Analyzing Patient-Physician Communication On Lifestyle Medicine To Promote Mental Health

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Lay Abstract

Mental illness affects 1.2 million children and youth in Canada. Female adolescents, in particular, suffer significant consequences associated with this. While family physicians are often the first line of contact for a health-related concern, little is known about how the promotion of lifestyle medicine to enhance the mental wellbeing of female adolescents is being communicated. Using a qualitative content analysis approach, a survey about counseling on lifestyle medicine was completed by 126 Hamilton Family Physicians giving a response rate of 25.2%. Key informants discussed with highest agreement the following three themes: lifestyle medicine factors, barriers, and improvements for communication to female adolescent patients. The global prevalence of female adolescent mental health issues in combination with the use of screening tools was showcased within this study population. Results indicated that Hamilton family physicians integrate global recommendations into their line of care with patient-centered dialogue, awareness of patient needs, and lifestyle medicine education.

Abstract

Purpose: Mental illness affects 1.2 million children and youth in Canada. Female adolescents in particular, suffer significant consequences associated with this. While family physicians are often the first line of contact for a health related concern,little is known about how promotion of lifestyle medicine to enhance the mental wellbeing of female adolescents is being communicated.

Method: Using a qualitative content analysis approach, a survey about counseling on lifestyle medicine was completed by 126 Hamilton Family Physicians giving a response rate of 25.2%. The data was analyzed thematically to understand emergent themes.

Results: Key informants discussed with highest agreement the following three themes: lifestyle medicine factors, barriers and improvements for communication to female adolescent patients. In each theme, the following sub-themes were identified. Theme 1: respondents identified a range of *lifestyle medicine factors* including family support, physical activity, nutrition, sleep, journaling, and mindfulness. Theme 2: *Barriers in Communication*, uncovered 2 subthemes; trust, and time constraints. Finally theme 3: *Improvements in the quality of the conversation* included 4 sub themes; clinical empathy, listening skills, time, and social media.

Conclusion: In this study, physicians were aware of female specific mental health concerns. Additionally, physicians recognized and acknowledged important ways to promote inclusive communication on lifestyle medicine with this population. Analyzing the data in regards to the patient-centred care model, the prevalence of screening tools such as PHQ-9 and GAD-7 and the use of communication frameworks, HEADSS and SSHADESS were deemed supportive to patient counselling. The global prevalence of female adolescent mental health issues in combination with the use of screening tools were showcased within this study population. Hamilton family physicians integrate global recommendations into their line of care with patient centred dialogue, awareness of patient needs and lifestyle medicine education. Communication is an important factor over which physicians have the opportunity to promote the mental health of their female adolescent patients.

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List of Tables and Figures

List of Abbreviations

HEADDSS (Home, Education, Activities, Diet, Drugs, Sexual activity/sexuality and Safety/suicide)

PA: Physical Activity

SSHADESS (Strengths, School, Home, Activities, Drugs, Emotions/eating, Sexuality, Safety)

HFAM (Hamilton Family Physicians)

Key Informants Hamilton Family physicians (KI-HFP)

Declaration of Academic Achievement

The following is a declaration that the content of the research in this document has been completed by Shania Bhopa and recognizes the contributions of Dr. Keyna Bracken, and Dr. Anne Niec in both the research process and the completion of the thesis.

CHAPTER 1 INTRODUCTION

Mental illness is a leading cause of disease burden worldwide (Wainberg et al., 2017). An estimated 1.2 million children and youth in Canada are affected by mental illness—yet, less than 20 per cent will receive appropriate treatment (Pearson, Jans, Ali, 2013). In recent decades, female children and adolescents tend to report substantially worse mental health than males and this gap increases during adolescence (Pearson, Jans, Ali, 2013). There are numerous factors associated with susceptibility and untreated mental illness symptoms among females, for example poor self-esteem, unsupported family life, and poor access to health education. As self-esteem and body image issues become prevalent during female adolescence, it is essential to understand how the primary care system approaches counseling and support for this population.

Primary care providers are often the first contact step in assessing and supporting the mental health of female adolescents. The link between adolescent patient health and physician-patient communication has been observed extensively in theoretical and review literature which argue that physician-patient communication can enhance mental health in various ways (Zolnierek, & Dimatteo, 2009). Physicians typically embody the trust and confidence of their patients, and are most often the first line of contact for individuals and specifically adolescent patients that rely on health education from their primary care provider. In a typical year, over 70% of young people visit a primary care physician to discuss health concerns (Finley et al., 2018).

There has been a growing rate of literature that promotes lifestyle changes positively affecting mental health. As educating a female adolescent patient on the benefits of lifestyle habits and

mental health are conducted through communication, it is essential to understand how this takes place in clinical settings. Elements of the patient-physician relationship include verbal, nonverbal and interpersonal communication. Patient education is often described as the process of influencing patient behaviour and producing changes in knowledge, attitudes, and skills necessary to maintain or improve health (Close, 1992). Lifestyle factors such as physical activity, mindfulness, enhanced nutrition, quality sleep and social support have been documented as factors that contribute to sustainable mental health (Close, 1992). There are few studies analyzing causal explanations connecting processes and outcomes to understand the way family physicians are educating their female adolescent patients on ways to promote positive mental health (Honavar, 2018). Most reviews of the communication-mental health connection have been quantitative and selective. This field of communication would benefit from a qualitative review of the efficacy of patient centred lifestyle medicine education to promote the mental health of adolescent females.

1.1 Study Purpose

The purpose of this study is to investigate the way family physicians practicing in Hamilton, Ontario are educating adolescent female patients on lifestyle habits that can contribute positively to their mental health. Adolescence is the life stage between childhood and adulthood, encompassing the physical, cognitive, and emotional changes of puberty resulting in maturity (Klein, Paradise, & Landis, 2020). For this reason we use adolescence to refer to an expanded age range to reflect the complex biological growth and social role transition that occur during this period (Klein, Paradise, & Landis, 2020). This study will utilize participants' perspectives (namely Hamilton family physicians HFAM) to understand where there may be barriers to

communication and suggestions to improve mental health care counseling. With minimal literature on female adolescent patient-physician communication on lifestyle medicine education, this study takes a qualitative approach in understanding the dialogue. Specifically the Canadian literature surrounding health communication is minimal, providing no substantial conclusion on its impact on female adolescent mental health. Additionally, while the importance of mental health assessment and treatment is widely recognized in primary care, there is minimal research addressing preventative measures.

1.2 Research Question

This research hopes to address the following questions.:

1. How do physicians communicate the health benefits of lifestyle factors to female patients between the ages of 11-25 experiencing mental health related symptoms?
2. How are factors within lifestyle medicine promoted?

These study questions will give some understanding to the way mental health recommendations are promoted and delivered by physicians to female adolescents in the Hamilton region. This information can help to dissect the gap that is present in current literature on this topic. These questions have guided the qualitative research study and showcase the impact family physicians have on adolescent female mental health and their role in promoting interventional and lifestyle techniques.

CHAPTER 2 LITERATURE REVIEW

2.1 Physician Health Communications

Patient-physician relationship is a complex psychosocial interplay of vulnerability, trust, and authority in a professional setting (Honavar, 2018). Health communication between physicians and patients has the capacity to elicit change and utilize strategies to inform and influence individuals' decisions that enhance health (Bohlman, Panzer, & Kind, 2005). Additionally, effective health communications can improve patient and physician satisfaction, patient compliance to treatment and/or medication and reduce medical errors (Honavar, 2018). In a 2015 study by Chipidza, the four elements that are integral to doctor-patient relationships are trust, knowledge, regard and loyalty which aid health communication. There is great value placed on effective communication, and the way physicians need to listen, explain, question, counsel and motivate (Travaline, Ruchinskas, & D'Alonzo, 2005).

The power dynamic within the patient-physician relationship is necessary to examine as physicians' awareness of power in the context of modern healthcare espouses values of dialogic, egalitarian, PCC (Nimmon, & Stenfors-Hayes, 2016). While the sharing of power is a goal in modern PCC healthcare, the way physicians enact therapeutic communication through reflective, effective and compassionate dialogue is key (Nimmon, & Stenfors-Hayes, 2016). Effective health communication considers health literacy, internet access, media exposure and cultural competency of target populations, and is presented in easy-to-understand language (Bohlman, Panzer, & Kind, 2005). Moreover, patients are vulnerable when they entrust a physician with their health, and trust is the keystone to such an asymmetrical relationship as declared by Santosh Honavarv (2018). It is important to consider that the cultural characteristics of a group are often

directly related to health priorities, decisions, behaviours, and/or acceptance and adoption of recommended practices (Kreuter, & McClure, 2004).

Patients' health literacy is increasingly recognized as a critical factor affecting patient-physician communication and overall health outcomes (Williams, 2002). A research study from the Department of Medicine at Emory University, revealed that patients are only able to recall 50% or less of important information communicated during a visit, placing importance on the overall dialogue in these critical conversations (Williams, et al., 2002). The health information currently available to the general public is often considered "wordy" or difficult to understand (Williams, et al., 2002). Strong patient-physician communication is centred around understanding the background of the patient to provide adequate care. This "difficulty" in language often conveyed by physicians promotes a level of inaccessibility, thus limiting the dissemination of information to the public, and lowering the rate of literacy (Williams, et al., 2002). A low patient literacy rate is related to poor compliance with recommended treatments (Williams, et al.,2002). Moreover, physicians knowing how to effectively communicate on an individualized basis may counter this claim.

Social Media

The prevalence of social media usage is a factor that may affect patient health literacy rates. A study by Emory University, revealed that the internet is an attractive method for patients to get specific health information, but most factors are not suitable for an audience with low literacy skills (Williams, et al.,2002). Young people, and those that use social media as their main source of information are at risk for receiving an overwhelming amount of misinformation. It therefore becomes increasingly important for health care practitioners to recognize and educate patients on the risks of social media usage (Ruberton et al., 2016). As we know, adolescents are

the age group most frequently exposed to social media content and are at risk for consuming misinformation. The way a physician understands their patient's social media usage can support the type of care that is conveyed.

