3-25-2014 12:00 AM

Technology Based Mental Health Support Strategies for Youth

Kathleen S. Larion, *The University of Western Ontario*

Supervisor: Dr. Susan Rodger, *The University of Western Ontario*

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

Technology Based Mental Health Support Strategies for Youth

(Thesis Format:Monograph)

By

Kathleen Larion

Faculty of Education

Submitted in partial fulfilment

of the requirements for the degree of

Master of Arts

School of Graduate and Postdoctoral Studies

Western University

London, Ontario

February, 2014

Abstract

The purpose of this study was to investigate youth mental health concerns and technology based support strategies from the perspective of local youth. Semi-structured focus group interviews were conducted with a group of youth who attend area high schools and postsecondary institutions. The youth were asked two main questions: 1) What mental health problems do you think youth are experiencing? 2) What are some support strategies that youth can use, particularly in the school system, that are technology based? During the second focus group the youth were given a list of their responses and asked to organize them into themes or categories using a concept map. Ten thematic categories were created by the youth: Preventions, Mental Health Factors/States, Bullying, Self image, Technology, Mental Health Disorders, Negative Coping, Positive Coping, Interventions, and Technology Based Interventions. Implications for counselling, the school system, and research are discussed.

Keywords: Adolescents, Mental Health, Technology, Internet, Education

Dedication

This work is dedicated to the youth who gave their voices to this project in the hopes of improving the lives of their peers and future students who struggle with mental illness.

Acknowledgements

I would like to thank the Counselling Psychology program and faculty at Western University. This program and its people have made a tremendous impact on my life, learning, and career. Particularly, I would like to thank my thesis advisor Dr. Susan Rodger for her unwavering support, kindness, and enthusiasm for this work. I would like to thank Dr. Jason Brown for his creativity and his wisdom, ensuring the voices of the participants were heard. I would also like to thank Dr. Alan Leschied who guided the project from the beginning, lending his research expertise with extraordinary enthusiasm.

This project would not have been possible without the support of our research partners. Thank you for welcoming our research team. I also would like to thank all those who participated in this project. I wish you all the best of luck as you continue fighting for the mental wellness of youth.

I am very grateful for my peers and friends who have been a constant support for me. Lastly, I am incredibly thankful for my family, including my parents who have encouraged my education, and also for Mr. Iain Coxen whose love and reassurance has always been a guiding light.

Table of Contents

Literature Review

Approximately one in five adolescents will experience a mental health disorder, and yet, only one in six will receive treatment. With only a small percentage of youth seeking treatment, there is a strong need for the development of innovative treatment interventions which target adolescents and prevent the problem from escalating in adulthood (Manion, 2010). This literature review describes the problem facing youth mental health, provides information on how technology offers a promising solution, and explores some of the existing technology based mental health services internationally, nationally, and local to Southwestern Ontario. The aim of this thesis project is to discover what technology based mental health services youth would like to be able to access in the local school system.

Youth Mental Health

Half of the population will be diagnosed with a mental health disorder at some point in their lifetime. Most mental health disorders develop in youth between the ages of 12 and 24, with half of all lifetime cases starting by the age of 14, and 75% starting before the age of 24 (Kessler et al., 2005; Manion, 2010). Up to 20% of teenagers experience such serious mental health issues that they report seriously considering suicide. Suicide is the second leading cause of death for young Canadians (Cheung & Dewa, 2007). Often these disorders are not detected until later in life, exacting a considerable burden on the public health system as they continue and worsen into adulthood. With the high prevalence of mental health issues developing at a young age there is a strong need for prevention and early treatment interventions aimed at youth (Kessler et al., 2005; Patel, Flisher, Hetrick, & McGorry, 2007; Manion, 2010). Youth mental health should be a public health priority. In response to this need, the Government of Canada

(2006), identified child and youth mental health as a significant area of focus and created the Mental Health Commission of Canada which has a strong focus on youth mental health.

Much of the current research on child and adolescent mental health focuses on risk factors. Early adversity, including attachment disruption, maltreatment, and neglect, are associated with increased risk for a range of mental health disorders (Newman, 2012). Maladaptive family patterns, including parental mental health problems, as well as violence and abuse, are particularly harmful to the healthy development of children, and are related to the persistence and prevalence of mental health problems in adulthood (McLaughlin et al., 2010). School factors have also been identified as risk factors, including academic failure, bullying, and the failure of schools to provide an appropriate and supportive environment. Poor mental health among youth can lead to other problems such as decreased educational success, substance abuse, and violence (Patel et al., 2007). Conversely, having strong individual, family and social resources coincide with a reduced occurrence of mental health problems (Wille, Bettge, & Ravens-Sieberer, 2008).

There is a strong need to advocate for improved mental health services for children (Schmidt, 2012). The current treatments for children and youth, including outpatient therapy and hospitalization, appear to be ineffective with average treatment effects being close to zero (Bickman, 1996). The low use of empirically supported treatments indicates a pressing need to enhance the availability of evidenced based practice (EBP). In support of the need for EBP, Kutcher (2011) advocated for treatments consisting of approaches that are based on research support with the best possible evidence. Proposed solutions should be based on research evidence, as well as clinicians' judgments, and take into consideration the preferences of the

specific population it is serving. This means that it is important for youth mental health treatments to reflect the preferences of the youth themselves.

Early intervention is essential for preventing poor outcomes, and this may be accomplished by implementing screening and identification measures within the school system (Newman, 2012). However, at the broadest level, service gaps exist which interfere with the ability to meet the complex and comorbid needs of children and youth, and there is a lack of standardization of best practices and lack of integration of EBP (Manion, 2010). At the individual level, stigma is a significant barrier preventing young people from seeking help (Burns, Durkin, & Nicholas, 2009), which significantly interferes with the treatment of child and adolescent mental health problems. Because of these structural and individual treatment barriers, there is an urgent need for inexpensive and feasible interventions for youth. It is recommended that these interventions be developed in youth-friendly ways, and possibly be delivered through educational settings and through the internet, as online treatment may reduce stigma and increase treatment availability (Patel et al., 2007).

Technology and Mental Health

Technology has become an integral part of Canadian society. The internet is commonly used to obtain information, engage in self-help activities, and at times, receive professional help for mental health problems (Baker & Ray, 2011). In recent years there has been an increase worldwide in both the number of technologies delivering mental health services and in their use by young people in particular. These technologies will most likely become more important as innovation continues, having the potential to revolutionize the child and youth mental health field (Boydell et al., 2013). Technology-mediated counselling is a relatively new phenomenon that has yet to be extensively studied. Despite the fact that mental health problems are prevalent

among young people, and often begin in adolescence, much of the research on technology based mental health treatment has focused on adults as opposed to youth (Nicholas, 2010). It is not yet known how the school system can best provide technology based support for youth with mental health concerns, but the question of what technology based mental health support works for young people and which specific tools youth would like to have in their school system is at the forefront of the current research study. For the purposes of this research project, technology based support strategies includes but are not exclusive to online, electronic, and internet based programming, and includes specific tools such as websites, podcasts, e-mail, chatrooms, instant messaging, computer programs, bulletin boards, newsletters and videoconferencing.

According to Burns et al. (2009), over 90% of American youth access the internet, with 75% using it to seek health related information and 25% seeking mental health information. At the broadest level, the internet can play an important role in reducing stigma and increasing help-seeking behaviour and access among adolescents. The ability to recognize symptoms and access information on professionals anonymously and privately can reduce the stigma youth experience and potentially motivate them to seek help; with such large numbers of young people experiencing mental health problems, it is possible that the internet could be used to overcome many treatment barriers including distance and cost (Burns et al., 2009; Costello, Copeland, Cowell, & Keeler, 2007). While the internet has increased certain problems for youth, such as cyberbullying, it does have value for mental health promotion, prevention, and intervention, with youth reporting that they feel empowered by the internet (Burns et al., 2009).

Technology & Adult Mental Health

The research on technology based treatment for mental health problems has a short history, but shows rapid development. The literature first began in the business world, with researchers studying how business could be accomplished more efficiently in a virtual boardroom where people could work, negotiate, and problem-solve online. After this initial success, numerous other professionals began incorporating the internet into their work, including counsellors (Alleman, 2002). The early clients of online therapy reported feeling less self-conscious, less inhibited, and more able to freely express themselves in an online environment. Clinicians' initial opinions were also positive, indicating being more focused, and more able to generate powerful responses upon reflecting on their clients written responses (Hamilton, 1999). There is also a substantial history for delivering mental health services via telephone. The extensive evidence base shows a high degree of satisfaction for both practitioners and clients, enhanced capacity for services in rural communities, and strong therapeutic effectiveness (Boydell et al., 2013).

The majority of studies finding support for technology-based counselling have focused on the adult population. One of the landmark investigations was a four group comparison study conducted by Day and Schneider (2002). Eighty participants were recruited to represent the typical clients of community based mental health agencies. Participants were randomly assigned to five sessions of cognitive behavioural therapy (CBT), delivered through face-to-face counselling, real-time videoconferencing, or two-way audio communication. A wait-list control group was also used. The researchers evaluated the working alliance, session outcome, and general satisfaction with the sessions using multiple measures. The researchers discovered the only significant difference between the groups on any of the variables was in favour of the videoconferencing and audio communication groups. For example, the videoconferencing and

audio communication groups had higher scores on the measure of client participation, which included activity level, initiative, trust, spontaneity, and disinhibition. However, all three intervention groups had equivalent outcomes, and all were substantially superior to the wait-list control group. This study is valuable because it is one of the few studies that directly compared face-to-face counselling with multiple types of non-face-to-face counselling and a wait-list control group using multiple treatment sessions and multiple measures of evaluation. The researchers made efforts to ensure their study was generalizable to true community based mental health agency populations, but since this study lacked a follow-up evaluation, it is not known whether outcomes were maintained equally into the future. Moreover, it is not known whether these results would generalize to youth.

The majority of research on technology based mental health treatments has focused on online CBT for anxiety and depression. A meta-analysis by Spek et al. (2007) was conducted to examine the effects of internet-based CBT on adult anxiety and depression prevention and treatment. Using 12 randomized control trial studies, internet-based CBT was compared to 13 control conditions. The studies contained follow-ups to determine longitudinal efficacy. An analysis of mean effect sizes determined that most treatments had medium to large effect sizes, although there were some differences. Small mean effect sizes were found for depression treatments whereas interventions for anxiety symptoms showed the largest mean effect sizes. Furthermore, interventions that included therapist support had large mean effect sizes, while those interventions without therapist support had small mean effect sizes. Lastly, treatment studies had large mean effect sizes, in contrast to prevention studies which had small mean effect sizes. These results suggest that receiving therapist support is more important than the type of problem, and that technology based treatment may be more effective than technology based

prevention programs. There were, however, significant differences in the designs of the included studies and thus future research is needed to further explore these findings, particularly with child and youth populations. Despite limitations such as the small number of included studies, this meta-analysis indicated that internet-based treatment interventions for adults are effective, especially when therapist support is present.

Ethical Considerations

There are certain ethical and professional practice issues which must be taken into consideration. At the professional level there are problems related to licensure across jurisdictions, and the related issue of responsibility at times of client crisis (Rochlen, Zack, & Speyer, 2004). One issue of interest is that of anonymity. While online interventions have been popularized because of their anonymity, certain types of online interventions, like e-mail, are at times subject to breaches of anonymity and confidentiality, and encryption methods should always be used. Such ethical issues are even more pertinent when counselling young people. Counselling youth online can be problematic as the clinician needs parental consent. The ethical issues underlying technology based mental health strategies are not the focus of this project, but should be kept in mind. Ethical guidelines exist for professional online counselling to help guide clinicians and protect clients (Bloom, 1998). These guidelines should be thoroughly examined by those wishing to implement technology based mental health strategies.

Technology and Youth Mental Health

With approximately 14 to 25% of Canadian youth experiencing a diagnosable mental health disorder, and only one in six accessing appropriate services, there is a significant and pressing need for innovative and appealing interventions (Manion, 2010). There is a long history of telephone counselling in the form of telephone distress lines, such as the Kids' Help Phone,

being used to provide young people with mental health services. It particularly benefits youth and families who live in rural areas or who otherwise cannot access mental health services in person. Other benefits of tele-counselling supported by research include the formation of a strong therapeutic alliance, reduced stigma, reduced distress, reduced suicidality, anonymity, and convenience. Many of these services are expanding to offer e-mail and web chat in addition to phone counselling, making them even more convenient and versatile (Boydell et al., 2013).

Online websites are showing great promise at meeting the need for e-mental health services. Australia is a world leader in this respect. Reach Out is the leading online mental health resource for youth in Australia. It promotes the mental health and wellbeing of young people ages 16 to 25. Since its launch in 1998, the site has been visited over 7,000,000 times, and one in every three Australian youth are aware of its existence. The key objectives of the website consist of reducing stigma, increasing mental health literacy, strengthening meaningful participation and relationships, enhancing skills that bolster resilience, and increasing help seeking. It uses research supported fact-sheets created by youth, has a supportive moderated forum where users can communicate, allows users to play a game based on CBT principles, offers opportunities for self-expression, provides educational podcasts, and offers short messaging services. Due to input from youth, branding strategies and promotional efforts have been identified as important to the success of the website. Over 80% of users reported that they learned more about mental health issues, and 77% learned where to get help. Among repeat visitors, 88% eventually sought help from someone, while 38% sought professional help. It is a success because people are aware of its existence, it is based on research evidence, it offers a variety of resources, there is significant input from youth, it promotes help-seeking, and reduces stigma (Nicholas, 2010). A sister site now operates in the United States.

In Canada, one particular not for profit youth mental health website engages young people and professionals by having them co-develop relevant online resources for youth, and the goals of the program are to reduce the stigma associated with mental illness and to increase access and use of professional and peer-based community support. The program recently underwent an evaluation with supportive results. The evaluation showed a 160% increase in help-seeking behaviour among youth accessing the website with 65% of repeat users who self-reported a mental health issue accessing formal or informal help. Results also showed a strong increase in user knowledge of mental illness and positive changes in attitude toward mental illness. In the one year evaluation period, the site received over 400,000 visitors. The most popular page accessed by the youth was a help page with an audio file providing information on receiving immediate help. The site also uses other internet websites such as Facebook and YouTube to help reach youth. All participating professionals noted that community organizations need to have a technology-based presence in order to reach youth. This evaluation shows that online supports can be effective in motivating troubled youth to seek help (Garinger, 2010).

