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School-Based Mental Health Programs for Preadolescent Girls: Mitigating Social Contagion of Non-Suicidal Self-Injury

Programmes de santé mentale en milieu scolaire pour les préadolescentes : Atténuer la contagion sociale des comportements d'automutilation non suicidaire

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ABSTRACT

Current mental health disorder rates for preadolescent and adolescent girls demonstrate a disturbing trend, most notably a drastic increase in reports of non-suicidal self-injury (NSSI), especially in the age category of 10- to 14-year-olds. NSSI has become normalized in the adolescent population, and social contagion—the spreading of NSSI through peer and media influence—has become a significant concern. This article defines and discusses NSSI and social contagion and explores why preadolescent and adolescent girls may be particularly vulnerable to it. Further, current Canadian approaches to mental health promotion and primary prevention are reviewed, and an argument is made for the development and implementation of elementary school–based, gender-specific, comprehensive mental health programs. Incorporating interconnected evidence-based protective factors such as self-worth, self-compassion, emotion regulation, healthy relationships, communication, and family and school systems will provide young girls with valuable skills and knowledge to mitigate their engagement with NSSI and to resist social contagion.

RÉSUMÉ

Les taux actuels de troubles de santé mentale chez les préadolescentes et adolescentes mettent en évidence une tendance inquiétante, notamment une hausse importante des cas d'automutilation non suicidaire, surtout dans la catégorie des 10 à 14 ans. Ce phénomène se normalise dans la population adolescente, et la contagion sociale, c'est-à-dire la progression des cas d'automutilation non suicidaire en raison de l'influence des pairs et des médias, est aujourd'hui un grave problème. Cet article définit et décrit l'automutilation non suicidaire et la contagion sociale et examine pourquoi les préadolescentes et les adolescentes peuvent y être particulièrement vulnérables. L'article passe aussi en revue les approches actuelles de promotion de la santé mentale et de prévention primaire au Canada et fait valoir l'importance d'élaborer et de mettre en œuvre des programmes de santé mentale sexospécifiques complets à l'école

primaire. L'intégration de facteurs de protection interconnectés fondés sur des données probantes, tels que l'estime de soi, la maîtrise des émotions, les relations saines, la communication, et les systèmes familiaux et scolaires permettront aux jeunes filles d'acquérir les aptitudes et les connaissances nécessaires pour limiter leur adhésion à des pratiques d'automutilation non suicidaire et résister à la contagion sociale.

Canadian preadolescent and adolescent girls are disproportionately affected by mental health disorders, and in light of statistics that are alarming and increasing, it would seem that their long-term health and development is in jeopardy (Bushnik, 2016; Hudon, 2017). One of the greatest mental health crises currently impacting young girls is non-suicidal self-injury (NSSI), with report numbers that are soaring and that refer to young people in increasingly younger age groups (Bem et al., 2017; Bushnik, 2016; Canadian Institute for Health Information [CIHI], 2015). The CIHI (n.d.) reported that between 2009–2010 and 2013–2014, hospitalizations due to intentional self-harm increased by 110% for girls aged 10 to 17, with a dramatic surge of 2.3 times among girls aged 10 to 13 (Bushnik, 2016). According to the CIHI (n.d.), girls represented 90% of children aged 10 to 13 and 80% of youth aged 14 to 17 who had been hospitalized for intentional self-harm. Further, Barrocas et al. (2012) found that 6.8% of girls in Grade 3 had reported engaging in NSSI.

The prevalence of young girls' engagement in NSSI is of serious concern, given that childhood mental illness often persists into adulthood with serious long-term developmental consequences, including lower educational and employment achievement, substance abuse, violence, self-harm and suicide, relationship challenges, physical illness, poor reproductive and sexual health, homelessness, shorter life expectancy, and economic burden (Dray et al., 2017; Mental Health Commission of Canada [MHCC], 2010; O'Mara & Lind, 2013; Patel et al., 2007). In fact, an estimated 70% of mental health problems in young adulthood originated in childhood (Centre for Addiction and Mental Health [CAMH], 2014; National Collaborating Centre for Determinants of Health [NCCDH], 2017). Although poor short- and long-term developmental outcomes are widely recognized, Tatnell et al. (2014) reported that effective prevention programs focused specifically on NSSI are lacking.

Because many preadolescent and adolescent girls are highly influenced by peer groups and media, they are particularly vulnerable to NSSI due to social contagion, a term that refers here to the spreading of NSSI behaviours through social influence (Brooks, 2015; Drolet & Arcand, 2013; Jarvi et al., 2013; Rose & Rudolph, 2006). The demand for mental health programs for preadolescent girls is evidenced by the disturbing trend in female rates of NSSI, the significant discrepancy between preadolescent and adolescent female and male reports, the potential negative impact on future development, and young girls' social

vulnerability. To mitigate the significant increase in NSSI (specifically through social contagion) among preadolescent and adolescent females, elementary schools must implement gender-specific, comprehensive school-based mental health programs. School counsellors would be ideally suited to deliver these programs.

In this article, I define and discuss NSSI and social contagion and review the literature on recommendations for and approaches to addressing mental health concerns. Further, I advocate for the development and implementation of mental health programs that will address the unique needs of preadolescent and adolescent girls and that will mitigate escalating NSSI disorder rates. Lastly, I discuss future considerations and recommendations for research.