Patient Satisfaction

Patient satisfaction is the result of adequate care demonstrated by a physician's effective communication and interpersonal skills. In particular, high levels of patient satisfaction have been correlated with physicians' expressions of warmth, courtesy, and empathy (Rowland-Morin, & Carroll, 1990). When analyzing adolescent health communication, the following characteristics are deemed most effective for professional relationships; active listening, empathic responses, and well-timed, tactfully delivered and open-ended questions (Bonvicini, et al., 2019). This information has been reflected in a wide range of systematic reviews, promoting the integration of adequate clinical skills medical training helpful to patient satisfaction (Travaline, Ruchinskas, & D'Alonzo, 2005). Inferred from the literature, within patient visits, all information regarding treatment should be communicated in an individualized way that supports a patient through education and progress (Bonvicini, et al., 2019). The impact of simple choices in words, information depth, body language, and interpersonal communication can greatly affect the quality of care that is administered to a patient (Travaline, Ruchinskas, & D'Alonzo, 2005). Physicians who are well versed in simple language around their patients were rated as communicating more effectively with those patients (Ruberton et al., 2016). Thus we can draw the connection between adequate interpersonal communication skills and the delivery of care.

2.2 Mental Health and Adolescent Females

The definition of adolescence is frequently seen as a bridge between childhood and adulthood. The significance of what we know about adolescence, is the importance of the development process and the transition to adulthood (Kim, & White, 2017). Children transitioning into adolescents go through many changes such as physical, intellectual, personality and social development (Kim, & White, 2017). As this period of time is among many environmental, biological and social transitions, the way one receives care in early adolescent years is crucial to the prosperity of their mental health.

Self Esteem

The gender differences in negative mental health attitudes, and willingness to access services are presented early in adolescence (Chandra, & Minkovitz, 2006). During adolescence, girls have a higher prevalence of depression, eating disorders and engage more in suicidal ideation than boys (World Health Organization, 2013). For example, in a 2018 European study, the relationship between depression and anxiety in youth was twice as large for girls when compared to boys between the ages of 15-25 (Van Droogenbroeck, Spruyt, & Keppens, 2018). Understanding mental health issues amongst females include the implications of self esteem. Stress and the association between body image and self-perception are highly predictive of a female's susceptibility to mental illness (Van Droogenbroeck, Spruyt, & Keppens, 2018). Biro, states "Self esteem has been viewed as both a trait and a state" (2006). The lower self esteem of adolescent girls when compared to boys in the same age group, reveals anxiety in relation to body image, which is known to result in a higher prevalence of depression and eating disorders (Micali, et al., 2015). According to Biro, in a longitudinal analysis of self esteem in adolescent

girls, race and BMI are important predictors of self esteem (2006). Adolescent girls surveyed in a 1999 European study, felt worse about themselves and their bodies than adolescent boys (Siegel, Yancey, Aneshensel, & Schuler, 1999). The female participants in this study showcased more symptoms of depression, a lower level of self-esteem, and less satisfaction with their bodies (Siegel, Yancey, Aneshensel, & Schuler, 1999). However it is important to note that women are more likely to seek treatment for depression and thus numbers can appear higher than their male counterparts (Shors, 2003). The connection lies on the basis that females typically undergo social pressures related to body image (Pinhas, 2011). Moreover, lowered self esteem informs poorer mental health and the susceptibility of life long consequences. When active listening and understanding of the patient's background is being done by the physician, self esteem enhancing education may be discussed.

Genetic/Hormones

Studies have shown, genetic and biological factors play a role in the higher prevalence of depressive and anxiety disorders among women, as women have significantly higher occurrences of mental illness (Shors, 2003). Hormones, puberty, and premenstrual problems all connect to a female's susceptibility to be diagnosed with depression (Hrafnkelsdottir et al., 2018). In women, it is suggested that ovarian hormones, estrogen and progesterone contribute to the higher incidence of depression (Shors, 2003).However the higher rate of mental illness such as depression in women isn't due to biology alone, life and cultural stressors play a huge role (Biro, et al., 2006). The analysis of the sex difference in depression during adolescence has been analyzed by the gender intensification hypothesis, describing that the pubertal change in early adolescence serves to stimulate increased focus by genders (Petersen, Sarigiani, & Kennedy, 1991). The Gender intensification hypothesis typically utilized in adolescent mental health

research describes the increased pressure for adolescents to conform to culturally sanctioned gender roles (Priess, Lindberg, & Hyde, 2009). Although little empirical research has tested this hypothesis we can understand that the physical changes an adolescent undergoes linked to the societal and cultural pressures of femininity have been associated with negative self perception and self esteem (Petersen, Sarigiani, & Kennedy, 1991). The perceived characteristics of what society has deemed to be considered "feminine" and "womanly" are reflected in the cultural ideals of what a woman's body should look like. As female adolescents go through a series of physical body changes, it may warrant unwanted weight gain, and development, leading to a reflection on one's body image perpetuated by society's ideals. Poor mental health has consequences for the broader health and long term development of female adolescents, and is associated with several health outcomes (Van Droogenbroeck, Spruyt, & Keppens, 2018). The literature has offered insight into the cultural, social and biological factors that contribute to an adolescent's mental well-being, suggesting the patient-physician dialogue to be inclusive of these factors.

2.3 Communicating Mental Health to Adolescent Females

Adolescence is a period of increased vulnerability to developing mental health disorders and externalizing conditions. The mode of communication during a visit is essential to the efficacy of care (Oltean, Perlman, Meyer, & Ferro, 2020). Health care professionals' interpersonal communication skills with adolescents and young adults play a vital role in early identification of issues, described in a 2017 Australian systematic review, while physicians are urged to portray non-judgemental characteristics and empathetic listening (Kim, & White, 2017). As highlighted by Kim & White (2017) in a study surveying adolescent patient experience, it is

important for young patients to feel included and autonomous during health communication encounters. Under the best circumstances it can be difficult to discuss mental health with an adolescent without causing distress. Youth diagnosed with a mental health disorder are likely to experience symptoms throughout their lives, and while it is important to communicate effectively to them, there are potential hurdles that may be encountered. When communicating with the adolescent patient it is essential to be aware of their cultural background, as it plays a role in shaping parents' social perception of mental health problems and need for specialist services (Oltean, Perlman, Meyer, & Ferro, 2020).

According to the literature, there are various obstacles in place that prohibit early detection of mental illness in the adolescent population (Glasner, Baltag, & Ambresin, 2021). The various barriers range from insufficient training of health care providers, a general scarcity of adolescent competent health professionals, and environmental factors such as lack of privacy (Glasner, Baltag, & Ambresin, 2021). In a Quebec study, all general practitioners who were surveyed reported seeing at least 10 adolescents weekly; few routinely contact parents when evaluating adolescents with serious mental health problems due to confidentiality (Maheux, Gilbert, Haley, & Frappier, 2006). The limitations associated with parental involvement is a barrier to female adolescent mental health care especially when considering openness and vulnerability.

2.4 Global Health Regulations for Patient Education on Mental Health

The link between adolescent and adult health is essential to promote a life-course perspective in adolescent health and health literacy improvements in this population. According to the WHO’s 2019 knowledge summary, mental health conditions such as depression and

anxiety account for 16% of the global burden of disease among 1.2 billion adolescents (Kessler, Amminger, Aguilar-Gaxiola, 2007). The major cause of morbidity and mortality in adolescents, is unintentional injuries and drug or alcohol usage, mood disorders, eating disorders and sexually transmitted diseases (Goldenring, & Cohen, 1988). To help decrease the global mental health (GMH) treatment gap, the World Health Organization (WHO) developed an intervention guide outlining evidence-based practice for health professionals (Wainberg et al., 2017). According to the WHO, the focus on women's mental health is an under-recognized component of a strategy for preventing mental disorders (Wainberg et al., 2017). Reflected in a 2007 UK study (Patel, Flisher, Hetrick, & McGorry, 2007) the importance of female representation within mental health studies worldwide was emphasized, as this divide is contributing to the lack of proactive services, assessments and change.

Screening tools

Globally, physicians utilize health assessment tools to improve efficiency and information gathering within patient centred care. HEADDSS (Home, Education, Activities, Diet, Drugs, Sexual activity/sexuality and Safety/suicide) and more recently, SSHADESS (Strengths, School, Home, Activities, Drugs, Emotions/eating, Sexuality, Safety) are tools utilized to remember various elements of an adolescent's psychosocial health (Klein, Paradise, & Landis, 2020). Both assessment tools are not to be used to develop any specific diagnosis, but rather to enhance the rapport within the patient physician relationship. The "HEADSS" and SSHADEES acronym allows physicians to ensure they are targeting their conversation with adolescents (Patel, Flisher, Hetrick, & McGorry, 2007). Research suggests these models may be used by all healthcare providers, as it improves the ability to discuss sensitive and personal information between the adolescent and the provider (Patel, Flisher, Hetrick, & McGorry, 2007).

The factors in the HEADSS and SSHADESS models offer health professionals the opportunity to assess psychosocial and preliminary risk effects that are associated with the social determinants of health. In addition to the socio-cultural factors that are associated with mental health, the mnemonics can be utilized in counselling an adolescent regarding internet usage and improving digital literacy (Norris, 2007). Studies have shown that when limited for time, a brief psychosocial screen may include current stressors, availability of a confidant, and school experience as a proxy for well being (Klein, Paradise, & Landis, 2020). While according to the literature there is little research focused on the effectiveness of the tool, the psychosocial risk screening together with counseling intervention has a positive impact on young people's engagement with their health outcomes (Glasner, Baltag, & Ambresin, 2021).