A number of computerized interventions have been developed for youth mental health problems. One such intervention is the Cool Teens CD-ROM (Compact Disc-Read Only Memory) for adolescents with anxiety disorders. Wuthrich et al. (2012) conducted a small randomized controlled trial of the Cool Teens program. Forty-three adolescents with a primary diagnosis of anxiety were randomly assigned to either the Cool Teens program, consisting of 12 weeks of computerized CBT for anxiety management, supplemented with telephone calls from a therapist, or a 12 week wait list control group. Participants in the Cool Teens condition, compared with those in the control condition, showed significant reductions in the total number

of anxiety disorders, the severity of the primary anxiety disorder, and the average severity for all disorders. At the initial post-treatment assessment, 41% of participants in the Cool Teens condition no longer met diagnostic criteria for their primary anxiety disorder, and 24% no longer met criteria for any disorder, compared with 0% of participants in the wait list group. Results were moderately well maintained at the three month follow-up with 26% no longer meeting criteria for their primary anxiety disorder, and 20% no longer meeting criteria for any disorder. Results were supported by significant reductions in reports of anxiety, internalizing symptoms, automatic thoughts, and life interference. Participants reflected positively on the anxiety education and interactive features of the program, for example, listening to the characters' stories, and also found the modules useful and easy to use. Participants expressed that it was hard to find time to use the program and do the homework tasks; however, the overall user feedback indicated that the program was highly acceptable to adolescents and effective in treating their anxiety.

While mental health programming on CD-ROM is still used, their use no longer seems as prevalent or necessary due to the development of newer technologies. Mental health treatment via mobile devices or mHealth appears to be a newer and more popular alternative. More than 3,000 applications, also known as apps, exist for multiple mental health issues including depression, anxiety, substance use, sleep disturbances, suicidal behavior, self-harm, psychotic disorders, eating disorders, stress, and gambling (Donker et al., 2013). Apple iTunes is a leader in mHealth, offering hundreds of apps. For example, the iCouch app can be used to identify and replace cognitive distortions, the Take a Break app leads users through mindfulness meditation exercises, and the Live Happy app is designed to help increase users' participation in positive activities with the goal of increasing happiness. The available mental health apps are often free,

or under five dollars to purchase and can be used alone or in conjunction with a counsellor (Apple, 2014). A recent research review looked at the effectiveness of mental health apps. The results indicated significant reductions in depression, stress, and substance use for regular users of the chosen apps. This study concluded that apps for mental health have the potential to be effective and to improve treatment accessibility. Advantages of mHealth also include increased retention and treatment adherence, real-time symptom and activity monitoring, tracking of treatment progress, personalized feedback and support, as well as portability and flexibility of use. However, there are also disadvantages of using mobile technology for mental health, including technical problems, concerns regarding data security and privacy, as well as crisis and risk management issues. Much more research is needed as the majority of applications have not been evaluated scientifically, although mobile mental health applications do appear promising (Donker et al., 2013).

Also in need of research support is the use of e-mail in youth mental health settings. Available research suggests that it may be a viable alternative to face-to-face counselling, although clinicians appear reluctant to use it, expressing fears about ethical issues, security, increased workload, and legal ramifications. Youth on the other hand, report feeling empowered by the use of e-mail and will readily engage with the tool. The benefits of e-mail include being quick, convenient, cost-effective, and allowing time to carefully construct a response. Clients can keep track of their thoughts in the moment, and the e-mail provides a hardcopy which can be accessed anytime. It also provides the anonymity and distance desired by many youth. While disadvantages do exist such as the potential for data corruption and being unsafe to use for emergencies, many of the security issues can be managed through proper use and familiarity with policies and guidelines (Mehta & Chalhoub, 2006). A case study showed support for e-mail

when working with high risk youth who are difficult to engage. Roy and Gillett (2008) used email to engage a teenager with low-mood and self-harming behaviour through weekly emails delivered over the course of three months. They found that e-mail had a dis-inhibitory effect due to its anonymity, invisibility and the leveling of status that occurs, as well as provided a sense of control. A literature review by Boydell et al., (2013) also found support for these benefits. They also found that the majority of service providers reported using email in their practice, but typically only for making appointments or communicating with other staff as opposed to being used as a mental health tool.

Looking at the popular press and media, this researcher noted that social media is changing the mental health care field for both service users and practitioners. As Betton and Tomlinson (2013) explained, the term "social media" refers broadly to any online social environment where conversations can take place, or where people can upload personal content and receive comments or have the information shared by others. Examples include Facebook, YouTube, Twitter, LinkedIn, Pinterest, forums, and blogs. Social media offers numerous opportunities and benefits to its users including increased connections to people with similar issues, promoting services, or providing mental health information. Benefits for service providers include the free nature of social media and the low time commitment. Benefits for youth include the ability to access information quickly, anonymously and from any wireless location. They also have an opportunity to carefully shape their identity. Furthermore, stigma often prevents people from sharing openly about mental health problems, but social media helps to eliminate that barrier and provides an opportunity for people to meet in a supportive online community. Today's youth expect to use social media for multiple areas of their lives, and yet, few mental health practitioners are making use of this resource. As with most resources however, there are

concerns. One example would be privacy as most of what is done on social media is public. Practitioners need to be knowledgeable of privacy settings and able to moderate comments for anything obscene or derogatory (Betton & Tomlinson, 2013). A recent study of 18-24 year olds with mental illness found that 94% were already using social networking sites, particularly for increasing connectivity. The study found that social networking sites helped them to feel less isolated. The participants also expressed a desire for additional features including connecting with other website users, resources on transition, capacity to plan local activities and meet other users in person, and opportunities to help others (Gowen, Deschaine, Gruttadara, & Markey, 2012).

While the majority of research on technology based interventions for youth has focused on anxiety and depression, research also supports applications to other types of mental health challenges, such as eating disorders. Internet interventions for eating disorders show promise at increasing youth access to treatment due to their anonymity, which lessons the impact of stigma and shame on help-seeking behaviour (Manwaring et al., 2008). For example, Bell (2008) developed an electronic intervention in the form of a CBT based home internet course for adolescents with binge eating behaviour and obesity problems. While the frequency with which participants actually used the intervention varied considerably, at the five month follow-up, participants lowered their number of binge-eating episodes. Despite some methodological problems related to group equivalence and a high attrition rate, this study provides limited support for technology based treatments for youth with eating problems. In another study by Manwaring et al., (2008), an online prevention program for eating disorders called Student Bodies was found to significantly reduce eating disorder attitudes and behaviours in college-aged women with body image concerns, as well as reduce the development of eating disorders in some

high risk groups. While program adherence had an impact on treatment outcomes, the main finding was that greater program use, in the form of accessing content pages and posting in the journals, as well as greater number of weeks of participation, had a positive impact on dietary restraint. However, other aspects of the program, such as the provision of a discussion board, had no impact on participant outcomes. That being said, the type of outcome measures used may not have reflected other benefits of the program, such as attracting users to the site.

Technology based mental health tools are becoming more popular in international school systems. Ripple Effects Whole Spectrum Intervention System (Ripple Effects) is an interactive American software program for students designed to improve social-emotional competencies, and improve outcomes in the areas of school achievement, delinquency, substance use, and mental health. There are two versions, one for children and one for adolescents. It has been used by over 1,000,000 individuals since its implementation in 1998. It includes peer-narrated tutorials and provides personalized guidance to each user around their specific risk and protective factors. There are over 100 topics available for the children's version, and almost 400 for the adolescent program. Administrators can customize the topics based on their needs and goals, or students can select the topics they are most interested in. Program duration can also be individually tailored. Material is presented in a variety of forms including videos, case studies, photos, and journal writing. Students using the Ripple Effects program compared to control groups have higher academic achievement in the form of grade point average and attendance, and greater resilience, including empathy and problem solving. The high cost of the program, however, may be a barrier for some, costing over five hundred dollars for one computer license (U.S. Department of Health and Human Services, 2011).

In considering what the most effective technology-based treatments for youth might be, it is important that youth voices are included in the research. The work of Havas, Nooijer, Crutzen, and Feron (2011), identified the importance of receiving input from youth regarding their preferences for technology based mental health resources. These researchers conducted focus groups with adolescents in the Netherlands, and found that adolescents have favourable attitudes towards receiving online support for mental health problems. The majority of participants stated they had searched or would search the internet for information and help for their own mental health problems, and for problems that relatives or friends experienced. The participants reported experiencing a wide variety of problems, such as bullying, depression, aggression, stress due to academic demands at school, and sleeping problems. While some participants did report a preference for talking face-to-face with someone about these concerns, researchers reported that the main reason reported for searching the internet as opposed to seeking face-to-face help was the anonymity offered by the internet. The vast majority responded favourably to the possibility of a reliable youth mental health website that would provide information, self-tests and supportive professional help through online instant messaging sessions, although there were minor differences in opinion depending on the educational level of the participants. Explanations for the participants' enthusiasm included their familiarity with the internet and its anonymity. The option of getting help by e-mail was less supported, and concerns surrounding the anonymity of this method were expressed by some of the participants. A positive finding was that the majority of participants had no objection to meeting face-to-face with a youth healthcare worker after having initial contact online. Such a system could offer added value for both the healthcare worker and the adolescent, especially when there are serious concerns about the adolescent's mental health. This study highlights the importance of including

adolescents in the development of technology based mental health supports, as well as highlights the variation in available interventions.

Technology in Canada for Youth Mental Health

Currently, there is no established or formal technology based mental health strategy for youth in Canada. While there are some websites offering mental health resources and information, there is no national or provincial strategy endorsing technology based mental health programming. The Mental Health Commission of Canada recently identified e-mental health as an important issue and is working on developing a framework (Boydell et al., 2013). Using online technology for its development, the Evergreen Framework recently established several strategic directions for child and youth mental health care in Canada. It identified the need to create mental health initiatives that involve the use of online, digital and other communication technologies that appeal to and are used by youth and their parents. As part of the Evergreen dialogue process, several parents and young people directly reported wanting online counselling or school-based programming. Innovative technologies, such as iPhone applications and web-based counselling, were identified as possibilities for establishing effective mental health services, including self-referral, counselling, and educational/literacy programming, for youth and their parents. Technology was also stated as a specific strategy for increasing access to specialty mental health services for young people living in rural areas, and as an urgent access service for youth in crisis (Kutcher & McLuckie, 2010). As of yet, technology based mental health tools are only being used sporadically throughout Canada, despite its recommended use, and despite the breadth and flexibility of technology that can be used to deliver mental health services as successfully as traditional face-to-face delivery (Boydell et al., 2013).

One of the keys to decreasing stigma and increasing the early identification of mental health concerns for and by young people is informative literary materials delivered through technology. YooMagazine is a web-based interactive health and mental health literacy resource targeted at youth, parents, and teachers. It is informed by research and provides youth and schools with reliable information in a variety of formats about mental health. YooMagazine is available Canada-wide through schools and community groups, although its implementation and use is sporadic (Santor & Bagnell, 2008).

In Halifax, a distance treatment model has been developed to overcome some of the barriers to accessing care. Mental health treatment is delivered via video and telephone support to families in the comfort and privacy of their own home, and at times that are most convenient for them. This type of approach increases access to care and provides an important opportunity for early intervention using evidence based practices (Lingley-Pottie & McGrath, 2008; McGrath, Lingley-Pottie, Emberly, Thurston, & McLean, 2009). Evaluation research shows a strong therapeutic relationship develops between client and practitioner, even though they only speak over the phone. The research also shows decreases in the child's disruptive behaviour and anxiety as well as reduced drop out-rates of 10% compared to the typical 40-60%. This model has been implemented province wide and has spread to Ontario and British Columbia (Boydell et al., 2013).

Telephone counselling has a long history in Ontario, and the Ontario Telemedicine Network is one of the largest in the world. It provides mental health care consultation via vidoconferencing to more than 100,000 individuals every year. They offer a specialized service for children and youth who require an in depth consultation by a specialist who would otherwise not be available to them (Boydell et al., 2013). In Toronto Ontario, the TeleLink Mental Health

Program at The Hospital for Sick Children is offering mental health care via videoconferencing for children and youth living in rural and remote Ontario. Pediatric psychiatrists and other child and youth mental health specialists are able to extend their care into client's homes through the use of technology. Outcomes research shows enhanced capacity of rural service providers, increased access for children and youth in need, service satisfaction reported by the families, and increased involvement of the school and community (Boydell et al., 2013).

Recently, a new locally based resource in Southwestern Ontario has been using telephone technology to help improve service access for youth and reduce wait-lists. The local health care authority employs a multidisciplinary team to serve teenagers and young adults experiencing problems with depression, anxiety, and substance use. People in need can bypass the long waiting lists offered at other agencies and receive an immediate telephone assessment. If treatment is required, clients are seen within a week or two, much shorter than the usual few months waiting period. The program currently treats up to 250 people a year (Dakin, 2012). This example is evidence of how existing services in Ontario have the capacity to make use of e-mental health for service delivery with beneficial outcomes.

Conclusion

With one in five adolescents experiencing a mental health problem, and the majority not receiving treatment, there is a strong need for innovative and appealing interventions aimed at youth (Manion, 2010). Technology has been identified as such an intervention. It is appealing to youth, and functions to overcome many of the barriers experienced with traditional face-to-face approaches, such as the stigma of having a mental health issue and long waiting lists. Furthermore, it has been found to increase help-seeking behaviour, ensuring those who need help will receive it (Burns et al., 2009; Nicholas, 2010). Technology based mental health resources

have been identified as a national need (Kutcher & McLuckie, 2010). Research has identified the importance of youth input in developing these resources, as they have distinct opinions and preferences regarding the services they would like to receive (Havas et al., 2011; Boydell et al., 2013). The question of what technology based mental health support works for youth and which specific tools youth would like to have in their school system is at the forefront of this needs assessment research study. It fulfills the need of identifying desired technology based mental health supports by engaging youth in the process.

Methods

Research Questions

Based on the current state of the research field, this study took a phenomenological approach to accomplish the purpose of exploring youth mental health concerns and technology based support strategies. This approach provided a detailed answer to the main research question, which was, how can we best support youth mental health through technology? This also provided an answer for the secondary research question, which was, what mental health problems are youth currently experiencing in their lives? Since this is a qualitative study, there were no preconceived hypotheses. The specific purpose of the research study was to describe the commonalities in mental health concerns and commonalities in preferences for technology based mental health resources among youth.

Design

Two focus group interviews were conducted, utilizing an exploratory method of retrieving and discussing information. In the first focus group, there was a deep exploration of the essence of youth mental health concerns and beliefs regarding technology as a support tool. Taking a subjective and holistic approach, cognitive, emotional, and physical aspects of

experience were discussed in depth. This design was chosen because it is well-suited for the communication style of adolescents and because the qualitative design reveals a great amount of richly detailed information about the phenomenon of interest (Havas et al., 2011). The reactions of participants to each other yielded additional information that would not be retrieved through a quantitative design. The group format also delivered more well-rounded conclusions since information was debated amongst the group and because each participant carried a unique perspective. The primary focus of the second focus group was to collaboratively arrive at a decision identifying common themes and to develop a mutual understanding of the concepts. Thus, research conclusions should be representative of the group as a whole. This qualitative research method was also chosen because it complemented a broader school based needs assessment which was being undertaken at the same time.

