarify the ways participants described how tech relates to their social relationships and their mental health. The subthemes are (a) *In-Person Phone use and Relationships*, and (b) *Online Interaction and Relationships*.

In-Person Phone Use and Relationships. Participants described the importance of in-person human connection as central to their mental health, and that phone use, in particular, can both enhance and damage these relationships. Isabella highlighted:

I'd say good relationships with people keep me the most mentally well, which can be maintained or ruined through our phones so there is the balance there. I think that's a big

one - human connection. I think everyone, whether you're an introvert, an extravert, like everyone craves that human connection in some way ... That is a huge part of being happy and being mentally well, so I think our phones can provide a lot of that for us through FaceTiming and texting and whatnot, but also can really damage relationships.

This subtheme speaks to digital technology's tendency to affect the quality of in-person interaction when digital technology is present. It also reflects participants' descriptions of digital technology reducing the need for in-person interaction, as is presented in Yui's quote below.

Within this subtheme, participants made particular note of how this dynamic plays out in their family contexts. Yui said, "It is definitely a part of how we interact with each other. I think that we definitely interact with each other less 'cause of our phones ... It does do that - separates us. Everyone sort of goes into their own worlds".

Jayden added:

Mhmm, yeah, I don't think it's our parents' fault too. I think that that is just a common trend in so many families that as our parents are on their phones more, they become less strict about our time on our phones ... So like the whole culture is changing and how we interact with one another is changing. Instead now we're all in our separate rooms or even in the same room on separate devices. It's almost like, "walls up [laughing], I'm in my own world".

Online Interaction and Relationships. This subtheme covers participants descriptions of the way *online* interactions influences their relationships. This was described in three ways, (a) judging relationship strength based on the amount of communication online, (b) the mask screens provide when communicating online, and (c) "real" friends are those that exist both in-person and online. Each of these three concepts are delineated below.

Judging Relationship Strength Based on the Amount of Communication Online.

Relating to the concept of ‘enmeshment’ described in Theme 1, youth describe how everything that happens online these days influences their in-person relationships. This may be in the security of those relationships, or the fact that they exist in the first place. For example, participants highlighted the constant judging of the strength of relationships based on the amount of communication online. Zoe lost a group of friends due to judgements they made about her commitment to their friendship, because she was poor at responding to messages they sent:

I know there’s people who even when you’re having face-to-face conversations it’s all about whatever is happening online. Even if I don’t respond to a Snap, like I had a friend text me yesterday being like “why aren’t you Snapping me? Why aren’t you opening my Snaps?” ... Or sometimes in my friend group chat they’re talking about doing all these things, and I just won’t answer because, busy, and I notice when I go to school the next day they’re all talking about it, and there’s this disconnect now between me and them because I didn’t engage in that online thing and now they’ve blocked me off.

Since participants clarified that the security or certainty of their social relationships is central to their mental health, they described how the amount or “pace” of communication online can make relationships “expendable”, and thus more insecure. Teya noted:

I think it’s somewhat detrimental to people’s ability to have strong relationships with each other because how fast-paced it is, because with fast-paced communication comes with fast-paced judgements. Like someone adds you on Snap, you have no idea who they are sometimes or where they’re from, and you kind of talk, and get to know them and then often someone just leaves you on read ... so it creates super, umm, expendable

relationships. You can go through more because there's going to be more, but you never know how certain they are.

She also added, "... or how long you took to respond, like that's another thing. Waiting a minute between sending someone something and getting a response vs. waiting 20 seconds shouldn't be as big of a deal as it is. But even those few seconds can signal like how secure the relationship is.

Nala added:

Another thing that I'll mention, I have felt sort of not included or excluded when I hear that some of my close friends send each other stuff all the time, and they don't send it to me or I'm not sending things to them, like we're not connecting in the same way that they are, and so now I wonder why aren't they sending it to me or why are we not doing this thing together; why are we not posting Snapchat stories or Instagram stories together, so then I start overthinking it that way too, which is super dumb because relationships are a lot more than just sending each other memes on Instagram. But I do think in the back of my head – these people seem more connected because they're communicating all the time on Instagram, and I'm not, so I definitely feel that.

The Mask Screens Provide When Communicating Online. Participants also described 'veiled' online communication and how it influences the quality of their relationships and thus their mental health. Here, they spoke to the ability to misjudge or misread online communication.

Teya reflected:

Mhmm, and something I think you just said as well reminds me just how detrimental, how much of an effect it [online communication] can have on your mental health because it's just so clear the masks screens provide for us ... It's like communication is no longer

honest or even makes any sense and people can be meaner a lot easier and more often. Sometimes they don't realize it, but it comes across that way because it's just through words, so sarcasm is being missed.

She also spoke to the abruptness of communication online, "... It sends you into a spiral because you're reading way too much into something that doesn't even have enough information for you to read into. And so it can ruin a relationship before it starts if something like what emoji you just sent or they just sent you."

"Real" Friends are Those That Exist Both In-Person and Online. Finally, participants spoke to how online interaction affects the quality of relationships, as "real" friends are those that must exist both in-person and online. In a quote that provides some context, Yui said:

There is sort of this extra aspect ... if you're going to be real friends, you have to both be friends through social media as well as in person. Like if you only talk at school, then you're not really like a close friend. So then you'll have people with #1 best friends on Snapchat and then they don't really talk in real life.

Being online, then, according to these participants, is not only associated with the maintenance of relationships, but the inception of relationships. Yui provided more context, "... Snapchat in my generation is used as like a way to kinda like, if you like wanna hang out with someone you hit them up on Snapchat. So it's almost like a dating app, that's how people start talking or start relationships now". It becomes clearer, with this context, how participants may feel a threat of losing (or missing out on) relationships as being consequential to their mental health.

Theme 4: Digital Technology and Their Relationship with Themselves

This fourth theme was endorsed by all eight participants, as they described how their digital technology use relates to their relationship with themselves. This was explained in three ways, represented in the following three subthemes (a) *Push-Pull Quality of Technology Use*, (b) *Sense of Control is Influenced by Digital Technology*, and (c) *Digital Technology and Self-Acceptance*.

Push-Pull Quality of Technology Use. In response to the research question, and as seen in Theme 1, participants identified that there is relationship between their digital technology use and their mental health as their digital and real lives are so entwined. In making sense of the *nature* of this relationship, however, participants described that the enmeshment between digital technology and their lives influences their mental health largely because of a ‘push-pull’ dynamic it creates. That is, where they realize their tech use impacts their mental health negatively, but not always, and that the relational consequences of letting the devices go may be more consequential to their mental health. Zoe helped me understand this by describing:

... I felt distance when I [took myself] off Instagram for a month because I didn’t see all of things that they were sending each other ... I’d hear people talking about at school, and then I didn’t feel included because I didn’t know what was happening. But the main reason I got off Instagram wasn’t because I didn’t want to connect with my friends, it was because of other factors that I felt were negatively affecting me that I needed to put to the side ... I wasn’t getting the beneficial things that was worth it for me to stay just for that group chat, and then I felt the distance when other people would talk and I didn’t know what was going on.

Isabella also shared the following:

I definitely feel the pressure if I'm not on it [digital technology]. I'll be disconnected from people, and I won't be in the loop or I won't be included or part of it. I have a friend who doesn't have Snapchat. She's an amazing person, totally happy not having Snapchat, but she does feel kind of disconnected from other people around her. Even though, again, it's not that we're doing that many amazing things on it, but there's still that pressure in the back of her mind to download the app again just because that's what everyone else is doing, so I think there's the pressure to conform even though it affects you negatively.

This study's participants described that the pressure of maintaining a presence online while trying to limit their use makes them feel exhausted. As such, it is a push-pull as they aim to maximize the benefits tech provides while minimizing the harm to their mental health. For example, every participant described this cyclical process of deleting certain apps when they felt too affected by them, then feeling uncomfortable and uneasy without them, prompting them to re-download the app and the cycle to continue. Or as Arjun shared, finding tricks to rely less on their phones, “The longer you don't look at your phone, the less you wanna look at it, so if you spend the first part of the day without looking at it, you're not so inclined to keep picking it up after”.

This push-pull concept also reflects the “addiction” participants were vocal about feeling towards their devices; that in addition to the social pull to stay online, they are pulled to use their devices because they find themselves addicted to them, too. Olivia shared, “but I know that moving forward I wanna increasingly just distance myself from my phone, and it'd be, it'd be lovely to just like not be addicted at all”. Participants often used this language to describe the pull they feel to use their phone the moment they are alone or bored, the feelings of anxiousness

when they lose a device or it is without charge, the fact that they try and limit their use but always “relapse”.

Jayden reflected on this push-pull relationship between his digital technology use and his mental health as it might play out for the rest of his life, “I know I’m going to delete Snapchat for good one year or another and TikTok, but there’s always going to be another thing I find myself addicted to, so I, I really don’t know. I don’t think it’s getting better, so yeah, I don’t know what to say”.

Sense of Control is Influenced by Digital Technology. Beyond the behavioural influence of the “addiction” noted above, this subtheme reflects the lack of control participants described feeling, with so much of their lives dictated by their devices. Nala shared: “... I am on it for too long then it just leads to frustration, which I guess is part of bad mental health because I am mad that I wasted time and could have been doing something better, could have been doing something that made me happier or have a better time, honestly, but that just takes more effort.”

Yui also said:

I don’t have control over what I’m doing, so that’s a big one for me. On a broader level, not feeling really in control of what I’m doing with my time and why I’m doing it and that’s when a lot of anxiety for me kicks in. ‘Cause I’m doing these things when I don’t really know what I’m getting out of them anymore. I think that when you don’t really feel control of your life, you kind of start to question why you’re doing a lot of the things you’re doing.

They described this felt lack of control as leading them to question their actions and ability to find accomplishment in those actions, resulting in feelings of guilt. Jayden said, “... when I’m scrolling through TikTok ... it’s just like such pointless time spent, and I feel guilty for

it". They described being pulled away from the activities that offer them this personal satisfaction or sense of accomplishment (in-person social interaction, creative projects, finishing tasks, helping others etc.) by consuming digital tech. Yui added:

And you know the thing about going on your phone that you really don't leave with anything like beneficial from it. I find like I'll get off scrolling for an hour, and first of all I'm usually never actually really enjoying what I'm doing, but then when I walk away from it, I also don't feel like I've gained something. For instance, I play the violin, and I don't always like practising, but you walk away from it, you feel better and satisfied. Or even for me, I love TV, and I'll walk away from watching an episode or two, and I don't feel like I've really gained that much, but I also don't feel bad, like it's kinda nice to relax. Well social media is not like that. You don't feel relaxed, but you also don't feel like you've gained something.

In member checking, Olivia reflected, "I'm jealous of how my parents grew up... they didn't spend all their time wasting time... You're never just doing nothing. In every moment of nothingness if you just distract yourself and no ideas will come". As a result of digital tech and distracting screens, youth described being pulled from the things that provide their life with satisfaction (even if it is boredom, as Olivia notes).

Digital Technology and Self-Acceptance. Finally, participants described the relationship between their digital technology use and their mental health as involving intentional self-acceptance. That is, they described feelings of mental wellness as being associated with accepting where they are at, not striving for more but being content with who they are and where they are. In other words, when they can reclaim that sense of control. Zoe noted:

Mhmm, especially with going on my phone, you get a lot of that productivity and things thrown at you. I find at least, like my feed is often full of “this is the way to do this,” “improve your habits like this,” and so you spend a couple of hours with that, and I’m emotionally exhausted, physically exhausted ... and it just a kind of a shame as well.

Jayden said: “... Not worrying how people are looking at you, or what your screen is saying, or whether you’re working out as much as you should be. I feel like being mentally well is when you can be happy with who you are”.

Teya added that she feels like a “very different person now than a couple of years ago”, having grown to realize that for her to “be safe on [social media], it is a job. I can’t put all realness out there because this is the person I’m going to present online as defense mechanism, but I think crucial... I think it’s being as real of a version of yourself as you can while still maintaining a guard”. Participants described digital technology as forcing constant adjustments to how they think about themselves. From the content they see to their daily behaviour on tech, they reflected on having to assess themselves; what they are presenting to the world, and how they are appearing. Nala commented: “I guess obviously you don’t have to be happy all the time, but being someone who is a happy person still and who ... I think to like love yourself, to accept yourself is big”.