2.5 Positive Effects of Lifestyle Habits on Mental Health

Lifestyle medicine can be broadly defined as the non-pharmacological and non surgical management of chronic disease (Mechanick, & Kushner, 2016). It is most often described as the use of evidence-based lifestyle therapeutic intervention -including whole-foods, physical activity, restorative sleep, stress management and mindfulness (Rippe, 2018). Lifestyle medicine is perceived to be the foundation of conventional medicine, as we assess how a patient's behaviour and overall health is influenced by their daily habits and patterns (Mechanick, & Kushner, 2016). The lifestyle medicine care model is deeply rooted in the preventative medicine care model from the 1960's (Mechanick, & Kushner, 2016). A 2018 systematic review described the strength of scientific literature supporting health impacts of daily habits on quality of life (Rippe, 2018). "Daily habits" listed within the first multi-author academic textbook in lifestyle

medicine included nutrition, physical activity, weight management and smoking cessation (Rippe, 2018).

More than two-thirds of antidepressants prescribed to teenagers are for females (Bokzam, 2017)As we know, the positive effects of quality lifestyle factors contribute to the prevention of chronic illness and mental illness (Carek, Laibstain, & Carek, 2011). It is important to recognize the correlation between the social determinants of health and mental well-being. The literature discusses lifestyle medicine rather than the socio-cultural factors that may affect one's ability to access the opportunities to improve their health. When it comes to mental health, three social determinants are particularly significant; freedom from discrimination and violence, social inclusion, and access to economic resources (Juha Mikkonen and Dennis Raphael, 2010).

A 2021 study suggests that modifiable risk factors related to lifestyle choices contribute to the disproportionate impact of poor mental health (Browning et al., 2021). In adolescent depression, the thing people tend to notice first is withdrawal or when the teenager stops participating in activities they enjoy (Browning et al., 2021). We can see that behaviour, appetite, energy levels, sleep patterns and academic performance are typically affected by depression. It is especially important for family members and health care providers to recognize "lack of interest", as early intervention becomes more critical than ever.

Physical activity

Physical activity (PA) is associated with decreased symptoms of depression and anxiety and has been consistently associated with improved physical health, life satisfaction, cognitive functioning, and psychological well-being (Carek, Laibstain, & Carek, 2011). As such, physical inactivity is now identified as the fourth leading risk factor for global mortality (De Cocker, Verloigne, Cardon, & Van Acker, 2021). Depression and anxiety disorders typically surface in

the adolescent years and physical activity may be an important underutilised adjunct to currently accepted pharmacological and psychological therapies (Hrafnkelsdottir et al., 2018). The findings from a 2016 systematic review described the strong consistent evidence of the correlation between leisure screen time and psychological distress (Hoare, Milton, Foster, & Allender, 2016). PA is a non-stigmatising intervention with few side effects and is often viewed by young people as helpful in promoting mental health (Pascoe, et al., 2020). PA and specifically moderate to vigorous-intensity intervention improves self esteem in adolescents (Pascoe, et al., 2020). Evidence to date suggests that higher PA frequency and intensity are associated with positive mental health benefits (Goldberg, et al., 2019). Not only does PA promote one's mood, but can elevate self esteem and body confidence (Pascoe, et al., 2020). As we know, self esteem is the foundation to adequate self perception, which positively influences the well-being of all individuals (Mann, 2004). Self esteem and self perception can also relate to one's level of self awareness. In 2003 the Canadian government announced Bill C-12, an act to promote PA and sport as a fundamental element of health and well-being (Noble, Russell, Kraemer, & Sharratt, 2011). The act works towards encouraging all Canadians to improve their health by integrating PA into their daily lives and assisting in reducing the barriers that prevent all Canadians from being active (Noble, Russell, Kraemer, & Sharratt, 2011).

Nutrition

The complex and multidirectional nature of the relationship between nutrition and mental health has been studied for numerous years. For example, maintaining a healthy diet, includes the barriers disproportionately affecting those with financial and environmental factors in place (Firth, et al., 2020). Studies have revealed the positive response to one's mental and physical well-being when following the Mediterranean diet rather than the western diet (Firth, et al.,

2020). The Mediterranean diet is based on daily intake of fruit, vegetables, whole grains, legumes, nuts, fish and white meats (Firth, et al., 2020). Parletta et al. tested the effects of the mediterranean diet supplemented with fish oils on mental health among 152 people self-reporting depressive symptoms (Parletta, et al, 2019). An improvement occurred on the diet with mental health (specifically reduced depression) confirmed at the 6 month mark of this study. (Parletta, et al, 2019).

Diets high in refined sugars for example worsen your body's regulation of insulin, and promote inflammation and oxidative stress (health harvard). Research showcases the direct impact on various biological systems and mechanisms that underpin depression, highlighting oxidative processes, and the function of the immune system (O'Neil, et al., 2014). In patients with depression, markers of systemic inflammation are usually greater than in those without depression (O'Neil, et al., 2014). Research has recently uncovered the role gut microbiology plays in mental health and a healthy diet is significantly associated with reduced odds for depression (Dash, Clarke,Berk, & Jacka, 2015). The increased consumption of unhealthy, sugar and fat rich foods is related to a risk of psychological symptomatology in children and adolescents (Dash, Clarke,Berk, & Jacka, 2015). The evidence of gut microbiota influencing brain and behaviour is expanding, with the integral role of the gut brain axis (Dash, Clarke,Berk, & Jacka, 2015). The gut microbiota can influence serotonin and its precursor tryptophan, to regulate the stress response and modulate cognition (Dash, Clarke,Berk, & Jacka, 2015). It is evident the role of healthy food can either enhance or demotivate the mental resilience of a young adult.

Mindfulness

Mindfulness is an approach to improve both mental and physical health care and is recommended to practice freely in any circumstance (Keng, Smoski, & Robins, 2011). Research suggests that mindfulness can promote self-awareness, aiding the self perception of a female adolescent. Self awareness allows young people to understand their thoughts and feelings, and better seek opportunities for help or growth. In a 2010 study that surveyed 400 students, those who meditated exhibited higher emotional intelligence and less perceived stress and negative mental health than those who did not meditate (Chu, 2010). This study defined meditation as having at least 20 min regular daily practice of either concentrative, mindfulness or integrated meditation (Chu, 2010). The literature discusses the support mindfulness can have as an adjunct to prescribed medication (Goldberg, et al., 2019). In a 2018 study from the University of Wisconsin, the research team examined the relative efficacy of mindfulness-based interventions on clinical symptoms of psychiatric disorders (Goldberg, et al., 2019). A total of 142 randomized clinical trials were included, with follow up consultations showcasing that mindfulness based interventions were superior to no treatment conditions and active controls (Goldberg, et al., 2019). The results from this study supported the notion that mindfulness based interventions hold promise as evidence based treatments (Goldberg, et al., 2019).The mindfulness based interventions showed superior effects on disorder specific outcomes for anxiety, depression, pain and weight/eating related disorders in children and adolescents (Mechanick, & Kushner, 2016). Mindfulness based interventions were equivalent to evidence based therapies for depression (Mechanick, & Kushner, 2016)Although it is evident that outcomes and the degree to which mindfulness-based interventions compare to other evidence based treatments, it is difficult to assess validity. A growing body of literature focuses on the mental health effects during the

covid-19 pandemic and the way mindfulness based approaches might be well-suited for responding to the current mental health challenges (Antonova, Schlosser, Pandey, & Kumari, 2021).

CHAPTER 3 METHODOLOGY

Qualitative Approach

This research paper is outlined in accordance with the Standards for Reporting Qualitative Research (SRQR). The method selected to explore the phenomenon of family physicians and their approach to communication and education with female adolescent patients is content analysis. Qualitative Content analysis (QCA) allows for making replicable and valid inferences from data to their context, with the purpose of providing knowledge, new insights, and a representation of facts (Kyngäs, Kääriäinen, & Elo, 2019). Content analysis is typically used as a method of analyzing written verbal or visual communication messages with the intention of describing and quantifying phenomena (Kyngäs, Kääriäinen, & Elo, 2019). By understanding the outcomes from this study, the data can provide further insights into how family physicians may improve their quality of care to female adolescent patients (Prasad, 1994). Moreover the principles of a content analysis provide a flexible way to develop content categories based on briefly analyzing the data, flowing from the research question and anchored in review of relevant literature (Prasad, 1994). As mentioned by Assarroudi, researchers in the field of healthcare commonly use QCA for data analysis as an application of language and contextual clues for making meanings in the communication process (Prasad, 1994). Therefore,

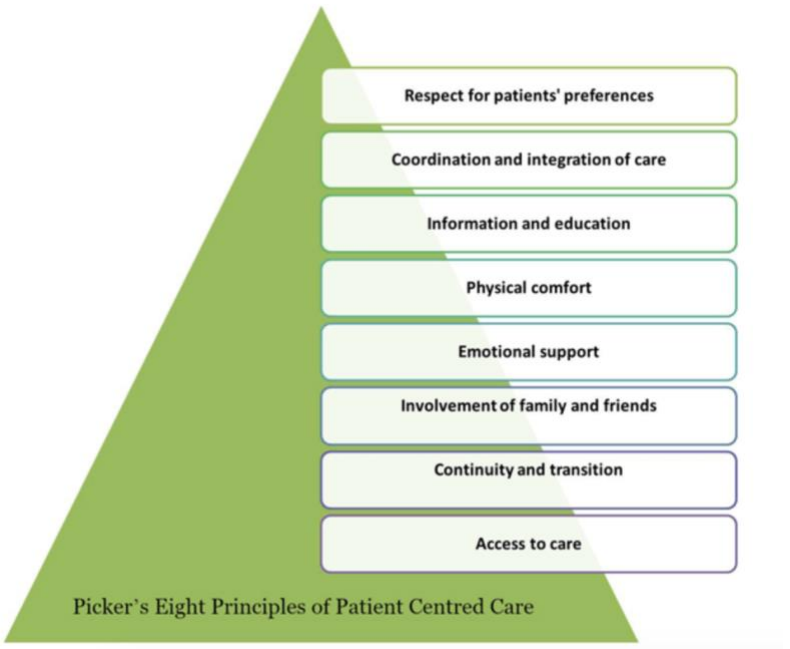
the content analysis methodology enhanced our understanding of patient physician communication within the scope of this study.