Participants

The focus groups were conducted at the local office of a youth organization that promotes youth mental health and well-being through their website. Recruitment was undertaken by the volunteer coordinator from among their existing volunteer pool of 20-40 youth. A recruitment notice providing a brief description of the study was provided to this volunteer pool using Facebook. From this Facebook group, six people agreed to participate in the study, and one person referred a friend to the study, making a final participation group of seven youth between the ages of 16 and 24. Three participants were aged 17, and attended a local high school. Two participants were 21 years of age and each attended a different local college. One participant was 21 years old and attended a local university. The final participant attended the same local university but did not disclose their exact age. Participation was on a voluntary basis, and participants did not need to have a mental health problem or other problem in order to

participate. Each person wishing to participate was given an informed consent form that was signed by them at the beginning of the first focus group. Both focus groups were conducted in the late afternoon, at times convenient for the majority of participants. Both focus groups were facilitated by this researcher with support from an employee from the youth organization. The first focus group was roughly one and a half hours long while the second focus group took just over an hour to complete. Two participants gave notice that they could not attend the follow-up group, and one participant did not show, meaning only four out of the seven original participants were present at the second focus group. The explanation for the high attrition rate appears to have been the timing of the second focus group, which was just before the Christmas holiday. However, all participants had access to the final product and were given an opportunity to contact the researcher regarding any questions or concerns with the final product.

Procedure

The focus group interviews were conducted at the downtown office of the youth organization. Before the focus group began, participants were informed of the research purpose and asked to complete the consent forms. All participants also verbally assented to the focus group and to the audio recording. It was emphasized that the focus group was not an examination, and that there were no correct answers or opinions. Participants were invited to disagree with anything that was said, and were also informed that everything said was confidential within ethical limits. They were also informed that lunch would be provided halfway through the discussion and that bus tickets and gift cards would be given out at the end. Participants were invited to revoke their consent and leave the group at any time, or else to pass if they did not wish to answer a certain question. The discussion was designed to be flexible and

as open as possible in order to sufficiently describe the essence of the phenomenon and answer the research questions.

Before the discussion an icebreaker was chosen and was designed to briefly introduce the participants and spark discussion. For the main discussion, participants were asked open-ended questions centered around three topics: problems they believe to be common in their school or society for people their age, strategies for dealing with those problems, and ways they would like to receive mental health support using technology if it was available (see below). An activity was chosen for the end of the discussion asking each participant to anonymously write on a card what they would want to ask about mental health anonymously, along with their favourite technology based support strategy. At the end of the focus group, participants were given the contact information for the student researcher and the supervisor, in case they had any questions or concerns. They were thanked for their participation with bus tickets and iTunes gift cards, and the remaining food was given out.

Once the data were transcribed, youth were asked to come to another meeting, lasting about an hour, to review the significant statements and sort them into themes. Food, bus tickets, and iTunes gift cards were provided to participants to thank them for their participation. The researcher reviewed the transcript from the first focus group and printed out every concept that was mentioned. These concepts were given to the participants and they were asked to sort them into categories or themes. Each concept could only go into one category. Once themes were arrived at, the participants were asked to create a concept map or diagram showing the relationships and connections between the themes. Sub-themes were allowed. The participants were also asked to define each category. Limited direction was given to allow the participants creativity and to ensure that the final product accurately reflected their beliefs. After the concept

map was finished, the participants were invited to take pictures of the concept map and a copy was sent to the coordinator at of the participating youth organization to be distributed to interested participants as well as to give any missing participants an opportunity to view the final result and to suggest changes.

Instrument

Obtaining Responses

This instrument was developed from previous research (Havas et al., 2011), and revised to suit the specific research questions of this study, and to suit the local culture. An open-ended, semi-structured interview format was used. Several questions were asked in an attempt to address the primary research questions, but the participants were encouraged to talk about whatever they considered meaningful.

For the icebreaker, each person was asked to provide their name, age, school, and inform the group of an interesting or random fact about themselves. The icebreaker was followed by the first question: "What are some mental health goals or ideals that we should be striving for at this stage in our life?" Clarification prompts were used such as, "what does mental health mean to you?" A follow-up question on how people cope was then asked as this connected closely with mental wellness. This question was designed to spark discussion on mental wellness and help ease the participants into the research subject. The second question asked was, "what mental health problems do you think are common in school, with your peers, in your community, or in the media?" This question was chosen because in order to discuss potential support strategies and tools for mental health problems, we first needed to know which problems have to be addressed. This question also provided a smooth transition into the third question which was, "what support strategies can we use in the school or in life in general to help address these

mental health problems?" This question connected the discussion to the fourth question which was also the main research question: "What coping strategies and mental health supports are technology based?" Throughout the discussion, probes and prompts, for instance about common problems experienced by young people (e.g. binge-drinking) and strategies for seeking help using technology (e.g. peer to peer phones) were supplied if needed. The discussion was focused in the direction of current and potential technology based support strategies that can be used at school. At the end of the discussion, the participants were invited to write on a cue card any anonymous questions they had about mental health along with which technology based support strategies they liked best. These responses were not included in the final response list used in the creation of the concept map as these were written individually and anonymously.

Organizing Responses

The researcher identified all the significant statements from the first focus group and printed each one on a piece of paper; these needed to have only been mentioned once and did not have to be agreed upon by anyone else in the group. Indeed, many of the responses were debated by other group members. As a result, concepts spoken of only once by a single participant were placed next to concepts which were discussed thoroughly and by multiple group members. A total of 82 concepts were printed out. They were not organized in any particular way but were presented to the group all together in an envelope.

The second focus group involved having the participants sort these concepts into categories and subcategories which represented major themes.

Interpreting Responses

The second focus group occurred two weeks after the first focus group and four of the original seven attended. Two of the participants gave notice that they would not be able to attend

as they were going home for the holidays. The third participant was expected to attend but did not. Poor weather or the holiday season are possible explanations. The group was asked to present the categories in a meaningful way using a concept map or diagram of their choice. They were asked to show the relatedness and interconnectedness of different concepts, as well as asked to provide definitions for the major categories. The group worked collaboratively to reach consensus regarding the categories and the concept map. Minimal direction was provided by the researcher so as not to bias the process.

Data Analysis

The focus group discussions were audiotaped and transcribed verbatim. One of the challenges with using a qualitative approach is that typically the researcher must subjectively choose themes out of the transcript. This approach interferes with the trustworthiness and credibility of the research as other readers may not understand why certain themes were selected and not others (Daley, 2002). To overcome this methodological challenge, concept mapping was used to analyze the data.

Concept mapping is an alternative to code based and word based forms of data analysis that is best suited for use with open-ended survey questions and interview questions that are exploratory in nature. It presents data in a graphical form showing relationships between concepts, meaning, and context. The concept map was developed by Joseph Novak in the 1970s for representing knowledge and illustrating a group of ideas on a specific subject (Dykeman & Mackenzie, 2010). This study used a modified concept mapping procedure whereby participants created their own concept map. This aligns with the values of community based research and the research goals of increasing trustworthiness and validity in qualitative data. It eliminated researcher bias by having the participants essentially analyze the data themselves with minimal

input from the researcher. The concept mapping procedure also allowed for a reduction of data into a meaningful visual. What constituted a concept included any word, phrase, or term that expressed an idea (Daley, 2002; Dykeman & Mackenzie, 2010). The concepts used to create the map were all taken from the discussion in the first focus group.

In this first focus group, participants were asked to come up with a list of mental health goals and problems they believed to be prominent, as well as a list of solutions, including those that are technology based, for those problems. The concept mapping procedure allowed for a visualization of the complex relationship between these topics. As with traditional concept mapping, the concepts were pictorially arranged on a map, but the participants were given the flexibility to be creative and create the diagram in whatever way they thought best. Concept mapping was selected because of its ability to maximize the strengths of qualitative analyses while minimizing their weaknesses (Jackson & Trochim, 2002). However, concept maps are not without their disadvantages. For instance, Daley argues that one of the main disadvantages of using concept mapping is the complexity of the maps which can make it difficult for the reader to understand which concepts are of greater and lesser importance (Daley, 2002). While this method does not reveal cause and effect relationships, that was not the goal of this study. At this point in the research field, a qualitative methodology was the most useful for exploring relevant variables (Daley, 2002).

Trustworthiness

Trustworthiness was an important part of this process. Effort was taken by the researcher to minimize bias where possible. The work of Shenton (2004) states that researchers should attempt to satisfy four criteria for trustworthiness: credibility, transferability, dependability, and confirmability. Credibility was particularly central to this research and attempts were made to

accurately capture the phenomenon under investigation. The chosen research method was based on strong research literature (Daley, 2002) as well as on previous research in this field (Havas et al., 2011). In line with the recommendations made by Shenton (2004), as much description as possible has been used to promote credibility. A preliminary visit was also undertaken with representatives of the youth volunteer organization in order to gain a better understanding of their organization. While random sampling was not used, a form of triangulation was used by having participants from several different local educational institutions and with a wide age range we were able to have a diversity of opinion and experience. All participants were encouraged to be open and honest about their opinion and were free to disagree with anything that was said. While occasional probes were used, they were infrequent, and the participants were given a great deal of flexibility to discuss what they wanted to discuss within the framework of the research questions. Furthermore, at all stages the project was overseen by an experienced researcher and a co-facilitator was involved in the focus group. At the conclusion of the project, all participants had access to the results and were given an opportunity to make any corrections. This helped to minimize the personal bias of any one researcher. To allow for transferability sufficient detail of the context of this project has been included to help other readers decide whether the findings of this study can justifiably be transferred to another setting. Although this research occurred in a specific setting with a specific group of participants, they may well accurately reflect the prevailing youth opinion. To improve dependability, again as much detail as possible has been given to help enable future investigators to replicate the study including descriptions of the research design, implementation, data gathering, and reflections. Lastly, to improve confirmability, a design was chosen which would allow the findings to emerge directly from the data and from the participants as opposed to the researcher. The group

was responsible for the analysis of the data and arrived at the concept map via consensus. The recommendations of the project are also taken directly from the responses of the participants. Direct quotations have been used while protecting participant anonymity. All of these actions were rooted in the recommendations for best practice in the qualitative research field (Shenton, 2004).

Ethics

The proposed study was granted ethics approval through the Non-Medical Research Board at the university (See Appendix G). Relevant ethical issues included using adolescents as research subjects and asking sensitive information about mental health concerns. These issues were addressed through the letter of information (Appendix E) and consent form (Appendix F), as well as by having participants give verbal assent. No deceit was used as the participants were fully informed of the research purpose. The interview environment was made as safe as possible, and was a familiar environment for many of the participants as they were existing volunteers with the participating youth organization. All participants were asked to turn off their cell phones and other devices, and debriefing was made available after the focus group with anyone needing to voice concerns privately. The researcher and supervisor information was provided to the participants for any issues that arose after the completion of the focus group. No individual was forced to provide an opinion. It is also important to note, that in the report for this study direct quotations were used, but no names were attached, and care was taken to exclude any quotations that may convey identifying information. The use of internet interventions for mental health concerns contains its own set of ethical issues, as previously explored in the literature review, but since no interventions were being implemented as part of this study, it was not a present concern.

Study Justification

This study fills an important and significant gap in the research field. Adolescents appear to be attracted to technology based interventions, which is important as they are a notoriously difficult population to engage (Havas et al., 2011; Wuthrich et al., 2012). While information does exist on the problems that youth are currently experiencing in school, they are neglected in the research literature on technology based support strategies. This is still a very new field, and the majority of literature focuses on adults as opposed to children and youth. The school system as the provider of technology based support has also not received much attention in the research literature, despite an identified need (Kutcher & McLuckie, 2010). The qualitative methodology chosen for this study provides valuable information on this phenomenon, and reveals how some youth really feel about the possibility of utilizing different technology based mental health programming. This study also sets the stage for a future of school-based mental health strategies delivered through technology.

Results

Two weeks after the first focus group, the second focus group interview took place at the youth mental health organization's office as this was a convenient and familiar location for the participants. A time was chosen that was convenient for the majority of participants. The discussion took place sitting at a large rectangular table in the central location of the office. At the beginning of the second focus group, I explained to the participants how I transcribed our first discussion and typed out the responses that emerged from that transcript. Eighty-two responses were revealed in the transcript from the first focus group. The cue card responses from the first focus group were not included in this list (see Appendix A). The complete list of

responses is provided in Appendix B and a quotation is given as evidence for the chosen response.

This researcher described to the group how they would be asked as a group to create categories or themes from the responses and present them in a meaningful way using a diagram or chart. The example of categories for animals was given including sample categories of pets, farm animals, sorting by size, or location where they live.

As the participants created their categories this researcher offered minimal input, but provided occasional prompts regarding creating new categories, combining themes, and creating sub-categories. A duplicate response was found during sorting (YouTube videos), and the duplicate was removed, making a total of 81 responses. Some similar concepts were clarified and differentiated as opposed to being discarded. For example, "text, ping or reach guidance counsellor online" was discussed in terms of making an appointment, whereas "text or email counsellor" was discussed in lieu of receiving therapy face-to-face. Some category ideas were discussed but abandoned, for instance alternative interventions, and prevention and intervention at personal, school-based, and societal levels. The group decided to create separate categories for prevention and intervention but discussed how some of the responses could fit into both categories, depending on the person and how the response was specifically being used. At some points when the group experienced trouble with responses belonging in more than one category, they decided to sort responses into subcategories and showed relationships between categories, thus avoiding the need to have a single response placed in multiple categories.

The group created nine categories for the responses. Six main categories and three subcategories were decided upon. A fourth subcategory was added during the creation of the concept map, making a final total of 10 thematic categories. These included Preventions, Mental

Health Factors/States with subcategories for bullying, self image, and technology (as a mental health factor), Mental Health Disorders, Negative Coping, Positive Coping, and Interventions with a subcategory for technology based interventions.

Using chart paper, pens, and markers, the group made four attempts at designing a concept map before reaching consensus on the fifth design. The previous attempts including arranging the categories hierarchically on a tree, two circular interconnected category designs, and one cause and effect table design. The participants' first tree diagram did not work out. They experienced great difficulty trying to arrange the categories hierarchically. The first circle diagram did not work out because there were too many connections. The participants attempted to colour code and use arrows to show bi-directional relations, but this scheme became too difficult because of the great number of connections. The third circle diagram was described as a cloud or spider web with every category co-existing in a space with every category connected to every other. However, this map experienced the same difficulties as the previous one, and consensus could not be reached. The fourth attempt flowed from a suggestion of presenting the categories as to show cause and effect. A table was created, but problems arose as categories could not fit neatly into the table as either a cause or an effect.

Lastly, after a discussion regarding the formal definitions of what the categories were and of what they meant, it became clear to the participants as they reached consensus regarding the definitions, that the categories were related by the time in which they occur, and could be displayed in a linear or stepped fashion. During this time, another duplicate was found in the Mental Health Disorders category (technology addiction) and was deleted, making a total of 80 responses. Consensus was reached regarding this final concept map design. This process took roughly seventy-five minutes to complete.

In the end, a concept map was created using a time oriented design showing how the categories progressed in a linear or stepped fashion as well as showing how the categories were connected to each other (see Table 1). The complete concept map can be found in Appendix C. During this final mapping an additional subcategory was created for technology based interventions under the umbrella of interventions. See Appendix D for a detailed breakdown of the concept map.