The NSSI Epidemic

NSSI is proving to be a dangerous and quickly growing reported mental health diagnosis among preadolescent and adolescent girls, and because of this growth, understanding its complexity and creating programs to decrease its prevalence are both urgent (Bushnik, 2016; CIHI, n.d.; Hudon, 2017). NSSI refers to deliberate actions that cause pain and damage to oneself but that are not socially acceptable or consciously suicidal, such as cutting, scratching, bruising, burning, head banging, scalding, hair pulling, and self-hitting (Brooks, 2015; De Riggi et al., 2017; Gholamrezaei et al., 2017). Although NSSI exists within the self-harm spectrum, which includes and is often correlated with suicidality (Jarvi et al., 2013), NSSI is distinguished specifically by its absence of conscious suicidal intent (Brooks, 2015; B. Wang et al., 2017). In fact, managing negative thoughts and emotions through engaging in NSSI may help some individuals avoid suicidal thoughts and attempts (T B. Brown & Kimball, 2013; Curtis, 2017; De Riggi et al., 2017).

Prevalence of NSSI

NSSI has become an international pathological phenomenon with similarly reported worldwide and cross-cultural adolescent community rates varying from 13% to 46% (Bem et al., 2017; Brooks, 2015; Gholamrezaei et al., 2017; B. Wang et al., 2017). There is overwhelming agreement in the literature that NSSI is most prevalent among adolescents (Brooks, 2015; Tatnell et al., 2014; Victor & Klonsky, 2018; Wester et al., 2018), and although some researchers reported no sex differences in rates of NSSI (Nock, 2009), many researchers have found considerable differences, with female reports up to five times higher than male reports (Barrocas et al., 2012; Bushnik, 2016; CIHI, 2015; Xavier et al., 2016). Likewise, researchers have maintained consistently that the average age of onset for NSSI is between 12 and 14 years (Tatnell et al., 2014; B. Wang et al., 2017; Wester et al., 2018). That said, the highest rates of increase for NSSI appear to be among girls aged 10 to 13, and children as young as 7 report engaging in NSSI behaviours (Barrocas et al., 2012; Bushnik, 2016). Possible explanations

for the increase in NSSI reports include higher prevalence of mental health disorder, increased awareness and measurement, and decreased stigma, possibilities that are important to explore further (CIHI, 2015; Monto et al., 2018). Despite being socially unacceptable by definition, NSSI has unfortunately become socially normalized, with adolescents reporting learning about NSSI from mainstream media (television, movies, magazines), social media, online communities, peer groups, and school classes (Brooks, 2015; Wester et al., 2018).

Risk Factors for NSSI

It is vital to understand the complex and multi-faceted nature of NSSI in order to be effective in designing mental health programs that will mitigate its prevalence (Brooks, 2015). Although NSSI is often correlated with other psychological disorders such as depression, anxiety, substance abuse, eating disorder, post-traumatic stress disorder, and suicide attempts, it can also present as an isolated condition that involves its own variety of biological, environmental, and psychological factors (De Riggi et al., 2017; Walsh & Muehlenkamp, 2013). In fact, as NSSI evolves and becomes more common, its relationship with severe psychological distress appears to be weakening (Curtis, 2017). Having said that, there are numerous, often interrelated risk factors associated with NSSI, including childhood abuse (Curtis, 2017), peer, physical, or sexual victimization (T. B. Brown & Kimball, 2013; Wadman et al., 2018), trauma (T. B. Brown & Kimball, 2013), substance abuse, identification with a sexual minority group (Monto et al., 2018), insecure attachment (Tatnell et al., 2014), parental criticism and unstable family relationships (B. Wang et al., 2017), relationship and communication difficulties with family, friends, peers, and romantic partners (Brooks, 2015; Wadman et al., 2018), and awareness of self-harm by family and friends (R. C. O'Connor et al., 2009).

Functions of NSSI

NSSI serves multiple functions that are often divided into intra-personal and interpersonal domains (B. Wang et al., 2017). Intra-personal functions of NSSI include emotion regulation, whereby individuals seek to reduce or avoid distressing emotions and to receive temporary relief from emotional pain. Self-punishment, another intra-personal function, often results when individuals (especially those with poor attachment) internalize criticism from others, become self-critical, and come to believe they deserve to be punished (De Riggi et al., 2017; Wadman et al., 2018; B. Wang et al., 2017; Wester et al., 2018). In contrast, interpersonal functions include forms of social influence such as engaging in NSSI to communicate distress or to gain attention, especially among individuals who experience unresponsive or invalidating family environments or difficulties in problem-solving (Nock, 2009; Tatnell et al., 2014; B. Wang et al., 2017). As well, individuals may engage in NSSI as a function of social avoidance, whereby

they attempt to escape difficult interpersonal situations such as further punishment from parents (B. Wang et al., 2017). In addition, Brooks (2015) stated that NSSI fosters group membership and closeness between peers and is associated with elevated peer status. Social contagion has emerged as a significant concern, possibly contributing to the drastic increases in NSSI among preadolescent and adolescent girls (Curtis, 2017; Jarvi et al., 2013; Wester et al., 2018; You et al., 2013).

Social Contagion of NSSI

Social contagion exists when two or more people in the same peer group engage in NSSI in a short period of time or when the rates of NSSI in the same group are statistically significant (Wester et al., 2018). Contrary to research indicating that social support is a primary factor in stopping NSSI behaviours and that individuals who engage in NSSI perceive less social support than those who do not (Tatnell et al., 2014; Wadman et al., 2018), social contagion often occurs in socially supportive situations in which self-injurious behaviour is encouraged (Wester et al., 2015).