Ultimately, each subtheme in this theme highlights how digital technology use relates to participants’ relationships with themselves and their mental health. Participants acknowledged digital technology as being a space that allows for creative self-expression, but also hinders their sense of control and satisfaction in their lives. They described the feelings of ‘addiction’ to their devices, a push-pull dynamic the enmeshment and attachment creates between their devices and

their mental health, the feelings of guilt and frustration with excessive tech use, and a yearning for self-acceptance and connection to themselves amongst tech.

Theme 5: They Feel the “Effects of a Bigger World”

With the sheer amount of content teens are consuming online, they describe the effects of being connected to a bigger, broadened world. While digital tech connects them to those across the world, social movements they care about, new ideas, values, cultures, the sense of being ‘inundated’ by unprecedented amounts of images, videos, information, expectation, was described as often resulting in feelings of overwhelm or pressure. This theme was referenced in five of the eight interviews. Two participants of the three who did not reference it in their interview offered post hoc endorsements for this theme, while the final participant did not find it to apply.

Teya said, “and I think the effects of so much exposure ... like your world is so much bigger, which is a common message people hear, but really broken down it’s so true and it’s so much more important than I think people really realize, the effect that a bigger world has on you”. She went on to note the way it affects the thoughts she has about herself, her peers, the decisions she makes, and

... How little of an impact I can have but how big of an impact I *feel* like I’m supposed to be having on the world, and the change I’m making through, like racial discrimination, gender discrimination, all of these things that are coming to light in the world and becoming big movements online... I mean it’s supposed to be empowering. But it can make you feel defeated, or me defeated.

Participants described this sense of being one small individual in a world vaster than ever as leaving them with feelings of pressure, social comparison, and competition with peers. Yui shared:

You're just constantly being bombarded with content, and I think that's when you really start to compare yourself to people and have that whole aspect of social media affect you a lot more... And I think that just consuming so much more media, consuming so much more content that I wouldn't normally see because it just like being directed to me.

Nala added: "... [social media] brings up the emotion of sadness or the comparison, I see like a change immediately in how I'm feeling, and I can identify that, and it's not something I have to look out for because it's something that just happens, like it's very obvious."

Teya also noted:

I'm really struggling with this feeling of competition with my peers and with the world to do so much more, so much younger, and also to broadcast it and to somehow get recognition for it by many, many people. Because I think no matter what the initial intentions of social media were, it has been warped ... I feel like it's all driven by the want to have recognition and to have fame to some degree ... I personally think that comparison on such a large scale can do nothing good for anyone's mental wellness at all.

Participants also reflected that especially as they are trying to figure out who they are, a seemingly bigger world leaves them struggling to figure out where and how they fit in. Isabella shared:

Trying to find who you are while having so many people look at you ... but also that all of your actions are being recorded, and they're being placed, and it's an expectation that

you are keeping track of what you're doing, and in order to put it on your applications, put it on your resumes, put on all of the things. So I feel like doing good things is no longer about doing good things, it's what it can do for you, and how it can put you over top of your like peer."

She went on to add, "... Your path is being published, and if you take the wrong path, you know it's going to be represented somehow because everything is being recorded."

Ultimately, Zoe expressed the overwhelm these participants described of growing up in spaces with millions of others, and the longing they feel for less:

I'd rather live my life thinking about the things that I have in front of me and the conversations that come up, but on [digital technology] it's as if I'm having 200 conversations about different things, and I'm thinking about all these different things, but I'd rather live a more simple life and have more simple thoughts in my mind.

In member checking, Olivia also mentioned, "A more natural experience of growing up is seeing what is front of you or close by in the real world but now we have access to the whole f***ing wild world, and tell me that doesn't affect your mental health in some way".

Theme 6: Digital Technology Influences Their Sense of Connection to Their Surroundings

Participants described the paradox of being so connected online that they feel a lack of connection to their surroundings, to the world around them. This was described in one of two ways, represented in the two subthemes (a) physical screen, and (b) digital screen. Six of the eight participants discussed this theme in their interview. Of the two who did not reference it in their interview, one offered a post hoc endorsement, and one did not.

Physical Screen. This first subtheme reflects participants' descriptions of *physically being on a screen*, almost as a blinder to their surroundings. Participants described that when

they are on their phone especially, they have a hard time being present with anything else around them. With most of their days spent on screens, participants reflected that they often feel disconnected from what is actually going on in the world around them.

For example, Teya describes this when it comes to eating: “I try not to go on my phone or any sort of screen while I’m eating especially because ... it has caused some interesting relationships, that are like habits almost, just with distracted eating or just trying to, whether I don’t eat enough or I eat too much ... I just don’t know...”

The device as a physical blinder to the world was described in public spaces, where participants explained being able to block out what is around them if they pull out their phone in the hallway at school or on the bus. When they ‘re-emerge’ participants reflected feeling more connected to what was on their screen than what might be beside them. They noted, as Yui reflected, that a sense of presence with physical surroundings is helpful in keeping mentally well amongst tech, “... When you are more present and you’re not fixated on something ... you’re not stressed about what’s coming, or missing what’s happening right now.”

In the eating example above, Teya later described the same strategy to combat feelings of disconnection from her surroundings. She shared, “... I try to focus on what I’m doing [eating], and that’s kind of a moment of mindfulness for me throughout my day ... when I sit down to eat it’s kind of slowing things down.”

Digital Screen. This subtheme reflects the influence of *what is on the screen*, in its ability to disconnect participants from reality. It is no surprise that the content youth are consuming on the screen is curated. Consequently, youth participants describe being left with a sense of disconnection from what is actually real and explain how that affects their mental health.

Olivia spoke to this distorted reality, “The power you have to change people’s perception of you from a really coordinated video is insane. People in high school will value certain people more if their presence online makes them look cool. Like they can be super awkward in real life but if people respect your content, they will put you on a pedestal.”

In member checking, Zoe added, “When you look on a screen you see what people want you to see. We know it affects us, and yet we’re still affected by it... I dunno.”

Nala and I discussed how unsettling this becomes, especially when it alters her perception of what is real and what is not in regard to what is happening around her. She provided an example of conversation:

Online is more meaningless conversation. ‘Cause maybe I’ll read a text and I’ll be like “oh that’s funny”, and I’ll laugh, but it’s not the same. I’m not laughing with anyone. I can’t see them ... it leads back to not being as real. I don’t get the whole experience.

Here, “the whole experience” Nala is referring to is the experience of being connected to what is in front of her, what is “real”, and what is known. As opposed to something that is screened, which leaves her feeling more unsure.

Across both these subthemes, youth described the capacity of nature, being with family or friends in the same physical room, mindfulness, exercise, and meditation as helpful tools they use to try and disconnect from their devices and re-connect with their surroundings. Isabella stressed that nature can be a powerful antidote to the disconnection she feels from screens, noting: “I think that part of your mental health is just feeling like oh I need to get outside, I need to stop staring at this one thing”.

Incidental Results

The following results are not direct responses to the research question and were therefore unable to be included in the previous section. They remain relevant, however, both to the study's supporting literature and the context in which this study is immersed. These themes have met the same criteria as this study's primary themes, as "common, recurring patterns across the dataset" (Braun & Clarke, 2009, p.89), although in this case without direct response to the research question. The two incidental results of this study are: (a) COVID-19, and (b) They are Feeling the Effects of the Digital Age.

Theme 1: COVID-19

This incidental theme appeared in all eight interviews. Participants described their mental health over this past year to have fluctuated, including periods of productivity, drive, and purpose, contrasted with intense loneliness and exhaustion. Teya shared that she "found extremes that [she'd] never hit in terms of [her] mental wellness, positive and negative". She considered this, noting:

I think the big up and down for me was letting go of the form of joy and happiness that had been my life, because I realized through social media and everything I was doing before quarantine was all external praise. I had the external praise of volleyball, like you would win a game, like that's how you got that excitement, that dopamine and that kind of energy, and what quarantine hit and COVID showed me was "what do I have when I don't have that?" And so I didn't have that dopamine coming, and so it was that withdrawal, or just those saddened states until I could find something that I liked doing for the sake of liking doing it.

For the most part, participants noted not feeling depressed, but not well either. In all, they reported having thought about their mental health more than ever before, and with the obvious

increase in screen-time, found themselves reflecting on the influence this might be having on their mental health. Zoe mentioned:

Ugh, oh the pandemic. It's definitely taken away things ... I know back in March [2020] when everything was in lockdown the screens became a big thing, everybody's mental health started to kinda fluctuate, and I feel like yes that was about not being able to go out and play soccer or blah, blah, blah, but also maybe the fact that they were now on screens all day and on apps and having that disconnect from the real world and that they were starting to do this [looking at phone], and I feel like that's still something that's going on right now because it's not over.

Olivia also shared the perspective she gained:

Ah, but with COVID being at home and just like growing up during this time and maturing, it's like recognizing like 'oh I want to delete this app'. That is because of COVID, because I was at home, because I had ... like before I was doing so many things and if I was at home, I'm exhausted, so I'm not like consciously like reflecting on my life and my day-to-day, and so COVID has allowed me to have perspective on the impact of these things on my mental health and lead me to delete some things.

Participants also noted how much 'bigger' social media has become this year, all-of-a-sudden becoming an immutable part of their lives. They reflected on turning to social media all day in order to escape real life and fill time. Yui noted, "I feel like the social media is gotten so much bigger over the past year. I'm just thinking about that now for the first time, like, so I think that social media has become almost like more real?". Nearly every participant made special note of the app TikTok as having a particularly distressing effect on their mental health, as a "vortex"

with an exceedingly smart algorithm, addictive content, and social grip on their generation. Nala mentioned:

I did actually get TikTok, which is a big thing this year. I got it in like the spring or the summer, and I deleted it 'cause it's pretty much impossible to not spend like at least an hour or two a day on. Like I found it the most addicting app I've ever been on, and I felt like that was kind of having the most impact on my mental health too.

Arjun shared a similar experience, noting that COVID-19 “started [his] TikTok addiction”, he continued, “I don't really remember using TikTok that much before COVID. Like I definitely used it, and same with Instagram. Snapchat hasn't changed for the past couple of years, but TikTok really, it was like, I was always in my room and supposed to be doing homework, but my phone was there, and I just got addicted to TikTok.”

Participants spoke to the lethargy they felt. Jayden said, “Well I'd say in quarantine, like I just had a million assignments to do, and all I wanted to do was - not that and be on my phone.”

Participants were sure to note, however, that COVID-19 made them realize the extent to which their livelihoods depend on the use of their mobile devices, and even social media. While being on a screen all day did not necessarily feel good, “screen-time” itself was not an accurate measure of its effect on their mental health, rather what they were doing on screens. For example, connecting with friends via Facetime or games was essential to their mental health, whereas scrolling endlessly through social media was what left them feeling unwell.

Finally, youth described their realization that online interaction did not equate in-person interaction. Isabella shared:

My most important relationships have always been, and still are in person. And what is really shown is the importance that the in-person relationships have to me over COVID

because I've had a lot of friendships drop out where I just didn't see them very much anymore, and so I don't know if that speaks to just how close we were originally or just how important seeing people day to day is for me.

Participants noted that seeing their friends and peers turned out to have more of a positive impact on their mental health than they ever could have imagined. They describe realizing that 'school' was so much more than academics, but a space and facilitator of social connection, routine, and structure that was essential to their mental health.

Theme 2: They are Feeling the Effects of the Digital Age

Finally, participants noted that they feel different from other generations. They reflected that their parents and grandparents did not use digital technology growing up the way they do, that society has shifted. Participants were clear to point out, though, that this is not all bad (if at all). Compared to generations before them, they have different communication styles, relationship styles, ways of forming and maintaining relationships, ways of learning, relating to others, different values, goals, and ideals. Teya noted:

... Going forward in later stages of life as a generation, I feel like there needs to be a whole new model of analysis at how later life will look because how past generations lived their life, through raising family, doing this, like all these kind of things are not really ideals to us. A large portion of my generation doesn't want to have a family, doesn't want to do things the usual way, or spend all that money going to school. That's something I'm dealing with right now is that with this exposure to so many other people living in so many other ways, now I've got all of these other things that I can do.

