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Examining the Impact of Social Media on Youth Self-Perceived Mental Health

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A thesis submitted in partial fulfillment of the requirements for the Master of Science degree in Nursing

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Abstract

Background: The development of social media has altered the lives of individuals worldwide enabling people to connect and share opinions, content, and even life milestones with one another. Further, the use of social media platforms has significantly increased over the past decade, particularly popular among youth. To date, it is estimated that 86% of Ontario youth use social media on a daily, and more than half of today's youth report utilizing social media platforms multiple times per day. With the rise of social media among youth, questions have begun to emerge whether the use of these communication technologies are associated with increasing mental health concerns.

Objectives: Two objectives were undertaken in this thesis: (1) completion of a scoping review; and, (2) presentation of a proposed study to explore the relationship between social media, and self-reported mental health among youth users.

Methods: A scoping literature review guided by the Arksey and O'Malley framework was used to complete a synthesis of relevant literature available on this topic. For the proposed study, a protocol and analysis plan to examine the secondary data arising from Cycle 27 of the Global Social Survey (Statistics Canada) is proposed. The Social-Ecological Model is presented as the theoretical framework to guide the proposed study.

Results: Among the twenty articles examined for the purpose of this scoping review, a total of seven articles met the predetermined inclusion criteria. The available literature was examined and a range of themes related to youth mental health and social media use were generated.

Conclusion: Understanding the implications of social media use on the mental health of the youth who use it is essential to improving and maintaining health and well-being of youth.

The results yielded from this literature review indicate that youth users may not fully understand the implications these new forms of technology have on their mental health and well-being. This proposed study provides further potential implications for policy development related to the use of social media, but also from a health literacy perspective related to youth, parents, and the general population in terms of social media use and mental health and well-being.

Keywords: Social media; social media use; youth; mental health; mental well-being

Summary for Lay Audience

The use of social media has revolutionized daily life. This technology has provided many opportunities to optimize care delivery within health and social systems, enhance communication, and reduce obstacles due to physical and geographical distance. For many of today's youth who have grown up in the technological age, they have never known a world without social media and the ability to share their thoughts, content, and experiences online. In fact, Ontario youth report that over 85% use social media on a daily basis (if not more often) (Centre for Addiction and Mental Health, 2015). Since the conception of social media just over a decade ago, there is no doubt it has dramatically transformed the way in which we interact with one another.

During the last 10 to 15 years the rates of youth mental illness in the province of Ontario (and across Canada) has also risen dramatically. In fact, youth presenting to emergency departments with mental health related concerns has risen over 35% (Gill et al, 2017). With over 80% of adulthood mental health disorders stemming from childhood (Children's Mental Health Ontario [CMHO], 2020), and 1 in 3 Canadians affected by mental health in their lifetime (Statistics Canada, 2019), it is imperative that factors that may affect the mental health of youth be further explored, including the use of social media in youths' daily lives.

This dissertation outlines the concepts of social media use and mental health as it relates to youth in Ontario, as well as current available literature in this area, and a proposed research project to further delve into this complex social and health issue.

Co-Authorship Statement

This work was completed under the supervision of Dr. Richard Booth and Dr. Kim Jackson, who will be titled co-authors on all publications and presentations resulting from this dissertation.

Dedication

This dissertation is dedicated to Kathleen West and Kowsillia Maharaj. Two incredible women who embodied dedication, perseverance and incredible work ethic, and who taught me the importance of making an impact on the lives of others and the world around us.

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Chapter One

Introduction

State of Mental Health

The mental health crisis in Ontario and nationwide continues to grow as individuals who struggle with mental health challenges commonly lack necessary supports, and the number of those suffering from mental health challenges continues to increase (Mental Health and Addictions Leadership Advisory Council, 2016). Currently, mental health related admissions to emergency departments alone account for more than 15% of total healthcare spending in Canada (Centre for Addiction and Mental Health [CAMH], 2015).

Although mental health supports have been identified as a gap within the current Canadian healthcare system for some time, service wait times in both emergency departments and community care both continue to climb (Gill et al., 2017). In an age where an already inundated healthcare system continues to experience a variety of budget cuts, those who are struggling are often not connected with adequate supports to cope with mental health challenges. Frequently, the resources offered to individuals suffering from mental health disorders are not timely nor easily accessible, causing these people to suffer in isolation (Public Health Agency of Canada [PHAC], 2015). Furthermore, there continues to be a great deal of stigma associated with mental health challenges, creating additional barriers for those who are in need of supports and services.

One cohort of the population that has been significantly impacted by mental health concerns is youth. It has been estimated that one in five youth experience mental health challenges, and over 70% of mental health disorders in adulthood stem from childhood (Ontario Ministry of Children and Youth Services, 2012). In 2016 over 25% of Ontario

students surveyed in grades 7 to 12 stated that they had unmet mental health care needs (Boak et al., 2016). With the current prevalence of mental health concerns in youth populations, it is of utmost importance that considerations which have implications on child and youth mental health be examined when considering care (Clinton et al., 2016).

Mental Health

Mental health is something that everyone possesses regardless of their age, race, or environment. It can be described as a “state of well-being in which an individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and is able to make a contribution to his or her community” (World Health Organization [WHO], 2013, para. 4). The idea of having *good mental health* or *mental wellness* depicts a somewhat coveted state of being where the individual is able to function to the best of their ability, work toward achieving their full potential, and experience emotions of happiness or being satisfied with their life (Vaillant, 2012).

The concept of mental health can be described as existing across a spectrum, from positive to negative (or good to poor), depending on the situation and challenges the individual faces. Those who struggle with mental health challenges (often referred to as having *poor mental health*) may find it difficult to carry out activities of daily life or reach their full potential with unmet mental health needs (Keyes, 2006). For instance, society has generated expectations of individuals to be productive members of their communities and factors which may impair this level of functioning (such as mental health challenges) are often regarded in a negative light (Galderisi et al., 2015).

With over 5 million Canadians requiring mental health supports on an annual basis (Statistics Canada, 2019) and Canadian youth suicide rate being the third highest in the

industrialized world (CAMH, 2020), it is imperative that youth mental health be examined to address concerns which could contribute to poor (or low levels of) mental health and well-being (Canadian Association of Paediatric Health Centres & The Provincial Centre of Excellence for Child and Youth Mental Health at CHEO, 2010; Ottawa Public Health, 2019). According to the World Health Organization “access to effective prevention and intervention during childhood and adolescence is essential to stemming the tide of chronic mental health disability into adulthood” (2020, para 2). Addressing these concerns in childhood and youth may have the ability to reduce subsequent burden on not only health systems, but also allow individuals to achieve their “potential to live fulfilling and productive lives” (WHO, 2020, para. 4).

Social Media Utilization

With over 90% of Canadians reporting use of the internet in the year 2018 (Statistics Canada, 2019), the integration of social media platforms into daily lives for routine communication has become habit for many (Chaffey, 2020). The wide-scale adoption of social media technology over the last 15 years has revolutionized how we connect with one another – providing the communication backbone for more timely and efficient communication in the moment, allowing users to share online content and media; and affording connectivity to people across globe to collaborate and engage with each other (Crone & Konijn, 2018).

Boyd and Ellison (2008) define the term *social media* as a “platform to create profiles, make explicit and traverse relationships” (p. 2). Many of the popular social media sites used today generally allow users to share media content online (i.e., videos, photos, music), including sites like *Instagram*, *YouTube*, *Facebook*, *Tumblr*, *Twitter*, and *Snapchat*.

Social media allows users to cultivate relationships online with individuals they may have never met physically and share media and life moments with others through digital interaction (Osborne-Gowey, 2014). While being able to seamlessly share information and life experiences with others may bring benefits, this ability to communicate fluidly also creates new additional challenges (McBride, 2011).