Social Learning

Social contagion can be explained by Nock's (2009) social learning hypothesis, according to which individuals learn and model behaviours from others, particularly those whom they admire, identify with, or perceive as having successfully achieved what they intended (Jarvi et al., 2013; You et al., 2013). Indeed, researchers have consistently found that individuals who self-injure first learned about and modelled NSSI from friends and family (Curtis, 2017; Nock, 2009; You et al., 2013). Further, individuals who self-injure, particularly adolescent girls, are more likely than those who do not engage in NSSI to report friendships with others who self-injure (Victor & Klonsky, 2018; Wester et al., 2018). Brooks (2015) argued that having friends who self-injure actually predicts adolescents' engagement in NSSI. Victor and Klonsky (2018) added that knowing about friends' NSSI was correlated with the number of NSSI methods used and with higher frequencies of NSSI behaviour, indicating greater severity.

Although individuals with additional risk factors or low resources may be especially vulnerable to NSSI, many adolescents who self-injure report no other existing psychological disorders or risk factors, indicating that positive social reinforcement—such as fostering closeness, gaining social support, or achieving group affiliation or status—is a powerful motivator to engage in NSSI behaviour (Brooks, 2015; Jarvi et al., 2013; Stanford et al., 2018; Wester et al., 2018). Moreover, Curtis (2017) reported that for some adolescents, NSSI is part of the group culture, the "thing to do," a game, or even a form of competition within the group. For example, Curtis quoted a participant who stated, "I remember at

intermediate people where they would get the prickly side of Velcro, it was like a game to see who had the highest pain tolerance as you scraped it along your arm and whoever lasted the longest would win. And they did it to me and I lasted for ages" (p. 111). Another respondent added, "In my year there was a group, they would cut themselves on their arms and they'd just be like 'Mine is better than your's [*sic*]'" (p. 111). Walsh and Muehlenkamp (2013) found that some youth may even engage in NSSI together, share tools, and take turns injuring each other. Encouragement or pressure from peers to engage in NSSI presents a concerning contribution to its increased prevalence (Curtis, 2017; Jarvi et al., 2013).

The Internet and Social Contagion

NSSI content in the media has steadily increased and become common, contributing to the normalization and even the glamorization of NSSI through the portrayal of appealing and relatable characters who self-injure (Curtis, 2017; Jarvi et al., 2013). Although social contagion related to NSSI can occur in various ways, online activity has become a particular focus for concern given the ways that youth engage frequently in online research, communication, and socialization and that the internet facilitates the dissemination of NSSI information (Brooks, 2015; De Riggi et al., 2017; Jarvi et al., 2013). Researchers have found that many adolescents who self-injure learn about NSSI online and participate in online communities dedicated to NSSI (Curtis, 2017; Jarvi et al., 2013). Although online communities may provide valuable resources, social support, and a sense of community to individuals, particularly those who feel isolated (Brooks, 2015; R. C. Brown et al., 2018; De Riggi et al., 2017), they may also encourage NSSI behaviours through sharing NSSI techniques, wound care and concealing tips, as well as photos and song lyrics (De Riggi et al., 2017; Jarvi et al., 2013). There is concern that explicit images and videos as well as online discussion may trigger NSSI behaviours and that hopeless messages about recovery may reinforce NSSI behaviours and prevent help-seeking efforts (Brooks, 2015; De Riggi et al., 2017); thus, the internet may be an effective pathway for social contagion.

Vulnerability of Preadolescent and Adolescent Girls to Social Contagion

It is well documented that peer relationships assume a primary focus in the lives of adolescents and that these relationships influence social, academic, and psychological development to significant degrees (CAMH, 2014; Drolet & Arcand, 2013; Schall et al., 2016; Victor & Klonsky, 2018). Because of their acute need for intimacy, belonging, and peer acceptance, preadolescent and adolescent girls may be especially vulnerable to the effects of social contagion (Brooks, 2015; Drolet & Arcand, 2013; Rose & Rudolph, 2006). Rose and Rudolph (2006) found that young girls often place higher importance on relationships and demonstrate more connection-oriented goals than their male counterparts do. They determined that girls tend to value having friends, helping others, sharing personal information,

and co-operating with others, and their findings also showed that girls tend to worry about social approval, rejection, and friendship status, whereas boys tend to find more value in non-social goals such as academic or financial achievement. Further, studies have shown that girls often define themselves in the context of their peer groups and that their self-worth and self-esteem are intricately connected with their relationships (Drolet & Arcand, 2013; Rose et al., 2016). The need to belong can exert considerable influence over girls' behaviour, to the extent that girls may model group behaviour even before they become a group member and may, once included, readily adopt the rules and norms of the group to ensure continued membership (Drolet & Arcand, 2013). In addition, girls often foster close supportive relationships through conversation and self-disclosure, which frequently contributes to emotional well-being, but this relationship style can also have a negative impact on mental health (Rose & Rudolph, 2006; Rose et al., 2016). For instance, Rose and Rudolph (2006) found that having frequent conversations about problems, a form of co-rumination, is correlated with increased depression and anxiety. This finding appears to be related to the fact that girls often demonstrate higher levels of empathy and sensitivity to their friends' distress; frequent conversations about peer difficulties may contribute to their own internalized feelings of sadness, worry, and insecurity (Rose & Rudolph, 2006).

