The Exploration of a Multifaceted Approach to Suicide Prevention in Post-secondary Institutions

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Abstract

Suicide is a leading cause of death worldwide (World Health Organization, 2017) and the student population in post-secondary education (PSE) institutions is not immune. Because suicide and suicide-related ideation, communication, and behaviours are prevalent in Canadian PSE, a framework is necessary to address suicide prevention and intervention on campuses. This paper focuses on the issue of suicide including the prevalence of suicide on campuses, risk factors, protective factors, and warning signs. Three promising multifaceted, public health inspired frameworks are reviewed because suicide and suicide-related ideation, communication, and behaviours are complicated and complex and require campus-wide strategies.

***Keywords*:** suicide prevention, prevention and intervention, mental health, holistic and multi-faceted

Introduction

The Canadian Mental Health Association (CMHA) defined mental health as the ability to balance all facets of life including "social, physical, spiritual, economic and mental" (2016a, para. 1). The CMHA also noted that balancing all facets of life can be difficult at times and tipping too much in one area is when mental health issues emerge. Given the vast number of students attending PSE institutions, it is not surprising that many students exhibit mental health issues. Mental illness, referred to throughout this review refers to a wide array of mental health conditions "characterized by alterations in thinking, mood or behaviour associated with significant distress and impaired functioning" (Public Health Agency of Canada, 2015, para. 1). Mental illnesses are also referred to as mental disorders which are diagnosable and described in the Diagnostic and Statistical Manual of Mental Disorders, fifth edition (American Psychiatric Association, 2013).

According to the World Health Organization (2017), suicide is defined as a deliberate self-inflicted act to kill oneself. Except when specifically noted otherwise, the variety of terms in this paper used with regard to suicide will align with the terms used by Silverman, Berman, Sanddal, O'Carroll, and Joiner (2007). These terms include suicide-related ideation, suicide-related communication, and suicide-related behaviour. Suicide-related ideation consists of thoughts of suicide with various ranges of intent to die. Suicide-related communication includes threats of suicide and disclosure of suicide plans again with varying degrees of intent to die. Finally, suicide-related behaviour includes behaviours which result in no injury, behaviours with injury (suicide attempt), and suicides (Silverman et al., 2007). There are variations or spectrums within these categories which rely on the presence or absence of a person's intent to die (Silverman et al., 2007). Another term referred to throughout the paper is suicide continuum. Suicide continuum refers to the range of behaviours and/or progression from suicide-related ideation (thoughts) to suicide-related communications (threats and plan), to suicide-related behaviours (attempts), ending with suicide (Drum, Brownson, Denmark, & Smith, 2009; Drum & Denmark, 2012).

Suicide on Post-secondary Institutions Campuses

The 2016 National College Health Assessment survey (NCHA) completed by the American College Health Association (ACHA) surveyed 38,171 students from 34 Canadian PSE institutions and found a high prevalence of students experiencing mental health concerns. This survey also found that 6.9% of the 38,171 students surveyed

seriously considered suicide and 1.2% attempted suicide within the last 12 months (NCHA, 2016). Additionally, the study completed by Drum et al. (2009) surveyed 26,000 undergraduate and graduate students from 70 American colleges and universities and found that suicide-related ideation was far more common amongst students than previously suspected (Drum et al., 2009). The authors found that over half of the students sampled reported some form of suicidal ideation over their lifetime, 18% of undergraduates and 15% of graduates seriously considered attempting suicide, and 8 % of undergraduates and 5% of graduates reported an attempt to commit suicide at least once in their lives. Furthermore, 6% of undergraduates and 4% of graduates seriously considered attempting suicide in the last 12 months. Of those, 69% undergraduates and 63% of graduates disclosed "having more than one period of the 12 months during which they considered attempting suicide" (Drum et al., 2009, p. 217). These statistics are alarming and underscore the need to engage in preventative actions.