Table 1

Concept Map Categories

Map Location (Stepped Approach)	**Thematic Category**
Step One	Prevention actions to be utilized before an issue becomes a problem
Step Two	Mental Health Disorders (problems that interfere with functioning and affect daily life) & Mental Health Factors/States (components that contribute to mental health disorders; subthemes for self-image, bullying, and technology)
Step Three	Positive Coping (healthy mental health strategies) & Negative Coping (unhealthy mental health strategies)
Step Four	Interventions (External positive coping or mental health strategies that involve outside help; subtheme for technology based interventions)

Category One: Preventions

The group believed that the school system needs to play a strong role in preventing mental health problems in youth and argued the school system should provide students with a practical mental health curriculum and work hard toward reducing and eliminating stigma by providing mental health plays, campaigns, and by simply providing information. It was clear

that the existing mental health measures are not sufficient as the youth had a strong desire for more mental health information, and were fully aware of the resources this would require. In the words of one participant:

> And like the only way to truly, I think get mental health curriculum and stuff like that, is if you actually look, like you have to just, you have to think of it practically as well. Like, it's great we want all these teachers to be educated. And we want all this education in school, and that all costs a lot of money. So we have to like actually look at how to get that money, and how to get that funding. And what programs could be altered maybe to, and what needs more money.

Having school websites provide more mental health information including where to access services was identified as another important way to use technology to prevent mental illness. One participant shared a positive experience with his school providing mental health information on their website:

> At (name removed) we have like quiet rooms and stuff where we can go and, if anything gets too stressful. We also have the ability to text message or email our counselors…it's online if they don't know it.

The group strongly believed that school websites should be providing students with information about where they can go for help and what resources they can access if in need.

Category Two: Mental Health Disorders

Mental health disorders were the second category created by the participants who argued that disorders result when prevention efforts fail. They identified disorders such as obsessive compulsive disorder, post-traumatic stress disorder, and addiction. One participant identified the following problems as particularly common: "In high school, insecurity, anxiety, and

depression." The group also acknowledged that technology can be part of the problem when overused, resulting in technology addiction. Facebook, Twitter, and cellphones were identified as being particularly problematic when overused.

> Yeah cellphones. The feeling that like you feel like you're missing something if your cell phone isn't in your pocket. Or you have a brief little panic, and you're like where's my phone? That isn't normal. I shouldn't be like that over this. Like I should not have a brief moment where I think my life has ended because my phone is not where I think it is.

Category Three: Mental Health Factors/States

Mental health factors, both internal and external, were identified by the youth as being important contributors to mental health. The group agreed that mental health factors ran parallel to mental health problems. It was unanimous that both groups are struggling with mental health, and the majority of participants agreed that factors such as insecurity, stigma, and a lack of support from staff or friends are important factors. The group identified school support staff as playing an important role as they are often the initial contact for a student in need of help. One participant shared that she felt university officials provide students with misleading expectations regarding social relationships:

> It's like totally like kind of the university's fault in a way. Like when, every single, I'm not going to university, but I still went to university presentations. And every single one, they're like, university is awesome because you'll find people just like you. And you'll have lots of friends. And then, what if you get to university and you don't find anyone. And you're like oh well maybe they meant I had to change who I was as a person because that's just what you do. You're like I don't have any friends, maybe I'm just, maybe I'm just messed up. Maybe I need to be like everyone else. Because like, it's almost like

> socially or like demeaning. Because you're like wow, a school of thousands and thousands of people, and not one person wants to be my friend, like.

Self-image was identified as a subcategory or type of mental health factor which contributes to mental health or mental disorders. Body image and impossible standards of beauty were identified as common difficulties for youth. The group expressed dislike with how technology, in particular the media, glamourizes a certain esthetic:

> I think it's a lot of the media, with the Photoshopped images. You look at it and you know it's not real, but it looks so nice and then you just want to look like that. And then you try and you don't. And it just, you're just like why can't I be like that. Even though you know it's fake, you just want it.

Bullying was also identified as a subcategory or type of mental health factor which contributes to mental health or mental disorders. Bullying, racism, and insensitive language were identified as factors contributing to mental health disorders. One participant criticized the pledge to end bullying campaign, stating:

> Yeah they're like I pledge to make high school a safe place. I'm like, this might come as a shock to you, but high school is not a very good place for anyone with a mental illness to be in at all.

As many of the concepts related to technology, the group decided to create a subcategory for technology as a mental health factor. They stipulated that it can have both a positive and negative influence on mental health depending on how it is used. Technology was recognized by the group as being easy and fast communication that offers a sense of security and allows them to connect to other people. The ability to perfect their message before sending was also spoken of positively.

Category Four and Five: Positive & Negative Coping

The next level in the concept map was labeled as positive and negative coping strategies. The group stated that after mental health disorders occur, people can either cope in a positive way or a negative way. Technology was recognized as playing a role here through the use of films on mental health made by students, peer-to-peer phones, and being able to listen to music in class. The participants identified many ways the school can help students cope in a positive way, including providing puppies, massages, being able to talk to someone, and providing alternative care such as yoga.

> So like instead of just being like, oh you should see your guidance counselor, like bring in, like things to promote mental wellness and like positive ways to cope. So like having like, like yoga at lunch or something, and not making a big joke out of it. Or like, promoting like, I know like right now we're trying to get puppies at my school, to like come into like a room, so that when, during lunch um you can like, go, go like see them. And like promoting that. Because I think that people like don't see, like music, like even like departments like music and art as therapy. And like people that are in the art program don't even notice that like it's therapeutic for them.

Conversely, the youth identified negative coping as self-harm or suicide, and stated that this happens when all else fails.

> Self-harm is really prominent. I had a friend…Who I talk to a lot, for like a year. I just talked to her every night, and had to convince her not to cut herself. Because she was so, she tried to explain it to me. She said that she was so sad on the inside, and it hurt so much to think about all the things that made her sad, that the physical pain distracted her from the emotional pain. It was like a release.

> The group recognized that not everyone copes with mental health problems in a positiveway, focusing on the prominence of self-harm and suicide in their schools and home communities.

Category Six: Interventions

The final level in the concept map stepped approach to mental health was interventions. The group had a very clear idea of the type of interventions they want to see in their school system. More counselling services and crisis support was advocated for quite strongly by the group. As one participant remarked:

> I have to make an appointment like three or four days in advance to see her. And if I'm having a crisis, you can forget it. I'm not getting in to see my guidance counsellor.

Having someone to talk to with a similar problem or shared experience was also important to them. The group felt that many of the needed intervention tools were already available, although they were also critical of current strategies, particularly around bullying, stating that they are not realistic. Lastly, the group favoured the use of alternative therapies like art, music, drama, and yoga in the school.

A subcategory of interventions was created specifically for technology based interventions. The youth recognized that many of the barriers and issues to improving mental health in the school could be improved using technology. For instance, promoting existing supports through the internet was identified as a major way to increase the number of youth receiving help. Being able to make a first contact using technology was identified as helpful. One participant reported:

> I have friends who think it's the most uncomfortable thing ever to talk on the phone or to knock on someone's door. They're so like, I'm not doing it!

The ability to ping, text, or email a counsellor to make an appointment was viewed favorably, and there was a mixed response for being able to text or email a counsellor in a therapeutic context. Websites were also found to be an important resource for providing mental health information, including the local youth mental health website and YouTube. The youth stated that the school should do more to connect students to websites such as this. As one participant argued,

> But I think that we need um a lot of, like YouTube videos are good, cuz you can get a lot of information. Like people are actually going to look at information if it's in a cool way. Like if you like post a poster in the school, it's like go to this website, and like then you have to go through the whole website too. I think like if we had, like how (name of local mental health website removed) has like the videos and like stuff, like those are interesting, and then maybe you'll go look at (name of local mental health website removed). But if it's just like a website and they don't have any content elsewhere, it's really hard to know about it. So like having more. Like we have like tvs at our school, if we have like stuff like that playing.

Again, the participants argued for the use of existing resources to provide mental health resources.

Discussion

This research study explores the findings of a series of two focus group interviews which were designed to identify the preferences and needs of youth for addressing mental health problems, particularly in the school system, using technology. The results showed that youth do

feel the school system has an important role to play in mental health support, including providing technology based support strategies. The findings fit well with the research literatures review discussed above. The results will be presented in terms of emergent themes, and discussed in terms of the categories assigned by the youth (that is, preventions, mental health disorders, mental health factors and states, positive and negative coping, and interventions), and recommendations for action and/or further research. All recommendations can be found in Table 2 at the end of the discussion.

Technology is an important part of life for today's youth; a recent poll of youth found that 90% of youth are using the internet (Burns et al., 2009). The research literature has suggested that young people prefer to communicate via technology rather than face-to-face (Burns et al., 2009). Youth appear to be comfortable using social networking websites (Gowen et al., 2012), e-mail (Mehta & Chalhoub, 2006), and smartphones (Donker et al., 2013), to address mental health concerns. They are familiar with the technology, with over 60% using the internet on a daily basis (Burns et al., 2009). Research has found that young people enjoy using technology for mental health support and are more engaged with this mode of communication (Boydell et al., 2013). The participants in the current study are no different, and expressed a clear desire for technology based mental health support tools. The findings of this study demonstrate that Canadian youth are not only a part of this online trend, but also desire that the school and local community offer technology based resources and services tailored to meet their mental health needs.

This evidence supports the conclusion that there is a critical need to integrate existing technology based mental health resources into the school system. This leads to the first recommendation; the first suggestion that emerged from this research is for the school system to

integrate existing technology based mental health resources into their schools in a meaningful way.

> As one participant reported, "I think that the issue isn't really finding that many more, like making more like apps and making more technology. I think like there's a lot of stuff out there. It's like, we have to like get the information to people now.

Furthermore, care must be taken to implement the technology in the desired way, as the participants of this study had clear preferences for some technology over others, and were at times critical of the way existing technology was being used in school. For instance, the group argued that technology can be dangerous in some ways, sharing that they believed technology addiction to be a common problem among their peers, as well as commonly used for bullying. The group was also critical of some of the ways that the school system currently uses technology, including iPads and televisions, in frivolous ways, such as being used as toys and displaying the weather, as opposed to being used to provide valuable information related to mental health. This leads to the second recommendation: Use existing technology to provide mental health information and support. One participant reported actively working to implement this in her school by having televisions display mental health information and coping tips.

> So what we're, we're changing it to something that's actually useful. And we're making like a six episode like anxiety thing so like that we can play on them. So I think like if schools, cuz I know that they, different schools have, use tvs differently, because they have like their announcements that plays on the tv. So if you could like have, like every school, like film like, and like include students in it. And like having them film like tips, like oh how do you cope? Or like interviewing different students, and like making people see that like it affects more people, and using technology in that way.

The youth appeared to have a good understanding of the ways technology can be used for positive purposes and for harm. However, they expressed concern that staff and faculty are not as aware of mental health supports, particularly those that are technology based. This leads to the third recommendation: School staff and faculty need to be aware of the existing technology based mental health resources and to be able to refer interested students. One participant recalled a frustrating experience of seeking information:

> I just wanted to say about the technology part. Um, I remember (name removed, participant 2) telling me about this booklet that teachers were supposed to have as a reference guide thing for mental illnesses. Do you remember about that? And that like when they went to the teachers, none of them could find it and stuff.

As new technologies emerge, the school should be in a critical position to facilitate access. As guidance counsellors and teachers have the most interaction with students, they would likely be a primary target for information dissemination regarding technology based mental health resources.

The youth in this study advocated for the use of a stepped approach to mental health in the school system, beginning with prevention and ending with treatment. The use of a stepped care approach by the school system is the fourth recommendation supported by this research as the concept map created by the group showed how the school could act at several levels to improve youth mental health. At the first level of prevention for instance the group identified the use of bullying campaigns that accurately portray bullying and its effects. At the second level of mental health problems and mental health factors and states, the group identified concerns such as stigma and insensitive language as contributing to the maintenance of mental health problems. The subtheme of technology also included the important role of technology at this stage in

providing security and increasing connections to others. Campaigns to reduce stigma or reduce insensitive language would be beneficial at this stage. At the third level, positive and negative coping strategies, the group advocated for films on healthy coping and having people to talk to, particularly to reduce negative coping such as self-harm and suicide. At the final level of interventions, the group created a subtheme for technology based interventions, suggesting that the school promote existing supports through the website and provide the ability to text message of email a counselor. All of the above responses may be appropriate for the school system to consider. It is also noteworthy that at all stages the youth identified technology based support tools that could be helpful.

Category One: Preventions

The focus group participants argued quite clearly that the school system needs to play a strong role in preventing mental health problems in youth and argued the school system should provide students with a strong mental health curriculum and work hard toward reducing and eliminating stigma. While there are many barriers to this, including financial constraints, the youth of this study argued that money could be found in other programs, and that mental health needs to have the same level of focus and attention as other programs such as physical education.

The implementation of a stronger and more detailed mental health curriculum is the fifth recommendation. The group recognized that this is difficult in our current economic climate, but strongly believed that it should be a priority. The sixth recommendation is a low-cost technology based option identified by the participants. Having school websites provide more mental health information including where to access services was identified as an important way to use technology. Furthermore, although the group created a category specifically for preventions, many of the responses in other categories also related to prevention. For instance, promoting

existing supports was included as a technology based intervention, although early access to support could also be considered prevention. This emphasis on prevention is consistent with the research literature which shows that mental health problems develop at a young age, and that it is important to address these issues early in order to prevent the problems from escalating with age (Kessler et al., 2005; Patel, Flisher, Hetrick, & McGorry, 2007; Manion, 2010).

Category Two: Mental Health Disorders

The participants acknowledged that prevention is often not enough and that when the school system does not provide prevention tools, mental health problems such as anxiety, depression, and addiction (including technology addiction) may follow. While the youth made a specific category for mental health disorders, it is a theme that runs across all categories as mental health was at the heart of the discussion and of this research study. Mental health related responses were also placed in the categories for mental health factors (e.g. anger), and for negative coping (e.g. self-harm). That the group focused strongly on mental health problems and was able to come up with so many responses for the category (10) is fitting with the research literature, which shows that most mental health disorders develop in youth between the ages of 12 and 24, with half of all lifetime cases starting by the age of 14. This means that the focus group participants are at the age where many of their peers, or even themselves will be developing mental health disorders (Kessler et al., 2005; Manion, 2010). It is also interesting that the group identified technology addiction twice in this category, once by itself, and once in the context of internet, cell phones, and social media. The possibility of technology based mental health tools maintaining or contributing to technology addiction is an interesting concept that has not yet been a focus in the research literature. It could represent a barrier to the implementation of technology based resources for mental health. The seventh recommendation

for this study is that youth receive education on technology including what is healthy use versus unhealthy use.