The importance that young girls place on relationships and social support may lead to social contagion in numerous ways. First, girls may influence others' engagement with NSSI by sharing their personal experiences; disclosure of and frequent conversations about NSSI by friends may not only introduce girls to NSSI but also contribute to their own distress, for which NSSI could then be considered an effective coping strategy. Second, girls who engage in NSSI may foster a close, intimate relationship, bonding with one another over an exclusively shared activity. Third, within groups, girls may engage in NSSI to establish or maintain membership, achieve social status, or experience a sense of belonging. Fourth, girls may be encouraged by popular media and internet communities to engage in NSSI practices through modelling NSSI behaviour from characters or celebrities they admire or through soliciting advice and encouragement from online NSSI supporters. Comprehensive mental health programs can effectively address and mitigate this dangerous phenomenon.

Promotion and Prevention Approaches for Mental Wellness

The prevalence of mental health issues, particularly NSSI, in preadolescent and adolescent girls provides a strong rationale for implementing programs to promote and maintain mental wellness (Morrison & Peterson, 2016; O'Mara & Lind, 2013). Although there are different approaches and types of programs that are recommended, there appears to be consensus that schools are the ideal

location for them (Bem et al., 2017; Jarvi et al., 2013; MHCC, 2018; Morrison & Peterson, 2016; O'Mara & Lind, 2013).

Mental Wellness

The WHO (2013) conceptualizes good mental health as something that "enables people to realize their potential, cope with the normal stresses of life, work productively, and contribute to their communities" (p. 5). More than simply an absence of disorder or disease, positive mental health encompasses emotional, psychological, and social well-being and includes both individual and relational processes (Mantoura, 2017; Morrison & Peterson, 2016; NCCDH, 2017; WHO, 2013). There is widespread agreement that to improve mental wellness and decrease mental illness in children and youth, mental health promotion and prevention should be a priority (MHCC, 2018; NCCDH, 2017; Patel et al., 2007). In addition to reducing financial, social, and emotional costs for children and families, promoting positive mental health and preventing mental illness are cost-effective for society, given that later interventions are more expensive (Kieling et al., 2011). In fact, the MHCC (2010) estimated a cost savings of $8 for every $1 spent on prevention. Aside from these savings, though, Kieling et al. (2011) argued that society has an ethical responsibility to protect the well-being of youth, of which positive mental health is an essential component (O'Mara & Lind, 2013).

Theoretical Approaches to Mental Health

According to life course theory, mental health evolves throughout the life cycle, and the health and the well-being of individuals are a result of the accumulation of both positive and negative experiences; moreover, the trajectory of each developmental stage is impacted by previous events (NCCDH, 2017). Each stage of development presents its own set of issues, and exposure to risk factors may create lifelong vulnerabilities (Mantoura, 2017; NCCDH, 2017; WHO, 2013). For example, adolescence is a critical period, being the stage during which many people complete academic programs, find employment, foster romantic and other relationships, and transition into adulthood (McCrone et al., 2005). Mental health disorders may prevent or inhibit success in these areas, thereby deeply impacting future economic and social success (McCrone et al., 2005). The WHO (2013) advocated for governments to design and implement policies, plans, and services that address the health and social needs of citizens at all stages, supporting individuals with identified mental illnesses, and promoting and protecting wellness for all.

Further, the WHO (2013) suggested that promoting the mental wellness of a population requires a comprehensive and coordinated effort by partners from multiple sectors, including health, education, employment, law, housing, social services, and private industry. Morrison and Peterson (2016) included

necessary collaboration between individuals, families, communities, and social environments when they discussed a social-ecological approach to promoting the mental health and the well-being of children and youth. According to social-ecological theory, it is important, in order to maximize opportunities for children's well-being, to consider and strengthen determinants of health, including home, school, community settings, and socio-economic status (CAMH, 2014; Freeman et al., 2016). Further, it is vital to examine individual health and risk behaviours such as physical activity, sleep and dietary habits, injury, substance use, as well as mental, sexual and spiritual health (Freeman et al., 2016). Similarly, a population health approach recognizes that the well-being of individuals, communities, and populations is interconnected with interrelated individual characteristics, physical environment, and social and economic factors (CAMH, 2014). A social-ecological or population health approach advocates integrating mental health promotion (MHP) initiatives for all children and youth across contexts, with targeted interventions for at-risk individuals (Morrison & Peterson, 2016).

Mental Health Promotion and Primary Prevention

MHP programs emphasize enhancing capacities of individuals and populations to manage their lives and mental health effectively, and they are focused on building strengths, resources, knowledge, and assets for positive health and well-being (MHCC, 2010; O'Mara & Lind, 2013). The goal of primary prevention (PP) programs, in contrast, is to reduce future mental health difficulties in populations currently considered to have good mental health functioning, in order to prevent the onset of disease or disorder (O'Mara & Lind, 2013; Wester et al., 2018). Although MHP and PP have different foci, their concepts often overlap, and MHP programs contribute to mental health disorder prevention (Mantoura, 2017).