Youth Mental Health

While the adoption rates of social media have been impressive, little is currently known in relation to this technology's influence upon general health or mental health and well-being (Kelly et al., 2018; Romer, et al., 2013). Youth users are a particularly unique cohort, as many in this demographic have been exposed to social media and use of the internet since extremely young ages. For instance, a recent media report in the United Kingdom surveying eighteen youth users in a longitudinal study over six years reported that almost all of the 12-15 year-olds surveyed reported using YouTube regularly, possess their own social media profile, and are permitted to take their phones with them to bed, unmonitored by their parents or guardians (Ofcom, 2019). With adolescent users likely engaging in online behaviours that their parents or guardians are unaware of, inappropriate content and behaviours cannot be monitored, and parents often lack the understanding and education needed to regulate safe social media use for their child(ren) (CMHA, 2015). A Czechoslovakian study of just over 1000 teenagers reported that half of teens surveyed reported they had experienced cyberbullying, and 9% reported they had either received or sent a *sext* (sexual text message) (Kopecký, 2016). Due to the endless bounds of the online world, this poses massive safety and privacy concerns for children and youth alike, as well as emotional implications (Brailovskaia & Margraf, 2018). As a cohort of the population

who are already at a vulnerable stage of their lives, youth present as a particularly high-risk group for mental health concerns, especially those potentially exacerbated by social media use (Canadian Mental Health Association [CMHA], 2015).

In recent years, the development and adoption of social media use has been linked to a variety of both positive and negative implications on health and well-being. From a positive perspective, increased use of social media has allowed youth an outlet for self-expression, to develop their sense of self-identity, network with peers in a timely and interactive way, celebrate milestones, and support one another. It also allows for relationships to be maintained online that may not otherwise be possible due to physical distance and other restrictions (Royal Society for Public Health, 2017). In addition, there has also been some demonstration of social media being used as a tool to connect and support youth to one another during challenging situations (and thus have a subsequent positive impact on mental health) (Wong et. al, 2014).

However, while potential positive impacts exist, this relatively new technology still poses many unnavigated challenges to be addressed from a mental health perspective. With Facebook, Twitter, & Instagram all being used by one in four people worldwide (Whiteman, 2015), constant sharing of media and experiences may cause increased levels of anxiety including “fear of missing out” when they are not involved, and increased feelings of exclusion from friends and peers (Royal Society for Public Health, 2017). In addition, due to the sheer frequency of use and need to be connected with their peers, youth who use social media frequently also are at risk for decreased sleep and other health implications linked to sleeping challenges (Scott & Woods, 2018). The ability to share content which is predominantly photo and alternate media based has also been noted to have potential effects

on body image and development of self-identity (especially in female youth users) (Marengo et al., 2018). With the ability to share heavily edited (and unrealistic) content, these falsified lifestyles and perceptions are portrayed when users are seeking online validation. This creates unrealistic body image expectations for users, and in turn negative perceptions of self and mental health (Shensa et al., 2018).

Theoretical Framework

The Social-Ecological Model

The Social-Ecological Model is a framework which explores the context of an individual in the environment around them (Centres for Disease Control [CDC], 2020). This model examines how the behaviours of one person can be shaped and formed based on societal and environmental influences, as well as the influence of interpersonal relationships (Here to Help BC & BC Partners for Mental Health, 2020). While some variations of the model exist, the core tenets of the Social-Ecological Model consistently depict a multi-layered approach to understanding social and personal factors which affect individual behaviours (CDC, 2020).

Individual Level

The innermost circle of this model is described as the *Individual* or *Intrapersonal* Level, which encompasses the individual themselves – for instance, what skills they have, their knowledge and understanding, and their personal morals and values. This level may also encompass personal traits such as a person's motivation, self-identity, spirituality, and gender identity or sexual orientation (Max et al., 2015). In the context of youth social media and mental health, it represents the individual emotions and feelings of youth users, as well

as perhaps their own insecurities as they navigate the defining transition to adulthood through adolescence (Reupert, 2017).

Interpersonal Level

The second most inner level of this model represents the *Relationship* or *Interpersonal* level which represents the networks the individual is a part of such as family and friends, and coworkers (CDC, 2020; McLeroy et al., 1988). The central component of the interpersonal level reflects influence of these members on the individual's actions and behaviours. In particular, examining negative behaviours between individuals (such as violence and cyberbullying) aligns within this level of the model. Within a youth context, interactions between peer groups and romantic relationships or friendships are particularly important to this level, as well as support networks (Max et al., 2015).

Community Level

Moving outwards the next level of the model is the *Community* layer, which describes the institutions or groups at a more macro-level in which the individual exists and lives within. This level is often important to distinguish customs such as religious beliefs and cultural norms of society which are often determined by these community groups and structures (The Borgen Project, 2017).

Societal Level

Finally, the outermost level or the *Societal* level, encompasses the many societal constructs and behaviours which create the environment which the individual lives in. Larger societal factors which are considered here include health, the economy, and social

inequities (CDC, 2020). Regulation of laws and policies also align with this level category (McLeroy et al., 1988).

The Social-Ecological Model has been utilized in various research activities since its conception in the 1970s, typically used help identify and address complex problems which are multi-leveled, exist within societal constructs, and possess individual/group behaviour levels (The Borgen Project, 2017). This framework has been particularly successful in examining and addressing problems such as health promotion initiatives and programs, violence prevention, adolescent pregnancy prevention, suicide prevention, and multiple other mental health related contexts (Here to Help BC & BC Partners for Mental Health, 2020; The Borgen Project, 2017).

Social-Ecological Model in Social Media Use

Examining how social media use is depicted through the Social-Ecological Model requires assessment all dimensions of the framework: (1) *Individual*; (2) *Interpersonal*; (3) *Community*; and, (4) *Societal*. Primarily, the *individual* dimension related to the use of social media has been proposed to be a strong factor in the individual's identity and sense of self (which includes frequency and habits of use, personal insecurities and perceptions, and both self-identity and self-esteem) (Max et al., 2015). The youth's personal values such as what they choose to share and post on social media platforms could also be considered here, as well as their feelings about how they are perceived (based on sexual orientation, gender identity, etc.)

From an *interpersonal* dimension, social media allows people to connect with others online) is a key component of understanding its' purpose. The use of common online platforms such as Snapchat, Instagram, and Facebook allow for people to connect with each

other despite physical or geographical distance. These platforms also facilitate users to post a great deal of personal information and content, which can be shared to followers or other users. The response of users to an individual's post or how they connect with others online depends on their personal values, interpersonal factors, and societal norms which have shaped their current online practices (Holland et al., 2017).

When examining social media use from an *interpersonal* lens, it becomes clear that online interactions can have ripple effects beyond an individual's immediate family and communities due to their interconnectedness (Reupert, 2017). Communication skills which are developed throughout the lifespan (but especially during the teenage or adolescent years) are incorporated within all of these levels as the individual navigates communication between themselves and other individuals, in larger groups, and within their *community* and *society* (CDC, 2020). Therefore, social norms developed surrounding communication conveyed via social media may significantly impact the health and wellness of an individual (CDC, 2020).

Social-Ecological Model and Mental Health

The Social-Ecological Model is also particularly fitting when examining youth social media use as it takes into account factors surrounding peer influence and involvement. This is an important consideration for youth populations who have been found to be highly influenced by friends and peer groups during their adolescent years (Max et al., 2015). With adolescence being a particularly difficult time for many youth (as they navigate the transition to becoming an adult from childhood), adolescents often struggle to develop a strong sense of self as they combat feelings of low self-esteem (Brailovskaia & Margraf, 2018). From a mental health perspective, the Social-Ecological Model considers the many

components of life can contribute to mental health challenges. In particular, when considering mental health as existing on a spectrum, this model helps to take into account the differing levels of influence that various individuals or groups may have upon a person and how they are influential (Galderisi et al., 2015). In this sense, mental health can be described as not the “absence of challenges but... our capacity to flourish and enjoy life but also cope with the challenges we face” (Here to Help BC & BC Partners for Mental Health, 2020, para. 6). With one in three Canadians reporting mental illness in their lifetime (Statistics Canada, 2018), and over 70% of adults reporting they utilize a social media account regularly (Pew Research Centre, 2018), social media should be addressed during years of childhood and adolescence to cultivate healthy use behaviours (CMHO, 2020).

Conclusion

With an increase in the prevalence of mental health disorders among youth across Ontario and Canada, further exploration of the relationships between youth mental health and social media use is warranted. By examining this topic from a multi-faceted approach informed by the Social-Ecological Model (Max et al., 2015), deeper insights related to youth mental health and social media use may be ascertained to inform both practice and research.