Category Three: Mental Health Factors & States

Mental health factors, both internal and external, were identified by the youth as being important contributors to mental health. The group agreed that mental health factors ran parallel to mental health problems, influencing whether or not they occur. One practical disagreement among the group was whether the same mental health factors carried over from high school to postsecondary. Some participants felt that mental health issues evolved with age, while others thought the issues stayed the same. However, it was unanimous that both groups are struggling with mental health, and the majority of participants agreed that insecurity and stigma are important factors for both groups. During the discussion, a significant amount of time was spent on insecurity, suggesting that it is a particularly important factor for this group. Furthermore, the group strongly emphasized the need for support including support staff and friends. They argued that trouble finding friends or people with similar interest may contribute to mental health problems. This leads to the eighth recommendation which is for the school to play an active role in connecting students together in a positive way, for instance through shared interests or shared problems. The group identified school support staff as playing an important role as they are often the initial contact for a student in need of help. This has important implications for the school system which suggests extra training may be helpful for support staff.

Self-image was identified as a subcategory or type of mental health factor which contributes to mental health or mental disorders, including body image and impossible standards of beauty. This is a theme that connects closely with mental health problems and technology. The group expressed dislike with how technology, in particular the media, glamourizes a certain

esthetic. In fact, a great deal of time was spent in the focus group criticizing how media and technology negatively affect self-image. The youth were concerned with how technology such as Photoshop and the media are being used in negative ways to increase mental health issues. The youth shared negative feelings of being unable to escape media messages and technology. Alternatively, the need to feel good about yourself and to have problems validated by another person were selected as important mental health factors. This leads to the ninth recommendation, which is for the school system to take action to improve youth self-esteem, for instance using media that portrays realistic standards of beauty.

Bullying was also identified as a subcategory or type of mental health factor which contributes to mental health. Factors such as bullying, racism, and insensitive language were identified. The group unanimously agreed that current bullying campaigns do not work and that mental health problems are often not taken seriously. They expressed anger at campaigns being joked about and not taken seriously by teachers. The tenth recommendation is to create new bullying campaigns for the school, including ones that focus specifically on mental illness. The group was adamant that campaigns provide practical and realistic strategies for intervening.

The last subcategory of mental health factors was for technology. This makes sense considering technology was the focus of this study and was a frequently occurring response item. While technology was a theme that ran throughout the categories, specific to mental health factors, the group stipulated that technology can have both a positive and negative influence on mental health depending on how it is used. Technology was positively recognized by the group as being easy and fast communication that offers a sense of security and allows them to connect to other people, as well as allows them to perfect their message before sending. This is a positive finding for this study and for the research literature which is attempting to show the benefit of

technology based resources as a possible low-cost and youth friendly solution to mental health problems. However, the group also recognized a downside to increased technology for mental health in the school system, expressing concern about guidance counsellors having their information at home, fearing the breach of privacy. Although concerning, this is consistent with the research which has thoroughly examined the ethical concerns of technology based mental health tools (Rochlen, Zack, & Speyer, 2004). The youth's concern is consistent with the research (Donker et al., 2013) which shows that many people have concerns about technical problems and privacy issues. The eleventh recommendation is for privacy protections to be put in place for school officials and counsellors who do communicate with youth using technology.

Category Four and Five: Positive & Negative Coping

Following mental health factors, the group concluded that after mental health disorders occur, people need to cope, and they can do this in a way that is positive and helpful, or in a way that is negative and harmful. Therefore, the next level in the concept map was divided into two categories: positive coping strategies and negative coping strategies. The participants identified many ways for the school system to intervene in order to help students cope in a positive way, including providing puppies for pet therapy visits, yoga, and being able to talk to someone. The overall theme of technology was also recognized in this category, as the students argued that the school could use technology to increase positive coping, for instance through the use of films on mental health made by students, peer-to-peer phones, and being able to listen to music in class. The twelfth recommendation is for the school to implement more of these alternative care strategies. This is consistent with the efforts of websites such as the local youth mental health website and the Australian site Reach Out which promote mental health and wellbeing by providing alternative care such as videos and games, enhance resiliency skills, provide

education, and offer short messaging services and forums for asking questions or seeking help. These websites have both been shown to promotes help-seeking, and reduce stigma (Garinger, 2010 & Nicholas, 2010). Promoting these existing sites fits well with the group's argument that change should start with existing resources. The participants' ideas for providing information via existing televisions in the school and coordinating with other community services that offer dogs and yoga would be low cost ways of increasing positive coping for youth.

When positive coping methods are not provided, the youth argued that many students respond with negative coping such as self-harming behaviour, and suicide. The youth expressed a great deal of concern about these negative coping methods, and several participants were concerned about their peers. The research has identified mental health apps and email delivered counseling as potential methods for reducing self-harming behaviour (Roy & Gillett, 2008; Donker et al., 2013). That the youth would identify suicide as a concern also fits with the research which shows that suicide is the second leading cause of death for young Canadians, with up to 20% of teenagers reporting that they seriously consider suicide (Cheung & Dewa, 2007). Therefore there is a strong need to increase means of positive coping in the school system and community for all youth, including those who are struggling with mental health issues.

Category Six: Interventions

The final level in the concept map stepped approach to mental health was interventions. The group argued that if prevention, positive mental health factors, and positive coping do not work, than actual interventions would need to be accessed by youth who are struggling with a mental health issue. The group had very clear ideas of the interventions they want to see in their school system. More counselling services and crisis support was advocated for quite strongly by the group and this constitutes the thirteenth recommendation of this study.

The group was critical of the fact that school counsellors do not work full time and are often over-booked. Having someone to talk to with a similar problem or shared experience was also important to them. The group felt that many of the needed intervention tools were already available, but they expressed the need to make the existing supports accessible. They were also critical of current strategies, particularly around bullying, stating that they are not realistic. The group would like to learn safer and more realistic strategies for intervening. Lastly, and similarly to their recommendations for positive coping in the school, the group favoured the use of alternative therapies like art, music, drama, and yoga in the school.

The group also created a subcategory of interventions specifically for technology based interventions. This fits with the general theme of the research around the importance and preference youth have for technology based mental health resources. The youth recognized that many of the barriers and issues to improving mental health in the school could be improved using technology. For instance, promoting existing supports through the internet was identified as a major way to increase the number of youth receiving help and represents the fourteenth recommendation. Being able to make a first contact using technology was also identified as helpful, because it removes some of the anxiety of approaching someone face-to-face or even making a phone call. This is the fifteenth recommendation. This view fits with the research of Burns et al. (2009) which found that technology reduced stigma and increased help seeking behaviour among adolescents. The ability to ping, text, or email a counsellor to make an appointment was viewed positively, and there was a mixed response for being able to text or email a counsellor in a therapeutic context. This is a positive finding, and similar to the finding of Havas et al. (2011), which discussed how youth favour making an initial contact online, and do not object to a follow-up face-to-face. The implementation of this initial contact system

would have added value for both the counsellor and the adolescent resulting in a savings of time and money.

Websites were also found to be an important resource for providing mental health information, including the local youth mental health website and YouTube. This is consistent with the work of Garinger (2010) which evaluated a Canadian youth mental health website and concluded that it was effective in motivating youth to seek help, and in reducing stigma by providing mental health information and linking them to other websites such as YouTube. The youth stated that the school should do more to connect students to websites such as this, and this represents the sixteenth recommendation.

The youth also shared frustration that teachers were not familiar mental health resources, particularly technology based mental health resources, and advocated for teacher knowledge of apps that provide mental health information. This is consistent with the research of Donker et al. (2013) which reported the popularity of mental health apps among youth. Lastly, the group also expressed frustration over current school technology such as iPads and televisions in particular not displaying mental health information and resources and instead being used for more frivolous pursuits.

As the group advocated strongly for the use of technology based mental health resources, it makes sense with the research which shows an increasing popularity of online counselling, and suggests that there will be an increase in the number of young people seeking help face to face as a result of the increase in help-seeking behaviour as a result of the technology. However, mental health professionals are currently unable to meet this growing demand due to limited resources (Alleman, 2002). An investment in mental health practitioners will be required to ensure treatment is available for all those seeking it. Furthermore, as the group did express some

concern over privacy and confidentiality with this technology, training and education in e-mental health would also need to be available for practitioners and this represents the seventeenth and final recommendation. See Table 2 for a summary of recommendations.

Table 2

Recommendations

1	Integrate existing technology based mental health resources into their schools in a meaningful way
2	Use existing technology to provide mental health information and support
3	School staff and faculty to be aware of the existing technology based mental health resources and to be able to refer interested students
4	Use of a stepped care approach to treating mental health problems
5	Implementation of a stronger and more detailed mental health curriculum
6	School websites with more mental health information including where to access services
7	Education for youth on healthy and unhealthy uses of technology
8	The school should play an active role in connecting students together in a positive way
9	The school system should take action to improve youth self-esteem
10	Create new bullying campaigns, including ones specifically for mental illness that provide accurate and realistic strategies for intervening
11	The development of privacy guidelines for school officials using technology with students
12	The implementation of more alternative care strategies
13	More counseling services and crisis support
14	The school should play an active role in promoting existing supports through the internet
15	Allowing youth to make first contact with a mental health worker using technology
16	Schools should do more to connect students to mental health websites and videos
17	Training of additional practitioners in e-mental health

Limitations

This study utilized a convenience sample. Although widely used in graduate research, the convenience sampling design does weaken the results of the study as the respondents may not be representative of the population. This study is also weakened by the manner of recruitment through a single local organization. As the organization is technology based, participants may also have had a preference for technology based tools due to their prior affiliation with this organization. The participants attended a select number of local schools, so

generalizations should be made cautiously. Furthermore, nothing was learned about those who refused to do the focus group or about those who did not attend the follow-up meeting. Time, expense and the complex demands of other methods of sampling were barriers to conducting a stronger and more detailed study. Unfortunately, the time-consuming nature of high-quality research contrasts sharply with the speed with which the technology is being developed. By the time a specific piece of mental health technology has been adequately researched it is often already outdated. Interventions delivered using CD-ROM are an excellent example of this. Therefore, it is necessary with this topic to gather research quickly in order to utilize the technology before it becomes outdated.

Implications

Many of the recommendations are aimed at the school system. This research has important and significant implications for the education of youth in Ontario. Most importantly, the youth identified the school system as being a major contributor to youth mental health, and as playing an important role at all stages from prevention to intervention. One of the strongest recommendations is for the development of stronger, and more detailed mental health curriculum in schools. None of the youth in this study were even aware that there is some mental health material in the existing curriculum indicating that mental health is being missed in the education plan. The youth of this study expressed that they often feel that mental health is ignored by educators and is not given priority status. It may be necessary to work with teachers in terms of exploring their attitude toward the mental health curriculum and their willingness to implement it. It is also possible that the mental health aspect is being overlooked.

The existing health curriculum for grades nine and ten is broken down into the categories of physical activity, active living, healthy living, and living skills. Mental health does not have its own category. The health curriculum for grades eleven and twelve includes the categories of healthy active living, health for life, recreation and fitness leadership, and exercise science. Again, mental health does not have its own course but is rather one aspect of many to be included in the course. There is a disproportionate focus on physical health which is a cause for concern as mental health is the more prominent issue as reflected in the research and data on the burden of disease for Canadian youth (Rodger, Hibbert, Pickel, & Leschied, 2013). The education system would benefit from a re-allocation of funding to mental health prevention and intervention strategies. The youth recommended several low cost solutions including making use of existing technology in the school, for instance, being able to text message a guidance counselor. Additionally, the youth recommended adding additional information and support using technology such as websites. Both of these recommendations are low cost. Change in related institutions such as the community and the family may also be needed to help increase youth access to technology based mental health strategies and to provide additional support against stigma and other barriers to access.

This study has important implications for youth and lends support to the existing research on the subject. The aim of this study was to identify what mental health problems youth deemed important and prominent and to address those problems by identifying technology based support strategies. The youth identified an overwhelming number of mental health problems, but anxiety and insecurity were given a large amount of attention. The youth also showed clear preferences for technology based supports including using technology to promote mental health, using

websites to access mental health information, using mental health apps, and accessing videos which contain mental health information and support.

This study has important implications for the counselling profession, particularly for mental health practitioners who work with children and youth. As youth showed a clear preference for technology based mental health supports, counsellors and other mental health professionals will need to receive additional training in e-mental health in order to meet this need. Counsellors will need to be aware of existing technology and how to use it in an ethical manner. Practitioners may wish to explore the possibility of using technology as a medium for counseling including telephone, videoconferencing and email based interventions as supported by the research literature. Counsellors who do adapt technology into their existing practice will likely have an edge in attracting and engaging youth over practitioners who do not employ technology.

Recommendations for Future Research

Many of the newest and most popular forms of technology based mental health remain unexamined, for example phone applications (Donker et al., 2013). Future research will need to innovate in the same way as the technology. Standards of research may need to be adjusted as the technology is changing faster than our ability to properly evaluate its effectiveness. The vast majority of technologies currently being used by service providers lack evaluation or outcome research supporting their use. It may be helpful for youth to have access to a directory of e-mental health services along with a description including whether it has been evaluated and information about its outcomes. Directories are available for youth living in other countries (Boydell et al., 2013). This recommendation fits well with the results of this study which

showed the participants had a clear preference for promoting existing supports and making them more accessible.

Future research may wish to include other questions, probes, and prompts with ethical consideration in order to further examine the use of very specific types of technology based intervention tools and differences in preferences among youth. The results of this work support other research, for instance by Havas et al. (2011), which show the importance of youth voice in creating and implementing these technology based resources.

Future research may wish to use technology in the data gathering process. For instance, a video camera may be used in the future in order for participants to record what they want others to know about mental health and possible technology based supports. Alternatively, Twitter, text messaging, or a smart board could be used instead of handwriting. The use of this technology was not possible within the limited resources of this research study.

The current literature on technology based mental health tools is generalist at times, not stating which specific interventions are recommended for which specific mental health problems. This is particularly true with videoconferencing. Future research should examine tools for specific diagnoses or problems and with specific populations (Boydell et al., 2013). Furthermore, as the work of Havas et al. (2010), and this current research shows, it is important to investigate the opinions of youth, as they may be divided on certain interventions, or else may offer certain preferences for their implementations. It was also clear in this study that few interventions could be unanimously agreed upon.

As confidentiality, privacy, and security issues have been labeled as a main barrier against the implementation of technology based mental health tools, future research may benefit the field by examining service provider perceptions of technology compared to the existing

guidelines and safety measures (Boydell et al., 2013). The youth themselves expressed concern about their privacy when using technology, so research may also need to survey adolescents for their opinions and work towards the development of recommendations and strategies for providing adolescents with the necessary education regarding privacy and confidentiality of various technologies.

As this research study clearly indicated the preferences of youth regarding technology based mental health support strategies in the school system, the next step should be to take action toward the implementation of these strategies. To gather further research support, quantitative analyses could be done, for example a school wide survey of youth regarding their preferences for specific initiatives. It may also be valuable to use qualitative interviews with teachers, guidance counsellors, and other school officials to investigate their opinions on offering technology based mental health support, and to gain more information on the barriers to their implementation.