The objectives of both MHP and PP programs are to build resiliency—the ability to withstand and recover from adversity with positive mental health—through increasing protective factors and decreasing risk factors (CAMH, 2014; Dray et al., 2017; MHCC, 2012). Protective factors refer to assets that reduce the impact of negative events, thereby decreasing the likelihood that an individual will develop a mental health disorder (CAMH, 2014; NCCDH, 2017). Protective factors can be intra-personal or interpersonal and can include a sense of belonging, positive and trusting relationships, self-efficacy, problem-solving skills, physical health, pro-social behaviour, spirituality, or adaptive coping strategies (Bluth et al., 2017; CAMH, 2014; Dray et al., 2017; Drolet & Arcand, 2013; MHCC, 2012; Stanford et al., 2017). In contrast, risk factors are liabilities that increase an individual's vulnerability to stress, thereby contributing to the likelihood of mental disorder (CAMH, 2014; NCCDH, 2017). Similar to protective factors, risk factors may be intra-personal or interpersonal and can include chronic health conditions, low self-esteem, poor social or problem-solving skills,

poor relationship quality, poverty, isolation, or powerlessness (NCCDH, 2017). Mantoura (2017) stated that MHP seeks to reduce inequities or what are referred to as "social and economic conditions that are distributed differently across social categories" (p. 3). In short, MHP "uses strategies that foster supportive environments and individual resilience, while showing respect for culture, equity, social justice, interconnections, and personal dignity" (Joubert et al., 1996, as cited in CAMH, 2014, p. 19).

Universal and Targeted Programs

Whereas MHP programs tend to be universal (i.e., provided to general population groups such as whole schools or age groups), PP programs include both universal and targeted approaches, meaning programs that are implemented specifically with at-risk populations. According to the NCCDH (2017), whole school or universal approaches are most effective for promoting mental health and influencing healthy development, especially when they are offered at critical times in students' development and are designed to address relevant and appropriate protective factors (Dray et al., 2017). Stanford et al. (2018) agreed, stating that universal programs were preferable to targeted programs, since the latter may overlook unidentified at-risk adolescents. Mantoura (2017) stated that targeted programs would not improve the overall mental health of the population and advocated for the implementation of culturally relevant universal programs that incorporated gender perspectives. The MHCC (2012) and O'Mara and Lind (2013) advocated for both, stating that whole school MHP interventions and targeted programs for high-risk students are associated with positive outcomes.

School-Based Mental Health Programs

Schools have consistently been identified by students, parents, educators, and mental health professionals as the ideal locations for MHP and PP programs because of the central role schools play in children's lives (Bem et al., 2017; Jarvi et al., 2013; MHCC, 2010; Morrison & Peterson, 2016; O'Mara & Lind, 2013; Schwean & Rodger, 2013). Given the amount of time children and youth spend in school, education systems have a unique opportunity to promote healthy development, to protect against mental health problems, and to identify and support children and youth who may be at risk (CIHI, 2015; MHCC, 2015; Morrison & Peterson, 2016). It is well understood that school environments have considerable influence in the development of children's self-identity and self-efficacy and that for adolescents these spaces may be more influential than family systems (CAMH, 2014; Morrison & Peterson, 2016). Freeman (2016) reported that supportive school environments are consistently associated with positive developmental outcomes and student-perceived well-being. School-based programs may also buffer inequities or social determinants of health that many young girls experience in other parts of their lives, such as low family support, poverty, and insufficient

access to mental health supports (Freeman, 2016; Schwean & Rodger, 2013; WHO, 2013). Monto et al. (2018) argued that schools need to address mental health, specifically risk factors for NSSI, given that this public health issue has become too extensive for clinical and therapeutic interventions to manage. C. A. O'Connor et al. (2018) stated that school-based MHP programs may reduce the number of referrals and may decrease wait-lists for mental health professionals. The CIHI (2015) proposed that PP programs in schools may reduce emergency department visits, and Wester et al. (2018) suggested that NSSI could be prevented completely if schools implemented PP programs. School counsellors are well situated to deliver MHP and PP programs, which would foster young girls' mental health and decrease students' future need to access counselling services.

Comprehensive School-Based Mental Health Programs for Preadolescent Girls

Because of the early onset of NSSI, young girls' vulnerability to peer influence, and concerns about social contagion, it is vital that elementary schools implement comprehensive mental health programs (Bem et al., 2017; Wester et al., 2018). I argue that to mitigate escalating mental health disorder rates, specifically NSSI, among preadolescent and adolescent girls, MHP and PP approaches need to be integrated and offered to all girls in each of the grades from 4 to 6. Although participation in a universal MHP program to enhance general capacities, skills, and knowledge would be beneficial, it is my assertion that, given alarming mental health statistics, all preadolescent girls should be considered at risk and be provided targeted PP programming designed to address gender-specific protective and risk factors. Monto et al. (2018) suggested that, although there may be common factors among males and females who engage in NSSI, gender-specific interventions are warranted. A developmentally appropriate and culturally relevant program that combines promotion and targeted prevention concepts would foster mental wellness in all young girls while attending to their unique needs and risks.

Further, I advocate that mental health programming for girls be not only school based but also implemented within the school curriculum, ideally by a school counsellor. Providing in-school programming will ensure that every girl has the opportunity to participate in and benefit from such programming, as opposed to after-school or community-based programs, in which only interested, registered, or available girls participate and from which there is often attrition (Shinaberry, 2016). For instance, Shinaberry (2016) implemented Growing Girls, an after-school comprehensive relational aggression program, in an elementary school with 921 students over the course of 2 school years. Of the eligible girls in Grades 5 and 6, only 72 girls registered and only 40 of those registrants completed the program. In-school comprehensive mental health programs would satisfy components of the Alberta Health and Life Skills curriculum (Alberta Education,

2020) and provide valuable support to all young girls—those already experiencing mental health concerns, those who may be identified as at risk, and those who would not otherwise be identified but who may be vulnerable nonetheless (Stanford et al., 2018). According to Shinaberry (2016), this kind of program does not yet exist. Improving the mental health of all girls will not only prevent or reduce social contagion of NSSI but also potentially foster social encouragement of healthy coping behaviours instead (Wester et al., 2018).