3.1 Research Paradigm

The study was performed from an ontological point of view using critical realism to understand themes on how physicians inform female adolescent patients on lifestyle medicine and mental health promotive information (Sturgiss & Clark, 2020). Critical realism is known for its ability to explain outcomes and events in natural settings - pertaining to questions about how and why events or phenomena occur (Sturgiss & Clark, 2020). Essentially, critical realism includes the idea that there is no pure knowledge, and that care must be taken to understand what is sufficient knowledge in a given area, in this case, female adolescent mental health (Hanly, & Hanly, 2001). The Critical Realist Model allowed us to analyze the research to make claims about the reality of Hamilton's family physicians' communication on lifestyle medicine and mental well-being to their female adolescent patients.

3.2 Conceptual Framework

The Patient Centred Care (PCC) approach can be utilized to further investigate the way physicians communicate with their female adolescent patients. This framework is often regarded as crucial for the delivery of high quality care by doctors around the world (Sturgiss & Clark, 2020). There are eight principles of PCC that include:



1. Respect for patients preferences
2. Coordination and integration of care
3. Information and education
4. Physical comfort
5. Emotional support
6. Involvement of family and friends
7. Continuity and transition
8. Access to care

Canadian physicians practice patient-centered medicine while conceiving the patient as an experienced individual rather than the object of some disease entity (Mead & Bower, 2000). This concept promotes the knowledge, trust, and loyalty that is necessary to create a sustainable relationship between the physician and their patient. The global implementation of PCC for mental health has been proven to enhance recovery and shared knowledge between the patient, their family, and the physician (Jorgensen, & Rendtorff, 2018). Female adolescent mental health can be a difficult discussion for most physicians due to the fragility of the topic. It is essential physicians optimize their time spent with their female patients to determine proactive next steps for addressing mental health (Jorgensen, & Rendtorff, 2018). This model dictates that physicians must be willing to understand the full range of difficulties patients bring to their appointment and not just their biomedical problems (Jorgensen, & Rendtorff, 2018). Analyzing the data of this study will provide information whether physicians are framing their care with regard to the PCC approach and whether they discuss the variables necessary to optimize mental health. The first dimension of patient-centered care is mainly concerned with understanding patients'

illnesses in general within a broader biopsychosocial framework and ensuring that the patient does not feel labeled by their diagnosed mental illness (Jorgensen, & Rendtorff, 2018). This model shapes the intention that family physicians should have when approaching a patient, promoting a holistic lens of medicine with a combination of education, physical/emotional support, and continuity of care (Jorgensen, & Rendtorff, 2018).

3.3 Context

Due to the covid-19 pandemic and the public health restrictions in place at the time of this study, all information was captured online via a confidential limesurvey. All sample participants within this study were located in the greater Hamilton area, serving their patient community, either virtually or in person.

3.4 Sampling Strategy

Saturation

Determining the theoretical saturation included an iterative process monitoring the data as it entered the system, tracking the themes that were emerging and deciding at which point to complete the survey response collection. As saturation means that no additional data is being found, it was important to analyze the point in which responses began to get repetitive (Hanly, & Hanly, 2001). A non-probability quota sampling strategy was used to select individuals that are representative of the overall population. Quota sampling is grounded in convenience offering the advantage of fast collection, and a lower cost (Quota, 2020). The sample population for this study was Hamilton physicians that have received their certification in Family Medicine. Inclusion criteria focuses on the key features of the target population that aid us in answering our

research question (Patino, & Ferreira, 2018). Family physicians who reported counselling adolescent females between the ages of 15 -24 were eligible and were recruited for this study.

Strategy for Participant Recruitment

The recruitment methods included email, and social media messaging which was sent to all 500 family physicians within HFAM. The focused mode of contact to prospective participants was through the Hamilton and McMaster Family Medicine communications bulletin board. LimeSurvey was utilized to administer the anonymous survey and was distributed by the McMaster Family Medicine administration team to promote high visibility rate. To promote retention of responses the reinforcement of email prompts 7 days, and 14 days post-survey release were conducted.

3.5 Ethical Considerations

Ethics approval was granted by McMaster University, Faculty of Health Science Research Ethics Board (HIREB) for the proposed study in Hamilton in February 2021. This study was reviewed in accordance with the"student in the Faculty of Health Sciences" protocols enlisted by the HIREB committee.

3.6 Data Collection Methods

Prior to data collection, all participating physicians gave informed consent. The survey distributed to the respondents included open ended questions, in order to elicit responses that physicians could reflect on their experiences with the specified patient demographic. The survey included demographic information and self reported attitudes towards their work and patient care. The contextual feedback supported the thematic data analysis with a better understanding of

respondents feelings and attitudes about the survey subject. The survey had one set of questions and respondents were expected to complete the survey in approximately 20 minutes or less.

3.7 Data Processing

We collected the data through limesurvey, a secure survey distributor and database. Survey responses were anonymized and each participant was given a code number. Once data collection was complete the codebook was created. In analyzing the data, an inductive process of creating the themes occurred that narrated the data prior to coding. To facilitate the coding and analysis of comments the content analysis software MAXQDA2020 - was used.

3.8 Data Analysis

The literature was scanned to generate concepts and potential themes for the survey questions. An inductive analysis was conducted; meaning that the patterns, themes and categories of analysis emerge from the data rather than being imposed on them prior to data collection and analysis (Srivastava, & Hopwood, 2009). Once data collection was completed, preliminary codes were assigned to the data in order to describe the content. Coding with the MAXQDA2020 software was used to manually code the comments. The search for patterns and themes within the data uncovered three main themes with underlying sub-themes.

3.9 Rigour/Reflexivity

Reflexivity was maintained by discussing challenging established assumptions and analyzing biases that may have impacted the findings. The first author conducted the data analysis. Her formal education was focused on health communications in her undergraduate education supplemented by her masters education in global health and experience working in

knowledge translation. She was not known to the participants of this research prior to undertaking the study and did not undertake any research activities locally prior to this research. The second and third authors, while supervising the project currently practicing within the Hamilton Health Sciences, had no influence on the way participants approached answering the survey questions. While their background in medicine influenced the concepts behind the overall study, it was beneficial to have their perspectives on the terminology to use when coding the data and constructing the analysis approach.

CHAPTER 4 RESULTS

Introduction

In this section, the findings describe the perceptions of lifestyle medicine, and mental health promotion to female adolescent patients, as expressed by practicing family physicians within the city of Hamilton. A total of 500 currently practicing family physicians were sent the survey with a total of 126 partial responses and 87 full responses, giving a response rate of 25.2%. The findings will be outlined in a thematic analysis, with integration of the survey results. Through inductive reasoning the three themes identified relating to patient physician communication are categorized as: (1) lifestyle medicine education, (2) barriers in communication (3) improvements in the quality of conversation. The categorization of themes was based on an inductive coding approach.

Participants of the digital survey had completed their residency training in family medicine or received their certification from the CFPC. The analysis of data was approached with an understanding that family physicians may belong to a discourse community. Theme 1: *Lifestyle medicine education*, uncovered four sub themes from the topics discussed in

conversation with adolescent female patients. The sub themes are as follows: family support, physical activity, nutrition, sleep, and mindfulness. Theme 2: *Barriers in Communication*, uncovered 2 subthemes; trust, and time constraints. Finally theme 3: *Improvements in the quality of the conversation* included 4 sub themes; clinical empathy, listening skills, time, and social media. The data from the surveys were coded in accordance with the code book recommendations, and directions associated with definition of each code.

4.1 Demographic findings

The participants took part in the virtual survey held between March 19 2021 and April 23 2021. All family physicians received the survey via email or accessed the survey through social media. Included in figure 2 below is their year of graduation and receipt of the Certification in the College of Family physicians (CCFP).

FIGURE 2

Year of CCFP	**N (%)**
2011-2021	**25.8% (n=23)**
2000-2010	**37% (n=33)**
1990-1999	**20% (n=18)**
1980-1989	**12% (n=11)**
1970-1979	**4.4% (n=4)**

4.2 Theme 1: Lifestyle Medicine Education

Respondents often described lifestyle medicine as promotional or life enhancing based on habits and the social factors affecting one's ability to manage health. Interestingly, the integration of all lifestyle factors were typically listed by respondents, highlighting a well-rounded approach to mental health promotion. Key informant, described their experience when counselling a female adolescent patient as,

"4 Pillars of health that promote wellness and form the basis for treatment - Sleep (discuss sleep hygiene), Nutrition (discuss food as fuel and link to health), Exercise (I call this move your body - exercise prescription and brainstorming around first steps) and relationships (with others - maintaining social connection and with self - mindfulness). Also discuss bucket of wellness - things that fill bucket and bring calm = activities that spark joy (we brainstorm these), things that detract = negative energy sucks (eg social media, dark movies, apocalyptic thinking)"

Similarly another key informant explained the breadth of lifestyle medicine covered,

"When a pt (patient) comes to me with mental illness sx (symptoms). I always include important lifestyle optimization, we focus on diet/exercise/sleep. I call it the three columns of optimized health. Ensure no /minimal etoh/thc/street drugs. then focus on internal and external stressors, Pt can work on this over two weeks while waiting for BW (bloodwork) , w f/u after two weeks of optimization. This all presumes they are not having regular panic attacks or SI (suicidal ideation)."