References

Alleman, J.R. (2002). Online counseling: The Internet and mental health treatment. *Psychotherapy: Theory, Research, Practice, Training, 39(2)*, 199–209. doi: 10.1037/0033-3204.39.2.199

Apple (2014). *iTunes App Store*. Retrieved from https://itunes.apple.com/ca/genre/mobile-software-applications/id36?mt=8

Baker, K. D., & Ray, M. (2011). Online counseling: The good, the bad, and the possibilities. *Counselling Psychology Quarterly 24(4),* 341-346. doi: 10.1080/09515070.2011.632875

Bell, J. (2008). E-counseling curbs binge eating6, BMI. *Pediatric News, 42(4),* 26.

Betton, V. & Tomlinson, V. (2013, March). Social media in mental health practice. Retrieved from the Leeds and York Partnership NHS Foundation Trust Web Site http://www.leedsandyorkpft.nhs.uk/_documentbank/2418_DMH_e_book_2_1.pdf

Bickman, L. (1996). A continuum of care: More is not always better. *American Psychologist, 51(7)*, 689-701. doi: 10.1037/0003-066X.51.7.689

Bloom, J.W. (1998). The ethical practice of WebCounseling. *British Journal of Guidance & Counselling, 26(1)*, 53-59. doi: 10.1080/03069889800760061

Boydell, K.M., Hodgins, M., Pignatiello, A., Edwards, H., Teshima, J., & Willis, D. (2013, October). Using technology to deliver mental health services to children and youth in Ontario. Retrieved from the Ontario Centre of Excellence for Child and Youth Mental Health Web Site http://www.excellenceforchildandyouth.ca/sites/default/files/policy_using_technology.pdf

Burns, J., Durkin, L., & Nicholas, J. (2009). Mental health of young people in the United

States: What role can the internet play in reducing stigma and promoting help seeking? *Journal of Adolescent Health, 45(1)*, 95-97. doi: 10.1016/j.jadohealth.2008.12.006

Cheung, A. & Dewa, C. (2007). Mental health service use among adolescents and young adults with major depressive disorder and suicidality. *The Canadian Journal of Psychiatry, 52 (4),* 228-232.

Costello, E. J., Copeland, W., Cowell, A., & Keeler, G. (2007). Service costs of caring for adolescents with mental illness in a rural community, 1993-2000. *American Journal of Psychiatry, 164(1)*, 36-42. doi: 10.1176/appi.ajp.164.1.36

Dakin, P. (2012, June 22). Teens with anxiety and depression can skip referrals. *CBC News.* Retrieved from http://www.cbc.ca/news

Daley, B. J. (2002). Using concept maps in qualitative research. Retrieved from http://cmc.ihmc.us/papers/cmc2004-060.pdf

Day, S.X., & Schneider, P.L. (2002). Psychotherapy using distance technology: A comparison of face-to-face, video, and audio treatment. *Journal of Counseling Psychology, 49(4)*, 499–503. doi: 10.1037/0022-0167.49.4.499

Donker T., Petrie, K., Proudfoot, J., Clarke, J., Birch, M.R., & Christensen, H. (2013). Smartphones for smarter delivery of mental health programs: A systematic review. *Journal of Medical Internet Research,15(11),* doi: 10.2196/jmir.2791

Dykeman, M., & Mackenzie, J. (2010). Concept mapping. In A. Mills, G. Durepos, & E. Wiebe (Eds.), Encyclopedia of case study research. (pp. 197-201). Thousand Oaks, CA: SAGE Publications, Inc. doi: http://dx.doi.org/10.4135/9781412957397.n73.\

Garinger, C. (2010). Mind Your Mind Evaluation Report. Retrieved from

http://Mind Your Mind.ca/images/stories/aboutMym/press/mym_Evaluation_March_2010.p df

Government of Canada, Standing Senate Committee on Social Affairs, Science and Technology. (2006). *Out of the shadows at last: Transforming mental health, mental illness and addiction services in Canada*. Ottawa: Senate of Canada.

Gowen, K., Deschaine, M., Gruttadara, D., & Markey, D. (2012). Young Adults with Mental Health Conditions and Social Networking Websites: Seeking Tools to Build Community. *Psychiatric Rehabilitation Journal, 35(3)*, 245-250. doi: 10.2975/35.3.2012.245.250

Hamilton, A. (1999, May 24). On the virtual couch. *TIME Magazine, 153(20),* 71.

Havas, J., Nooijer, J.D., Crutzen, R., & Feron, F. (2011). Adolescents' views about an internet platform for adolescents with mental health problems. *Health Education, 111(3),* 164-176. doi: 10.1108/09654281111123466

Jackson, K. M., & Trochim, W. M. K. (2002). Concept mapping as an alternative approach for the analysis of open-ended survey responses. *Organizational Research Methods, 5(4),* 307-336. doi: 10.1177/109442802237114

Kessler, R.C., Berglund, P., Demler, O., Jin, R., Merikangas, K.R., & Walters, E.E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the national comorbidity survey replication. *Archives of General Psychiatry, 62(6)*, 593-602. doi: 10.1001/archpsyc.62.7.768

Kutcher, S. (2011). Facing the challenge of care for child and youth mental health in Canada: A critical commentary, five suggestions for change and a call to action. *Healthcare Quarterly, 14(1)*, 14-21.

Kutcher, S., & McLuckie, A. for the Child and Youth Advisory Committee, Mental Health

Commission of Canada. (2010). *Evergreen: A child and youth mental health framework for Canada*. Calgary: Mental Health Commission of Canada.

Lingley-Pottie, P., & McGrath, P. J. (2008). Telehealth: A child and family-friendly approach to mental health-care reform. *Journal of Telemedicine and Telecare, 14(5)*, 225-226. doi: 10.1258/jtt.2008.008001

Manion, I.G. (2010). Provoking evolution in child and youth mental health in Canada. *Canadian Psychology, 51(1),* 50-57. doi: 10.1037/a0018468

Manwaring, J. L., Bryson, S. W., Goldschmidt, A. B., Winzelberg, A. J., Luce, K. H., Cunning, D., Wilfley, D.E., & Taylor, C. B. (2008). Do adherence variables predict outcome in an online program for the prevention of eating disorders? *Journal of Consulting and Clinical Psychology, 76(2)*, 341-346. doi: 10.1037/0022-006X.76.2.341

McGrath, P. J., Lingley-Pottie, P., Emberly, D. J., Thurston, C., & McLean, C. (2009). Integrated knowledge translation in mental health: Family help as an example. *Journal of the Canadian Academy of Child and Adolescent Psychiatry, 18*, 30-37.

McLaughlin, K.A., Green J., Gruber, M.J., Sampson, N.A., Zaslavsky, A.M., Kessler, R.C. (2010). Childhood adversities and adult psychiatric disorders in the national comorbidity survey replication II: Associations with persistence of DSM-IV disorders. *Archives of General Psychiatry, 67(2*), 124-132. doi: 10.1001/archgenpsychiatry.2009.187

Mehta, S., & Chalhoub, N. (2006). An E-mail for your thoughts. *Child and Adolescent Mental Health, 11(3),* 168-170. doi: 10.1111/j.1475-3588.2006.00405.x

Newman, L. (2012). Getting in early: Identification of risk in early childhood. *Australian and New Zealand Journal of Psychiatry, 46(8*), 697-699.

Nicholas, J. (2010). The role of internet technology and social branding in improving the mental

health and wellbeing of young people. *Perspectives in Public Health, 130(2),* 86-90.

Patel, V., Flisher, A., Hetrick, S., & McGorry, P. (2007). Mental health of young people: A global public-health challenge. *The Lancet, 369(9569),* 1302-1313.

Rochlen, A.B., Zack, J.S., & Speyer, C. (2004). Online therapy: Review of relevant definitions, debates, and current empirical support. *Journal of Clinical Psychology, 60*, 269–283. doi: 10.1002/jclp.10263

Rodger, S., Hibbert, K., Pickel, L., & Leschied, A. for the Centre for School Based Mental Health. (2013). *Environmental scan: Grade 4-12 mental health curricula in Canada*. London: Centre for School Based Mental Health.

Roy, H. & Gillett, T. (2008). E-mail: A new technique for forming a therapeutic alliance with high-risk young people failing to engage with mental health services? A case study. *Clinical Child Psychology and Psychiatry, 13(1),* 95-103. doi: 10.1177/1359104507086344

Santor, D. A., & Bagnell, A. (2008). Enhancing the effectiveness and sustainability of school based mental health programs: Maximizing program participation, knowledge uptake and ongoing evaluation using internet based resources. *Advances in School Mental Health Promotion, 1*(2), 17-28. doi: 10.1080/1754730X.2008.9715725

Schmidt, F. (2012). The critical role for psychology in the children's mental health system: Being a catalyst to implement and build better interventions. *Canadian Psychology/Psychologie Canadienne, 53(1)*, 53-62. doi: 10.1037/a0026383

Shenton, A. K. (2004). Strategies for ensuring trustworthiness in qualitative research projects. *Education for Information, 22*, 63-75.

Spek, V., Cuijpers, P., Nyklicek, I., Riper, H., Keyzer, J., & Pop, V. (2007). Internet-based

cognitive behaviour therapy for symptoms of depression and anxiety: A meta-analysis. *Psychological Medicine, 37(3)*, 319-328. doi: 10.1017/S0033291706008944

U.S. Department of Health and Human Services. (2011). *Ripple Effects Whole Spectrum Intervention System (Ripple Effects).*Retrieved from http://nrepp.samhsa.gov/Search.aspx

Wille, N., Bettge, S., & Ravens-Sieberer, R. (2008). Risk and protective factors for children's and adolescents' mental health: Results of the BELLA study. *European Child & Adolescent Psychiatry 17(1)*, 133-147. doi: 10.1007/s00787-008-1015-y

Wuthrich, V., Rapee, R., Cunningham, M., Lyneham, H., Hudson, J., & Schniering, C. (2012). A randomized controlled trial of the Cool Teens CD-ROM computerized program for adolescent anxiety. *Journal of the American Academy of Child and Adolescent Psychiatry, 51(3*), 261-270. doi: 10.1016/j.jaac.2011.12.002

Appendix A: Cue Card Responses

Cue Card Responses – technology based mental health support

- PT 1: "Teachers need to get on board. Teacher based info apps and easy access to help from guidance counsellors is key"
- PT 2: "Get APPS into teacher's hands! Mental Health info on school sites (link to existing sites!). Use existing resources, focus on promotion".
- PT 3: "A way to connect w/ a guidance counsellor (through text/messaging system) so you don't have to walk into a scary room when you're in crisis. Apps for teachers with info on mh".
- PT 4: "Anything visual Text. YouTube. App. Facebook profile like but for mental health. Cam (Skype like) for Therapist/consellor. Texting".
- PT 5: "Or any type of video about mental health starring youth/young adults. YouTube/any type of video".
- PT 6: "YouTube videos/videos. Documentaries (short). PD days for teachers (training, mental health first aid for teachers). Games/apps".
- PT 7: "Having a crisis email so that students get help when they actually need it instead of pushing it off until things hit rock bottom because they are too scared to confront in person".

Appendix B: Researcher Identified Responses with Supporting Quotes

Be happy
PT 3: "To be happy."

Positive coping mechanisms
PT 3: "And to like be able to cope when things aren't so happy. Having positive coping mechanisms."

Feeling good about yourself
PT 4: "Feeling good about yourself."

Not dwelling on the bad things
PT3: "Being able to take bad things that come to you, and turn them into positives, or not dwell on all the bad things in life."

Important to have interests
PT 5: "Have interests."

Important to have purpose
PT 6: "Or provide purpose I suppose. If you have an interest and you want to learn more about it. Then you have something to do for the day."

Important to have one positive aspect in life
PT 3: "And it always gives you a positive thing in your life. So even when there's a lot of negatives you still have that positive aspect."

Talk to someone – friend, parent, guidance counsellor
PT 1: "Talk about it. Ask your friends, or talk to parents, or guidance counsellors."

Google
PT 7: "Google"

Feel related/connected
PT 6: "I guess it's important to feel like you're related. Like you have some sort of relation to like the world kind of…. Yeah, like you're connected in some way."

Having someone with a similar problem/shared experience
PT 6: "I was watching, or we were watching this documentary on like young adults that had OCD, and one of the major things was that they like having other people that were kind of in a similar situation as they were, having them there to cope, like to kind of work through their issues made a really big difference."

Having problem normalized/validated by someone
PT 6: "…it's like you don't realize that it's normal in the sense that it can happen. It's happening to other people."

PT 3: "In some ways it kind of like, validates how you're feeling I guess."

Anxiety
PT 2: "Anxiety."

Mental Health problems may or may not change from High School to Postsecondary
PT 2: "In high school, insecurity, anxiety, and depression."

PT 1: "Same for university age I would think too."

PT 6: "It's the same thing but in a different way."

Depression
PT 2: "In high school, insecurity, anxiety, and depression."

Insecurity
PT 4: "So much insecurity."

OCD
PT 6: "OCD."

PTSD
PT 5: "PTSD."

Suicide (contagion?)
PT 1: "But they do say too that once like one happens then it's kind of like a ripple effect."

Addiction
PT 6: "Mental things to do with like addiction. Substance use."

Alcohol/Binge Drinking (normalized)
CO-FACILITATOR : "Or even binge drinking?"

PT 7: "Yeah."

Pt 5: "It's more like accepted, I don't know if accepted is the proper word, but I don't think people really consider it…"

PT 2: "I think especially in high school because it's so normal just to like go out all the time…"

Eating Disorders (male and female)
PT 5: "Another disorder that I find is eating disorders."

PT 2: “You see it a lot in guys too, but people don’t, cuz it’s not so much in the media. But like guys that go to the gym every night for two hours.”

Body Image
PT 5**: “** …they want to look in a certain way, so they do that in this type of like eating disorder wise. They want to lose weight, because they see people. Cuz right now being healthy, or being fit, or being thin is in. That’s the fad right now. And so a lot of my friends wanna look like that, what they see in media, or just from other people. And the way how they do it is they go and throw up, or stop eating, and stuff like that.”

Impossible standards of beauty
PT 4: “I think it’s a lot of the media, with the Photoshopped images. You look at it and you know it’s not real, but it looks so nice and then you just want to look like that. And then you try and you don’t. And it just, you’re just like why can’t I be like that. Even though you know it’s fake, you just want it.”

Celebrity Obsession and Negative Media Messages
PT 2: “And then you can’t win. Cuz they’re like oh this person is horrible because they don’t look normal, and then looking normal they’re like whoa are they sick or something? And it’s like what’s your problem?”

PT 2: “Like it always like makes me feel like even bad about myself even like reading it. Because like it’s really hard to like reflect back on being like oh I shouldn’t be… Like it’s so hard to like walk at like the grocery store or something and you see like magazines. You’re so, you’re so like curious. Like, like I like have an unhealthy obsession with Taylor Swift, and I know that that’s so wrong. And I’m like wow it sucks that everyone just makes fun of her all the time. But I’m so like obsessed with it. And like it sucks that we get so obsessed with celebrities that we kind of we like empower the media just to keep going. As much as we hate it, we just like subconsciously empower it.”