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Chapter Two

Literature Review

Introduction

The concept of social media has infiltrated the lives of people across the globe and has become an integral part of daily life. The term *social media* possesses a fluid definition and can be defined as applications, websites, or other networking platforms which enable users to connect with one another to share content and perspectives (Livingston et al., 2014). A survey of Canadian youth reports that 86% of youth users utilize social media on a daily basis (CMHA, 2018) while other supporting literature confirms that more than half of users 18- 24 years of age check their social media platforms multiple times per day (Richards et al., 2015).

While the creation of portable technologies such as smartphones have changed various aspects of social networking, their use has also been purported to pose potential risks to users from a health and well-being perspective (Crone & Konijn, 2018). Currently, some research literature suggests that youth users could be at high risk of negative implications related to mental health and wellness, resultant from the constantly connected world we now live in (Lukes, 2010).

Like all humans, youth (typically considered in the 10 to 25 year range) are greatly affected by their environments (CMHA, 2018). The years of adolescence mark significant transition for children as they enter a new stage of life and verge onto adulthood. With these changes comes an increased need for independence and autonomy, as they develop self-identity and where they fit within social constructs. In particular, relationships with others are critically important during this time (Gandhi et al., 2016).

Developing a strong sense of self and identity is critical in order to prepare the adolescent for adulthood to be independent and interact with others as well as the world around them (CMHA, 2018).

Furthermore, transition from childhood to adolescence also brings additional challenges in terms of accessing supports and services particularly within a mental health context. While access to care may be more readily available during childhood, this often changes as they are transitioned to adult care, and their needs are no longer the responsibility of their parent or guardian (CMHO, 2019). With less adult involvement in their lives, youth who are seeking their natural independence often fall through these gaps in health systems, which exacerbates difficulties in accessing necessary supports and care (Gandhi et al., 2016). Evidently, this poses multiple challenges when it comes to social media use by youth when their parents/guardians are already less involved in their lives and may not be aware of how they use social media or are affected by interactions with others online (Orben & Przybylski, 2019). In addition, safeguards in place to prevent users under 18 years of age are frequently bypassed when children and youth create their own social media accounts without knowledge or consent of their parents or guardians (Powers, 2012).

Due to the critical period of growth and development youth experience during teenage years and young adulthood, they are particularly vulnerable to the influences of peer engagement and perceptions on their own feelings of self-worth and self-esteem (Reid-Chassiakos et al., 2016). Further, it has also been reported that youth may experience a great deal of stress and anxiety in regards to projecting a favourable image to their friends and peers (McBride, 2011).

With the wide-scale diffusion of social media sites that allow users to quickly connect and share personal content with others, the potential for unintended consequences on youth and their self-worth and self-esteem (both positive and negative) have become amplified, youth attempt to project a favourable image to their friends and peers instead of their authentic identities (Institute for Clinical Evaluative Sciences [ICES], 2017).

In North America alone, 3% of paediatric emergency department visits and 10% of all hospital admissions are related to mental health concerns (Gill et al., 2017) with a dramatic increase in youth mental health related visits to Ontario emergency departments across Ontario by over 30% between 2006 and 2011 (Gandhi et al., 2016). Looking to the future, it is necessary to have an improved understanding of why this has occurred as mental health related expenses currently make up more than 15% of all Canadian healthcare spending (CMHA, 2018) and as a large stigma towards mental health still exists (Halsall et al., 2014).

It is important to acknowledge that while there are potential negative implications related to social media use, a bidirectional relationship exists which may present some positive implications as well. Some adolescent social media users do report higher levels of feeling connected to peers and others and ease of access to reputable and educational information provides health and wellness supports to young users online (Allen et al., 2014).

Although significant research in various aspects of youth mental health have been conducted to date, there is little understanding regarding the full implications of social media use on the mental health and well-being of youth users. With peer interactions

facilitated by the use of social media, new concerns such as cyberbullying, and appropriate use of social media/appropriate content (i.e., *sexting*) have emerged. While social media has the capacity to be a robust networking tool, it also has the ability to create new challenges related to emotional and psychological health, encourage unhealthy behaviours, and provide a means to be connected to information they would not otherwise have access to (Knox et al., 2016). Therefore, in order to advance the understanding related to the implications of social media on youth mental health, a scoping review was conducted to synthesize knowledge in this domain. The purposes of this scoping review were:

- 1) To explore the extent of current available literature related to the implications of social media on mental health of youth users;
- 2) To summarize findings of this literature for future research and policy development in this area both in nursing and other interprofessional teams; and,
- 3) To identify gaps in current available research and literature to inform future research needs within this topic area in a technology driven age.

Search Methods

Criteria for Considering Studies for Review

This scoping review included research studies which examined the impact of social media use on the mental health or mental well-being of youth users. The decision to complete a scoping review instead of more systematic review methodologies was made primarily due to nascent nature of the topic and difficulty in “visualizing the range of material that might be available” (Arksey & O’Malley, 2005, p.6). Research studies were included in this review if they met the following inclusion criteria:

- 1) The amount/extent of social media use by youth was measured or discussed at length;
- 2) The concept of social media was well defined and discussed (inclusive of all specific social media platforms addressed);
- 3) Mental health or mental well-being was a key variable or construct examined in the research study;
- 4) The study or article specifically discussed youth users (the target population);
- 5) The study included a discernable research method (ie. qualitative or quantitative);
- 6) The study was published in the English language (regardless of global location); and,
- 7) The study was published in 2010 or onwards (due to changes in social media platform use and popularity over the past decade).

All studies, regardless of research methods were included in the scoping review due to the relatively small body of literature available on this topic if they met the criteria above. Although eligible for consideration, there were no pilot studies available at the time of the literature review which met the search criteria. Abstract only studies and grey literature were not included in the review.

Search Strategy for Identification of Studies

Electronic databases (PubMed, CINAHL, Scopus, PsycINFO) were searched between February to April 2018 for eligible studies using predetermined MeSH search syntax (Appendix A). As per the scoping review approach proposed by *Arksey and O'Malley* (2005), the reference lists of these studies were also examined for potentially

relevant literature for the scoping review. Based on results obtained through online database searches, each study was reviewed by a member of the research team to ensure appropriateness for the review. Overall, a total of 18 studies were retrieved. Two additional relevant articles were found through reviewing of individual study reference lists. After screening and full-text review, a total of seven articles were deemed eligible for this review (*Appendix B*). *Appendix C* outlines studies which were examined and excluded based on search criteria, with the rationale for exclusion of each.

Data Extraction

Data was extracted from each eligible study using a predeveloped data extraction tool, guided by *Arksey and O'Malley* (2005). The tool consisted of the following fields (*Table 1*): author(s), year of publication, location of the study, study population, outcomes, and significant findings from the study.

Collating, Summarizing, and Reporting of Results

For the purpose of this scoping review, both the prevalence of literature available in the topic area of interest was included, but also further description of themes found throughout examination of the literature itself. Numerical analysis was used to determine the total number of articles searched and eligible for the study, as well as the nature of these studies (i.e., the aim of the study and global context). An exploration of thematic analysis provided further insight into each individual article, which was then compared to all the other studies overall. A thematic analysis was conducted of the content to identify common findings amongst the various discipline databases which were searched and various study contexts.

Results

Study Design

All seven which were deemed eligible for this scoping review are outlined in *Table 1*, summarizing the data which was obtained from each individual article. Of the seven included studies, none utilized a traditional model of control/intervention groups (although one article did explore social media users as a non-classical “intervention” group). This was also the only study which used a retrospective design (due to the context of the study itself).

Three of the other studies examined questionnaires distributed or completed with the participants (Brailovskaia & Margraf, 2018; Chan et al., 2017; Romer et. al, 2013). Four of the eligible studies were primary studies (Brailovskaia & Margraf, 2018; Chan et al., 2017; Pontes, 2017; Romer et al, 2013) while three were secondary analyses (Booth et al., 2018; Holland et al, 2017; Mueller, 2017).