Silverman, Meyer, Slone, Raffel, and Pratt (1997) reviewed the rates of suicide at 12 Midwestern university campuses over a ten-year period to determine who were most impacted by suicides on PSE campuses. This study ran from 1980 to 1990; within these institutions, approximately 346,000 students per academic year who were within the 17 to 29 age range were determined to be at risk for suicide. Over the course of the ten-year study, the number of students determined to be at risk within this age range was 3.5 million (Silverman et al., 1997). When examining the different age groups and genders, the researchers noted the following data. In the 17 to 19 years old age range (which represented 28% of the overall institutional population), the percentage of suicides were 9% of females and 14% of males. Approximately 50% of the students fell within the 20 to 24 years old age range; in this group the percentages of suicide were 49% of females and 45% of males. In the 25-29 age range (which comprised 12% of the institutions' populations), the percentages for suicides were 22% of females and 23% of males (Silverman et al., 1997). The number of suicides, which met the study's suicide definition, totalled 261 over the course of the ten-year study. Of the 261 suicides, 6% were international students and of these, 81% were graduate students. The suicide rate for students over the age of 35 years was significantly higher than those under the age of 25. "39% of all female suicides occur among graduate students, who comprise only 19% of female students overall" (Silverman et al., 1997, p. 301). Finally, this study also found that older students are at great risk, which is indicative of the American and Canadian national rates (Silverman et al., 1997; Statistics Canada, 2017). Given this data, Silverman et al. (1997) suggested that prevention measures should pay particular attention to older, returning undergraduate or graduate students.

The studies above confirm that suicide and suicide-related ideation and behaviours exist in PSE institutions in North America. How does this impact the delivery of mental health services, specifically by counselling centres on campus? A survey by Gallagher (2015) found that counselling centre directors all noted that the centres experienced an increase in demand for services, an increase in the seriousness and acuity of situations, and an increase in the complexity of situations. Even though student counselling centres are feeling the impact of increased mental health issues, a study by Kisch et al. (2005) found that, while counselling centres were struggling to keep up with the increased demand for services, 80% of students who died by suicide did not attend their university's student counselling centre. Another survey found that of the students sampled, only 26% knew about the mental health resources, including student counselling centres, available on their campuses (Westefeld, Homaifar, Spotts, & Furr, 2005). This data is troubling as a study conducted by Schwartz (2006) determined that clinical intervention was effective in reducing the suicide rate of those who attended counselling centres.

Understanding Suicide

Interpersonal theory of suicide. In order to determine the most appropriate prevention and intervention for suicide-related ideation and behaviours, we must try to understand why people enter onto the suicide continuum. Theory helps to build a framework of understanding. The first theory, the interpersonal theory of suicide developed by Thomas Joiner, suggests that in order to die by suicide a person must have the desire to commit suicide as well as the capability to act on this desire (Joiner, 2005). Two variables are necessary to acquire a desire to commit suicide: disenchanted sense of belongingness and a perceived burden on others. Disenchanted sense of belongingness otherwise referred to as "thwarted belongingness" refers to being isolated and alienated from family and friends (Ribeiro & Joiner, 2009, p. 1292). The perceived burden relates to a person's self-worth and that one's existence would be a burden on other people leading to a belief that ending their life would make other people's lives better (Ribeiro & Joiner, 2009). Notably, it is believed that people have a strong intrinsic self-preservation instinct and so the movement from suicide-related ideation to suicide-related behaviours requires a

person to overcome this strong intrinsic self-preservation instinct (Joiner, 2005). However, a desire to commit suicide does not push people to suicide, rather another element must be present to complete suicide. What moves the desire to commit suicide to suicide-related behaviours is a person's capability to engage in suicide-related behaviours (Van Orden, Witte, Cukrowicz, Braithwaite, Selby, & Joiner, 2010). According to Ribeiro and Joiner (2009), a person's capability to commit suicide comes from "repeated exposure and habituation to painful and provocative events" (p. 1291). When all three things (disenchanted sense of belongingness, perceived burdensomeness, and capability to engage in suicide-related behaviour) interconnect, a person commits suicide or a suicide attempt (Joiner, 2005). Ribeiro and Joiner (2009) indicated that the interpersonal theory of suicide outlines the real difference between suicide-related ideation and suicide-related behaviours and "not only addresses the question of who wants to die by suicide but speaks to the question of who can die by suicide" (p. 1292).