They realize, though, that they are pushing up against an old way of being in the world, one that does not rely on digital technology to survive. Participants do not want it to change, but

rather to figure out how to live amongst tech in a way that supports their mental health and not detract from it. Jayden shared:

Yes we are communicating differently, but to our parents, us communicating is being on our phones too much. To us, we are reaching out, finding new relationships, but to older generations that could be scary. Like me personally I feel like judged almost ... by generations above, but really I am just moving through the world how I know to.

Zoe added that, “because [digital technology] has been such a major part of our lives, that going forward if you don’t know how to have it just be something that helps you and this cool thing, it becomes a part of you”. She continued, “As long as it’s around, it will be a part of us whether we like it or not and whether we try and disconnect or not, it will always be there.”

Participants also acknowledge that this may be out of their hands, calling on larger social systems or “outside forces” to help in understanding the power screens have over their lives, and thus, their mental health. Yui speaks to this, when she said:

But part of me thinks that when my generation is ... when we’re adults we’re going to be so much more aware of how affecting it is ... so I think it’s going to be regulated more. I think right now it’s so unregulated that it’s kind of like the biggest it’s been, and it’s just getting more and more prevalent, but when people know more about the effects ... I think it’s gonna take a lot more outside forces too than just the individual because it’s such a large part of our lives now.

Finally, participants with younger siblings reflected on their concern for the health and well-being of their younger relatives. Participants reflected on how different their experience of digital technology has been compared to their siblings even a few years younger. That even a couple years difference created marked differences in when they got access to screens and social

media, how they interact with their parents, friends, their activities, priorities, behaviours, communication, and the implications of such on their well-being.

Olivia shared, “I think research exactly like you’re doing is so important, and it’s kind of crazy to be in the now of it as well as you’re not on either end. Like in social studies classes you always see the aftermath or the what happened before, like you could see how it all led up, whereas now we’re in the revealing of a lot of things and social media is one of them.”

Ultimately, Arjun added, “Our ways of using technology is different, and therefore our behaviours and experiences are different. We can’t say that all the ways that worked 10 years ago will work now. Things have changed too much.”

Chapter Summary

This chapter presented this study’s results, themes constructed from eight semi-structured interviews with youth participants. Six primary themes in response to the research question were presented as well as two additional, incidental results. In the next chapter, this study’s findings will be discussed in the context of the extant literature.

CHAPTER FIVE: DISCUSSION

This chapter explores how the results of the current study fit within the extant literature in the field, both supplementing and specifying the relationship between youth mental health and digital technology use. It first presents the themes that inform the literature, then highlights the study's unique and incidental results. Finally, the discussion delineates implications for practice, identifies the strengths and limitations of the study, and concludes with recommendations for future research. First, however, this final chapter begins with a summary of results.

Summary of Results

Using a qualitative approach, this study aimed to explore youth perspectives on the relationship between their digital technology use and their mental health. Eight participants were interviewed, and upon analysis of the transcriptions, six main themes were constructed: (a) They Find That a Relationship Exists, (b) Screens are not Created Equal, (c) Digital Technology and Their Social Relationships, (d) Digital Technology and Their Relationship with Themselves, (e) They Feel the “Effects of a Bigger World”, and (f) Digital Technology Influences Their Sense of Connection to Their Surroundings. In addition, two incidental results of (a) COVID-19, and (b) They Are Feeling the Effects of the Digital Age were constructed.

Themes that Inform the Literature

This study contributes to the existing knowledge of digital technology use and youth mental health in several ways. The paucity of youth perspective on the influence of digital technology on mental health in the context of counselling psychology leaves a gap in the literature that this study has attempted to address. Specifically, rich, descriptive, data on the experience of youth mental health in the digital age were gathered to add depth to extant literature and clarify *how youth understand* the relationship between their screen use and their

mental health. The results of the current study that appear in the existing literature are discussed in this section, including (a) *Screens are not Created Equal*, (b) *Digital Technology and Their Social Relationships*, and (c) *Digital Technology and Their Relationship with Themselves*.

Screens are not Created Equal

One of the most unanimous perspectives across all participants was the clarification of the definition of ‘screen’. When discussing the relationship between screens and their well-being, participants were sure to note that not all screens are created equal. That is, certain screens have more of an influence than others, and as such, screen-time is not an effective measurement of the relationship between screen use and mental health. In other words, when considering the mental health implications of screen use, what adolescents *are doing* on screens seems to be more important to consider than the amount of time they spend on screens. This result has considerable implications in the context of existing literature.

As this is perhaps the most debated topic in the field today, the current study’s unanimity in participant responses lends further indication to the fact that it is *quality*, in addition to *quantity* that we should be paying attention to when assessing the mental health implications of screen use on young people (Naslund et al., 2020; Rotondi et al. 2017; Sanders et al., 2019; Stiglic & Viner, 2019; Thomée 2018). Within the current study, participants’ perspective that reducing their screen time does not necessarily alleviate the adverse mental health consequences of screen use, gives weight to the rising argument that placing ‘limits’ on screen use is not the answer (Ashton & Beattie, 2019; Gao et al., 2020). This challenges the established goal of research in this field – limiting screen time (Przybylski & Weinstein, 2017; Twenge et al., 2018; Keles et al., 2019). Here a predominant presumption is called into question: that reduced screen time is the solution to relieving the mental health consequences of screen use, and as such,

research and policy should be geared toward the implementation of screen-time guidelines for young people (Domoff et al., 2019; Twenge & Campbell, 2018; Twenge et al., 2018; Sanders et al., 2019). Instead, the current study points to the need for a more nuanced approach to investigating youth screen use and mental health, inviting questions that focus on the quality of screen use in addition to the quantity.

Relatedly, the current study's findings confirm that the literature's concentration on social media is legitimate, as participants overwhelmingly stressed how affecting social media is on their mental health. This validates researchers such as O'Reilly (2020), Keles et al. (2019), and others studying the mental health effects of excessive social media in youth. The results from the current study do, in addition, provide reassurance to the portion of the literature devoted to studying the merits of digital technology use (Chassiakos & Stager, 2020; Naslund et al., 2020; O'Keeffe & Clarke-Pearson, 2011; Tartari, 2015). The advantage of social media, however addictive and harmful it was described to be, was highlighted by youth participants of the current study. Particular attention was paid to social media's ability to connect participants to one another and exist as a space for creative self-expression. This finding is also seen in research by O'Keeffe and Clarke-Pearson (2011), and Tartari (2015), and provides further evidence that blanket screen time/screen use restrictions have the potential to not only backfire, but also infringe adolescent agency and underestimate their digital literacy and competence. In addition, although smartphones – where the addictive and harmful apps reside – were negatively attributed to adverse mental health consequences in the current study's participants, other forms of digital technology were described positively. This is supported by literature from Mykhnenko (2016), Saba (2009), and others who describe the venues for educational tasks, gaming, watching films

(e.g., laptops and tablets) are generally appreciated by youth for their ability to help them relax, complete tasks, and feel productive, thus supporting their mental health.

Digital Technology and Their Social Relationships

As noted in the previous chapter, teen participants regarded social relationships as one of the most important aspects of their lives, together with their digital devices. As a result, it is no surprise that the relationship between their digital technology use, social relationships, and mental health was reported to be significant. This finding coincides with the existing literature, which suggests that digital technology is impacting the nature, quality, and sheer existence of social relationships today, and as a result youth well-being (Colier, 2016; McCreary Centre Society, 2018; OECD, 2018). The two subthemes of this theme (a) *in-person phone use and relationships*, and (b) *online interaction and relationships*, reflect the current study's findings on the relationship between adolescent digital tech use, their relationships, and their mental health.

The first subtheme is well-documented within the literature. Researchers such as Lapierre and Lewis (2018) and Sbarra et al. (2019) highlight the tendency of digital technology to (a) reduce the need for in-person interaction, as well as (b) affect the quality of the interaction when digital technology is present. Participants of the current study spoke to both these concepts.

Participants noticed that especially within their family context, there is less of a need to interact with one another now that “everybody has their own devices”. Jayden, Isabella, and Yui noted that particularly in the evening, when the family would normally spend time together and catch up on their days, everyone is able to “go into their own worlds” to decompress instead. For example, Yui reflected that because so many options for entertainment exist these days, they do not need to “compromise” and watch the same thing together; everyone can watch what they want, each on their own devices. Aligned with Lapierre (2020), Haig (2019), and others, the

current study's participants noted that screens have replaced a significant amount of their in-person interaction, and that they often notice feeling less fulfilled after time on their device than they would spending that same amount of time with their loved ones. Colier (2016) and Hari (2018) speak to the way the current study's participants feel the outcomes of this, specifically as less connected to and sure of their closest relationships. Participants noted, however, that COVID-19 showed them that without access to their friends in person, social connection via digital technology (Facetime, online games etc.) not only benefited their mental health, but became essential. Research by Pandya and Lodha (2021), Rosen et al. (2021) and others support this finding, exploring the delicate balance that is screen time, social connectedness, and mental health in the context of a global pandemic.

Additionally, the current study's findings align with the mental health effects of phones interrupting in-person interaction, in turn affecting the overall quality of social relationships. Participants spoke to the existing concept of *technoference* (McDaniel & Radesky, 2018), where digital devices (especially handhelds such as smartphones and smartwatches) interfere and interrupt everyday social interactions. Participants of the current study expressed feelings similar to Radesky et al.'s (2016) concept of an "absent presence" when with peers or family who are on their devices, the sense of someone being physically present but having their mind elsewhere based on communication or content from their device. With the continued intrusion of screens, participants described reduced relationship satisfaction, as seen in McDaniel and Radesky (2018).

The second subtheme also appears in the literature, albeit to a lesser extent. Here, the current study suggests that adolescent online interaction relates to their in-person relationships. First, the concept of screens providing a 'mask' when communicating online is documented in

research regarding the effects of online communication on psychological health (Abi-Jaoude et al., 2020; Pierce, 2009; Twenge & Campbell, 2018; Twenge et al., 2018), especially in the ability to misjudge or misread online communication as the current study's participants describe. Where the literature is less prevalent, however, is regarding the current study's findings that relationships are constantly being judged based on the amount of communication online. This relates to the concept of 'enmeshment' described in Theme 1, where youth describe how everything that happens online impacts their in-person relationships. Small parallels could be drawn to literature regarding *social capital theory*, especially seen in Zoe's example of losing group of friends due to judgements they made about her commitment to their friendship, just because she was poor at responding to messages they sent. Social capital theory, where features of social relationships, or "networks" can be seen to either yield or degrade human capital (Putnam, 1995). These networks work together with shared norms, values, and understandings that facilitate connection among groups. Norms and understandings, then (the unspoken and largely unquestioned rules) may not become apparent until they are broken (Cuesta, 2012; Putnam, 1995). Once broken – e.g., failing to keep up with text messages – it can be relationally costly to the individual. Thus, the bonding and trust of some demands the exclusion of others (Cuesta, 2012; de Zúñiga et al., 2017; Raffo & Reeves, 2000). Digital technology, as described by the current study's participants, serves as a new medium for social exclusion, a socialized punishment that appears to carry with it serious relational and mental health implications.

Finally, "real" friends having to exist both in-person and online appears less in the literature, but parallels may be drawn between a study by Lu et al. (2016) in their investigation of the differences between online and offline friendships. Here, they describe that the internet has "extended the physical boundary of people's social circles to manage an inordinate number of

online friends”, and that only a select number of these online friends are also in-person friends (p. 1299). This might explain why new generations of humans *expect* a close relationship to exist in both spaces, in order to maintain connection. The participants of the current study describe this phenomenon, but add that presence online not only influences the maintenance of relationships, but the *inception* of relationships. The consequences of this, as youth describe, is the almost existential threat of losing (or missing out on) relationships because of decisions to remove oneself from the online world to protect one’s mental health. Given the lack of research on this concept, further exploration may be informative.

Digital Technology and Their Relationship with Themselves

All of the participants in the current study commented on the way digital technology relates to their relationship with themselves and thus their mental health. This was explained in three ways, represented in the following three subthemes (a) *addictive quality of technology use*, (b) *sense of control is influenced by digital technology*, and (c) *digital technology and self-acceptance*. Each of these subthemes is visible in the context of existing literature, albeit to differing extents, as is delineated below.