Technology Addiction (internet, cell phones, social media)
PT 6: “And also like technology addiction.”

Narcissism
PT 6: “Social networks are causing, or maybe exposing more narcissistic personalities.”

Don’t know how to show emotions
PT 3: “It’s like, then you just like, you don’t know how to have, show emotions kind of thing. It’s like, you’re afraid to show your emotions. But online, if you want to have a heart to heart with me, here is my whole story.”

Laziness
PT 5: “Sometimes you wonder if people take advantage of, of cell phones or technology because they’re lazy…I find that some of my friends do it because they’re friggin lazy.”

Self-harm
PT 4: "Self harm."

Anger
PT 5: "Anger."

Pressure to dress a certain way
PT 1: No, I just think the like fitting in and stuff, I think that's still a huge issue. Especially just like looking at (name of local education institution removed) and like the fact that people are so desperate to get like Hunter boots and like Canada Goose jackets, and like it's ridiculous.

Trouble finding people similar to you/friends
PT 2: "It's like totally like kind of the university's fault in a way. Like when, every single, I'm not going to university, but I still went to university presentations. And every single one, they're like, university is awesome because you'll find people just like you. And you'll have lots of friends. And then, what if you get to university and you don't find anyone. And you're like oh well maybe they meant I had to change who I was as a person because that's just what you do. You're like I don't have any friends, maybe I'm just, maybe I'm just messed up. Maybe I need to be like everyone else. Because like, it's almost like socially or like demeaning. Because you're like wow, a school of thousands and thousands of people, and not one person wants to be my friend, like."

Stigma
PT 3: "I think it's hard to kinda know also in high school like what people are struggling with a lot. I just, I see like a lot of, like you can still see so much stigma. And like, I can see some of my friends, and I'm like, like I've talked to them before. And it's like you think that. You can kind of tell that they're struggling with something, but no one will actually talk about it. Or they're all like what the heck, like I'm upset, but like it's normal to be upset. And like, and that's a big thing. That like everyone just thinks that people are over-exaggerating if they say that, oh I'm depressed, or I have anxiety. And I get, I think that I get like the feeling that people think that it's not a legitimate."

Mental health problems not taken seriously (jokes, minimization, over-exaggeration, ignorance)
PT 3: "It's like you, it's like you pretty much have to be like, like in the hospital for anyone to validate your issues at school. Like you're like I'm having a really tough, like tough time lately. It's like, yeah I dunno, you have a lot on your plate, like. But like let's just, like you'll be fine, and stuff like that."

PT 4: "Everyone thinks it's a joke. If I told someone, stop bullying me they would laugh."

Bullying
PT 4: "Most people don't sympathize for you that you had a hard time when you were younger. They say, oh everyone was bullied in elementary school. Everyone was a

bully, everyone was bullied, that's just the way it is. And you shouldn't still feel sad about that because that's what happened to everybody."

Insensitive language

PT 2: "Or that girl's so crazy. She's so psychotic. I'm like ohh."

PT 3: "You know, when people like joke about like killing themselves. That's the worst."

Racism
PT 4: "And it was just this guy talking about how he doesn't think racism stems so much from hate, but more from ignorance. People don't understand that, like some terms are thrown around so, so freely that they've become terms that everybody uses and everybody knows. And people didn't learn that it was a bad term. They learned that it's a term that everyone uses. So, like the n word. Everyone uses that."

PT 2: "People say the n word like it's the word sweater."

People who pretend to be supportive, but still bully others
PT 3: "And I think that a lot of the time when people do post things now, like or like, you shouldn't hurt, or you shouldn't bully people or we shouldn't talk about each other. It's like, they're doing it for like re-Tweets or likes."

PT 3: "Like I've seen that. They'd be like, you know, we should all be nicer to each other. Then bam, like three things down, they have like a Twitter war going on with someone else. Like ew you're so dumb."

PT 2: "Yeah I know a lot of teachers that are bullies."

Technology is easy and fast communication
PT 2: "To enhance communication."

PT 4: "It's a good thing to be able to text your mom when you're running late so she doesn't think you've gotten murdered."

Technology can control your image
PT 7: "And, and it goes with the personality thing with being online, right. You can change who you are, pretend to look a certain way.**"**

PT 2: "It like gives you a way to like experiment with who you are in a way. Because like, I mean, in the grand essence or the big picture of the world, who you are in one text messaging conversation doesn't matter. So you could like be a different person all the time, right. Like you're obviously going to text really well when you're happy, and when you're sad you're gonna be like, go away. So like you can experiment with different things."

Technology offers security
PT 5: "And I think it also gives people the sense of security."

With technology you can perfect your message before sending
PT 6: "People like love it. You could spend the whole day thinking about what you're gonna write for your status. It can be like perfect, and deep, or really humorous or funny, and like…or you like think of something like oh that would be great, like!"

Guidance counsellor has your information at home
PT 2: "She has all the information on her phone. That means she has that when she goes home."

Technology addiction
PT 6: "And also like technology addiction."

PT 3: "The feeling that like you feel like you're missing something if your cell phone isn't in your pocket. Or you have a brief little panic, and you're like where's my phone? That isn't normal."

Current bullying campaigns don't work
PT 3: "Like we, we're in grade um 12 and we're signing, we're signing a sheet of paper. They just, just made everyone sign it. I'm like that's not doing anything."

PT 2: "Yeah they're like I pledge to make high school a safe place. I'm like, this might come as a shock to you, but high school is not a very good place for anyone with a mental illness to be in at all."

PT 3: "I'm like, there's no meaning behind this. I signed a piece of paper, I signed a piece of paper that does not mean anything."

Mental health problems used as entertainment/glamourized by media
PT 6: "There's a show, there's a show I guess for nearly everything. There's a show for like addiction, for OCD, for hoarding, for, so I think now it's also like a novelty thing. Like did you see that cool meme, about like, oh like my anxiety?"

PT 2: "Yeah so like it's glamourized in the media."

Guidance counsellors – not full time, overbooked
PT 4: "I have to make an appointment like three or four days in advance to see her. And if I'm having a crisis, you can forget it. I'm not getting in to see my guidance counsellor."

PT 2: "Yeah and since they're only there once a week, they're probably going to be too busy to see you, so you should just forget about having a crisis."

Support staff are insensitive/don't understand
PT 4: "She's way to busy. I went up to the counter, like there's a secretary and I asked."

PT 2: "She's not very nice."

PT 3: "She's really mean."

PT 1: "That's always how it is too."

Bullying campaigns that more accurately portray bullying and the effects of bullying
PT 2: "Or what bullying is. Like talking about someone behind their back is bullying. Talking about people when they're like right there and saying like oh I don't like this about you, that's bullying. Like making it legitimate. Instead of being like, beating someone up is bullying. Taking their things is bullying."

PT 3: "…I think there needs to be a more, a better look at mental illness as a result of bullying and stuff like that. The results of bullying, besides just it really, it's upsetting when people are bullied, and people get really upset when they're bullied. It's like, well talk about like the legitimate things that can happen if you get bullied…"

More mental health information/education
PT 5: "I think that kind of goes with the, another thing to add on to the bucket list, is that people need to be more acknowledged of what mental health is and what bullying is, and those other mental health does and what they do. Because I think people see it in one perspective. They don't see it in more like elaborate perspective like us. Like if you bring somebody here that's completely normal who doesn't know anything about mental health, they'll only tell you what they know. And that is the one perspective. Which is really, really sad.

PT 3: "Yeah I was talking to someone yesterday like about like depression and stuff. And he was like, like I don't get it. Like I don't, I don't. I think it's, I was like people always think that it's just something you can just get over. And he's like isn't it kind of like that? Like, and he was like, he wasn't trying to be mean anything."

PT 7: "I think they should get rid of all that, take all the money, and put it into a curriculum for mental health."

Teacher education and mental health training
PT 6: "So they need like some sort of PA day but, so they can learn about their own mental health, but then they can also learn how to educate people about mental health."

PT 3: "Yeah mental health first aid like should be mandatory."

Mental health curriculum (has to be practical)

PT 3: "And like the only way to truly, I think get mental health curriculum and stuff like that, is if you actually look, like you have to just, you have to think of it practically as well. Like, it's great we want all these teachers to be educated. And we want all this education in school, and that all costs a lot of money. So we have to like actually look at how to get that money, and how to get that funding. And what programs could be altered maybe to, and what needs more money."

Safer and more realistic strategies for intervening when someone is bullied
PT 2: "And it's hard because I think like as humans we're all very primitive beings. So when you see something, like you kind of subconsciously evaluate it. You're like, oh I could get hurt, especially if it wasn't, if it was a stranger…It's like if I go up to someone and be like, hey you know what, you probably shouldn't call someone a, a whore or a slut as a joke, because that's kind of mean and it's kind of bullying. Like I'm not going to go up to someone and say that. Because like, they'll be like, oh look at this little quiet girl in the corner who thinks she can just come into our group and tell us what to do. Because that is legitimately what would happen. And like I can sit her like advocating for mental health all I want, but I wouldn't do that in high school..."

Mental health as a priority in the school
PT 7: But gym's important, why wouldn't mental health be important?

PT 3: "And I think, that's why I think the only way that actual mental health curriculum in schools would work is if they act, like they really put an effort and if they cared about it."

Crisis support
PT 3: "They never really say at my school at all about like…I've never heard anything like if you're in crisis like talk to your guidance counsellor…Like I would, I wouldn't even think really to go to my guidance counsellor if I was."

Quiet rooms
PT 7: "At (name of local education institution removed) we have like quiet rooms and stuff where we can go and, if anything gets too stressful."

Mental health breaks
PT 6: "Or like mental breaks. Like they have like recess, for like, well I guess they have that now in elementary school. But even in high school, if they had like quiet time. Or like, even time like okay, like this is your quiet break for school, you can listen to music for like the next twenty minutes. Like even that alone. Or like you could read your book for the next, like this is your mental health break."

More counselling services
PT 2: Yeah and since they're only there once a week, they're probably going to be too busy to see you, so you should just forget about having a crisis

PT 6: “Yeah or like more services. Because even at (name of local education institution removed), like to get a psych appointment they tell you it’s like three to four months, and it’s like.”

Massages
PT 7: “On Tuesday my school had massages and puppies.”

Puppies
PT 7: “On Tuesday my school had massages and puppies.”

Support for peers and RA’s
PT 3: “It can also be stressful on the person you’re talking to, too. I mean, when you’re in that position, and people are coming to you with their problems and then you don’t feel like you can adequately help them.”

Alternative therapy – art, music, drama, yoga
PT 2: “I think like having more alternative care in schools. Like instead of just saying, oh if you’re, like what we talked about earlier, like sometimes therapy and like talking to someone, or like meds don’t work. So like instead of just being like, oh you should see your guidance counsellor, like bring in, like things to promote mental wellness and like positive ways to cope. So like having like, like yoga at lunch or something, and not making a big joke out of it. Or like, promoting like, I know like right now we’re trying to get puppies at my school, to like come into like a room, so that when, during lunch um you can like, go, go like see them. And like promoting that. Because I think that people like don’t see, like music, like even like departments like music and art as therapy.

PT 2: “Like um, maybe like having like drama? Because I know that a lot of kids can’t take a lot of art because like, like art therapy, or dramatic arts therapy. Like they can’t take it because they’re like in science. So they’re like oh I really wanted to take art, but I can’t fit it into my schedule. So if they offered that at lunch as a way to cope. And like if kids like responded to it well, they’d keep bringing them back. And being like okay, like kind of have this. And promoting that, instead of promoting like guidance counsellors. Because sometimes kids are really uncomfortable and can’t express themselves through talking.

More information on where and how to access mental health services
CO-FACILITATOR : “Do you think schools tell, inform the students enough about what’s there. Whether it’s high school or postsecondary. Do they, does the schools do a good enough job of telling you what your options are?”

PT 2: “No.”

PT 3: “I think that um, the issue isn’t, the issue isn’t really finding that many more, like making more like apps and making more technology. I think like there’s a lot of stuff out there. It’s like, we have to like get the information to people now…”

Plays like the Safe Schools schizophrenia play but for anxiety and depression
PT 3: "We did, we did have a really good thing at our school though. We, well, our school is doing the um, the play, um safe schools play. It was about schizophrenia. Um and they went around to like other schools and did it. And I went and watched it. And like we watched it, I think in grade 10 or something. And it was, I liked it but at the same time, I thought that, I dunno. I felt like some kids still, like they, I saw kids like laughing at like the parts they weren't supposed to laugh at. It was a funny, like some parts were funny."

PT 2: "Oh um, I wouldn't say that schizophrenia is irrelevant, because it's not, but making a play that focused on like anxiety and depression, just because it's a more prominent issue. Because I think just because people are so ignorant to mental illness that like throwing schizophrenia at them is kind of like big. And they're like well I'm not schizophrenic. And it's like, wow, one percent of everyone that does weed gets schizophrenia from it, because that's what the play is. And it's like, that's so far off. That's never going to happen to me."

Teachers to have a mental health reference guide
PT 4: "I just wanted to say about the technology part. Um, I remember (name removed, participant 2) telling me about this booklet that teachers were supposed to have as a reference guide thing for mental illnesses. Do you remember about that? And that like when they went to the teachers, none of them could find it and stuff."

Tracking moods as part of the curriculum
PT 2: "If it was part, part of the curriculum. It could be like every week the kids track their moods and hand it in to the teacher, and the teacher can review them."

Make the existing supports accessible
PT 1: "Make it more accessible."

PT 3: "Like I think there's a lot of different options, but they're kind of useless if no one's using them."

YouTube videos
PT 3: "But I think that we need um a lot of, like YouTube videos are good, cuz you can get a lot of information."

Text, Ping or reach guidance counsellor online
PT 2: "I wish there was some way for like you to like online be able to like see if your guidance counsellor could like see you. Like if you could text message your guidance counsellor."

PT 4: "Ping them, like I need help."

Website like (name removed, local mental health website)

PT 3: **"**Like if you like post a poster in the school, it's like go to this website, and like then you have to go through the whole website too. I think like if we had, like how (name of local mental health website removed) has like the videos and like stuff, like those are interesting, and then maybe you'll go look at (name or local mental health website removed). But if it's just like a website and they don't have any content elsewhere, it's really hard to know about it. So like having more."

TV's in school should display mental health information or resources
PT 3: "Like we have like tvs at our school, if we have like stuff like that playing… We have screens that, that don't really give us any information, except for like the, the weather."

Films on mental health/coping tips made by students
PT 2: "So what we're, we're changing it to something that's actually useful. And um we're making like a six episode like anxiety thing so like that we can play on them. So I think like if schools, cuz I know that they, different schools have, use tvs differently, because they have like their announcements that plays on the tv. So if you could like have, like every school, like film like, and like include students in it. And like having them film like tips, like oh how do you cope? Or like interviewing different students, and like making people see that like it affects more people, and using technology in that way.