Table 1 | Table of Included Studies

Study Information	Study Population	Study Aim	Study Methodology	Outcomes/ Measures	Significant Findings
Booth, R., Allen, B. Jenkyn, K., Li, L., & Shariff, S. (2018)	Convenience Sample of 5.66 million visits to primary care & psychiatric services by Ontario youth 10-24 years from 2006-2015	Examine impact of 2012 Bell Let's Talk Mental Health Awareness Campaign in Ontario CA	Interrupted Time Series Retrospective Examination Autoregressive remodeling	Perceptions of Mental Health/ Associated Stigma Campaign Effectiveness Number of Visits Demographics (Female vs. Male) and Age of Youth Time Series Graphic	Bell Let's Talk temporally associated with increase in mental health related visits of Ontario's youth to primary health care and psychiatric services More females vs. males who presented with mental health needs for services Noticeable difference temporally in mental health visits also as content sharing apps have become more popular (ie. Instagram)
(ON, CAN)					
Brailovskaia, J., & Margraf, J. (2018)	Students of a large German University. n= 633 participants	Investigate relationship between personality traits, mental health variables and media use	Cohort Study (No intervention) Completion of one-time Questionnaire	Media Use – captured on Likert Scale (frequency of use) Personality traits - Narcissism: Personality Inventory used <i>Mental Health:</i> - Life Satisfaction: Perceived life satisfaction Scale used - Resilience: German Resilience Scale - Social Support: Questionnaire Social Support Used - Depression/ Anxiety Stress: Depression/Anxiety Stress Scales 21 Used	Participants who frequently use internet have higher values of self-esteem, narcissism, life satisfaction, resilience and social support. No significant relationship between use of social networking sites and depression.
(GER)					
Chan et al. (2017)	Youths in Hong Kong, China who received telephone surveys January 23- March 22, 2013 n=1010	Explore online distress and help seeking behaviours of Hong Kong youth	Cross-Sectional	Self- Reported "Distressed" – yes or no? (Have they been/ are they distressed?) Sought out help from professionals (ie. social worker, psychologist, etc.)	Many opportunities available utilizing social media for health professionals to engage youth and help distressed youth online Approximately 20% of youth who expressed they were in distress online did not seek out help The internet could bridge the gap between need for seeking out help and having it offered in real time
(HK, CHN)					

Table 1 | (Continued)

Mueller, A. (2017). (USA)	2014- 2016 collected data of local youth to determine how youth discuss and are affected by media reports of suicides (in a town with very high youth suicide rates and low levels of mental health) N= 91	Determine if media "crafts stories" about causes of youth suicide	Ethnographic Study	Community Perceptions of suicide Number of Youth Suicides Discussion online and in the media amongst youth after a suicide has occurred	Deaths are often discussed in detail online via social media and can insight future suicides Mental Health Stigma affects how the media reports suicide/ how comfortable people are discussing via social media
Holland, K. M., Vivolo-Kantor, A. M., Logan, J. E., & Leemis, R. W. (2017) (USA)	NVDRS (National Violent Deaths Recording System) 1606 suicides recorded Aged 11-15 years 2003-2014	Determine if there are patterns of antecedent behaviours which occur prior to attempted/ completed suicides	Mixed Methods - Analysis of Previous Suicides - Content analysis of coroner reports	School Related Problems: reported in 40% of cases of suicides, feelings of stress related to academic work or feeling they cannot meet expectations Relationship Problems: with relatives, in blended families, dating partners, with online interactions with peers Individual Problems: levels of self-esteem/ self-worth, depression, previous attempted suicides	10% of youth utilized social media or their phone to inform someone that they were planning to die or talk about suicide in general Some youth also posted about suicide/ mental health challenges online in the weeks leading up to their suicide
Romer, D., Bagdasarov, Z., & More, E. (2013). (PA, USA)	Panel from National Annenberg Survey of Youth Telephone survey 14-22 years old 86% under 22 years n= 719	Determine effects of older vs. newer media use on academic, social and mental health outcomes in youth	Cohort Study No Intervention Completed telephone survey at beginning and one year's time	Demographics Age, gender, school attendance for past year, neighbourhood median income, internet in the home, hours per day on media, specific media uses	High TV users had lower academic grades Moderate use of internet was supportive, also built positive networking with peers. Lower socioeconomic status and high rates of TV/ Internet use produced lower grades Higher findings of depression with high rates of internet/ TV use.

Table 1 | (Continued)

Pontes, H. M. (2017). (POR)	Adolescents (53.5% male) aged 10-18 years at local elementary school in Portugal. Convenience Sample From May to June 2015 n= 509	Examine relationship between social networking site addictions and internet gaming disease on psychological health	Cohort Study No Intervention	Socio-demographics: - age, gender, relationship status <i>Frequency of Tech use:</i> Social Networking Site Addiction: - weekly time spent on internet for leisure (Bergen Facebook Addiction Scale) Internet Gaming Disorder: - weekly time spent gaming (Internet Gaming Disorder Scale) Psychiatric Distress: Depression/ Anxiety & Stress Scale	Higher time spent online did not predict a social networking site addiction disorder Both Social Network Site Addiction & Internet Gaming Disorder caused high levels of anxiety, stress & depression
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Geographic Location

Three of the seven studies which were eligible for this review originated in the United States (Holland et al., 2017; Mueller, 2017; Romer et al., 2013) one from Canada (Booth et al., 2018), two from European contexts (Brailovskaia & Margraf, 2018; Pontes, 2017) and one originating in China (Chan et al., 2017).

Patient Population

Overall, the age of youth defined in the individual studies varied between 10 and 24 years of age. Of particular note, two of the seven studies utilized various terms interchangeably throughout the studies when discussing the youth population (Chan et al., 2017; Romer et al., 2013). Only one study considered previous experience of mental health challenges or required previous mental health supports (Halsall et al., 2014). None of the seven studies explicitly compared mental health (or reported rates of mental health and well-being) prior to and after social media was utilized.

Thematic Analysis of Outcome Measures

Overall, analysis of these studies presented themes were as follows:

1) Appropriate Use of Social Media

Appropriate use of social media was a common theme throughout multiple articles in the scoping review, the concept of *appropriate* use being broken down in two ways: both frequency of use (or overuse) and engaging in appropriate behaviour online. The idea of use in moderation (or finding a balance between being disconnected/overuse) was found throughout the Romer et al., (2013) and Pontes (2017) studies. The studies respectively discussed youth's *dependence* on social media and frequency of using various social media platforms daily to communicate with peers and others online. They also explored

reliance on validation from online peers, directly affecting self-esteem and self-image of users. The articles also touched on *appropriate* use in terms of new concerns that have developed since social media's conception such as cyberbullying and youth not having the necessary education or knowledge around what behaviours are appropriate online. The Romer et al. (2013) article did however discuss the implications of socioeconomic status and how lack of resources/education around utilizing social media predisposed youth to high levels of depression and subsequent low levels of mental health.

2) *Networking*

Networking or connecting to other peers/supports was discussed in all of the articles in the review. The term networking refers to users being able to connect with one another (in this case using online platforms), to create a connection between users allowing them to share ideas or information amongst each other (Schmitt et al., 2012). In a digital sense, networking allows users to converse with others online with similar interests or experiences. From the perspective of utilizing social media, these platforms provide the unique opportunity to facilitate and enhance communication and networking amongst users around the globe. In particular, Brailovskaia and Margraf (2018) and Pontes (2017) depicted that high levels of social media use did not necessarily correspond with low levels of mental health or self-esteem. Booth et al. (2018) did examine a subsequent drastic increase in mental health visits to care providers since an initiative utilizing social media to reduce stigma around mental health.

Furthermore, Holland et al. (2017) discovered that youth often post about their mental health challenges online (especially prior to suicidal ideation). Similarly, Chan et al. (2017) discussed potential benefits social media could provide to youth to support

them through mental health challenges, although overall poorer health outcomes for those who expressed distress online and did not seek supports despite verbalized challenges with mental health. These positive aspects were contrasted by the Romer et al. (2013) article found that higher levels of TV and internet use were associated with low levels of self-esteem and high rates of depression, but moderate use of the internet proved to build positive relationships with peers (Pontes, 2017). Due to the small number of studies currently available, it is probable that further insight is needed to clarify this within a variety of contexts and settings. This would be particularly helpful to understand how best to utilize social media platforms to connect with youth to provide important health information, and also cultivate relationships using social media safely and responsibly online.