As noted in Chapter Two, despite my criticism of the addiction language, and preference for the term “problematic use” (Loid et al., 2020; Panova & Carbonell, 2018), youth participants of the current study did identify with and use the addiction framework to conceptualize their experiences. The current study’s participants were vocal about the “*addiction*” they feel to their devices, leaving them feeling mentally unwell and frustrated with themselves. This is reflected in the literature, where the psychological and behavioural effects of smartphone use have been commonly analyzed through addiction criteria, such as excessive use, functional impairment, physical consequences, issues with impulse control, tolerance, salience, withdrawal, and relapse

(Chiang et al., 2019; Kim et al., 2018; Ihm, 2018; Volkmer & Lerner, 2019). Participants of the current study described similar experiences, noting its interference with schoolwork and relationships, the momentary ‘feel-good’ sensation of receiving likes or comments online, and their attempts to limit their use but shame and frustration with self when they inevitably ‘relapse’. This begins to get at the concept of the ‘push-pull’ quality of the relationship between participants’ tech use and their mental health, although it is less apparent in literature. The ‘push-pull’ is the participants’ acknowledgement that their devices can impact their mental health negatively, but the relational consequences of reducing their use be more consequential to their mental health. From my search of the literature, existing research does not comment on this push-pull relationship between tech use and mental health. The exhaustion and frustration participants describe in the current study regarding the battle of trying to maximize the benefits of digital tech while minimizing the harm to their mental health points to an area of further study.

Related ties to the literature, however, can be found in the subtheme of *youth sense of control as being influenced by digital technology*. The current study’s participants described the lack of control they feel over their screen use as trickling outwards, influencing the attitudes they develop about themselves and their abilities. When considering the protective factors against mental ill health (Keyes, 2006; Youth.gov, n.d.), the literature poses youth as better off mentally when they can believe in their capacity to influence their own thoughts and behaviour and have faith in their ability to handle a wide range of tasks and situations. Youth in the current study often described situations in which social media made them lose faith in their ability to influence their own thoughts and behaviour. Youth in the current study also reflect that this lack of control they feel regarding tech often trickles outwards and influences their sense of self-worth, confidence, and the agency they feel over their lives. This, in turn, influences their sense of

satisfaction in life (also seen in Cho [2020] and Pierce [2009]). Being pulled away from the things that offer them satisfaction and purpose (in-person social interaction, creative projects, accomplishing tasks, helping others etc.), had consequences on their mental health. This is also well documented in the literature, that an individual's ability to find meaning and purpose is central to their well-being (see Deci & Ryan, 2008; Reker et al., 1987; Zika & Chamberlain, 1992).

The final subtheme, *digital technology and self-acceptance*, shares similarities with aspects of existing literature, which suggest that an individual's acceptance of themselves is strongly associated with greater mental, emotional, physical, and psychological well-being (Chamberlain & Haaga, 2001; MacInnes, 2006; Ryff & Keyes, 1995). The current study's participants described mental wellness as a place of acceptance for where they are at, not striving for more but being content with who they are and where they are. They described digital technology as forcing constant adjustments to how they think about themselves; from the content they see, to their daily behaviour on tech, constantly having to assess themselves, what they are presenting to the world, and how they are appearing. Gao & McLellan (2018) apply Ryff and Keyes' (1995) model of well-being to adolescents, and find that self-acceptance, along with autonomy, environmental mastery, personal growth, and purpose in life, correlate highly to youth self-reported well-being, which this subtheme supports.

Unique Results

The current study constructed several unique results. These include the themes: (a) *They Find That a Relationship Exists*, (b) *They Feel the "Effects of a Bigger World"*, and (c) *Digital Technology Influences Their Sense of Connection to Their Surroundings*. These themes are a

unique contribution to the literature in the field of digital technology use and youth mental health.

They Find That a Relationship Exists

In the current study, participants acknowledged a relationship between their digital technology use and their mental health. They explained this relationship to exist because of an ‘enmeshment’ between their digital and real lives, where boundaries are permeable and unclear, and what happens online directly impacts real life and vice versa. Although parallels may be drawn to aspects of boundary continua and differentiation within close familial relationships (Bowen, 1976; Minuchin, 1974), the understanding of proximity and distance within *relationship to technological devices* is new.

The nearest parallel to the literature here may be in the debate of ‘attachment’ to technological devices, where some authors posit that that devices are extensions of ourselves (Konok et al., 2016; Parent & Shapka, 2020). The current study highlights that youth are, in a sense, in relationship with their devices. Participants describe that the enmeshment makes it feel as though they are just as much “in relationship” with their device as they are with anyone else important in their lives (e.g., a best friend or parent). In some ways, this also relates to Theme 4’s concept of the push-pull quality of the relationship. For example, like religion, spirituality, or anything we deem greater than ourselves, we exist in a relationship with digital technology that can be both beneficial (providing meaning, support, community), and at the same time harmful (resulting in feelings of helplessness, guilt, obsession). The literature here is nascent (Harkin & Kuss, 2021; Parent & Shapka, 2020), however, and does not include youth perspectives on the subject. For example, Harkin and Kuss (2021) qualitatively explored adult participants holistic experiences of their device use, and found that smartphones were considered an extended part of

‘the self’, permeating personal identities, romantic and social relationship, and so on. They found that devices hold value through constant connectivity, externalizing identities, mediating intimacy, authenticating experiences, and forfeiting agency. More research as to psychological and emotional enmeshment between individuals and their devices, and the accompanying mental health implications of such would be beneficial. As would more studies that aim to centre youth perspectives on the matter, prioritizing *their* understandings of the relationship between their digital technology use and their mental health.

They Feel the “Effects of a Bigger World”

The current study is unique in its co-generation of evidence regarding the influence of a broadened world on youth mental health. With the sheer amount of content teens are consuming online, participants of the current study described the mental health consequences of being inundated with unprecedented amounts of images, videos, information, news, ideas, values, cultures, belief-systems, and opinions. They described this as leaving them with feelings of overwhelm, pressure, and defeat. While this is not yet fully represented in the literature, it is a rapidly growing field of research as some researchers (Matthes et al.; 2020; Stainback et al., 2020) investigate the effects of COVID-19 and the 24/7 news cycle or information overload on mental health. Youth in the current study, however, describe that it goes beyond the news. They reflected that the consumption of enormous amounts of digital media leave them feeling especially overcome by pressure, social comparison, and competition. This is where the closest parallel to the literature might be drawn, where researchers have extensively studied social media’s effects of social comparison on mental health (Barry et al., 2017; Berryman et al., 2018; O’Reilly et al., 2018; Vogel et al., 2014). Few of these studies, however, have been qualitative in nature or centred on youth voice. As such, the current study adds a unique youth perspective as

to the effects of a broadened world on their mental health. From conversations of loneliness, self-esteem, and the experience of growing up with “millions of others”, youth participants in this study describe the social competition and overwhelm they feel, leaving them feeling small and inconsequential. In particular, Zoe, Olivia, and Isabella noted how this “bigger world” as a result of social media leaves them struggling to figure out where and how they fit in.

Digital Technology Influences Their Sense of Connection to Their Surroundings

This final theme is another unique contribution of this study to the literature. Here, youth describe the paradox of being so connected online that they feel a lack of connection to their surroundings, or the world around them. This was described in one of two ways, represented in the two subthemes (a) *physical screen*, and (b) *digital screen*.

This first subtheme captures the participant descriptions of *physically being on a screen*, almost as a blinder to the real world. When on their phones, the physical screen was described to separate participants from their physical surroundings. Surprisingly, this concept is seemingly understudied in the literature. Slight parallels may exist in research regarding smartphones and distraction – how devices are pulling us from the environment we are in, sometimes resulting in injury (e.g., distracted driving or walking) (Stavrinos et al., 2011; McDaniel, 2019). The current study’s findings are different, however, as participants described the tendency of their physical devices to hinder their sense of connection to what is around them, when on their device (e.g., on a bus, in a hallway). When they ‘re-emerge’ from their devices participants reflected that they often feel more connected to what was on their screen than what is right beside them, leaving them feeling out of place and dealing with the momentary stress of needing to relearn their surroundings. As participants described being on their devices nearly every minute of every day, this momentary stress could conceivably build and result in deeper feelings of detachment and

instability. The lack of literature on this highlights a need for more in-depth qualitative analysis of the mental health consequences of disconnection from physical worlds as a result of our ever-growing digital worlds.

The second subtheme, digital screen, describes the influence of *what is on the screen*, in its power to disconnect participants from reality. Here, youth described the psychological and emotional effects of knowing what they are consuming on their screens is not ‘real’, but it still affecting them (e.g., social media posts). The closest related literature to this subtheme includes studies regarding the psychological effects of curated content on social media (Barry et al. 2017; Berryman et al., 2018; Cain, 2018; Vogel et al., 2014), but few of these studies are qualitative and/or involve young people’s perspectives of the visceral effects of consuming unprecedented amounts of ‘unreal’ media. This phenomenon is so new that more research is needed to explain how consuming curated media distorts youth sense of reality and as such, disconnects youth from what is real around them. With the dearth in youth perspectives and qualitative data here, further research might be apt to involve participatory methods (such as Youth Participatory Action Research, or Advisory Councils) that involve youth directly, especially considering the disconnecting, isolating, experiences spoken to throughout this subtheme.

Ultimately, the current study’s participants provide preliminary insight as to the sense of disconnection (both physically and digitally) from reality. They note that this leaves them with the impulse to “unplug” often, a time where they voluntarily forego the use of their devices temporarily in order to alleviate mental health consequences and reconnect with themselves and their surroundings. This aligns with research regarding the beneficial influence of mindfulness in reconnecting with oneself in the present (Gu et al., 2015; Shapiro & Carlson, 2009), especially seen in the exercise many individuals practice today of taking time throughout the day to

intentionally focus on their breath in order to reconnect with the present and temporarily alleviate the stress of the world around us. Mindfulness strategies are a certainly well-documented concept and are further emphasized in the *Implications for Practice* section after discussion of this study's incidental results.

Incidental Results

Throughout the data analysis, there were a few patterns that did not directly relate to the research question yet provided important context to the responses. These incidental results (a) *COVID-19*, and (b) *They are Feeling the Effects of the Digital Age*, represent significant elements within the larger context of this study and beyond.

COVID-19

The significance of COVID-19 within the context of the current study is undeniable. Although this project was conceived pre-pandemic, the events of the past year have informed this research in innumerable ways. Perhaps most evident, is the impact COVID-19 has had on the current study's youth participants, thus making it a part of every interview. Much of what youth participants shared paralleled emerging literature speaking to the impact of COVID-19 on youth mental health. Per current reports, young people have disproportionately felt the effects of this global pandemic (CAMH, 2020b; de Figueiredo et al., 2021; Mental Health Commission of Canada, 2020; OECD, 2020; OECD, 2021; Statistics Canada, 2020). Early researchers such as Courtney et al. (2020), Loades et al. (2020), and Xiang et al. (2020) stress that young people have been particularly vulnerable to the disruptions the pandemic has caused, feeling the tolls of social isolation, parental stress, financial stress, on top of the physical, emotional, and social changes experienced in teenaged years. The current study's participants described experiences in line with this research, and noted that as a result, they have thought about their mental health

more than ever before. The majority of participants noted, however, that they have not felt depressed, but have not felt incredibly well either. This reflects (Keyes, 2002) concepts of *flourishing* and *languishing*. Participants of this study described their mental health similarly to languishing, or an absence of well-being, where they have felt a sense of loneliness, emptiness, and lack of motivation (Keyes, 2002). Participants also described this to be on a continuum, where their mental health shifts daily and depending on their circumstances or updates on the pandemic (Keyes, 2002; 2005).

Thus far, however, there has been little research that investigates the role of digital technology use on youth mental health during this time, and/or centres youth perspectives to gain that understanding. A few studies Huckins et al. (2020) and Nagata et al. (2020) have quantitatively studied the effects of increased screen time in this past year, noting the behavioural, psychological, and physical impacts of extensive screen use in youth. The current study's participants, however, made particular note of the content of their screens this past year – seeing an ‘explosion’ of social media. Apps like TikTok have become more ‘real’ as participants describe turning to social media to escape the reality of the pandemic, but are left feeling addicted, distressed, and exasperated at their inability to let the apps go. Relatedly, this finding also underscores another of the current study's findings that screen time itself is inadequate as a sole measure for understanding the relationship between digital technology and youth mental health.