Current Status of Interventions

Despite recommendations to prioritize mental health promotion and prevention, intervention support for high-needs students has traditionally been the focus for school boards (MHCC, 2013). Additionally, when offered, most school-based mental health promotion and prevention programs take place in junior and senior high schools, where high rates of adolescent female mental disorder, specifically NSSI, are already present (De Riggi et al., 2017; MHCC, 2013; Walsh & Muehlenkamp, 2013). Preventive efforts at these levels often focus on decreasing known NSSI engagement and minimizing social contagion; Wester et al. (2018) contended that these measures may be insufficient to stem the rising tide of socially normed NSSI and contagion behaviours. Tatnell et al. (2014) recommended that to prevent students from engaging in NSSI in the first place, school-based interventions should be implemented for students who are between the ages of 13 and 15, which is the average age of onset, but information indicating that the fastest growing population for NSSI is girls aged 10 to 14 supports the need for earlier intervention (Barrocas et al., 2012; Bushnik, 2016). Tatnell et al. (2014) and B. Wang et al. (2017) recommended initiatives that focus on improving relationships, self-concept, and affect regulation for adolescents who self-injure. While these recommendations may prove effective, promoting these skills and knowledge as protective factors with children before they initiate NSSI behaviours would realize better outcomes. Stanford et al. (2018) reported that school-based self-harm prevention programs for adolescents may be effective, although there are concerns about iatrogenic effects, in the form of negative outcomes for individuals resulting from such programs. This concern may be justified, given that adolescents who self-injure have cited school classes as sources for having learned about NSSI (Wester et al., 2018). Nonetheless, Muehlenkamp et al. (2010) concluded that neither iatrogenic or contagion effects were found in Signs of Self-Injury (SOSI), a high school–based prevention program. SOSI is designed to increase knowledge of NSSI, to improve staff and student comfort levels with students and peers who self-injure, to increase help-seeking behaviours, and to decrease NSSI behaviours (Muehlenkamp et al., 2010). Counsellors in five high schools implemented SOSI with 274 students during a 50-minute class, and while results indicated promise in improving knowledge of NSSI and attitudes about help-seeking (Muehlenkamp et al., 2010), SOSI does not address protective

or risk factors that might mitigate initial engagement with NSSI. To address the adolescent female NSSI epidemic effectively, we need to intervene before NSSI becomes an ingrained behaviour and part of young girls' critical social fabric.

Evidence-Based Components of a Comprehensive Mental Health Program

In addition to incorporating evidence-based curriculum designed to enhance protective factors and to mitigate risk factors specific to preadolescent girls, MHP and PP programs need to be interactive, creative, and fun if they are to be truly effective. Sammons et al. (2016) found that engaged and inspired learners demonstrate positive short-term and long-term outcomes in areas such as motivation, self-efficacy, aspiration, and achievement as well as in the domains of affective and social-behavioural development. As well, programs must be designed and implemented in a manner that creates safe and trusting environments, inspires respect for individuals and their experiences, and recognizes existing capacities and self-knowledge (CAMH, 2014; Sammons et al., 2016). Developmentally relevant and interconnected protective factors that need to be addressed and fostered include self-worth, self-compassion, emotion regulation, healthy relationships, communication, and systemic influences (Brooks, 2015; CAMH, 2014; NCCDH, 2017; O'Mara & Lind, 2013).

Self-Worth

Researchers agree that fostering self-esteem is one of the most important components of an MHP or PP program (O'Mara & Lind, 2013; Wadman et al., 2018), but I propose that promoting self-worth is even more instrumental and would contribute significantly to the mental wellness of preadolescent and adolescent girls. Merriam-Webster (n.d.-b) defined self-worth as "a sense of one's own value as a human being; a feeling that you are a good person who deserves to be treated with respect." Although possessing healthy self-esteem (i.e., having confidence and feeling satisfied with oneself; Merriam-Webster, n.d.-a) is important, a fundamental belief in one's worth would be even more meaningful to and protective for young girls. Self theory suggests that healthy self-worth supports healthy behaviours, and McDavid et al. (2015) found that self-worth is associated with positive relationships, increased motivation, peer acceptance, hopefulness, and decreased depression. Fostering perceptions of self-worth in young girls may contribute to healthy psychological, emotional, and behavioural outcomes (McDavid et al., 2015).

Creatively reinforcing young girls' inherent value will inspire them to realize not only their own worth but also, by extension of the principle, the worth of others; they will learn to embrace uniqueness and diversity simultaneously. In practice, this core belief may help girls understand that they do not have to subscribe to peer or group attitudes and behaviours to fit in or belong, either in person or online; they can honour themselves by making choices that fit for them and

can value and respect others for the same. A culture of young girls with healthy self-worth would therefore contribute to decreased levels of NSSI social contagion.