Three step theory (3ST). A second theory related to suicide-related ideation and behaviours is the three-step theory (3ST) by Klonsky and May (2015). This emergent theory for understanding suicide was inspired by Joiner's interpersonal theory of suicide. Klonsky and May (2015) suggested the first step towards the development of suicide-related ideation is that a person must be experiencing emotional, psychological or even physical pain. While pain alone does not lead to suicide-related ideation, pain coupled with hopelessness that the pain will cease or get better is what leads to suicide-related ideation. The second step within this theory involves connectedness. Klonsky and May (2015) described connectedness as one person's connections to others (family, friends and colleagues); however it also refers to a sense of connectedness "to a job, project, role, interest, or any sense of perceived purpose or meaning that keeps one invested in living" (p. 117). The final step within this theory addresses the progression from suicide-related ideation to suicide-related behaviours (attempt) and supports and expands Joiner's work in the interpersonal theory of suicide, agreeing that the progression from suicide-related ideation to suicide-related behaviours requires a person to be capable of suicide. Klonsky and May (2015) expanded this belief by suggesting three variables which contribute to a person's capacity to engage in suicide-related behaviours as dispositional, acquired, and practical. Dispositional refers to a person's familial genetics such as a person's threshold for pain. Acquired refers to those who engage in habitual actions which cause pain, injury, and fear having a higher propensity to initiate suicide-related behaviours. Finally, the third variable is practical, which refers to things that make it easier to engage in such behaviours including knowledge of and access to lethal means (Klonsky & May, 2015).

Risk factors, protective factors, and warning signs. Another important element in understanding suicide is the risk factors. Risk factors are individual (genetic predisposition), familial (dysfunction), and community (access to mental health services) characteristics which are static (things that cannot be changed) or dynamic (things that can change) and contribute to a person's overall likelihood of considering, attempting, or dying by suicide (Suicide Prevention Resource Center & Rodgers, 2011). While there are many risk factors, some of the main risk factors include prior suicide attempt(s), misuse of alcohol or other drugs, family history of suicide, social isolation, chronic disease and/or disability, lack of access to mental health care, access to lethal means, and mood disorders (Suicide Prevention Resource Center & Rodgers, 2011). According to Bertolote and Fleischmann (2002) "it is generally acknowledged that 90 % of those who committed suicide had a psychiatrist diagnosis at the time of death" (p. 183); therefore mental disorders, specifically depression, are a risk factor for suicide. While 90% of those who have died by suicide have a mental disorder diagnosis, it is important to note that over 98% of people diagnosed with mental disorders do not commit suicide (Nordentoft, 2011). Notably, students referred to as higher risk or at-risk, typically have multiple risk factors.

A multivariate analysis completed by Arria, O'Grady, Caldeira, Vincent, Wilcox, and Wish (2009) identified five risk factors that correlated with students' mental health in PSE institutions. These five were depression, lack of social support, conflictual family-student relationships, affective dysregulation, and alcohol use disorders. With respect to depression, of those students sampled who espoused suicide-related ideation, 40% met the study's criteria for high depressive symptoms (Arria et al., 2009). The second risk factor identified was the lack of social support, which aligns with the notion of needing to feel a sense of belonging (Arria et al., 2009; Van Orden et al., 2010). The relationship students have with their parents also correlates to suicide-related ideation in that students who have a conflictual relationship or minimally attached parents have a higher risk of experiencing suicide-related ideation. Affective dysregulation is characterized by a person's inability to control their emotions and their responses fall outside the range of what is reasonable. Typically the uncontrollable and unreasonable emotions

manifest externally through aggression and anger (Arria et al., 2009). Finally, Arria et al. (2009) determined that suicide-related ideation was associated with alcohol use disorders, therefore, identifying alcohol use disorder as a risk factor for students in PSE institutions.

Warning signs are behaviours that indicate an immediate risk for suicide (Suicide Prevention Resource Centre, 2014) and are not considered risk factors. Warning signs include suicide-related communication expressing a desire to die or kill oneself, researching ways to kill oneself, or making comments about being hopeless or feeling as though they are a burden on others. Other signs may include sudden, unexpected changes in behaviour including a shift from calmness to reckless behaviour (tempting fate by engaging in risky behaviour) or someone being sad and suddenly and unexpectantly shifting to being calm and/or happy (mood swings). The increase in alcohol or drug use, the giving away of possessions, withdrawing from family and friends, anger, an unexpected or significant change in life circumstances (death of a family member, legal charges, job loss, relationship loss, or financial strain) are other warning signs of suicide (Canadian Mental Health Association, 2016b).