3)Health Implications

Unfortunately, the internet and social media's ability to connect each other at almost all times does have pose potential concerns. Mueller (2017) discussed that youth will often plan out attempted suicides or discuss self-harm behaviours online with each other which can in fact exacerbate mental health challenges. Holland et al. (2017) confirmed that ten percent of youths who have committed suicide did notify their friends or family via social media or a text message on their phones that they were planning to harm themselves prior to their attempt.

Limitations

Like all knowledge synthesis this scoping review has limitations which need to be stated. In conducting this literature review it was noted that there are often variable terms used interchangeably both in the context of "youth" and "mental health". While the most

common variations were utilized, it is possible that some available literature may not have been captured which would be a potential suggestion for future literature reviews in this area.

It is also important to consider that the variation of populations, health system and context of social media use may differ across global contexts as well. While two studies utilized the same anxiety, stress and depression scale (Brailovskaia & Margraf, 2018; Pontes, 2017), different tools and methods might be used in global contexts to measure and examine mental health and well-being among youth social media users.

Implications for Practice

Considering the influence of social media on the mental health of youth, the potential to significantly impact the health and well-being of this population, and its potential to support young people to achieve mental wellness, a range of practice implications exist. Nurses, physicians, and other care providers working in paediatric contexts are in a unique position having the ability to support youth during this transition period, and also have the opportunity for one-on-one interaction when providing care. These providers could also potentially benefit by incorporating this knowledge to use tools like social media to enhance communication when working with this population and to facilitate access to timely, relevant, and reputable resources for health education purposes.

The findings of this scoping review have highlighted the need for further research within this area, as the small body of literature available is not consistent nor definitive. In addition, since the concept of social media is still relatively new, many studies in this area cannot control for other confounding variables which could influence the relatively

small pool of available data in this area (Pontes, 2017). The available literature currently identifies knowledge gaps related to the understanding of youth mental health and its relationship to the frequency/typology of social media use and gender differences (Booth et al., 2018).

This scoping review also revealed that social media cannot be assumed to have a distinct positive or negative influence on youth mental health without considering the context within which it is used, and the knowledge of its user (Romer et al., 2013). While further research in this area should include concepts such as frequency of use, it is clear there are many additional factors which may play into the effect(s) that social media has on youth users. While factors such as frequency of use may affect the prevalence of mental illness conditions like depression and mood disorders in youth, these technologies may also help attenuate feelings of isolation that adolescents and youth might otherwise experience (Viner et al., 2019).

Moving forward, it is suggested that mediating factors which may also influence mental health and general well-being also be considered during examinations of youth mental health and social media use (Viner et al., 2019). While social media has significant potential to support youth mental health in innovative ways (Powers, 2012), this can only happen if it is used effectively, appropriately, and safely within youth populations.

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Chapter Three

Research Protocol

Background and Information

Communication in society today has been greatly shaped by the use of technology and electronic media consumption. The increased adoption and use of social media technologies has forever changed the lives of users around the globe (Osborne-Gowey, 2014; Lukes, 2010). Social media networking sites such as *Facebook*, *Twitter*, *Instagram*, and *Snapchat* have become particularly popular among youth users due to their ability to share media content and engage in online discussion (Gritton et al., 2016). The creation of portable technologies (e.g., mobile phones) has facilitated access to online networking platforms, with 86% of Ontario youth reporting they utilize social media on a daily basis (Canadian Mental Health Association, 2015). In fact, more than half of youths confirm they check these social media accounts multiple times per day (Smith & Anderson, 2018).

However, with the adoption and uptake of social media use, implications related to the health and well-being of users have been posed (Reid-Chassiakos et al., 2016). For instance, in youth populations, the use of social media has been posited to potentially generate negative consequences on self-esteem and other mental wellness considerations (McBride, 2011). In contrast, social media platforms also have the ability to connect youth with one another at a time of growth and development where friend and peer interaction is extremely important and plays a significant role development (Primack et al., 2017). Potential benefits of social media use include reducing isolation, and connecting users to other individuals with similar lived experience(s) regardless of their geographical location (Viner et al., 2019).

Rationale and Objectives

Due to the relatively recent adoption of social media en masse by society, large scale exploration of social media use in youth and its resulting effects on mental health has only begun. Further, there is currently a literature gap related to the impact of social media on the mental health of youth during their development and into their formative years, which has been proposed to be influential upon aspects of adulthood (McBride, 2011). To date, much of the social media-related health research has been completed in various adult contexts, making research activity in youth populations worthy of deeper exploration (Viner et al., 2019).

Knowing that unaddressed mental health challenges can have long lasting implications on growth and development of youth, there is a need to further explore how youth populations and their mental health are influenced by these social media technologies. To explore this, the proposed study will examine various relationships and predictors between sociodemographic, social media usage, and mental health variables in a youth population.

Research Questions

Two overarching research questions are to be examined within this proposed study:

1. To explore and describe youth use of social media in the General Social Survey (2013, Cycle 27-Social Identity); and,
2. To explore relationships between sociodemographic and social media use variables and their association with perceived mental health in a youth population.

Exploring these two research questions will help provide a better understanding related to the various mental health implications experienced by youth who utilize social media.

Methods

Proposed Study Design

A secondary analysis has been proposed for this research project utilizing data obtained by Statistics Canada. The proposed analysis is a non-experimental, cross-sectional, predictive design, drawing upon data arising from the General Social Survey Cycle 27 survey held locally at the Western University, Research Data Centre (RDC). A range of descriptive and inferential methods will be conducted to gain insights from the data. Due to the number of respondents to this survey (over 27,500 total participants) (Statistics Canada, 2014) and its population level representation, this proposed study is both pragmatic and also possesses significant external validity potential.

Ethical and Privacy Considerations

Ethical and privacy considerations are essential considerations in any type of research. First, since this project is a proposed secondary analysis, ethical approval is not required as per Western University's RDC Guidelines (Research Data Technology Centre, 2008). When utilizing data from the RDC, many safeguards are already in place to protect study participant privacy and personal information. In order to access the RDC environment, a researcher is required to submit a proposal related to the proposed project, data sources required, and resources required to complete the study. The proposed study described in this thesis chapter was approved by the RDC (Appendix D). If and when a proposal is approved by the RDC, researchers must complete a rigorous vetting process to ensure safety and reliability of the researcher and the study, including having fingerprints taken and providing an oath or affirmation of office and secrecy (Statistics Canada, 2020b). Any analysis must be completed within the locked and protected RDC

facility. Data that is to be extracted from the RDC must be vetted for clearance by one of the staff RDC analysts who reviews the analyses or data for privacy and confidentiality considerations (Statistics Canada, 2020b). Any data housed within the RDC is the property of Statistics Canada and is also de-identified prior to being stored. All personal information which is collected and held by Statistics Canada is protected by the RDC extensively, and any violation of the terms of appropriate use of this data is punishable by law (Statistics Canada, 2020a).

Data Source

The General Social Survey (GSS) was developed in 1985 and is collected every five years by Statistics Canada to gather data on social changes related to the lives of Canadians on a national level (Statistics Canada, 2020). Statistics Canada describes that the primary objectives of this survey are: “to gather data on social trends to monitor changes in living conditions and well-being of Canadians over time, and to provide information on specific social policy issues of current or emerging interest” (Statistics Canada, 2020, para 3). Due to the inclusion of social media and internet use questions in more recent versions of the GSS, this survey was deemed a relevant data source from which to underpin the proposed study. In particular, access for this proposed study will be required to the specific data arising from the GSS (Social Identity-Cycle 27) survey version, which examines factors such as social media use by Canadian respondents. Responses contained in Cycle 27 of the GSS were collected between June 2013 to March 2014 (Statistics Canada, 2014). Survey questions specific to Cycle 27 included self-reported variables such as contact with family, contact with friends, use of internet and social media platforms, and traditional media consumption (Statistics Canada, 2014).

Questions related to self-perceived or self-rated general health and mental health were also collected on Cycle 27 of the GSS (Statistics Canada, 2020a). *Table 2* represents the variables arising from Cycle 27 of the GSS that will be required to execute the proposed study.