Finally, the current study's finding that for youth, online interaction does not equate in-person interaction seems new and important. To me, this finding reflects broader societal conversations sparked by COVID-19 policies like social distancing, where individuals are increasingly aware we *need* in-person interaction to be well, and that without it, individual and

collective health suffers (Galea et al., 2020; Seitz et al., 2020; Skołacka & Pajestka, 2021). This finding lends evidence to the importance of school as a space and facilitator of social connection, routine, and structure that appears essential to youth mental health. Ultimately, according to both the literature and this study's participants, life as a teen in 2020/2021 appears to have been unsettling, unsure, and isolating, making this and future research seem more pressing than ever.

They are Feeling the Effects of the Digital Age

A final incidental result of the current study are the more 'meta' reflections on youth mental health today. Here, the current study finds that youth in the digital age realize that they are different, that society has shifted. Participants acknowledged that they are the first generation to grow up in a time where screens and social media have taken hold of society – impacting everything they do, feel, say, and experience. With something as epoch-making as digital technology has proven to be, the mental health concerns youth are experiencing today may be a reflection of this broader, societal, adaptation to life with digital technology.

Parallels to this concept may be seen in the literature regarding how humans handle change in general, that a natural response to change or life transition are feelings of pressure, anxiety, or grief (Neimeyer, 2000; Wheaton, 1990). That disorder, unpredictability, and lack of control are normal parts of a transition process (Bussolari & Goodell, 2009) and challenge one's sense of life satisfaction, purpose, or self-efficacy (Jerusalem & Mittag, 1995). As seen in many of the quotes in the previous chapter, the current study's participants described similar experiences feeling pressure and anxiety as well as wrestling with self-efficacy, and reflected on the individual effects they feel as resulting from bigger system-wide change. One could consider this to be the opposite of chaos theory's *butterfly effect* (Lorenz, 2000), that in a way the large-

scale, collective change of digital technological adoption is being felt most on a small, individual level.

Finally, the current study's finding regarding participants' concern for their younger relatives who are experiencing a 'completely different' version of the world is important to discuss. The current study's participants reflected that even a few years difference in ages today can mean not only the use of different technologies and apps, but different ways of communicating, ability to read certain emotions, activities engaged in, values, thoughts, and worldviews. Jayden reflected "My brother and sister are younger, they grew with their headphones in and on their phones. Screen use in the family became more individual, rather than a collective thing we did together" and continues that he feels this has had consequences on how they communicate and relate "I feel like that's a part of why I'm more social than they are, and I worry about them". Teya reflected she worries about her younger sister, too:

That's what I noticed with my little sister coming on, it feels like I had the benefit of a slower integration into it [social media]. I did have Snapchat and Instagram, which gave me a slow building of this world, like the diet culture world, whereas for my sister, TikTok was like jumping in the deep end, and it has had effects on her, and it has had effects on me too.

Participants' reflections that only a few years apart in age may signal completely different experiences of the world, online and offline, has not yet been studied in the literature. Implications of this can be seen in the following section.

Implications for Practice

This research was founded upon a desire to learn how we can best support youth struggling with their mental health in the digital age. Through in-depth qualitative inquiry, the

results of the current study point towards five specific implications for clinical practice: (a) *understanding ‘generational’ nuances*, (b) *the value of mindfulness-based approaches*, (c) *maintaining regard for youth agency*, and (d) *the importance of the family context*.

Understanding ‘Generational’ Nuances

First, is understanding the nuances within and between youth experiences today, even within the same “generation”. That is, a 15-year-old and 13-year-old client with the same presenting issue may have different experiences of that issue, thus requiring a different approach. This could be based on the amount and type of digital tech they consume, how early it was introduced into their lives, how much face-to-face time they get with their parents, their sibling’s interaction with technology, birth order, etc. A Jayden reflected “*It’s my brother though. He’s only three years younger than me, we both have our own video game consoles. I use it like in the night sometimes, and for fun, but he’s just addicted to it, and we are only three years apart, so ... I, I don’t, it’s crazy*”. Practitioners should be attuned to the variability of experiences, even within families. As Arjun shared, “*our ways of using technology is different, and therefore our behaviours and experiences are different. We can’t say that all the ways that worked 10 years ago will work now. Things have changed too much*”. I argue the same applies to counselling strategies. In order to support youth mental health today, we have to acknowledge how much has changed, is continuing to change, and adjust our approaches accordingly. For example, incorporating technological interventions to meet youth where they are.

Furthermore, the acknowledgement of counsellors’ own age or experience-related biases in understanding youth mental health concerns today has significant implications for clinical practice (Cook, 1999; Elliot, 2000; Reupert, 2006). To me, with rapid advancements in social media and digital tech by the minute, comes new experiences of the world, language for those

experiences, communication styles, ways of expressing feelings, reading emotion, and the sheer existence of some emotions (e.g., boredom). As with counselling in general, acknowledging the lacunae in one's own experiences seems central to the meaningful, supportive, and ethical support of youth mental health in the digital age, thus carrying with it implications for continuous professional development, regular supervision, and attention to boundaries of competence. For me personally, confronting my own assumptions about how and why youth should be using technology and reminding myself of the nuances of young people's reliance on tech has been essential to my clinical practice. That, in addition to continuously educating myself on the types of media young people are consuming, how they are engaging with media and devices more broadly, as well as the language associated with their use feels important to the maintenance of a relevant clinical practice.

The Value of Mindfulness-Based Approaches

One of the strongest recommendations stemming from the current study's results is the evident value of mindfulness-based approaches to supporting young people's mental health today. The current study's participants highlighted digital technology's capacity to reel them in, keep them scrolling, and disconnect them from their thoughts, feelings, and surroundings. Olivia said: "With the mindfulness, the initial steps are always the hardest for me because for some reason no matter how toxic and negative the social media and screened aspects of things can be, for some reason it's always easier than going and doing something I know will be good for me". They also noted that when they are able to connect with what is within them and around them (e.g., emotions, nature, being with friends or family without phones nearby), they feel more fulfilled and better off. Teya said, "I don't seem to let go of it [yoga] or the mindfulness work, and so that's how I think I know how important it is for me, but when I don't have that time for it

things go downhill for my overall wellbeing”. This recommendation is in line with trends across current counselling theory and practice, emphasizing that our brain and its processes are so busy in the modern age that helping it practice being still can provide innumerable benefits to our mental, emotional, and psychological health (Brown et al., 2013; Goldberg, 2018; Segal et al., 2018). The current study suggests that therapies such as mindfulness-based cognitive therapy (MBCT), mindfulness-based stress reduction (MBSR), dialectal behavior therapy (DBT), and acceptance and commitment therapy (ACT) that focus on a nurturing present-oriented and non-judgemental approach would support young people in cultivating a deeper connection to life. In addition, nature-based therapies might prove especially valuable with youth who find connecting with nature helps to counteract the disconnection they feel as a result of digital technology use.

Maintaining a Regard for Youth Agency

Implications of this study also regard the benefits of regarding youth perspectives and their agency, especially for those struggling with their mental health today. Throughout this qualitative inquiry, young participants continuously expressed the lack of agency and control they feel over their digital tech use and mental health. They described this in terms of the addiction they feel to their devices, like ‘guinea pigs’ for big tech. Isabella reflected this as being, “so emotionally exhausting, draining and like defeating at the same time”. It was also described in terms of the push-pull relationship they have with their devices, trying so hard to maximize the benefits of addictive tech while minimizing the harm. In this sense, the opportunity is for therapy to nurture youth agency, normalize their struggles without prescribing a ‘cure’, help youth gain autonomy, practice connection to others and themselves, all while following their lead. Ensuring that therapy is not being overly driven by adult therapist’s assumptions about

what technology use should look like (e.g., remembering the nuance in the screen-quantity vs. quality debate; that youth *rely* on their devices for social connection and screen-time is not accurate nor reduction in screen-time always a goal), but honouring youth as experts in what may help them feel best – or at least in control of how they feel. As Teya comments on the struggles of this, working through this battle on her own, “But I think something that has lended me a lot of good is realizing that social media, for me to be safe on it, it is a job. I can’t put all realness out there because of who can see and how it can be manipulated”. Although Teya was able to support herself, her example provides insight into how adults today may be able to help young people reclaim some agency or control over their tech use to support their mental health.

The Importance of Family and Social Contexts

Last, are the clinical implications of acknowledging and utilizing family and social (schools, youth groups, recreation etc.) contexts in the support of youth mental health (Bronfenbrenner, 1989; Edberg et al., 2017). First, the current study’s participants noted the enormous influence their family context has on both their tech use and their mental health. This was seen in participant reflections on screen use in the house, family norms around tech, the age they were able to get a smartphone, when and what apps they are allowed to use, the restrictions (or not) placed on those apps, their sibling’s relationship with tech, and their parental use of screens. Participants also reflected on how their parents either acknowledge or do not acknowledge the influence of screens on their well-being, both as a venue for social connection and an addictive device. In fact, one participant in member checking noted that the push-pull relationship not only exists between her and her device, but between her and her parents. In this way, instead of battling each other with regard to screen use, the current study recommends parents create space for open dialogue about screens in the house. They can facilitate routine to

help ground teens and reduce stress, as well as facilitate the accomplishment of tasks (chores, even) as the current study's participants noted how beneficial it is to their mental health to feel productive and with a sense of purpose. They can also ensure their child's quantity and quality of sleep is sufficient for the growing adolescent brain². Perhaps most importantly, though, is the modelling of boundary setting and tech use that is possible within the family context. Many of the current study's participants noted the double standard of their parents on technology. Nala reflected:

And my mom, she has an iPad, and she is always on that iPad, and she is a wonderful thing, but if she's looking at emails, she loses hearing. Nothing goes in her brain, so you will say like her name, you will speak to her, nothing. She will not look up, nothing. And it extremely annoying. And you'll be mid conversation, and she'll look down at her iPad, and she just tunes out, and it's so annoying.

She continued, "Our parents yell at us if we ignore them because we are on our phone, but the other way around they're terrible". Parents may be in a unique position to both model the discussion of mental health and screens, as well as behaviourally setting boundaries for addictive devices (e.g., no tech at the table, no phones in bedrooms) in the home.

This recommendation carries with it the acknowledgement that so much of human behaviour with digital technology is out of youth's control, as time on screens is less of an option and more of a necessity today. Especially clarified throughout the COVID-19 pandemic, without physical access to workspaces, schools, family, and friends, entire lives have moved online and

² Although not discussed in depth within the current study, it is well-documented in the literature (Bartel et al., 2019; CSEP, 2017; Hale & Guan, 2015; Martin et al., 2020; Werner-Seidler et al., 2019) that screens impact on teen sleep is important to consider in discussions – and recommendations – of the best ways to support youth mental health in the digital age. This study argues the family context is a great tool to help facilitate these conversations.

to a certain extent, youth rely on digital technology to survive yet still feel the negative mental health effects from its use. Through establishing social norms around tech use, though, we may be able to reclaim the connection some youth are missing with one another, themselves, their time, and their mental health. Like the United States Supreme Court holding Big Tobacco accountable in the 90's for the public health crisis of tobacco use among children and adolescents (Gostin, 2009), this might be the kind of change that requires larger-scale legislation and policy (e.g., no smoking in schools, no phones in schools). In the meantime, the family and social systems like school can be a helpful source of smaller system change, supporting youth mental health through engagement, conversation, and ultimately, connection. As well, in addition to maintaining a regard for young clients' agency as discussed in the previous section, this may be an opportunity for counsellors to step outside of the counselling room and engage in social justice and advocacy roles in support of youth today. For example, carrying conversations into advancing public understanding of the issue, policy, attending to the unique socio-economic inequities of tech use, and protection of young people's social rights with particular attention to racialized youth and experiences of marginalization with regard to youth mental health in the digital age.

Strengths and Limitations

Inherent in any study are both strengths and limitations embedded throughout the process. This section will delineate the specific strengths and limitations of this thesis research.

Strengths

First, is the gap in the literature this study sought and succeeded to fill. As acknowledged from the outset of this project, there is considerable lack of youth voice in research regarding youth mental health and digital technology. The central epistemological and methodological

approaches within the current literature have been primarily focused on proving theory and making claims, involving large sample sizes and instrumentation through informant report. Though this is helpful given certain research purposes, the consequences of implementing measures for generalizability through parental report is that researchers are pulled further and further from youth experiences (Camarota & Fine, 2008; Kidd & Kral, 2005). The current study acknowledged this and instead prioritized youth perspective on the topic. In conversing with youth who are accustomed to this new technological experience and its relationship with mental health, the qualitative methodology used ensured that at least some young people's voices are being heard in the conversation of supporting youth mental health in a technological and ever-changing world.