Respondents described the importance of balance with the common association between combined lifestyle factors that seem advantageous to the promotion of a young female adolescent's mental well-being. To achieve this "balance" between various activities it is

essential to analyze the material in regards to the PCC model as socio-economic factors affect the integration of the suggestions mentioned by the family physicians.

(1) *Family*

47% of respondents reported the discussion of family life while educating female adolescents on the promotion of mental health through lifestyle factors. Respondents suggested that not only family members but friends and community support are beneficial in combination with other lifestyle factors. Respondents listed family/community support among other lifestyle medicine topics they cover in mental health counseling with a female adolescent patient.

Key informant described:

" Family and friend communication and support"

Respondents noted the importance of social support and specifically peer support. A strong support system at home was described as promoting open communication and willingness to improve one's mental health. As a family physician targets their interventional approach in line with the patient centred care model, understanding the social determinants of health and the home environment is important.

Respondents referred to social factors that align with family dynamics and included social life, friends, academic success and self perception. Social factors that influence one's mental health have been analyzed through various screening tools such as **GAD-7, PHQ-9 and the HEADSS interview instrument.** Further discussion by respondents with respect to the barriers faced by female adolescents arising from the pandemic included that they were faced with increased screen time and decreased social interaction. The various pandemic lockdowns, especially the "stay at home order" likely restricted adolescents from physical interaction with their usual social circles, therefore virtual communication acted as a barrier.

(2) *Physical Activity*

32% of respondents discussed the positive effects of physical activity on mental health and recommended movement as a prescription to female adolescent patients.

A Key informant explained exercise, as *"Highly desirable, impactful helps with physical and mental well being, reduces stress, assists with self validation and confidence, associated (perhaps) with reduced risk of substance disuse"*

This comment describes "reduced stress, self validation and confidence" enhancing the connection between physical activity and self esteem. Respondents discussed the association between self esteem and mental health, emphasizing poor body image in adolescent females attributing to the susceptibility of mental illness. According to respondents, physical activity is associated with both improved mental health and self esteem aiding positive body image. Analyzing the integration of lifestyle medicine and pharmacological recommendations within family medicine, a key informant explained;

"physical activity is very important for physical and mental health - better than our SSRIs in some cases - always counsel re: increased activity if suffering from mental health concerns"

Respondents shared their perspective on physical activity as being promotive to both the physical and mental health components. The comment on Selective Serotonin Reuptake Inhibitor "SSRI" refers to the most commonly prescribed antidepressants and allows the benefits of improved quality of life for an individual that may be facing depressive symptoms (Oberlander, Miller, 2011). Recommendations to a female adolescent patient are based on an individualized basis, with the combination of SSRI's and lifestyle modifications commonly advised.

Key informant echoes;

"Along with meditation, physical activity is likely the most protective lifestyle choice for enhancing/preserving mental health. "

Acknowledging the words “protective” and “preserving” describe the role of physical activity in mental health promotion. Family physicians often described the way lifestyle medicine is deemed to be the association with lifestyle factors that contribute to optimal health. For adolescent females, learning the preventative measures and “life enhancing” activities that can promote the likelihood of sustainable habits to aid in overall well-being is seen to be important.

Respondents reported increased screen time and diminished physical activity presents itself in the adolescent years, and it is crucial to inform patients on the standards of]

recommended exercise per week. While it may differ based on country, the Canadian recommendations for physical activity in children and youth are 60 minutes of moderate-to-vigorous intensity aerobic movement everyday (Latimer-Cheung, et al., 2013). Respondents integrated the Canadian guidelines in counselling adolescent females where applicable.

(3) *Nutrition*

35% of respondents reported educational counselling on nutrition with female adolescent patients in relation to personal mental health. There was no acknowledgement of a particular diet regime recommended by respondents to their female adolescent patients. However, the discussion on quality of nutrition was deemed important by family physicians.

Key informant explained:

I typically frame it as "foundations/pillars" of mental health (sleep hygiene, nutrition/substances, physical activity/time in nature, and relationships); as well as a discussion about counselling”

The discussion of nutrition is intertwined with varying social factors. As noted previously, the integration of lifestyle factors and individualized approaches to care is important. As suggested by the response below, screening tools are recommended to assess the background of a patient, with a variety of screening tools actively employed by family physicians to further explore a patient's background.

Key informant explained:

"Forms GAD-7 and PHQ-9, Sleep, nutrition, physical activity, alcohol and drug use; social factors currently arising and current family dynamics"

Respondents described their opportunity to identify early onset of negative mental health symptoms with their female adolescent patient through screening tools and regularly checking in on lifestyle related activities. The **PHQ-9 and GAD-7** are designed to facilitate the recognition of depressive disorders and anxiety disorders respectively and are global methods of screening (Moyer, Connelly, Holley, 2019). Typically clinicians will screen patients to understand the baseline indicators as part of patient history taking. Respondents mentioned their usage of the SSHADESS and HEADSS interview instrument for discerning issues in adolescents' lives (Goldenring, Cohen, 1988). The SSHADESS and HEADSS model offers the opportunity for physicians to receive information from patients on topics such as home life, education, employment, activities, drugs, sexuality, and suicide/depression (Cohen, MacKenzie, Yates, 1991). It is important to note that the SSHADESS model is a newer outline however covers similar areas, likely not as familiar to family physicians as opposed to other specialties.

(4) Sleep

35% of respondents indicated promotion of adequate sleep and its mental health benefits when counseling adolescent female patients. Respondents described the way female adolescents should understand the quality and quantity of sleep and how it is affected by lifestyle factors. Specifically, the environment such as prohibiting factors in regards to homelife, management of stressors such as school, and relationships, in addition to the physiological effects associated with mental illness affecting the ability to fall asleep, and the maintenance of bodily function promoting optimal sleep.

Key informant describes:

" Mindful hobbies- art, journaling, colouring

Walking, especially in nature

Reduce screen time 2 hr before bed

Take breaks

Self compassion mindful exercises

Address sleep

Avoid alcohol and drugs"

Respondents described the importance of sleep as a holistic pillar to aid overall wellbeing when prioritized among other factors. Respondents discussed the influence of parents' habits and the home environment affecting an adolescent's ability to maintain a consistent sleep schedule. Quality of sleep influenced by home life can be understood when looking towards the PCC model and formulating patient education based on their individual needs.

(5) Journaling and Mindfulness

18% of respondents discussed the importance of mindfulness, journaling and/or meditation in the delivery of care to adolescent female patients. Describing artistic or reflective activities as "mindful" from art to journaling was a common theme amongst respondents. Participation in reflective practices is considered a mindful activity.

Key informant describes:

" Reducing screen time, grateful journal and daily mindfulness and mindful movement. Eating with family, contributing to daily household chores, avoiding phone plugged in bedrooms, yoga, stress reduction and coping strategies, avoiding marijuana etc. "

Respondents indicated the multifaceted nature of mindfulness including not only meditation, and journaling but also physical activity and social support. Within the participant responses "mindfulness" and "mindful hobbies" were mentioned as a key lifestyle factor promoted to female adolescent patients.

4.3 Barriers in Adequate Health Communications

The second theme *barriers in adequate communication* included the sub-themes: parent involvement, time constraints, and trust.

(1) *Parent involvement*

17% of respondents noted that parents' involvement is a large barrier to informative conversations with their adolescent female patients. The over-involvement with parents and guardians act as a limiting factor for adequate communication, as informed by the family

physician respondents. Respondents suggested that parents in the room or immersed in the conversation affect the comfort level of the adolescent female patients.

Key informant described:

"Over Involved parents, or shy adolescents that come to appointments with parents, who then will assume control of the meeting,"

Emphasized by a key informant:

"Don't want to talk.Parents in the room. Phones. Parents and parents. Did I mention parents?

Usually their parents are the biggest barriers —

Wanting to be "helpful". Can be awkward to get them out of the scene"

Respondents acknowledged the difficulties of parent involvement when attending to the needs of female adolescent patients. Navigating how to minimize parent involvement in adolescent mental health counselling, negatively affects the quality of patient education, and relationship building. Parental involvement as a barrier affects subtheme (3) trust, as the key indicator to promote a trusting relationship to provide the patient adequate care and education is attributed to open communication and comfort.

(2) Time Constraints

18% of respondents discussed time constraint as a barrier to strong patient communication. As physician satisfaction contributes to patient satisfaction, this can be affected by the amount of time available. There is value and importance of quality time between a physician and patient to curate a strong relationship promoting open conversation. Respondents

described the limitations associated with having to limit their conversations, and needing several appointments to curate a lasting relationship with patients. A key informant described:

"*main barrier- is not enough time- often takes several appointments to get the whole picture"*

Respondents reflected the literature suggesting that physicians that spent time in health education and the effects of treatment had a large bearing on patient satisfaction (Dugdale, Epstein, Pantilat, 1999). It is evident that time, and frequency of appointments affect the quality of communication. While relationship building offers trust within the communication between a physician and female adolescent patient, the time constraints can act as a limiting factor as elaborated by this key informant:

"Time constraints of community practice (time constraints of community practice)"

As depicted in the respondent's reflection, it is evident that the time constraints are not based on isolated appointment times but more importantly long term relationship building as a community practice. Time constraints limit the ability to develop the relationship with patients in terms of the questions the physicians are capable of asking with comfort and trust in mind.

Further expanded by key informant:

"Right now virtual appointments can be a large barrier.."

Respondents acknowledged that family physicians are often the first line of contact for healthcare to most young people in Ontario and the pandemic has altered the interface between patients and Family physicians. Telemedicine has impacted the ability to build trust and communication potentially acting in detriment to the mental health of female teens.