Text message or email counsellor
PT 3: "I think that like, I think emailing or texting could be helpful in combination with talking to someone but I don't, obviously, don't think that you can just text, like, I, I don't think that you should just be able to constantly text someone. I think that at the same time you do need to see someone face to face. I mean I think that you should be able to like email and stuff."

Peer-to-peer phones
PT 6: "The distress line."

PT 1: "Do they? Cuz this year, um there's been, because the peer support center like has been closed."

RESEARCHER: "Do you think reopening like a peer support center with phone, email, text, that would be helpful?"

PT 1: "Oh yeah, yeah."

School websites with more mental health information
PT 3: "Or like the school websites even with more information about mental illness."

An app that provides mental health information
PT 4: "What if we had like an app? Cuz they're always going to have their phones. What if they could use that?"

Connecting students to (name of local mental health website removed)
PT 7: "Well I, I found you through my counsellor at (name of local educational institution removed). And that's connected me with (name of local mental health website removed)."

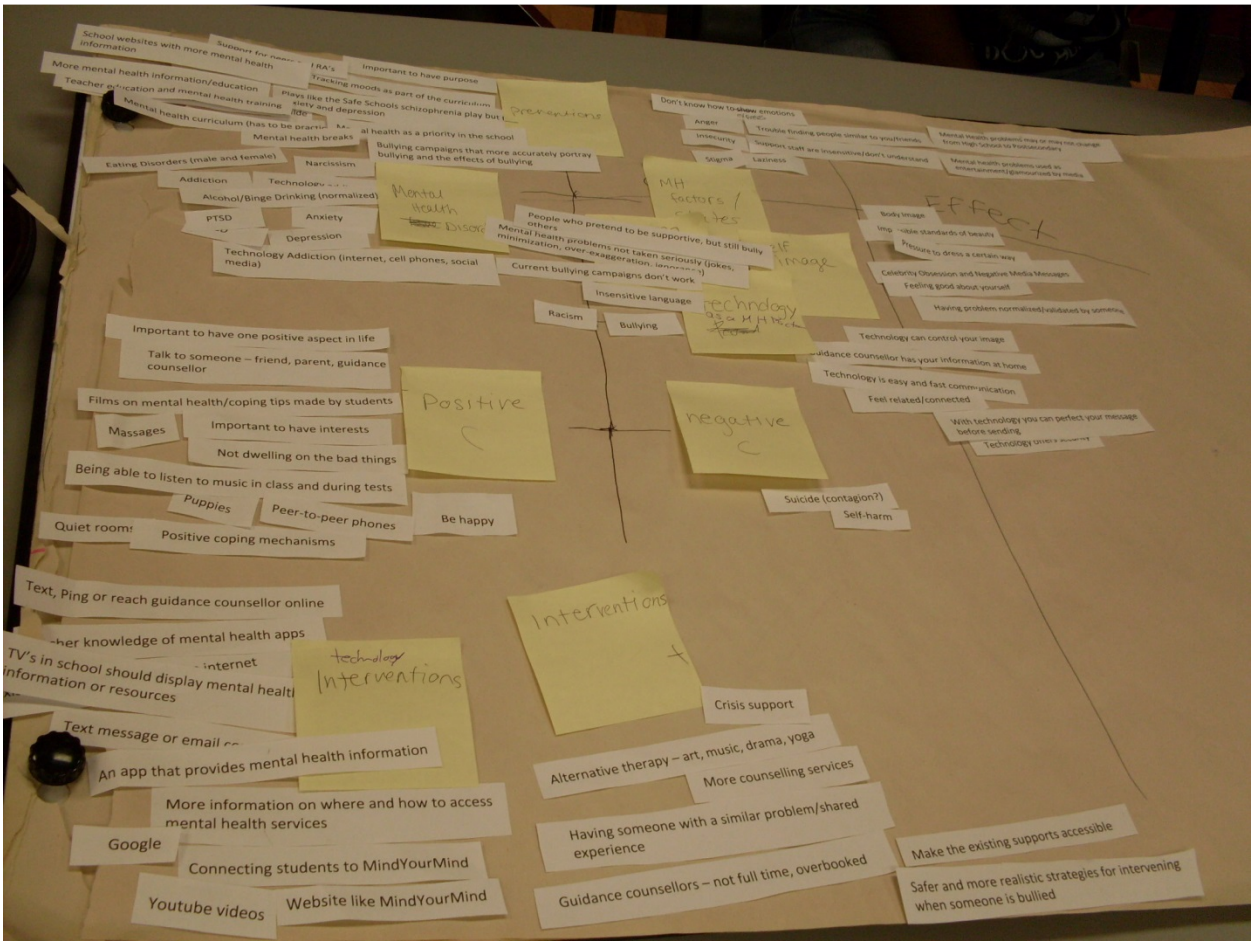
Being able to listen to music in class and during tests
PT 4: "I know being able to listen to your music is really important for some students."

Teacher knowledge of mental health apps
PT 3: "Yeah like, we have, like if you ask the teacher hey what kind of mental health apps are out there? They'd be like, what?"

PT 2: "What's mental health? What's an app?"

Promoting existing supports through the internet
PT 3: "Yeah or even like, sorry, outside of schools too, like promoting it like through the internet is probably the easiest way. Like people don't even watch tv anymore, they watch Netflix, like."

Appendix C: Concept Map



Completed Concept Map. Yellow Labels represent Themes/Categories. White labels represent Responses/Concepts

Appendix D: Concept Map Details

Prevention: Preemptive action against mental health problems; Utilized before a problem gets bad.

- Plays like the Safe Schools schizophrenia play but for anxiety and depression
- Mental Health breaks
- Teachers to have a mental health reference guide
- Mental Health as a priority in the school
- More mental health information/education
- Tracking moods as part of the curriculum
- School websites with more mental health information
- Mental health curriculum (has to be practical)
- Teacher education and mental health training
- Bullying campaigns that more accurately portray bullying and the effects of bullying
- Important to have purpose
- Support for peers and RA's

Mental Health Disorders: Problems that interfere with functioning and affect daily life. They can be mental states or behaviours.

- Alcohol/Binge Drinking (normalized)
- Depression
- Anxiety
- Narcissism
- Eating Disorders (male and female)
- OCD
- Technology addiction
- Addiction
- PTSD
- Technology Addiction (internet, cell phones, social media)

Mental Health Factors/States: Components that contribute to mental health disorders. Can be internal states and external factors.

- Mental Health problems may or may not change from High School to Postsecondary
- Insecurity
- Don't know how to show/express emotions
- Anger
- Laziness
- Mental health problems used as entertainment/glamourized by media
- Stigma
- Support staff are insensitive/don't understand
- Trouble finding people similar to you/friends

Self-Image: The ideas, positive and negative that people have about themselves which is influenced by the media. It can be both a cause of problems and an effect of problems.

- Celebrity Obsession and Negative Media Messages
- Having problem normalized/validated by someone
- Impossible standards of beauty
- Pressure to dress a certain way
- Feeling good about yourself
- Body Image

Bullying: Being mean, intentionally or unintentionally to another person, or even towards yourself.

- Current bullying campaigns don't work
- Mental health problems not taken seriously (jokes, minimization, over-exaggeration, ignorance)
- Insensitive language
- Bullying
- Racism
- People who pretend to be supportive, but still bully others

Technology (as a mental health factor): The use of electronics & the internet. It can be a positive or negative mental health factor.

- Technology offers security
- Feel related/connected
- Technology can control your image
- Technology is easy and fast communication
- Guidance counsellor has your information at home
- With technology you can perfect your message before sending

Positive Coping: Healthy mental health strategies

- Not dwelling on the bad things
- Important to have one positive aspect in life
- Puppies
- Be happy
- Positive coping mechanisms
- Peer-to-peer phones
- Important to have interests
- Being able to listen to music in class and during tests
- Massages
- Films on mental health/coping tips made by students
- Talk to someone – friend, parent, guidance counsellor
- Quiet rooms

Negative Coping: Unhealthy mental health strategies.

- Suicide (contagion?)

- Self-harm

Intervention: External (as opposed to internal) positive coping or mental health strategies that involve outside help. Utilized after the problem becomes bad.

- More counselling services
- Crisis support
- Guidance counsellors – not full time, overbooked
- Having someone with a similar problem/shared experience
- Safer and more realistic strategies for intervening when someone is bullied
- Make the existing supports accessible
- Alternative therapy – art, music, drama, yoga

Technology Based Interventions: A subcategory of interventions that specifically uses technology.

- Promoting existing supports through the internet
- Text message or email counsellor
- Connecting students to (name of local mental health website removed)
- YouTube
- An app that provides mental health information
- Text, Ping or reach guidance counsellor online
- Website like (name of local mental health website removed)
- TV's in school should display mental health information or resources
- Teacher knowledge of mental health apps
- More information on where and how to access mental health services
- Google

Appendix E: Letter of Information

LETTER OF INFORMATION

Introduction
My name is Kathleen Larion and I am a Master's of Counselling Psychology student at Western University in the faculty of Education. I am currently conducting research into youth mental health and technology based supports, and would like to invite you to participate in this study.

Purpose of the study
The aims of this study are to identify what concerns students have about mental health and discuss technology based support strategies.

If you agree to participate
If you agree to participate in this study you will be asked to participate in a focus group interview with 5 or 6 other students that will take about 1.5 hours, and attend a follow-up meeting to talk about the major themes, which will last about an hour. The focus group will be audiotaped. You will be not be asked about any specific mental health concerns you have, but instead, about the concerns commonly expressed by youth. You will be asked about how you use technology to help with concerns, and how you think others at school use technology to help. You will be asked your opinion on the implementation of new technology based mental health strategies. The focus group interview will take place at (name of location removed) and should about one and a half hours. Once the recording has been typed out, we will bring paper copies of the statements made during the focus group and ask each of you to read them and sort them into piles that reflect the major themes of the discussion. These piles will then be used by the researchers to organize the results. You will be sent a copy of the themes and statements in each theme by email, to check and see if you agree.

Confidentiality
The information collected will be used for research purposes only, and neither your name nor information which could identify you will be used in any publication or presentation of the study results. All information collected for the study will be kept confidential within ethical limits such as safety. The researcher may be required to report to authorities if there is a disclosure of abuse. All collected data will be securely stored. Quotations may be used in publication, but any identifying information will be removed or excluded.

Risks & Benefits
There are no known risks to participating in this study. If you experience any discomfort please let the researcher know right away so that you can be provided assistance.

Voluntary Participation
Participation in this study is voluntary. You may refuse to participate, or, refuse to answer any questions or withdraw from the study at any time with no effect on your relationship with (name of local youth organization removed

Questions

If you have any questions about the conduct of this study or your rights as a research participant you may contact the Office of Research Ethics, Western University at (phone number removed) or (email address removed). If you have any questions about this study, please contact Kathleen Larion at (email address removed) or Dr Susan Rodger at (phone number removed)
This letter is yours to keep for future reference.

Appendix F: Consent Form

Technology Based Mental Health Strategies for Youth
Kathleen Larion University of Western Ontario

CONSENT FORM

Technology Based Mental Health Strategies for Youth

Kathleen Larion (M.A. Candidate) & Dr. Susan Rodger

I have read the letter of information, have had the nature of the study explained to me and I agree to participate in the study. All questions have been answered to my satisfaction.

_____
Name of Student

_____ _____
Student's Signature Date

If you consent to being contacted via email to review the results of the sorting please provide your email address

_____
Email address

Name of Person Obtaining Informed Consent:

Signature of Person Obtaining Informed Consent:

Date:

Appendix G: Ethics Approval

Western Education

WESTERN UNIVERSITY
FACULTY OF EDUCATION
USE OF HUMAN SUBJECTS - ETHICS APPROVAL NOTICE

Review Number:	1307-7
Principal Investigator:	Susan Rodger
Student Name:	Kathleen Larion
Title:	*Technology Based Mental Health Support Strategies for Youth*
Expiry Date:	April 30, 2014
Type:	M.Ed. Thesis
Ethics Approval Date:	August 26, 2013.
Revision #:	
Documents Reviewed & Approved:	Western Protocol, Letter of Information & Consent, Advertisement

This is to notify you that the Faculty of Education Sub-Research Ethics Board (REB), which operates under the authority of the Western University Research Ethics Board for Non-Medical Research Involving Human Subjects, according to the Tri-Council Policy Statement and the applicable laws and regulations of Ontario has granted approval to the above named research study on the date noted above. The approval shall remain valid until the expiry date noted above assuming timely and acceptable responses to the REB's periodic requests for surveillance and monitoring information.

During the course of the research, no deviations from, or changes to, the study or information/consent documents may be initiated without prior written approval from the REB, except for minor administrative aspects. Participants must receive a copy of the signed information/consent documentation. Investigators must promptly report to the Chair of the Faculty Sub-REB any adverse or unexpected experiences or events that are both serious and unexpected, and any new information which may adversely affect the safety of the subjects or the conduct of the study. In the event that any changes require a change in the information/consent documentation and/or recruitment advertisement, newly revised documents must be submitted to the Sub-REB for approval.

Dr. Alan Edmunds (Chair)

2012-2013 Faculty of Education Sub-Research Ethics Board

Dr. Alan Edmunds	**Faculty of Education (Chair)**
Dr. John Barnett	**Faculty of Education**
Dr. Wayne Martino	**Faculty of Education**
Dr. George Gadanidis	**Faculty of Education**
Dr. Elizabeth Nowicki	**Faculty of Education**
Dr. Julie Byrd Clark	**Faculty of Education**
Dr. Kari Veblen	**Faculty of Music**
Dr. Jason Brown	**Faculty of Education**
Dr. Susan Rodger	**Faculty of Education, Associate Dean, Research** ***(ex officio)***
Dr. Ruth Wright	**Faculty of Music, Western Non-Medical Research Ethics Board** ***(ex officio)***
Dr. Kevin Watson	**Faculty of Music, Western Non-Medical Research Ethics Board** ***(ex officio)***

The Faculty of Education
1137 Western Rd.
London, ON N6G 1G7

Faculty of Education Building
edu-ethics@uwo.ca
519-661-2111, ext.88561 FAX 519-661-3095

Copy: Office of Research Ethics

Curriculum Vitae

Name	Kathleen Larion	
Post Secondary Education and Degrees	University of Western Ontario London, Ontario Master of Arts: Counselling Psychology	2012-2014
	University of Western Ontario London, Ontario Bachelor of Arts (Honours)	2006-2011
Honours and Awards	Canada Graduate Scholarship Social Science and Humanities Research Council	2013-2014
	Gold Medal Winner Brescia Council of Trustees	2011
Related Work Experience	Counselling Intern University of Western Ontario London, Ontario	2013-2014
	Children's Group Facilitator Merrymount Family Support and Crisis Centre London, Ontario	2014
	Call Volunteer London District Distress Centre London, Ontario	2012-2013
	Wait-List Clinic Counsellor Canadian Mental Health Association London Ontario	2012
	Intake Housing Worker London Housing Registry London, Ontario	2012
	Liaison Officer Huron University College London, Ontario	2011
Research Experience	Research Assistant Canadian Mental Health Association London, Ontario	2007-2010