This point also reflects the strong alignment between this study's research question and its applied methodology, a marked strength of this study. As this study aimed to fill a gap in the literature by centering youth voice, it did so by asking a question that beget qualitative answers. The selection of semi-structured interviews paired with a reflexive thematic analysis was purposeful, particularly in the ability to co-generate relevant and meaningful data with youth so as to assure a method-question fit. As such, the depth of the study's findings allowed by the qualitative nature of the study was able to point to both implications for clinical practices as outlined above, and areas of future research as discussed in the following section.

Another marked strength of this study is the rigour applied to the data collection, validation, and analysis. From the careful attention to the interview protocol, meticulous transcription, mindful construction of themes, and constant researcher reflexivity, this study's trustworthiness and credibility was maximized. Further, the purposeful addition of the validation procedure served to provide participant youth with an opportunity to correct my assumptions of

their experiences. This process reflects the study's philosophical underpinnings, where Wilber (1998) states in his *three strands of valid knowledge* that confirmation (or rejection) provides social consensus as to the validity, credibility, and veracity of the knowledge attained. This ensured that the interpretive act of constructing themes was in fact representative of their experiences. Through its continual grounding in the narratives of the youth who participated, it was able to remain true to their unique experiences. The focus was to truly explore the experiences of these eight participants, and it was this honouring of their own voices that allowed their experiences to shine through. Finally, the ongoing supervisory support and consultation with my thesis committee provided fidelity to the study's procedures and eventual findings. Ultimately, this study is a well-designed, rigourously approached inquiry that aligned with its core research question and approved method.

Limitations

Due to the qualitative methodology of the study, which allowed for depth in the results by prioritizing descriptive data, some limitations need to be considered.

First, is the nature of the sample and recruitment strategy as limiting potential participants. As emails were sent to my personal and professional networks and youth quickly responded, there was no selection of participants beyond their fit of the inclusion criteria. It was hoped that the final sample ended up a diverse and representative sample of the broader, British Columbian youth population, but it is safe to say this did not end up the case. All eight youth were students, 50% of them were white, all spoke English, and all from middle-upper class families. The fact that all participants were found within a week also limited the amount of youth who could have engaged in the research project. Further, all the participants included in the current study were those who had an interest in the topic, already reflecting on the relationship between their screen

use and mental health. This limits the study's ability to speak to the experiences of other youth. For example, teens who use digital technology but do not find it terribly affecting or have not yet considered its relationship to their mental health. In addition, the small participant number, although in line with qualitative methodology, does not lend itself to findings being generalized to larger populations of youth. All these factors limit the study's results to youth who (a) have smartphones, (b) speak English, (c) attend school, (d) have the capacity to self-reflect, and (e) were already interested in and/or noticed the impact of their screens on their mental health. As such, while generalizability was not the goal, it is nonetheless a limitation of the current study.

Next, a concern regarding qualitative research particularly with youth is the concern of social desirability. Participants may have agreed with the reflections, statements, themes upon member checking, or express to me what they believe I want to hear (Simpson & Quigley, 2016). In addition, the parameters of this study that were set to prevent harm to participants may have undermined their power in our dynamic, and as such, the research process as a whole. Boundaries denoting our inability to discuss topics such as online harassment, cyber-bullying, abuse, porn, drug use, and suicide were pre-set. This meant that participants were unable to speak to details that may have been particularly important to their story. As the researcher, limiting participant's ability to speak to certain concerns was a disappointing limitation, albeit the correct ethical decision. In future research, I would be interested to see more qualitative research that has the ability to hear from larger numbers of youth voices, and their stories more fully, so as to gain an even more nuanced appreciation for the relationship between their digital technology use and their mental health of today.

Suggestions for Future Research

The purpose of the current study was to explore how youth understand the relationship between their digital technology use and their mental health. Thus, the goal of the study was to centre youth perspectives on the topic, employing a qualitative methodology to engage with youth in conversation. The descriptive results of the current study demonstrate the value of this method for understanding the relationship between screens and youth mental health, both in understanding their experiences but also in the ability to spot avenues for future research.

Although Chapter Two of this thesis highlights the dominance of quantitative methodologies in the field, there is no denying that larger-scale studies provide larger-scale response to an issue. The small participant number of the current study, which is in line with qualitative methodology, does not lend itself to findings being generalized to the larger population of youth. Quantitative research developed from these current findings (i.e., particular topics that resulted from this study's themes, highlighted below), with a larger sample would allow for more generalizability, and provide more data to support the present findings. This, in turn, would continue to highlight the importance of this topic, especially in the wake of COVID-19. More research, regardless of the design or applied methodology, is beneficial right now as we urgently seek answers as to how we can best support youth mental health in today's uncertain world.

Second, some topics seen in this study's findings that do not yet appear in the literature may prove beneficial to explore. First, rerouting the academic focus from studying screen *time* to screen *matter* (i.e., quality vs. quantity) would help in clarifying what it is about digital technology that is most affecting to youth mental health, in order to tailor interventions appropriately. In addition, further investigation into the role of the family context might prove useful in ensuring a wrap-around care for struggling youth. Further, the investigation of topics

this study could not explore, such as online harassment, cyber-bullying, abuse, porn, drug use, and suicide would be helpful to study to add depth to our understanding of youth mental health in the digital age. Last, the current study's findings of teens judging strength of relationships based on the amount of communication online, and that "real" friends are those that exist both in-person and online is entirely novel. Pursuing this line of inquiry might prove fruitful in determining social and relational approaches to supporting youth mental health in and amongst tech. Putting this and the concept of "enmeshment" into words fascinated youth participants in the member checking procedure of the current study, providing further validity to its newness of a phenomenon. Studying the novelty of this conceptualization of enmeshment and youth being *in relationship with their devices* would prove compelling. In this way we could explore further how relationships sometimes support and sometimes hinder our mental health, and apply what we know about human-human relationships and mental health to human-tech relationships and mental health.

Conclusion

This study begins to bridge a gap in the burgeoning field of research regarding digital technology and youth mental health. Through the employment of a qualitative methodology that used semi-structured interviews and a reflexive thematic analysis, youth voices were centered in understanding the relationship between their digital technology use and their mental health. During the thematic analysis, six themes (and two incidental themes) were developed and endorsed by participants. This study's findings indicate that youth not only experience a relationship between their devices and their mental health, but a relationship between their devices and themselves. They feel a sense of enmeshment with digital technology, where everything in their lives is impacted by and through its use. Relationships with others, with

themselves, with their sense of satisfaction and purpose in life, and their well-being is informed by their digital technology use. This makes for a push-pull relationship between their devices and their mental health, in which youth try to maximize the benefits of digital technology while minimizing the harm. This relationship is exhausting, defeating, and bears heavily upon their mental health.

Ultimately, this study is just one of many in an emergent field of research intending to clarify how youth understand the relationship between their digital technology use and their mental health. With this knowledge, young people's mental health can not only be better understood, but more appropriately supported in order to benefit the well-being of youth today, and ultimately, of tomorrow.

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Appendices

Appendix A: Informed Consent



**University
of Victoria**

Participant Consent Form

Youth Mental Health in the Digital Age

You are invited to participate in a study entitled *Youth Mental Health in the Digital Age* that is being conducted by Sydney Boothroyd.

Sydney is a graduate student in the department of Educational Psychology and Leadership Studies at the University of Victoria. You may contact her if you have further questions by emailing her at sydneyboothroyd@gmail.com.

As a graduate student, Sydney is required to conduct research as part of the requirements for her master's degree in Counselling Psychology. It is being conducted under the supervision of Dr. Fred Chou. You may contact Dr. Chou at fchou@uvic.ca.

Purpose and Objectives

The purpose of this research project is to explore the relationship between digital technology use and youth mental health. The intention is to use this knowledge to learn how to best support youth well-being in the digital age.

Importance of this Research

Given the ubiquity of digital technology in our lives, it is essential that we learn how to engage with screens in meaningful, supportive, and healthy ways. Our constant use of digital technology is so new, and we are just beginning to make sense of the parallels between mental health and screen use – but more research is needed. This project is important particularly as it centres youth perspective on this topic – how do those who have grown up with this technology describe the relationship between its use and their mental health? This study seeks to generate knowledge as well as contribute to the emergent research in the field of supporting young people struggling with their mental health in the digital age. It will also ask a question regarding the impact COVID-19 has had on young people's screen use and mental health.

Participants Selection

You are being asked to participate in this study because:

1. You are interested in the connection between digital technology use and mental health and are open to sharing your experiences/perspectives on the topic.
2. You are between the age of 13 and 18 and attend middle or high school in British Columbia.

3. You are willing to volunteer for an interview over Zoom.

What is involved

If you consent to voluntarily participate in this research, your participation will include a minimum of three steps.

The first will be a brief phone call to ensure you fit the study's inclusion criteria and ensure you are willing and able to consent to participation. It will take no more than 15-20 minutes.

The second will be an interview lasting 45-60 minutes where we will explore your experiences of and perspectives on the relationship between mental health and digital technology, through questions and conversation. The interviews will take place over Zoom Video Communications Inc. (Zoom) at your convenience.

The interviews will be audio recorded and transcribed.

Approximately 4-6 weeks following your interview, the researcher will either post the study's thematic analysis to you via certified mail and then contact you by phone, or meet with you again over Zoom. You will be asked if the themes created from the interview transcripts, as well as the analysis are representative of your experience and perspectives. These meetings or Zoom calls will take between 15 to 30 minutes depending on the time you need to review the analysis.

If changes are made to the analysis, you may need to be contacted again to confirm your approval of the changes. These meetings or telephone conversations will also vary in length.

Inconvenience

Participation in this study may cause some inconvenience to you, including the time required to participate in the interview, approve the analysis, arrange interview times, and the sometimes-arduous nature of self-reflection upon personal experience.

Compensation in the form of volunteer service hours towards your graduation may be requested, but otherwise there will be no compensation for your participation.

Risks

There are some potential risks of harm for participants in the current study, however they will not extend beyond those encountered in your daily life. These risks include experiencing emotional or psychological discomfort associated with talking about their experience of mental health and digital technology. The self-reflective nature of the interview could evoke challenging feelings related to the relationship between your screen and your well-being; however, not more than one might experience when speaking to this topic with anyone else. Potential participants will be informed of this so that they can consider if they are willing to discuss their experience and perspectives in the context of the current study before volunteering. Furthermore, the researcher will explicitly communicate that the study is non-judgmental regarding sensitive topics of well-being and mental health.

To prevent or to deal with these associated risks the following steps will be taken:

- (1) Participants may discontinue participation at any time without explanation or consequence.

- (2) Participants may pause the interview at any time and arrange to complete it later.
- (3) The researcher's training in trauma-informed practice will aid in identifying and managing disclosures that appear harmful.
- (4) If negative feelings arise and are either overwhelming and/or persistent, participants parents or guardians will be notified (upon consent of the participant), and will be provided the contact information for low-cost and free counselling support in their area. These will be appended to the informed consent form.

Benefits

The potential benefits of your participation in this research include the following:

1. Only a handful of studies to date have interviewed young people about the relationship between digital technology and youth mental health. As a result, your contributions will generate new knowledge in this burgeoning field. Not only may this help other young people navigate their well-being in the digital age, but help lay the foundation for research of the future.
2. Some research participants in this type of study report personal benefits from discussing their experiences such as feeling supported, undergoing personal growth, and developing a sense of perspective.
3. Service hours toward graduation (if you so choose)!

Voluntary Participation

Your participation in this research must be completely voluntary. If you do decide to participate, you may withdraw at any time without any consequences or any explanation. You may also decline to answer particular questions in the interview.

If you do withdraw during the study your data will not be used unless you provide me consent to do so. Otherwise the audio/video and text files associated with your contributions will be destroyed and any paper notes, forms, or documents will be shredded.

I _____, have chosen to withdraw from the study described herein, but I consent to the use of the data I have contributed to this point: _____ (Participant to provide signature upon a decision to withdraw)

On-going Consent

To make sure that you continue to consent to participate in this research, I will review this consent form with you each time we meet. This includes at the beginning of your interview and analysis approval meeting/phone call. Reviewing informed consent means that I will give you time to read this form and answer any questions you have about it. I am also willing to discuss your consent at any time during the project.