(3) Patient Trust

8% of respondents reported trust as a barrier to communication with female adolescent patients. To build a trusting relationship between a patient and physician, it is a multi-factorial situation regarding factors related to confidentiality, comfort, frequency of meetings, and communication to the parent. As described by key informant:

"Sometimes it takes time for the patient to open up/trust. Patient Worry re confidentiality of information- always reassure the patient re confidentiality unless a threat to themselves or others. Virtual care through video appointments limits rapport building sometimes"

Respondent:

"Trust. Through my career this has fostered a good working relationship in young women who "grew up" in my practice. Less easy to establish in adolescents new to my practice"

Respondents acknowledged the importance of fostering a relationship over a period of time to increase depth in communication and trust. It is important to note that developing relationships based on factors that make youth feel comfortable and open to the opportunity of discussing their concerns, family physicians will have the chance to optimize their therapeutic relationships. Patient trust correlates to time and empathetic listening, highlighting the importance of individualized approaches to female patient care.

4.4 Improvements in Quality of Lifestyle Medicine Education

The third theme uncovered within the data is informed by the perception of practicing Hamilton family physicians and their reflection on how to improve the quality of care and

education within the adolescent female population. Within this theme the following sub-themes were presented; clinical empathy, listening skills, time, health literacy resources and social media education.

(1) Clinical Empathy

17% of respondents described clinical empathy as a sub theme. Empathetic listening and behaviour within patient-physician communication influences patient trust, compliance and satisfaction.

As key informant described:

"Speaking in non judgmental ways to adolescent patients. Always inform about confidentiality"

Echoed by key informant:

"I am trying to use non judgemental questions, and demonstrate openness."

Respondents described that a way to improve adolescent clinical care is non-judgemental communication. Physicians noted that interpersonal and empathetic communication skills have the potential to improve adolescent female patient satisfaction and compliance, in turn improving patient health. While the biomedical approach often overrides concern about patients' social experiences, it presents the importance of the patient-centred care model offering a holistic approach to health.

An aspect of empathy is a clinicians ability to experience *affinity*, adequately recognizing a patient's experience and communicating with inclusive dialogue at the forefront (Garden, 2008). Informing a patient about the importance of confidentiality can promote trust which in turn, can help cement relationship building thereby promoting the longevity of the patient-

physician relationship. Demonstrating openness can be seen as providing empathetic care, and being perceived as an open-minded physician with a genuine interest in the patient experience.

(2) Listening skills

6% of respondents emphasized the importance of good listening skills when counselling female adolescent patients on mental health. Respondents described that a critical component of communication skills is the ability to listen and adequately frame counselling that demonstrates a PCC approach

Key informant described:

"listen better, show concern, involve the parents when indicated and necessary"

Respondents indicated the action of showing concern can be understood as nonverbal communication and interpersonal skills. Showing concern can be enhanced by body language, social cues such as eye contact, facial expressions and nodding ensuring the patient feels heard. In addition to listening skills, key respondent mentioned:

"Motivational interviewing"

Respondents reported the benefits of motivational interviewing as it can aid the trust and communication of a patient relationship. Respondents emphasized that motivational listening can support patient goals, and willingness to learn.

(3) Time

Respondents described the limitations associated with appointment times being short. Time is a barrier which can limit the ability of a physician to adequately understand a patient's lived experience . A combination of time and telemedicine affect the ability to acknowledge a patient's non-verbal reaction when care is provided by a phone without video."To show interest"

as indicated by respondents is based on the initial acknowledgement of a patient's needs and how receptive they may be to the communication throughout a conversation. Connected with the themes above are the need for long term relationship building, empathetic listening and face to face communication.

Key informant stated:

"Have more time available"

Further expanded by key informant:

"More time to discuss these issues more deeply, having open and non judgemental attitude during the interaction to allow them to feel comfortable sharing"

Applying the concepts from the subtheme "listening skills" and "clinical empathy" as motivational listening can enhance the interaction that offers non-judgemental attitudes during conversation.

(4) Health Education

11% of respondents emphasized accessibility to health information as an area of improvement to female adolescent patients. Specifically the mobilization of educational resources whether in an office accessible to patients or administered to the patient at the time of the visit by the physician.

Key informant described:

"Probably having a good list of age-appropriate resources and means to distribute them"

Respondents indicated the importance of having age specific material to support every patient along their life course. This highlights the way health information must be tailored to its specific age demographic to be effective and be implemented from theory to practice on an individual

basis. Evidence suggests that health education when communicated by the physician improves relationship dynamic, trust, and patient compliance (Ha, & Longnecker, 2010).

Further expanded by key informant:

"I think that general health literacy education messaging through schools and via social media platforms, by Youtubers"

The emphasis of health education administered through a digital medium that most likely resonates with the patient was presented within the data, as exemplified with the above remark. A key component of health education described by respondents was accessibility of take-home material for a patient and how they perceive the recommended resources. How the health education material is communicated to a young person is determined to some degree on their willingness to accept such information and be proactive about the material offered indicated by respondents. The health education that is typically offered within clinics may be from secondary sources such as nearby mental health organizations, local or provincial resources such as the Ontario Medical Association (OMA).

(5) *Social Media Education*

6% of Respondents suggested formally learning about the common practices of social media usage among youth would improve their awareness and intervention strategies when counselling. To improve their clinical practice as family physicians, it is imperative to understand how to navigate social media usage, and tackle misinformation on the internet with their patients.

Key informant described:

"Sometimes gaining buy in - often social media or "trends" or myths about use of substances to help with MH (eg marijuana) - often have to engage in "experiment" language to help get buy in to decrease substance use "

Respondents discussed the "trends" and "myths" that lack evidence on social media. The messaging on social media and its ability to influence behaviour in our youth is determined by the level of education of that youth. It is important to recognize that if a young person has been informed about the dangers of social media usage and proceeds with caution, they most likely will not relay skepticism within patient-physician counselling relationships. While social media can act as a detriment to many, it has the potential to be an educational tool when used appropriately.

However respondents discussed their willingness to learn more about social media usage to aid their clinical practice as described:

"I would not mind learning more about the impact of social media and how to help these adolescent girls who have excessive screen time and now have mood disorders."

Key informant:

"Understanding the importance of social media to this population"

Highlighted within the data, is the desire for formal education to family physicians on the psychological impacts of social media usage on adolescent females mental health and self esteem.

Further describing the need for screen time education, key informant stated:

"Education on impact of screen time and how to counsel them re mood disorders related to social media - newer concern"

Respondents discussed not only in-office social media education but navigating the conversation on digital education with their patients. The social determinants of health may influence the number of hours an adolescent female spends on social media or in front of a device/ television. These responses showcased the greater need for awareness and intervention levels outside of the clinical setting.

Not only are adolescent females curating trust within social media influencers, but these digital relationships that influence the interpretation of non-evidence based material can affect one's health in the long term. Mis-information on the internet can affect the efficiency of communication within patient physician relationships.

Respondents described the need to understand what their patients usage is like on social media, as described by respondent:

"Perhaps asking patient to describe to me the pros and cons of their social media involvement-- what parts bring confidence, positivity

-Frank conversations, ask what is important to them

-open invitation to call/book back- asking them their preferred appt type- virtual/in office/phone"

The social media education that will promote the well-being of adolescent females combined with a patient centred care approach offers the exchange of information for both physician and patient. Allowing a female adolescent to reflect on their own experience will promote trust, and build the strength of patient-physician communication aiding the longevity of this relationship.

4.5 Conclusion

Adequate patient-physician communication on lifestyle factors for mental health promotion was signified within the data. Respondents discussed the importance of family support, physical activity, sleep, mindfulness and nutrition to adolescent female patients. 47% of respondents emphasized the importance of family and social support to the promotion of adolescent female patients' mental health, while acknowledging the barriers to communicate effectively as parent involvement, time constraints, and trust. Time constraints, which may be a more structural issue, was rated the highest barrier at 18% of respondents describing this as a difficulty in communication. Of the ways in which physicians can improve their communication with female adolescent patients, clinical empathy was the highest rated at 17% of respondents with the following sub-themes uncovered from the data, listening skills, time, health literacy resources and social media education.

CHAPTER 5 DISCUSSION

This study presents data from key informants from the group of Hamilton Family physicians (KI-HFP) educating and informing adolescent female patients on mental health promotion. Inputs from (KI-HFP) identified three themes including lifestyle factors, improvements in patient communication and barriers to adequate health communication. This chapter discusses the extent to which the identified themes are consistent with the literature review conducted in chapter two. Additionally this chapter will highlight areas discussed by informants not emphasized or noted in the literature review and conclude with implications of

the study, to improve adolescent mental health through advancing the quality of patient-physician communication.

Analyzing the data through the lens of the PCC model allows us to ensure when physicians are engaging in conversation with their patients, it is in line with a person's first language. The PCC model was integrated into counselling with female adolescent patients through screening tools, HEADSS and SSHADESS interview guidelines, quality time, and the nurturing of relationships over time. Specifically the screening tools were discussed by respondents as enhancements to the quality of communication when counselling female adolescent patients. Globally it is recognized that screening tools such as the **PHQ-9 and GAD-7** were designed to facilitate the recognition of depressive disorders and anxiety disorders respectively (Moyer, Connelly, Holley, 2019). An overarching attribute to adequate care is consistency of communication and interpersonal relationship building. With respect to the findings from this study, the PCC approach would be further utilized by physicians if the communicative barriers were addressed. To adequately understand a patient's socio-economic background and how it may affect the lifestyle factors that are being recommended by physicians, increased time to build relationships would be advantageous. Furthermore the integration of the PCC model at the forefront of care would enhance the quality of the treatment plan for the patients.