Self-Compassion

Similarly, self-compassion may prove to be a powerful protective factor for young girls. Self-compassion refers to "non-judgmentally connecting with one's own suffering and failure as an inherent aspect of being human, and taking an active role in self-soothing when experiencing emotional challenges" (Bluth et al., 2017, p. 841). The three main components of self-compassion include demonstrating kindness toward one's self during times of difficulty or failure, understanding that all humans are connected through common experiences of mistakes, failures, and challenges, and being mindful of one's thoughts and emotions (Bluth et al., 2017; Xavier et al., 2016). Self-compassion is consistently associated with positive psychological well-being, including greater life satisfaction, adaptive coping, positive affect, emotional intelligence, and a sense of community and connectedness (Bluth et al., 2017; Xavier et al., 2016). Additionally, self-compassion is correlated with decreased stress, self-criticism, maladaptive coping, rumination, aggression, anxiety, and depression (Bluth et al., 2017; Xavier et al., 2016).

These associations form a compelling argument for including self-compassion as a component of MHP and PP programs for young girls as a way to mitigate social contagion of NSSI in a variety of ways. First, self-compassion may help preadolescent girls notice their negative feelings, understand that everyone has difficulties, and care for themselves through finding healthy self-soothing strategies. Self-compassion practice may also support girls to satisfy needed closeness and belonging, either in person or online, through sharing personal experiences without overidentifying with others' problems and experiencing increased stress. Further, self-compassion may mitigate co-rumination, since girls would have the skills to attend to and manage troubling emotions without perseverating. Fostering self-compassion may also pave the way for preadolescent girls to recognize, understand, and tolerate suffering in others with compassion and to foster a desire to alleviate that suffering (Roeser et al., 2018).

Emotion Regulation

Given that emotion regulation is considered the primary function of NSSI (De Riggi et al., 2017; Wadman et al., 2018; Wester et al., 2018) and that adolescents disclose NSSI with friends and share emotion regulation techniques (De Riggi et al., 2017; Jarvi et al., 2013), it is imperative that adaptive emotion regulation strategies be included in MHP and PP programs (Brooks, 2015; Tatnell et al., 2014; B. Wang et al., 2017). Wester et al. (2018) agreed with this recommendation, stating that these skills need to be taught intentionally in elementary school. Price and Hooven (2018) asserted that emotion regulation ideally involves

identifying, understanding, and integrating sensations, thoughts, and feelings as well as responding emotionally in ways that impact mental well-being in positive ways. Given the scope and influence of this process, adaptive emotion regulation skills may be considered a protective factor for psychological disorder, whereas difficulties with emotion regulation may be a risk factor (Sanchis-Sanchis et al., 2020).

Social contagion of NSSI may occur when girls do not have adaptive coping skills to alleviate stressful states and as a result solicit advice from NSSI-promoting friends or online communities; in the absence of helpful strategies, NSSI may seem like a viable option. Young girls with strong emotion regulation skills, however, may be able to process and manage emotions before situations become overwhelming, thereby diminishing overall experiences of distress, preventing engagement with NSSI, and eliminating social contagion (Price & Hooven, 2018; Wester et al., 2018). Combined with the mindfulness component of self-compassion and healthy self-worth, adaptive emotion regulation skills would help girls notice and evaluate their sensations, thoughts, and emotions and would guide them to respect themselves by making healthy choices about how to manage these messages from their bodies.

Healthy Relationships

Developing healthy relationships is another integral component of MHP and PP programs, given that the correlation between positive interpersonal relationships and mental wellness is well established (CAMH, 2014). Given that young girls' peer relationships are particularly influential (Drolet & Arcand, 2013; Rose & Rudolph, 2006), it is vital to girls' mental health that those relationships be healthy. Peer relationships can protect against or increase risk for mental health problems depending on the type of friends one has (Coe et al., 2016; Drolet & Arcand, 2013). Supportive and trusting peer relationships often contribute to a sense of belonging and to increased self-esteem that leads to positive development and well-being (Drolet & Arcand, 2013; Freeman, 2016). Those same peers, however, may become risk factors for mental health problems if they engage in risky health behaviours such as NSSI (Drolet & Arcand, 2013).

I argue that young girls may be vulnerable to social contagion of NSSI if they are unable to identify, establish, and maintain healthy relationships, either in person or online. Interactive and engaging activities that explore what healthy relationships look and feel like will help preadolescent girls make positive choices about relationships and resist peer influence to engage in health-compromising behaviours such as NSSI (You et al., 2013). The integration of self-worth, self-compassion, emotion regulation, and relationship skills will help girls realize they deserve healthy friendships, make healthy relationship choices, and manage feelings in positive ways when relationships change or when difficult peer interactions arise.

Communication Skills

Nock (2009) included poor communication skills among the interpersonal factors that contributed to NSSI behaviours, whereas De Riggi et al. (2017) reported that resolving interpersonal conflicts was difficult for many adolescents who engaged in NSSI. Consistently, researchers have suggested that improving problem-solving and pro-social interpersonal communication skills fosters psychological wellness and mitigates NSSI risk and behaviours (Brooks, 2015; MHCC, 2013; Tatnell et al., 2014; Wester & King, 2018; Wester et al., 2018). Effective communication and problem-solving skills are positively associated with help-seeking, peer relationships, emotion identification, and conflict resolution (Z. Wang et al., 2020; Wester & King, 2018). Adolescents who lack these skills may also be more influenced by peers and more susceptible to social contagion of NSSI (Wester et al., 2018).