Anonymity

Identifying information such as you name, age, appearance, and school will only be known by the researcher and possibly Dr. Fred Chou. However, I ask that you do not provide identifying information of other people such as your friends, teachers, or family members. To help avoid accidentally revealing the identity of others, please make up unrelated names for people you believe might discuss during your

interview. All of these features will be removed from the analysis and final report (unrelated pseudonyms may be used). Audio recordings will not be used in the dissemination of the results.

Please note: the research team will provide you with guidance on how to protect your identity and increase the protection of your personal information when using Zoom.

Confidentiality

Your confidentiality and the confidentiality of the data will be protected in two ways:

1. Transcriptions, documents, and forms with identifying information will be kept behind lock and key.
2. Digital information such as audio recordings and electronic transcriptions will be saved as password encrypted files on a password encrypted memory stick, also kept under lock and key.

Exceptions to Anonymity and Confidentiality

Expectations to anonymity and confidentiality that you need to be aware of:

1. The researcher may share portions of your interview recording and associated transcript with her thesis supervisor Dr. Fred Chou. This will be to provide guidance and support regarding data analysis. Both the researcher and Dr. Chou will abide by the ethical standards of their respective professional associations and colleges, as well as those of the University of Victoria.
2. There are three legal limits to confidentiality that you must be aware of. I may be obliged to make a report to the appropriate authority:
 - i) when disclosure is required to prevent clear and imminent danger to you or others;
 - ii) when legal requirements demand that confidential material be revealed;
 - iii) when a child is in need of protection.
3. Should you choose to interact with the researcher through her University of Victoria e-mail account, the security of this communication may be limited. While every effort will be made to ensure that the messages are error and virus-free, unfortunately, full security of email communication cannot be ensured as the data included in emails could be infected, intercepted, or corrupted. This may include others becoming aware of your participation in the study.
4. As a student, you are able to receive 'service hours' for your participation, if you are interested. In most middle and high schools in the British Columbia school system, these hours are credit requirements for graduation. If you express interest in using your participation towards your service hours, a letter will be written to your teacher confirming your participation and hours spent in service. This essentially breaches your confidence as a participants in this study. If you choose this option, you are aware this requires the disclosure of your participation in this research project.

Dissemination of Results

The results of this study will include small excerpts of interview transcriptions, the listing of themes created from the transcriptions, and an analysis of the themes. It is anticipated that the results of this study will be shared with others in the following ways:

1. The oral defense of my thesis dissertation and subsequent publication on the publicly available database UVicSpace
2. The publication of an article in social science journals.

3. The presentation of the results at scholarly meetings.
4. The final report will be made available to you and other participants by request.

Disposal of Data

Data from this study will be securely stored through the lock and key and encryption practices described above for a maximum of 5 years. At this time, or upon completion of the study, all digital files will be erased, and any paper notes, forms, or documents will be shredded.

Contacts

Individuals that may be contacted regarding this study include Ms. Sydney Boothroyd and Dr. Fred Chou whose contact information is at the beginning of this form.

In addition, you may verify the ethical approval of this study, or raise any concerns you might have, by contacting the Human Research Ethics Office at the University of Victoria (250-472-4545 or ethics@uvic.ca).

Your signature below indicates that you understand the above conditions of participation in this study, that you have had the opportunity to have your questions answered by the researchers, and that you consent to participate in this research project.

Name of Participant

Signature

Date

Please return this signed form (e-signatures welcome) to the researcher at your earliest convenience.

You are encouraged to keep a copy for yourself.

Appendix B: Recruitment Poster

The poster features a background of crumpled grey paper. A large orange rectangle with a blue border contains the main title. Below it, a blue rectangle contains an invitation to participate. Further down, a red dotted line separates the invitation from the contact information. The contact information is in a blue rectangle. The University of Victoria logo is in the bottom left corner.

Seeking research participants for
an interview-based study about
the experience of *technology on
youth mental health*

If you are a teen aged 13-18 and are interested in sharing your perspectives and
experiences on the relationship between your screens and well-being, you're
invited to take part in this study!

.....

For more information please contact Sydney Boothroyd:

sydneyboothroyd@gmail.com
778.989.7765


University
of Victoria

Appendix C: Recruitment Email



Dear [Prospective participant, parent of participant, teacher, coach etc.],

My name is Sydney Boothroyd and I am completing my master's degree in Counselling Psychology at the University of Victoria. I am writing you to ask if you, or anyone you know, may be interested in participating in my small thesis study.

The purpose of the study is to explore the relationship between digital technology use (e.g., use of smartphones, tablets, screens etc.) and youth mental health. The objective is to better understand the role digital technology plays in the mental health of young people today, to learn how we can best support youth mental health in this digital age. I will also be asking a question about how COVID-19 has impacted your screen use and mental health.

Accordingly, I am conducting brief interviews with six to eight youth between the ages of 13 and 18. If you know someone who may be interested, or you yourself are interested, there are a few things you need to know:

1. To be eligible for participation in this study, you must:
 1. Be interested in the connection between digital technology use and mental health, and/or open to sharing your experiences/perspectives on the topic.
 2. Be between the age of 13 and 18 and attend middle or high school in British Columbia.
 3. Be willing to volunteer for an audio recorded interview.
2. Participants *do not* have to have any personal experience with mental health concerns. The interview is **not** a counselling session, it does not seek acute discussions of mental health and well-being. Instead, participants are being asked to generally consider the relationship between their screens and their well-being, reflecting on personal experiences, perspectives, and the effect of the pandemic, society, family, friends etc. on their screen use and well-being.
3. Participation in the study must be completely voluntary. And participants should know that if they decide to participate, they may withdraw at any time without any consequences or any explanation.
4. Due to COVID-19, this research is entirely online. Participants must have access to the internet and videoconferencing technologies (Zoom).

If you know of an individual in British Columbia who may be interested (or you yourself are interested), please contact me at sydneyboothroyd@gmail.com or 778.989.7765.

Thank you for your time and consideration.

Sincerely,

Sydney Boothroyd

Supervisor: Dr. Fred Chou, fchou@uvic.ca

Appendix D: Letter to Parent or Guardian



**University
of Victoria**

Dear [parent or guardian of prospective participant],

I hope this letter finds you well. My name is Sydney Boothroyd and I am a graduate student at the University of Victoria, wrapping up my Master's degree in Counselling Psychology. As a part of my program, I am required to carry out a research project.

As someone who works in youth mental health, I have a deep understanding and appreciation for the unique obstacles youth face today. I am particularly fascinated by the effects of digital technology use (time on screens such as smartphones, tablets, laptops, gaming devices etc.) on youth mental health. This constant use of digital technology is so new, and we are just beginning to make sense of the parallels between mental health and screen use – but more research is needed.

As such, my research project explores the relationship between youth digital technology use and their mental health, from their perspective. This project is important particularly as it centres young people's take on this topic – how do those who have grown up with this technology describe the relationship between its use and their mental health? This study seeks to generate knowledge as well as contribute to the emergent research in the field of supporting young people struggling with their mental health in the digital age. It will also ask a question regarding the impact COVID-19 has had on their screen use and mental health.

This letter is to inform you about the study and what your child's potential participation would entail.

I am looking to interview six to eight youth between the ages of 13 to 18 to understand their experiences and perspectives on the relationship between their screens and their well-being. The goal of this research is to learn how to best support youth mental health in this digital age.

In order to be eligible for participation in this study, your child must:

1. Be interested in the connection between digital technology use and mental health, and/or open to sharing your experiences/perspectives on the topic.³
2. Be between the age of 13 and 18 and attend middle or high school in British Columbia.
3. Be willing to volunteer for an audio recorded interview (due to COVID-19, this research is entirely online. Participants must have access to the internet and videoconferencing technologies (Zoom)).

³ It is important to note that your child *does not* have to have had any personal experience with mental health concerns. Our interview will **not** be a counselling session, it does not seek acute discussions of mental health and well-being. Instead, your child is being asked to generally consider the relationship between their screens and their well-being, reflecting on personal experiences, perspectives, and the effect of the pandemic, society, family, friends etc. on their screen use and mental health.

If your child meets the inclusion criteria, they are invited to participate in this study. If they do not, but you or your child are looking for some information about mental health, I can happily provide you with a list of BC mental health resources for youth.

If your child consents to voluntarily participate in this research, their participation will include a minimum of three steps.

The first will be a brief phone call to ensure they fit the study's inclusion criteria and ensure your child is willing and able to consent to participation. It will take no more than 15-20 minutes.

The second will be an interview lasting 45-60 minutes where we will explore your child's experiences of and perspectives on the relationship between mental health and digital technology, through questions and conversation. The interviews will take place over Zoom at your child's convenience.

The interviews will be audio recorded and transcribed.

Approximately 4-6 weeks following their interview, I will contact your child again to review the study's themes. Your child will be asked if the themes created from the interview transcripts, as well as the analysis are representative of their experience and perspectives. These calls will take between 15 to 30 minutes depending on the time they need to review the analysis.

Once the study is wrapped and I have defended my thesis, I would be happy to send your child the final paper.

I would be so honoured to have your child participate in this research. As one of the first studies of its kind, their participation would not only provide invaluable insight into the support of young people today, but of generations of young minds to come.

If you have any questions, please do not hesitate to contact me at any time.

Sincerely,

Sydney Boothroyd

778.989.7765

sydneyboothroyd@gmail.com

Supervisor: Dr. Fred Chou fchou@uvic.ca

Appendix E: Phone-call Screening Protocol

My name is Sydney and I am the researcher. Thank you for considering participating and making contributions to this study. Is now a good time to talk? (If yes: proceed/If no: arrange a time to call again.

Great, I am graduate student in Counselling Psychology at the University of Victoria. This study is part of my degree. Today's conversation will probably be quite short. It is a chance for me to make sure that you fit with the study. It is also a chance for you to ask any questions of me. Today's conversation should not be too long. It is a chance for me to make sure that you fit with the study. If you do, we will review informed consent and see whether this is still something you'd like to participate in! This is also a chance for you to ask any questions of me.

Before we get started, I just want to make sure we are on the same page about confidentiality. Your identity and what you say today will be kept confidential and private by me. However, there are three situations where I would have to make a report to the appropriate authority. This would happen:

- i) when disclosure is required to prevent clear and imminent danger to you or others;
- ii) when legal requirements demand that confidential material be revealed;
- iii) when a child is in need of protection.

Knowing these three limits to my agreement to keep your identity and what you say today confidential are you willing to continue?

If **YES**: Proceed

If **NO**: I understand, no explanation is necessary.

Do you have any questions now? [respond accordingly] Okay, let's see if you fit with the study's inclusion criteria:

1. Are you age 13-18?
2. Are you able to commit to an hour-long recorded interview (with access to videoconferencing technology)?
3. Are you interested in mental health; and/or open to discussing topics surrounding mental health and digital technology?

*Note: some clarifications may be needed regarding the definition of mental health and/or digital technology use. Guidelines are provided at the end of this script.

If **YES** to all: Great you can take part in this study if you choose. Do you have any questions for me? [respond accordingly]

If **NO**: Unfortunately, this study is not focused on [reasons for exclusion] and so I can't include you in the study. Do you have any questions for me? [respond accordingly]

- If the participant seems to be in significant emotional or psychological discomfort provide them with contacts for free or low-cost counselling support. These will be appended to the informed consent form.

Before you agree to participate, it is important that we review consent so that your participation can be fully informed. After this call, I will be emailing you a Consent Form for you to read and think through. If upon reading it (and perhaps discussing it with your parent) you would like to participate, you can return the signed form to me at your convenience. We will also review it together prior to the start of our interview.

Also, as it may be helpful, I would love to send a brief letter to your parents/guardians so that they can be informed of the study as well. Would you mind providing me with their contact information? [Get parent/guardian contact information]. Thanks!

Do you have any questions? [respond accordingly]

If, at this point, the participant **does not** appear competent to participate and/or capable of making a decision regarding consent (see indicators and protocol at the end of this script), apologies will be expressed and the call will end.

If they **do** appear competent to participate and capable of making a decision regarding participation, the call will continue.

Are you interested in participating?

1. If **YES**, continue with script
2. If **UNSURE**, needs more time/would like to speak to parent/guardian: express that is absolutely fine, ensure potential participant has my contact information, and let them know they are welcome to sign and return the Participant Consent Form (emailed to them after this call) when they feel ready to decide.
3. If **NO** express understanding and thank them for their time.