5.1 Lifestyle Factors

Participant responses reflected the current literature regarding the positive effects of lifestyle factors on female adolescents mental health, and how communication can improve patient education. The results indicated physicians discussed a number of lifestyle factors with

the most relevant being; physical activity, nutrition, mindfulness, sleep and family life. The literature suggests that modifiable risk factors related to lifestyle choices contribute to the impact of poor mental health. This was reflected within physician responses. We can further analyze the efficacy of patient physician communication on lifestyle factors by using the Globally Recognized PCC Model (PCC).

5.2 Exercise

Evidence has suggested intensive and repeated counseling by healthcare professionals and specifically family physicians can increase their patients' physical activity (Colley et al., 2019). Motivational interviewing has been shown to help overcome ambivalence by guiding patients to voice their personal reasons for change, reflected both within this study and the literature (Letourneau, Goodman, 2014). The data from this research project was consistent with the literature, exemplified in a 2019 study measuring physical activity among Canadian youth finding a significantly larger proportion of boys than girls meeting the physical activity guidelines (Colley, et al 2019). As physicians acknowledge adequate care to adolescent females is affected by how long they have been a patient at the clinic, there was no clear mention of how care differs between genders. If in fact the physicians responded on how they approach gender specific care, we would be able to draw connections to the literature. However, the integration of physical activity education and its promotional benefits to adolescents coincide with the various dimensions of the PCC model and specifically dimension 2; information and education (Davis, Schoenbaum, Audet, 2005). The data from this study shows how physicians integrate a PCC approach in their promotion of physical activity by acknowledging the environmental and economic factors that affect one's access to exercise. The literature suggests when recommending

physical activity to female adolescent patients understanding the feasibility, coupled with managing barriers for exercise is essential to adequate patient care (Lange et al., 2019).

5.3 Nutrition

Respondents reported their discussion on nutrition as being intertwined with a patient's various lifestyle, and social factors. The results displayed the way practitioners can improve nutrition education by further understanding the implications social media has on one's health . The literature suggests patient's education on healthy eating will enhance all facets of their well-being as nutrition is a pillar for optimal mental health as the composition, structure and function of the brain are dependent on the availability of appropriate nutrients, including lipids, amino acids, vitamins and minerals (Adan, et al., 2019). As reflected within a 2017 study, PCC can improve patient education on nutrition, by enhancing communication skills, individualizing and adapting care and displaying humanistic behaviours as a practitioner (Sladdin, Ball, Bull, & Chaboyer, 2017). Reflected within physician responses, improving communication, and empathetic listening can enhance the quality of health education in the office. Dietary intake on an individual and population basis is a function based on access, economics, cultural traditions, and environment. The information gathered from the literature in comparison with the study data can be analyzed by the eighth principle of the PCC model: access to care. The literature suggests patients and specifically adolescents, rely on their family physicians for guidance and the education which can positively impact a patient's dietary choices (Adan, et al., 2019). While respondents described their role in communicating the health benefits of physical activity, integrating personalized health information on access to exercise can improve patient compliance to the recommendation.

5.4 Mindfulness

As respondents discuss their recommendations of journaling and mindfulness meditation, this data is reflected within the literature, as a key recommendation alongside Cognitive Behaviour Therapy (CBT). The literature supported the positive relationship between mindfulness activities and female adolescent mental well-being. Scientific evidence has discussed the growing rate of mindfulness interventions in clinics to support the mental health of patients (Creswell, 2017). Current literature is suggestive of the value of meditation techniques for treating symptomatic anxiety, depression and pain in youth (Simkin, & Black, 2014). However the literature emphasizes that clinicians must be properly trained before recommending these techniques (Simkin, & Black, 2014). Mindfulness recommendations in practice, coincides with the PCC model indicator four; emotional support. Emotional support when counselling the patient, and offering suggestions to aid emotional well-being such as mindfulness was reported by respondents.

5.5 Sleep

The consensus concerning changes in the transition from childhood to adolescence that result in increased sleep deprivation, affect the overall health of an individual (O'Neil, et al., 2014). As reflected within physician responses, the environmental factors that determine patients quality of sleep is important to acknowledge. Analyzing the data utilizing the PCC model, physicians that understood the background and social factors affecting female adolescent patient health will aid the quality of communication. Respondents describe the impact parents, and homelife can have on a female adolescent's sleep in which offering suggestions must be personalized to each patient. Literature reveals poor sleeping habits are associated with increased

risks for excessive sleepiness, difficulty with mood regulation, impaired academic performance, learning difficulties, school tardiness and poor mental health consequences (Simkin, & Black, 2014). While respondents revealed a holistic approach to educating patients on lifestyle factors, sleep can affect factors other than mental health, as the literature highlights the impact on academic performance.

5.6 Family Support

The importance of family support was presented within the data. As discussed in the literature, family support is presented as a critical factor in female adolescent mental health and was also described as a potential barrier to the delivery of care (Acri et al., 2016). When looking towards the literature, caregiver and parental satisfaction is deemed to be highly influential on a child's treatment process (Acri et al., 2016). Respondents described low family engagement and retention as significant problems for mental health prevention and intervention. We can further understand physician responses when analyzing through the lens of the PCC model, specifically the sixth principles; involvement of family and friends (Sturgiss & Clark, 2020). The literature suggests the daily stressors that may impact a parents or caregivers attention to be focused on their child's mental health (Acri et al., 2016). Furthermore,this finding adds significance to the study as family intervention strategies and mitigation may add greater importance than we realized.

5.7 Improvements

The respondents suggest establishing a relationship with the patient to more thoroughly understand and appreciate socio-cultural determinants of health, would positively affect the level of health education. This was reflected by respondents as an area of improvement for patient

communication as increasing the appointment time would be advantageous to build relationships. As reflected in current literature, patient - physician trust is linked to higher medication adherence, better relationships and long term connection (Gabay, 2015). Furthermore, offering non-judgemental dialogue includes not only verbal, but non-verbal communication, specifically body language, the timing of communication and the extent to which information should be disclosed (Larson, 2005). As respondents listed a number of lifestyle factors that are typically discussed in counselling, the depth of the conversation and education is dependent on addressing the challenges and barriers that prohibit communication. Social media, parent involvement, time limits and patient willingness to communicate offer barriers to care.

The increased mode of communication via telemedicine influenced the themes that were discussed within the data. While interpersonal communication skills are hindered by virtual communication, the latter may have added additional difficulties for physicians. Respondents discussed the negative influence of telemedicine restricting the development of patient trust, and clinical empathy both being described as barriers to care. While the literature suggests that telemedicine has improved accessibility for some, it is a concern for vulnerable groups such as adolescent female mental health patients (Gomez, Anaya, Shih, Tarn, 2021).

Social media education and intervention presented as a sub-theme that if improved would positively affect care. When analyzing the data, the common theme of social media as a tool for health promotion and barrier to quality of communication was presented. Social media may be interpreted as a barrier physicians often feel limited by when counseling female adolescent patients. The data from respondents uncovered the need to educate themselves on the current media landscape so it can translate into better communication and care with patients. The literature suggests social networking usage negatively affects females compared with male

adolescents, affecting self esteem, body image among other causes (Blomfield neira, & Barber, 2014). The literature further discusses the impact of screen time affecting all facets of an adolescent female's development, as increased screen time has been associated with lower levels of physical activity (Viner RM, et al, 2019). It is a multifaceted issue as screen time affects movement, in turn affecting obesity rates, mental health and risk of chronic diseases (Moreno, Standiford & Cody, 2018). As reflected within the data and in the literature, a recent study explained that pre-teen girls' increased use of social media sites had stronger correlation with body image concerns than traditional media (Moreno, Standiford & Cody, 2018). The correlation to body image was discussed by respondents when addressing the positive effects physical activity can have on self-esteem and self perception. This finding adds significance to the study showcasing how important it is for physicians to be up-to-date with new mediums and platforms that are evolving and essentially affecting the mental health of female adolescents.

5.8 Barriers

The barriers to adequate communication, parent involvement, time constraints and trust if addressed would aid the quality of care to adolescent females and improve their mental health. Barriers in clinical care can be different for every population being served. It is essential for physicians to integrate the patient centred care framework, while listening to patient needs in order to offer individualized consultations.

Evidence suggests adolescent behaviours including autonomy, and at home interaction lend itself to the difficulties in clinics with parents' involvement (Sekaran, et al., 2020). Reflected in physician responses, a parent can be the most prevalent barrier. In contrast it can be important to patients with lower adherence to treatment plans that parents remain involved (Palmer et al.,

2009). However, when analyzing through the lens of the PCC model the respect for patient preferences, is a priority that a physician must uphold. While involvement of family and friends is important for support, there are boundaries that must be discussed with adolescent patients on how to provide the best care. A global systematic review found that young people most commonly fail to seek help because of stigma, embarrassment, and difficulties recognizing the problem (Palmer et al., 2009). The stigma associated with mental illness may be a prime reason parents are seen as a barrier. This global indication is reflected within our Hamilton sample group as it is evident physicians recognize the stigma when trying to curate a promotive conversation with adolescent female patients.

There has been relatively little study of physician time as a resource, and yet the global understanding of what adequate patient-physician time should be is undeclared.Time was raised as an issue to many of the respondents. Evidence has suggested that the time pressure on both patients and physicians visits vary not only in length but also in the division of time among topics (Tai-Seale, McGuire, & Zhang, 2007). When reviewing the data from the lens of the PCC approach, time affects quality of communication and support, consequently the need for a number of follow up appointments may be initiated.

Listening skills and trust are connected to themes “Improvements and Barriers”. Respondents described trust as a barrier to fostering good communication with female patients and research has suggested good listening and clinical empathy as beneficial to that relationship. Furthermore the literature offers the recommendations for clinical and education practices of communication development to address (1) patients authority in first person accounts of illness, (2) the importance of an action component, (3) the social context of illness in conjunction with

the clinical encounter (O'Daniel, & Rosenstein, 2008). It is important to understand affective and cognitive states within a patient in order for them to receive information.