Table 2 | Table of Required Variables (General Social Survey-Cycle 27)

VARIABLE CODES AND DESCRIPTIONS REQUIRED FOR THIS PROJECT

DEMOGRAPHIC VARIABLES	
Variable Code	Description
AGE	Age of respondent at time of survey
AGEGR5	Age group of the respondent (groups of 5)
SEX	Sex of respondent
INCMHSD	Personal and household income- total (2012)
VISMIN	Visible Minority Status of Respondent
DISCRIM	Experienced Discrimination in Past 5 Years
EDM_01A	Type of Educational Institution Currently Attending – Elementary School/ Junior/ High School
EDM_01B	Type of Educational Institution Currently Attending – Trade School, College
EDM_01C	Type of Educational Institution Currently Attending – University

SOCIAL MEDIA USE VARIABLES	
Variable Code	Description
ICR_10	Past 12 Months- Social Media Website
ICR_30	Frequency of Social Media Account Access
ICR_20A	Has a Facebook Account?
ICR_20B	Has a Google + Account?
ICR_20C	Has a LinkedIn Account?
ICR_20D	Has a Twitter Account?
ICR_20E	Has a Myspace Account?
CWF_45	How Often Communicated with Friends via Text? (Past Month)
CWF_50	How Often Communicated with Friends via Email/ Internet? (Past Month)

HEALTH AND WELL BEING VARIABLES	
Variable	Variable Description
SLM_01	Subjective Well Being
SRH_110	Self-Rated General Health
SRH_115	Self-Rated Mental Health

Population Characteristics

Cycle 27 of the GSS sampled 27,695 Canadians over the age of 15 years who were non-institutionalized (Statistics Canada, 2014). The survey received a response rate of 41% (just below target population of approximately 31,000)(Statistics Canada, 2014). It was completed by the respondent voluntarily and confidentially, either by an electronic questionnaire or through a computer assisted telephone interview by trained interviewer (Statistics Canada, 2014). Various general and demographic questions were included on each cycle of the GSS and asked in addition to specific questions related to Cycle 27's topic of Social Identity (Statistics Canada, 2014). The complete dataset was requested for this age group to examine the population of participants aged 15-24 years and complete further data analysis of factors affecting the outcome variable. The research team expected this cohort to be approximately 5000 respondents of the over 27,000 studied.

Respondents lived in the 10 provinces of Canada (territories were not included in this particular survey) (Statistics Canada, 2014). Minimum sample sizes were determined for each province, and once stratum sample size targets had been met, remaining individuals within the sample were allocated within the strata (which were balanced at national and strata estimates)(Statistics Canada, 2014). Many large metropolitan centres or Census Metropolitan Areas (CMAs) were considered a stratum (Statistics Canada, 2014). Strategies put in place by Statistics Canada were able to leverage previously collected data from other census activities, which allowed for the increased probability of contacting households without a listed telephone number (Statistics Canada, 2014).

As the GSS examined participants 15 years of age and older, the cohort for this proposed study was 15 to 24 years of age. Inclusion criteria for the proposed study included: (1) being a respondent to the GSS (Cycle 27); and, (2) between 15 to 24 years of age. The age cut-off of 25 years to be considered *youth* was determined by the majority of the supporting literature which states that 25 years of age typically marks the conclusion of brain and growth development (Crone & Konjin, 2018). Due to age blocks pre-defined within the General Social Survey (15-19 and 20-24 years) (Statistics Canada, 2014), all participants 24 years of age and younger were proposed for inclusion.

Data Analysis

Data arising from the GSS Cycle 27 survey will be analyzed using both SPSS (IBM Corp, 2019) and STATA (StataCorp, 2015). Descriptive statistics will be generated for all meaningful variables in this study, and reported as categorical data or as mean/standard deviation, where appropriate. Of particular interest, descriptive statistics related to youth cohort demographic and other self-reported social media use variables will be focused upon. Covariates to be included in this study include *age* (AGE, AGEGR5), *sex* (SEX), *income* (INCMHSD), *visible minority status* (VISMIN), *having experienced discrimination* (DISCRIM), *use of social media in past year* (ICR_10), *internet use* (ICR_30), *texting use* (CWF_45), and *having social media accounts* (ICR_20A, ICR_20B, ICR_20C, ICR_20D, ICR_20E). Other independent variables include *Self-Rated General Health* (SRH_110) and *Subjective Well-being* (SLM_01). *Self-Rated Mental Health* (SRH_115) is proposed as the dependent variable of the study.

Binary multivariate logistic regression will form the primary data analysis method in this proposed study, and be used to explore relationships between sociodemographic

variables, social media use, and perceived mental health. This type of binary multivariate analysis has been selected due to the variables included and analyzed in this project – and primarily, the desire to analyze the dependent variable (i.e., *Self-Perceived Mental Health [SRH_115]*) as a binary outcome of *poor* or *good* perceived mental health. In order to recode the *Self-Perceived Mental Health (SRH_115)* dependent variable into a binary outcome, it will be recoded from its original 5-point scale in the GSS (where 1 excellent, 5 poor) to a researcher-derived binary outcome of *good* (1-3) or *poor* (4-5). Through recording this dependent variable, it is hoped that analysis through binary logistic regression will help show if any of the study covariates are associated with self-perceived mental health in youth, in either protective or negative fashions.

In order to execute a binary logistic regression certain assumptions must be met. The assumptions to be met for this proposed analysis include the following:

- 1) the dependent variable must be dichotomous (Polit & Beck, 2017) (i.e., *Self-Perceived Mental Health*);
- 2) the independent variable(s) are categorical or continuous (Polit & Beck, 2017);
and,
- 3) there must be little to no multicollinearity between independent variables. (Polit & Beck, 2017)

Limitations

One significant limitation of the proposed dataset to be used in this study is the way in which the data in the survey were collected by Statistics Canada. Since potential respondents were contacted by telephone, individuals without access to a telephone were

not able to be contacted or participate in this survey (Statistics Canada, 2014). This potential sampling bias may limit the extent of responses and eligible participants.

In addition, as often experienced in research, turnaround time between completion of the research project, publication of results, and relevancy of the topic may vary due to elapsed time (Polit & Beck, 2017). In this instance, the survey was completed in 2013-2014, focusing on social media platforms such as *Facebook*, *MySpace*, *Google+*, *Twitter*, and *LinkedIn* (Statistics Canada, 2014). It is important to consider that the relevancy of the social media platforms examined at this time may have changed significantly over the last few years (i.e., both *MySpace* and *Google+* no longer exist). Therefore, the constantly evolving nature of social media and the typologies of social media technology used by youth should be considered when reviewing the proposed project. Finally, when utilizing self-measured and self-reported measures as proposed in this study, there is always the potential for response bias and other recall biases.

COVID-19 Limitations

Due to the global COVID-19 pandemic in spring of 2020, significant disruption to the proposed research study occurred. Due to the province of Ontario and the Government of Canada declaring a State of Emergency (Government of Ontario, 2020), RDC centres were closed until further notice (and remain closed as of late May 2020). With the closure of RDC centres, all research projects (including this proposed study here) were been indefinitely delayed, as physical access to the RDC lab is required to complete data analysis and extraction (Research Data Centre UWO, 2020; Research Data Technology Centres, 2008). Due to this unprecedented situation, it was clarified with Western University SGPS that an alternative thesis presentation would be acceptable, in

lieu of reporting actual data arising from the proposed RDC study (*Appendix E*). To accomplish this, Western University SGPS was receptive to a modified thesis presentation, which has been presented here in the form of a comprehensive scoping review (Chapter 2) and protocol for the proposed incomplete study (Chapter 3) examining the relationships between social media use and self-reported mental health of youth in Canada.

Conclusion

Mental health is a complex concept, which can be influenced by many individual and societal factors (CDC, 2020). With social media technologies immersed throughout daily life of most Canadian youth, this area of research inquiry warrants further exploration, especially in the adolescent or youth population where the mental health crisis is a growing epidemic across the province of Ontario and across Canada (CMHO, 2019). In completing and carrying out this proposed study, the research team endeavors to address these gaps in current literature and evidence with impacts on both health and societal levels.

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Chapter Four

Implications

Discussion of Implications

The goal of this proposed study is to examine associations and relationships between social media use and mental health among youth users utilizing the General Social Survey (Statistics Canada, 2014). The study will also examine demographic variables and other personal factors which may or may not be predictors of self-reported mental health in youth. This proposed study utilizes the Social-Ecological Model as a theoretical framework (McLeroy et al., 1988). The implications of this potential study are also discussed briefly in this chapter.