Okay great. Please know that scheduling the interview does not mean you have agreed to participate. Please review the information within the Consent Form first and make a choice after you have read through the information and discussed it with your parents/guardians.

If you have any questions as you read through the Consent Form with your parents/guardians, you are welcome to call me at any time. Please return the signed form to me at your convenience and note that you and I will review the form together prior to beginning our interview.

The interview will take between 45-60 minutes and will start with a review of the Consent Form. After we do that, so long as you consent, you will be asked to describe the relationship between your digital screen time and your mental health.

Appendix F: Confidentiality and Non-Disclosure Agreement for Contracted Services
Confidentiality and Non-Disclosure Agreement

WHEREAS, Ms. Sydney Boothroyd agrees to provide certain confidential information products to _____ for the purposes of translation and/or transcription;

WHEREAS, _____ agrees to review, examine, inspect, and/or obtain such confidential information only for the purposes described above, and to otherwise hold such information confidential pursuant to the terms of this Agreement.

BE IT KNOWN, that Ms. Sydney Boothroyd shall grant _____ certain confidential information and may further allow _____ the right to provide translation and interpretation services and/or transcribe interview data of Ms. Sydney Boothroyd on the following conditions:

1. _____ agrees to hold confidential or proprietary information or trade secrets ("confidential information") in trust and confidence and agrees that it shall be used only for the contemplated purposes, shall not be used for any other purpose, or disclosed to any third party.
2. No copies will be made or retained of any written information or prototypes supplied without the permission of Ms. Sydney Boothroyd.
3. At the conclusion of the research project, or upon demand by Ms. Sydney Boothroyd, all confidential information, including prototypes, written notes, photographs, sketches, models, memoranda, or notes taken shall be returned to Ms. Sydney Boothroyd or destroyed upon Ms. Sydney Boothroyd's request.
4. Confidential information shall not be disclosed to any employee, consultant, or third party unless they agree to execute and be bound by the terms of this Agreement, and have been approved by Ms. Sydney Boothroyd.
5. This Agreement and its validity, construction, and effect shall be governed by the laws of British Columbia.

AGREED AND ACCEPTED BY:

Date: _____

By _____

Witness: _____

Title: _____

Appendix G: Free or low-cost counselling support

Victoria/Vancouver Island

[Victoria Youth Clinic](#): Provides drop in, integrated and comprehensive primary health care services, including mental health and addiction care for youth aged 12 to 24 years. A team of youth-focused professionals that includes doctors, nurses, counsellors, outreach workers, youth support workers, and wellness navigators.

[Hulitan Family and Community Services Society](#): Hulitan preserves, unifies and advocates for Indigenous families by supporting healing and fostering resilience through culturally rooted programs, services and collaboration with community partners.

[Pacific Centre Family Services Association](#): Offers affordable community counselling options to the Greater Victoria area, primarily the West Shore and Sooke regions

[Hiiye'yu Lelum \(House of Friendship\) Society](#): Offers low-barrier, no-cost counselling to young people in the Cowichan Valley

[Salt Spring Island Community Services](#): Community Counselling Program allows flexibility to accommodate individuals that may face barriers that prevent them from accessing counselling

[Vancouver Island Counselling Centre for Immigrants and Refugees \(VICCIR\)](#): Offers counselling services on a sliding fee scale, and for free when needed

[Foundry Victoria Youth Clinic](#): Foundry Victoria offers young people 12-24 access to mental health and substance use support, primary care, peer support and social services. [\(250\) 383-3552](tel:2503833552)

Province-wide

Child and Youth Mental Health: <https://www2.gov.bc.ca/gov/content/mental-health-support-in-bc/children-and-youth>

Helpline for Children: If you are a child or youth and would like to talk to someone call the Helpline for Children at [310-1234](tel:3101234) (no area code needed), toll-free anywhere in B.C. to access emotional support, information and resources specific to mental health and substance use. Available 24 hours a day.

Kid's Help Phone: Call [1-800-668-6868](tel:18006686868) to speak to a professional counsellor. Available 24 hours a day.

Youth in BC Distress Line: Call [604-872-3311](tel:6048723311) or [1-866-872-0113](tel:18668720113) (toll-free) to speak with counsellors and trained volunteers who are committed to helping youth in crisis. Available 24 hours a day.

Chat Services

[Kids Help Phone – Live Chat](#): Chat counselling lets you connect one-on-one, real time, with a Kids Help Phone counsellor, on the web or from a smartphone. Chats are for youth up to age 20. Available Wednesday to Sunday from 3pm to 11pm Pacific Time.

[YouthinBC Online Chat](#): Get support, information and resources for youth in B.C. and Yukon. Online chat is available from noon to 1am Pacific Time.

[Youthspace.ca Online Chat](#): A community of volunteers who can provide emotional support, crisis response, and more. Available 6pm to midnight Pacific Time. Also available by text at [778-783-0177](tel:778-783-0177).

Email Services

BC Partners for Mental Health and Addictions Information: Help and support via email at bcpartners@heretohelp.bc.ca. Let them know where you're writing from so they can provide community specific information. A volunteer will email you back within 3 business days.

[Youthspace.ca E-Counselling](#): Email a youth counsellor for support with a variety of issues including: social life, family conflict, school and work challenges, addictions, violence and abuse, mental health, and more. You can expect a response within 5 business days.

Appendix H: Interview Protocol

Participant Name:

Date:

Interview Start Time:

Interview End Time:

Informed Consent: ☐

Interview Format: Interviews are audio recorded over Zoom.

Introduction and Review of Informed Consent:

Introduce yourself: Introduce who you are and your role as a master's student. Review the informed consent and allow time for participant to sign it if they have not already.

Purpose of the study: Explain to participant that the purpose of the study is to explore the effect of technology on mental health. This interview is intended to get to know their take on this topic, allowing them to reflect on and contemplate how their well-being is impacted by using screens.

1. **Procedure:** The interview will be approximately 45-60 minutes long. Participants are invited to share their experiences and perspectives in a guided manner, through questions asked and natural conversation.
2. **Potential risks:** Inform the participant that a potential risk is that it may be difficult to talk about some of the subject matter especially when considering mental health and technology. It may bring up emotions. Inform participants that they have the right not to answer any questions or to stop the interview without any penalty. It may help for them to take a break during the interview. If there are any emotional issues that get raised, they can speak to the research team or refer to the resources provided.
4. **Confidentiality:** The interviews will be audio recorded through Zoom and downloaded and stored in an encrypted password protected hard drive. All the information will be kept safely stored in a locked filing cabinet. The end report will not have their names linked with the information. Information about the participants will not be disclosed unless permission is granted.
5. **Benefits and compensation:** Participants can review service hours for school if they so choose. Please note that this will break confidentiality. The participants will also receive the benefit of participating in new and novel research as to the effects of digital technology on youth mental health – getting their voice heard and contributing to mental health initiatives of the future.
5. **Parameters:** Let participant know that there are certain subjects this interview won't be covering, and that if at any time dialogue begins moving in the direction of certain topics, I will acknowledge the movement and reiterate our inability to discuss these subjects. These subjects are:

- Pornography (including sexting)

- Suicide
- Abuse (physical, emotional, psychological)
- Online Harassment (e.g. Cyber-Bullying)
- Drug use (cannabis, prescription, alcohol etc.)

6. **Remind participant of follow-up call.** Inform participants that about four to six weeks after their interview, I will reach out again for the member checking protocol. Here I will run the study's themes by them and ask them to consider/verify whether they accurately capture their experience and our conversation.
7. **Consent:** Explain that taking part in the interview is voluntary. If they do not want to answer certain questions they may choose not to. If they choose to stop the interview there will be no penalty.

Demographic/Tech use Questionnaire

☐ Complete the demographic questionnaire

Orienting Question

1. As a way of getting started, I am curious what made you decide to take part in this interview?

Orientating Statement: Now we will begin with a couple of questions and go from there!

Semi-Structured Interview Questions

1. What does being mentally well look like to you?
2. How much is digital technology a part of your day?
3. Would you say there is a relationship between the two? i.e. Does time on your screens affect your mental health?
4. What is your family's approach/culture with regard to technology?
5. How do your friends/school/social world influence your screen use?
6. How has the COVID-19 pandemic impacted your screen use and your mental health?
7. What keeps you mentally well in the digital age?

Debriefing

At the end of the interview, review the interview and briefly summarize conversation with the participant. Give the participant an opportunity to ask questions or make any further comments and give them time to debrief their experience of the interview. You can inform them about the possible supports indicated in the resource sheet. The following debrief script can be used:

“We were involved in doing a semi-structured interview in order to explore your perspectives on and experiences of mental health and digital technology. The purpose of this interview is to better understand youth perspectives of their mental health in the digital age, and to better understand what we can do to support youth struggling with mental health today and tomorrow.

I intend for these results, along with the whole project, to be published in a scholarly journal so that the field of mental health research can benefit from hearing yours and others’ voices on this topic. It may also be presented at future research conferences. Do you have any further questions about this project, interview, or anything else?

At this point the data of this interview will be transcribed and analyzed using thematic analysis. Themes will be developed based on the interview and will be sent back to you to verify and provide any additional feedback. Key themes will help inform how we best support youth mental health efforts in the digital age. I can send you my final thesis paper once it is completed.

Do you have any further questions or concerns before we end this interview?

Thank you for your time and contribution.”

Appendix I: UVic Human Research Ethics Board (HREB) approval



**University
of Victoria**

Office of Research Services | Human Research Ethics Board
Michael Williams Building Rm B202 PO Box 1700 STN CSC Victoria BC V8W 2Y2 Canada
T 250-472-4545 | F 250-721-8960 | uvic.ca/research | ethics@uvic.ca

Certificate of Approval

PRINCIPAL INVESTIGATOR	Fred Chou (Supervisor)	ETHICS PROTOCOL NUMBER	20-0402
		Expedited review - delegated	
PRINCIPAL APPLICANT	Sydney Boothroyd Master's student	ORIGINAL APPROVAL DATE	10-Feb-2021
UVIC DEPARTMENT	Educational Psychology and Leadership Studies EPLS	APPROVED ON	10-Feb-2021
		APPROVAL EXPIRY DATE	09-Feb-2022

PROJECT TITLE **Youth Mental Health and the Digital Age**

RESEARCH TEAM MEMBERS
Sydney Boothroyd - Committee Member, University of Victoria
Timothy Black - Committee Member, University of Victoria
Sam Liu - Committee Member, University of Victoria

DECLARED PROJECT FUNDING
Social Sciences and Humanities Research Council (SSHRC), University of Victoria

DOCUMENTS INCLUDED IN THIS APPROVAL
SB.TCPS.2.certificate.pdf - 15-Oct-2020
Draft of Questions.pdf - 19-Dec-2020
SB Thesis Proposal.pdf - 02-Feb-2021
Initial Recruitment Email.pdf - 02-Feb-2021
Participant Consent Form.pdf - 02-Feb-2021
Confidentiality and Non-Disclosure Agreement for Contract Services.docx - 02-Feb-2021
Free or low-cost counselling support.pdf - 02-Feb-2021
Letter to parent or guardian.pdf - 02-Feb-2021
Recruitment Poster.2.png - 05-Feb-2021
Inclusion Assessment Interview Script.pdf - 05-Feb-2021

CONDITIONS OF APPROVAL

This Certificate of Approval is valid for the above term provided there is no change in the protocol.

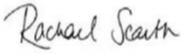
Modifications
To make any changes to the approved research procedures in your study, please submit a "Request for Modification" form. You must receive ethics approval before proceeding with your modified protocol.

Renewals
Your ethics approval must be current for the period during which you are recruiting participants or collecting data. To renew your protocol, please submit a "Request for Renewal" form before the expiry date on your certificate. You will be sent an emailed reminder prompting you to renew your protocol about six weeks before your expiry date.

Project Closures
When you have completed all data collection activities and will have no further contact with participants, please notify the Human Research Ethics Board by submitting a "Notice of Project Completion" form.

Certification

This certifies that the UVic Human Research Ethics Board has examined this research protocol and concluded that, in all respects, the proposed research meets the appropriate standards of ethics as outlines by the University of Victoria Research Regulations Involving Human Participants.



 Dr. Rachael Scarth
 Associate VP Research Operations

Certificate Issued On: 10-Feb-2021