I maintain that an interactive format will allow girls to practise learned communication and conflict resolution skills, increasing their ability and confidence to express themselves honestly, assertively, and respectfully. Through combining communication skill building with previously discussed components, preadolescent girls will understand that they are worthy of getting their needs met within healthy relationships, learn that conflict is a normal part of relationships, develop skills to advocate for their needs, and utilize healthy coping skills to manage emotions through interpersonal difficulties.

A Systems Approach

It is vital that school-based MHP and PP programs incorporate parent and staff components to address integral family and community systems (Freeman, 2016; Tatnell et al., 2014; Wadman et al., 2018; Wester et al., 2018). A systems approach fits with social-ecological theory, wherein strengthening determinants of health such as home and school environments have a positive impact on children's well-being (CAMH, 2014; Freeman et al., 2016).

Parent Groups

Given that family support and quality of parenting are primary factors for mental health promotion and are considered protective factors against an onset of NSSI, supporting parents and/or caregivers in enjoying quality relationships with their young girls is fundamental to comprehensive MHP and PP programs (Freeman et al., 2016; Mantoura, 2017; Roeser et al., 2018; Tatnell et al., 2014). Researchers agree that stable, positive, and respectful home environments are associated with well-being and serve to protect children from health-compromising behaviours and from peer groups that engage in them (CAMH, 2014; Freeman et al., 2016). Conversely, parental criticism and unstable family relationships may create conditions whereby preadolescent girls develop negative perceptions about their own worth and about the trustworthiness of others, increasing their

vulnerability to NSSI and social contagion (B. Wang et al., 2017; Wester & King, 2018). If parents and/or caregivers are supported in fostering secure and nurturing relationships through setting healthy boundaries, demonstrating empathy, and being emotionally available (Brooks, 2015; CAMH, 2014; Freeman et al., 2015), preadolescent girls will more likely internalize healthy self-worth, seek help when needed, communicate their thoughts and feelings in positive ways, feel loved and cared for, and learn about healthy relationships (Wadman et al., 2018).

Teachers and Staff Members

School staff, especially teachers, have a significant opportunity and responsibility to influence young students' mental health development in positive ways (Freeman et al., 2016). As microcosms of society, classrooms are where students learn about themselves and how to interact with others; teachers are instrumental in the development not only of academic skills but also of social-emotional skills (Freeman et al., 2016; Klinger et al., 2016). Not surprisingly, the CAMH (2014) reported that positive levels of mental health were correlated with higher levels of teacher support. As well, Klinger et al. (2016) found that support from teachers contributed to higher school engagement, fewer behavioural problems, and a decrease in affiliation with negatively influencing peer groups. Muehlenkamp et al. (2010) reported that adolescents believed having access to non-judgmental personnel at school would help prevent NSSI. Because so many elementary school–aged girls are already engaging in NSSI behaviours, it is also vital that primary school teachers become knowledgeable about NSSI, able to identify it, comfortable discussing it, and confident in responding to students who disclose it (Muehlenkamp et al., 2010; Stanford et al., 2018). Supporting teachers' understanding of preadolescent girls' unique needs and of protective and risk factors for their mental health would foster increased awareness of and attention to the development of self-worth, self-compassion, emotion regulation, healthy relationships, and communication.

Future Considerations and Research

Although there is considerable research regarding NSSI and more recently regarding social contagion, there are still unanswered questions that require exploration. First, it would be valuable to find an accurate explanation for the significant increase in NSSI reports for preadolescent and adolescent girls, for which worsening mental health, increased awareness and measurement, and decreased stigma are possibilities. As well, more research is needed to investigate NSSI prevalence in elementary school–aged children, how young girls learn about NSSI, and whether online activity is indeed becoming an effective pathway for social contagion.

This article discusses the development and implementation of a combined MHP and PP program for preadolescent girls and makes recommendations for the inclusion of necessary evidence-based components. Future directions include translating these components into gender-specific, culturally relevant, and developmentally appropriate activities that comprise a comprehensive in-school mental health curriculum. It would also be vital to develop partnerships between health, social, and education sectors to establish necessary collaboration and funding for program planning, development, and delivery. Further, because this type of program does not yet exist, it would need to undergo rigorous evaluation once it is implemented; longitudinal studies would provide valuable information about immediate benefits and about possible delayed preventive effects. As well, it would be beneficial for research studies to explore the various protective factors to determine if particular factors or combinations thereof result in greater preventive effects.

Conclusion

The current reality of preadolescent and adolescent girls' mental health is concerning; trajectories demonstrate a disturbing trend of increasing rates of mental health disorder, particularly NSSI, and elementary school–aged girls as young as 7 are reporting NSSI with more frequency. Young girls appear especially vulnerable to social contagion of NSSI due to their relationship needs of intimacy and belonging. It is imperative that action be taken to mitigate this public health crisis, especially considering the evidence that mental health disorders that start in childhood or adolescence often persist into adulthood and impact long-term developmental outcomes in negative ways. The development and implementation of an elementary school–based, gender-specific, integrated MHP and PP program is critical to support the mental health of all young girls effectively. A comprehensive MHP and PP program would align with life course theory as well as with a social-ecological or population health approach, and it would contribute to young girls' improved mental health trajectories by fostering supportive environments in which girls realize their worth and have the skills to develop healthy relationships, advocate for their needs, and manage their thoughts and emotions effectively.

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