Implications for Theory

The Social-Ecological Model (McLeroy et al., 1988) is a framework which examines an individual as a product of not only their individual choices and behaviours, but also their environment and those within it (CDC, 2020). At the individual level, self-perception and self-image are influential factors which have previously been noted in the literature to have an association with mental health and well-being (Richards et al., 2015). Factors such as gender and age may also play a significant role in these outcomes (Booth et al., 2018) which can be further explored in this potential study from an individual perspective, while factors such as having experienced discrimination and educational status may speak to the interpersonal, societal, and organizational levels (i.e., cultural and societal norms and expectations, perceptions of others within communities). In some instances, the use of social media can be found to be extremely positive, providing users with a sense of connectedness to each other online (Allen et al., 2014).

Developing a stronger and well-informed theoretical model has the potential to make this information more readily available, and further reduce stigma related to mental health and attributing factors (Booth et al., 2018). A substantive understanding of these factors and implications on mental health from social media use can inform guidelines on social media use as no currently available framework links these factors for the youth population. This may also further impact resource allocation, education, and practice incorporating mental health into considerations for care. Utilizing the structure of the Social-Ecological Model as a framework, a robust theoretical model can be developed and utilized which can support work in variety of areas and contexts.

Implications for Practice

From a practice perspective, the proposed study presents potential implications worthy of deeper exploration. First, there are many opportunities for practitioners to optimize their use of social media in terms of offering care and increasing accessibility for youth. As described in the literature review, the use of certain social media technologies in mental health settings has been demonstrated to be supportive for patients and their care needs (Chan et al., 2017). Health providers can utilize their knowledge of social media in this way not only to promote healthy and responsible social media use amongst young people, but also to address mental health challenges in the moment and support youth to develop appropriate and effective coping strategies (Best et al., 2016).

Further, understanding the impact of social media use on youth in terms of mental health will be helpful toward the identification of specific interventions to best support this demographic (Best et al., 2016). By carrying out this proposed study, the identification of various relationships between sociodemographic and social media use

variables upon mental health can assist in identifying new ways to support youth during this time period in their lives.

Implications for Future Research

As previously mentioned, the proposed research project described in this chapter was in progress prior to the COVID-19 pandemic, and indefinitely delayed by the provincial shutdown in mid-March 2020. Ideally, this research project could still be completed in the coming year if restrictions are lifted, as it is believed that this study would generate significant findings to inform practice and research. At the time of writing (April-May 2020), the author of this dissertation is hopeful that this research can be carried out in the coming year and published as a standalone peer-reviewed article.

Conclusion

The mental health crisis in the province of Ontario and nationally represents a greater need for both understanding and resource allocation to address this critical issue (CMHO, 2020). As a consequence of non-addressed health needs, over 50% of children and youth in Ontario state they have had a mental health concern they needed support for but could not access any (CMHO, 2019). As mental health challenges continue to rise among youth, social media use has also become more intertwined with activities of daily living of many Canadians. Future health systems will require forethought about the implications of social media use on their patients, but also how social media use can be optimized to create innovative deliveries of health care and other services (Reupert, 2017).

During the COVID-19 pandemic, concerns related to the spread of the virus have necessitated a reduction in face-to-face communication and gatherings, with significant increases in all forms of virtual communication, including the use of social media platforms

(CDC, 2020c). While these measures were necessary to slow the spread of COVID-19, the effects of self-isolation upon individuals has generated many new and uncharted challenges in relation to the mental health and well-being of people (Ontario Ministry of Health, 2020; CDC, 2020b). Due to this recent global emergency, the completion of this proposed study is very timely, as understanding regarding the potential associations and relationships between social media use and mental health in youth populations is needed more than ever.

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Appendix A

Search Strategy for PubMed, CINAHL, PsycINFO & Scopus:

MeSH terms as well as keywords were utilized in this review (respective of the search database itself). Boolean operators were used between the search terms (AND) below:

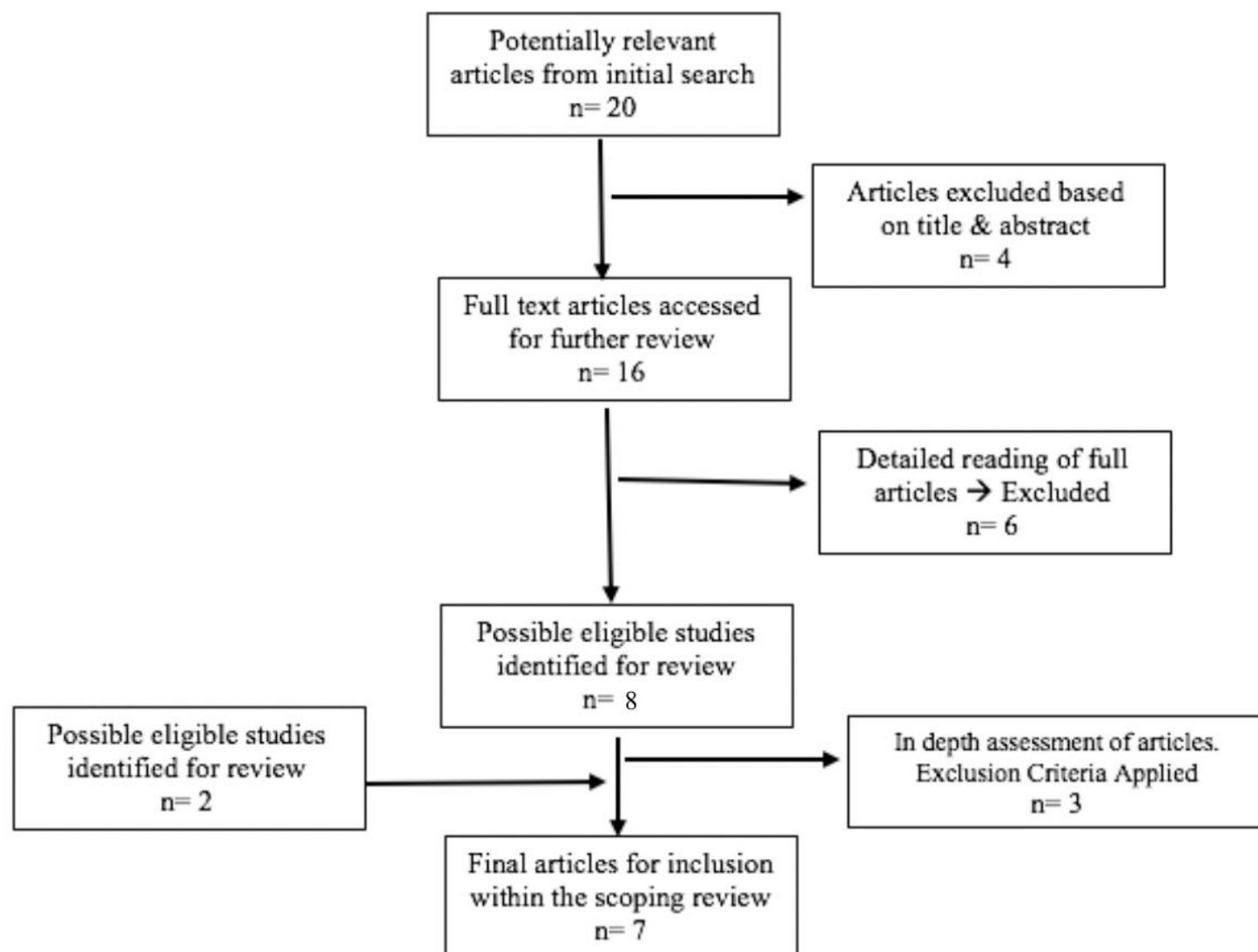
- 1) “*social media*” OR “*digital media*”
- 2) “*youth*” OR “*adolescent*” OR “*young adult*”
- 3) “*mental health*” OR “*mental well-being*”

The results of the search were as follows:

18 total articles from the databases (PubMed 7; CINAHL 2; PsycINFO 4; Scopus 5).

Two additional articles were found from one identified article in the PubMed database which was eligible for the review. Additionally, one of the articles (found in the initial search) was known to the author to be of significance to the review due to prior background knowledge, which was able to be utilized to understand the available literature when conducting the scoping review.