5.9 Strengths and Limitations

To our knowledge there are few studies analyzing patient-physician communication on mental health promotion through lifestyle medicine with a population focus on adolescent females. This qualitative content analysis enabled us to study the range of lifestyle factors often found within the literature, and the communicative barriers associated with patient care. As the study was limited to the field of family medicine and to a very particular practice community, the findings may not be directly transferable to other medical specialties or communities. The limiting factors associated with the global pandemic may have affected the number of respondents available to participate. However, the decision to collect data through a qualitative survey allowed us the opportunity to gather insights on the human experience with authentic and diverse data. It is important to note the subjectivity involved in open ended questions; consequently this affects both the data collections and results. However, we tried to prevent this by having the research team reflect on the findings and thematically categorize appropriately.

The limitation of only surveying family physicians and their experience affects the analysis of the data. It is possible to overcome this limitation in the future with an extended timeline. Analyzing in contrast a female adolescent patient population experience would have allowed for an in depth understanding of the discrepancies that exist. Limitations associated with conducting surveys is the lack of rich data and inability to ask follow up questions to participants. While feasibility was high, surveys run the risk of respondents not providing accurate and honest responses. As recognized in a recent study a researcher should aim for a

60% response rate with digital survey distribution (Fincham, 2008). Recent research states that email response rates may only approximate 25% to 30% without follow up email and reinforcement (Fincham, 2008). With a low response rate the increased likelihood of the nonresponse bias negatively affects both the reliability and validity of the study (Fincham, 2008). To improve the response rate within this study, reinforcement was executed 1 week and 3 weeks following the response collection.

5.10 Recommendations

Future research could focus on analyzing the reflections by female adolescent patients in their interactions with their primary physicians. A secondary opportunity for further research is the area of lifestyle medicine and patient education curriculum in undergraduate medical schools and how this translates into clinical practice. The research could additionally be expanded by analyzing interpersonal communication in clinical training specifically with adolescent female patients.

CHAPTER 6 CONCLUSION

Physician communication with adolescent female patients regarding lifestyle factors enhances patient mental health, adherence and education. The findings from this study contribute to our understanding of interventions that would enhance patient-physician communication. Physician responses were based on reflexivity from personal, structural or institutional areas of improvement. Reflections from physician respondents indicated the lifestyle factors typically communicated to female adolescents are:family support, physical activity, sleep, mindfulness and nutrition. The barriers to adequate communication included parents, appointment time constraints and patient trust. Results indicated physician awareness on female specific mental

health concerns acknowledging ways to promote inclusive communication. Moreover, physicians' reflections indicated the following improvements would aid communication with female adolescents: clinical empathy, listening skills, social media education, time, and health education. Analyzing the data in regards to the PCC model, the prevalence of screening tools such as **PHQ-9 and GAD-7** and the use of communication frameworks, HEADSS and SSHADESS were deemed supportive to patient counselling. The global prevalence of female adolescent mental health, in combination with the use of screening tools were showcased within this study population. Hamilton family physicians integrate global recommendations into their line of care with patient centred dialogue, awareness of patient needs and lifestyle medicine education. Communication is thus an important factor over which physicians have the opportunity to promote the mental health of their female adolescent patients.

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Appendix A

Survey email

Version 02 Date March 18th 2021.

Dear Colleagues,

To support student research initiatives, we are distributing this brief survey to help identify female adolescent patient communication regarding lifestyle factors and mental health promotion. It would be greatly appreciated if you could offer your perspective in this short survey attached to the email. All responses will be confidential and protected. We are optimistic about the potential of the results, however, if you are encountering any challenges please let us know.

This survey should take you approximately 10 minutes to complete. You will be shown a series of questions and you will be asked to fill out the survey as best you can. We will be asking you questions about your communication to female adolescent patients in regards to their lifestyle factors and mental well-being. We will also ask you for some demographic/background information like your age and education.

LETTER OF INFORMATION / CONSENT

Analyzing Patient-Physician Communication On Lifestyle Medicine To Promote Mental Health

Investigators:

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Purpose of the Study

The purpose of this study is to understand the way Family Physicians, practicing within the Greater Hamilton Area, emphasize the importance of preventative medicine and lifestyle habits when addressing the adolescent female's mental health journey. The evolution of adolescent mental health services in primary care suggests a continuing expansion from a focus initially on provider behaviour and quality to a growing attention to patient and systems' behaviour over time and within communities.

You are invited to take part in this study on patient communication. We want to understand how lifestyle factors are discussed with female adolescent patients. We are hoping to learn how we can better serve female adolescent patients. We also hope to find out how global practices can aid Hamilton Physicians in their communication.

Procedures involved in the Research

This survey will be sent out to all 500 family physicians within HFAM. The survey should take you no more than 10-15 minutes to complete. You will be shown a series of questions and you will be asked to fill out the survey as best you can. We will be asking you questions about your communication to female adolescent patients in regards to their lifestyle factors and mental well-being. We will also ask you for some demographic/background information like your age and education.

Potential Harms, Risks or Discomforts:

The risks involved in participating in this study are minimal.
It is not likely that there will be any harms or discomforts from/associated with completing this survey.

You do not need to answer questions that you do not want to answer or that make you feel uncomfortable. You can withdraw (stop taking part) at any time. We describe below the steps we are taking to protect your privacy.

Potential Benefits

The research will not benefit you directly. We hope to learn more about how physicians communicate the benefits of promotive lifestyle factors with their adolescent female patients' mental health. We hope that what is learned as a result of this study will help us to better understand areas we can utilize global practices.

Confidentiality
(removed the section about defence of confidentiality)
You are participating in this study confidentially. No one will know of your participation in the study once you click the link attached to the end of this consent form to access the secure digital survey. No email or IP address will be collected at the time of the survey. No one including us will know of your participation.

Participation and Withdrawal

Your participation in this study is voluntary. It is your choice to be part of the study or not. If you decide to withdraw, there will be no consequences to you.If you do not want to answer some of the questions you do not have to, but you can still be in the study.

Information about the Study Results

We expect to have this study completed by approximately September 2021. If you would like a brief summary of the results, please let us know how you would like it sent to you.

Questions about the Study

If you have questions or need more information about the study itself, please contact me at: bhopas@mcmaster.ca.

This study has been reviewed by the Hamilton Integrated Research Ethics Board (HiREB). The HiREB is responsible for ensuring that participants are informed of the risks associated with the research, and that participants are free to decide if participation is right for them. If you have any questions about your rights as a research participant, please call the Office of the Chair, HiREB, at 905.521.2100 x 42013.

CONSENT

I have read the information presented in the information letter about a study being conducted by Dr. Keyna Bracken and Shania Bhopa, of McMaster University.
I have had the opportunity to ask questions about my involvement in this study and to receive additional details I requested.
I understand that if I agree to participate in this study, I may withdraw from the study at any time.
I agree to informed consent once I click the link to the survey. I understand my completion and submission of the survey means that I have agreed to participate. I agree to participate in the study.Once submitting at the end of the survey I understand my participation is finalized and cannot be removed.

Survey questions

Section A: Questions

A1. **Do you currently practice within the Hamilton Family Medicine network as a fully licensed family physician?**

yes ☐

no ☐

A2. **Year of graduation and/or year of CCFP**

A3. **Estimated % of your patient population that are adolescent females between 11-25 years of age.**

A4. **Using the scale below, how would you describe your comfort with the population?**

Not at all comfortable ☐

Somewhat comfortable ☐

Very Comfortable ☐

A5. **What is your perceived understanding of physical activity and its benefit on mental health?**

A8. **What do you discuss when diagnosing a patient with a mental illness? (it can be anything from lifestyle, to social media consumption, to family life etc..)**

A6. **Do you typically communicate the benefits of physical activity to the patient population listed above?**

Yes ☐

No ☐

A7. **When recommending mental health promotive activities which ones do you typically discuss?**

Journaling ☐

Mindfulness and/or Meditation ☐

Healthy Eating ☐

Exercise ☐

None of the Above ☐

A6. **Do you typically communicate the benefits of physical activity to the patient population listed above?**

Yes ☐

No ☐

A7. **When recommending mental health promotive activities which ones do you typically discuss?**

Journaling ☐

Mindfulness and/or Meditation ☐

A8. **What do you discuss when diagnosing a patient with a mental illness? (it can be anything from lifestyle, to social media consumption, to family life etc..)**

A9. **Do you use a validated tool such as "HEADSs" OR SSHADESS in the conversation with the adolescent? Briefly explain.**

A10. **Are there any barriers you experience that may affect your communication with your female adolescent patient? Briefly explain.**

A11. **How can you better improve the quality of conversation between yourself and your female adolescent patient, in regards to mental health and lifestyle factors?**

Appendix B

Code Book

Survey Cody set

1. **Year of CCFP**
   a. 2000-UNDER — 2000+
   b. 2001 + — 2000-under

2. **Lifestyle medicine education**
   a. Physical activity — physact
   b. Nutrition — nutrition
   c. Sleep — sleep
   d. Journaling — Journaling
   e. Mindfulness/meditation — meditation
   f. Family support — familysuppport
   g. Social media usage — socialmediau
   h. Self esteem — selfesteem

3. **Barriers**
   a. Trust — Trust
   b. Parental influence — Parents
   c. Social media — Socialmedia
   d. Time/pandemic — time/pandemic

4. **Improvements in care**
   a. Listening skills — listening
   b. Time — time
   c. Social media education — screentime
   d. Empathetic/motivational communication — empathetic

5. **Validation Tools**
   a. Headss
   b. Other