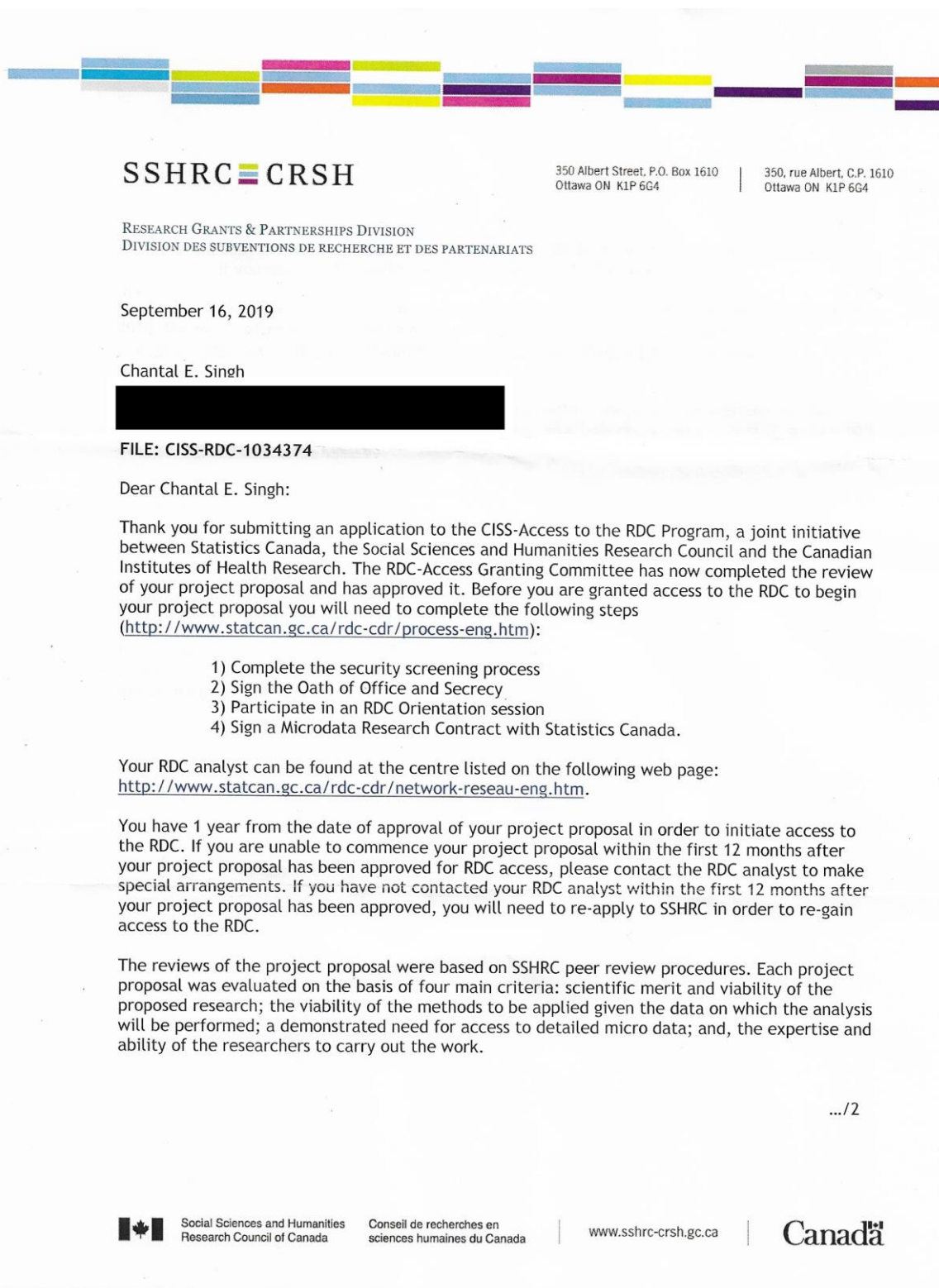
Appendix B



Appendix C

Author	Rationale for Exclusion from Review
Booth, Allen, Jenkyn, Li & Shariff (2018)	INCLUDED
Brailovskaia & Margraf (2018)	INCLUDED
Chan et al. (2017)	INCLUDED
Crone & Konijn (2018)	No measure/ description of mental health (perceived or measured)
Forchuk et al. (2016)	No measure of social media use/ Social media and technology not well defined
Gritton, Rushing, Stephens, Kerr, & Moreno (2016)	No measure/ description of “concerning social media” No measure/ description of mental health (perceived or measured)
Halsall, Garinger & Forneris (2014)	No discussion of social media use specifically
Holland, Vivolo-Kantor, Logan & Leemis (2017)	INCLUDED
Gandhi, Chiu, Lam, Cairney, Guttman, & Kurdyak (2016)	No measure of social media use
Khodarahami & Fathi (2017)	No measure/ description of mental health (perceived or measure)
Livingston et al. (2014)	No measure of social media use
McBride (2011)	No measure of social media use No measure/ description of mental health (perceived or measured)
Knox, Collings & Nelson (2016)	No measure/ description of mental health (perceived or measured)
Pontes (2017)	INCLUDED
Powers (2012)	No measure of social media use
Primack, & Escobar- Viera (2017)	No measure/ description of mental health (perceived or measured)
Reid Chassiakos, Radesky, Christakis, Moreno, & Cross (2016)	No specific discussion of mental health (perceived or measured)
Richards, Caldwell, & Go (2015)	Review of previous literature
Romer, Bagdasarov, & More (2013)	INCLUDED
Schmitt, Sims-Giddens, & Booth (2012)	No measure/ description of mental health (perceived or measured)

Appendix D



CURRICULUM VITAE

CHANTAL E SINGH

Education:

Western University. London, ON, Canada

2016-2020 MScN (Expected Completion)

Western University. London, ON, Canada

2012-2016 BScN (Dean's Honour Roll)

Awards:

Evelyn Campbell Memorial Bursary-Registered Nurses Foundation of Ontario (RNFOO) (2019)

Irene E. Nordwich Foundation Award (2017)

Linda Frances Lees Award (Graduation Award)-Western University (2016)

Bud & Joanne Taylor Clinical Education Bursary-Western University (2015)

Professional Experience:

Telehealth Ontario

Registered Nurse, 2020 to Present

Western University, London, ON

Part-Time Lecturer, 2018-2020

LHSC Children's Hospital, London, ON

Nurse-Paediatric Critical Care Unit, 2016-Present

South West CCAC/ LHIN, London, ON

Care Coordinator, 2016 to 2018

Western University, London, ON

Research & Teaching Assistant, 2016- 2018

Western University, London, ON

Teaching Assistant, 2016

LHSC Children's Hospital, London, ON

Research Assistant-Haematology/ Oncology
2014-2016

London Health Sciences Centre & St. Joseph's

Healthcare London, London ON

HUGO Implementation Team, 2014

Professional Memberships:

Paediatric Nurses Interest Group (PedNIG)
Of RNAO – Elected President

Registered Nurses Association of Ontario
College of Nurses of Ontario
Canadian Association of Paediatric Nurses

Invited Presentations:

Western University Health Sciences Graduate
Student Conference, Feb 2020, London ON

Children's Healthcare Canada Conference
December 2019, Ottawa ON

Paediatric Nursing Update Symposium
November 2019, Toronto ON

Western University Child Health Symposium
May 2019, London ON

Nursing Leadership Network Conference
March 2018, Toronto ON

Great Lakes Biennial Nursing Conference
November 2016, Windsor ON

Canadian Nursing Informatics Association
May 2015, Toronto ON

PUBLICATIONS

Booth, R. G., Sinclair, B., Strudwick, G., Brennan, L., Morgan, L., Collings, S., Johnston, J., Loggie, B., Tong J., & Singh, C. (2017). Deconstructing clinical workflow: Identifying teaching-learning principles for barcode electronic medication administration with nursing students. *Nurse Educator*.

Sey, M., et. al (2017). KODA score: an updated and validated bowel preparation scale for patients undergoing small bowel capsule endoscopy". *Endoscopy International Open* (Accepted-In Publication)

Sey, M., et. al (2017). External Validation of the Park's Score for Capsule Endoscopy Bowel Preparation study. (In Process of Submission by M. Algeeli, Fall 2017)