Suicide Prevention Frameworks for Post-secondary Institutions

Jodoin and Robertson (2013) advised that because of the unique interpersonal factors relevant to students as well as institutional influences for students, prevention and intervention efforts must go beyond traditional clinical treatment. The authors also said that prevention and intervention efforts must "take a holistic and comprehensive approach to addressing the concerns not only for individuals, but also at the community and organizational level" (Jodoin & Robertson, 2013, p. 15). Public health models focus on the importance of considering the health of the entire student population rather than on an individual's health. Furthermore, the public health model focuses on preventing suicide-related ideation from occurring; it is committed to understanding suicide prevention through science, and it values a multidisciplinary collaboration to enhance the strength of the prevention and intervention strategies (Jodoin & Robertson, 2013). Wasserman and Durkee (as cited in Benson, 2013) posited that the public health model divides prevention strategies into three categories: primary, secondary, and tertiary. According to Benson (2013), primary prevention efforts are directed towards the general population and focus on the "reduction or elimination of disease before onset so as to eliminate the threat" (p.3). Secondary prevention includes the discovery and diagnosis of individuals "who are at risk or in the early stages of an illness," with the intention to treat the issue before "symptoms are fully expressed" (Benson, 2013, p.3). Interventions in secondary prevention efforts are intended to "reduce the intensity, severity, and duration of the illness" (Benson, 2013, p.3). Lastly, the third category in the public health model is tertiary. Tertiary prevention is the "treatment of those with a disease, so as to reduce the disability caused by the disorder, as well as improving the quality of life" (Benson, 2013, p. 3-4). Three following three frameworks that take a public health model perspective will be explored in the following sections.

The JED Campus Framework. The JED campus framework developed by the JED Foundation Campus Program (n.d.) draws on many factors which are known to promote mental health and prevent suicide. It is a comprehensive, multifaceted approach to promoting mental health and suicide prevention that includes various prevention and intervention strategies. The JED campus framework includes policy, systems and strategic planning, life skill development, connectedness, academic performance, student wellness, identification of students at risk, increasing help-seeking behaviour, mental health and substance use disorder services, and means restriction and environmental safety (JED Foundation Campus Program, n.d.).

Comprehensive approach to suicide prevention. The Suicide Prevention Resource Centre (n.d.) developed a comprehensive approach to suicide prevention which suggests a combination of efforts that collectively address the many facets of suicide-related ideation, communication, and behaviour. This model identifies nine strategies which work together to promote a healthy lifestyle, facilitate prevention of suicide-related ideation, and implement interventions for students experiencing suicide-related communication and behaviours. The nine strategies include: identifying and assisting a person at risk; increasing help-seeking behaviours; ensuring access to mental health care and treatment; supportive care transitions and organizational linkages; effective response to students in crisis; immediate and long-term postvention; the reduction of access to means; enhancing life skills and resiliency; and the promotion of social connectedness and support (Suicide Prevention Resource Centre, n.d).

Intervention continuum and treatment of suicidality. A third approach to suicide prevention and intervention in PSE institutions includes a blended approach between a clinical intervention paradigm focused on students who are on the suicide continuum and a problem-solving paradigm where the institution as a whole takes on more

responsibility for the wellbeing of the entire student population. Drum and Denmark (2012) suggested a framework which "embeds intervention within a comprehensive prevention strategy and helps interveners link intervention methodology to specific types of preventive action" (p. 210). The framework includes five preventative actions (ecological perspective, proactive prevention, early intervention, treatment and crisis intervention, and lapse and relapse intervention) which are divided into three intervention zones (prevention, clinical intervention, and recovery zone). The prevention zone consists of ecological and proactive prevention actions. Interventions for the ecological prevention action include policy and procedures which "build health-promoting qualities such as collaboration and a sense of togetherness, and to reduce harmful qualities of depersonalization, competitiveness, and discrimination" (Drum & Denmark, 2012, p. 215). These three frameworks have identified many prevention and intervention strategies that will be compared and contrasted in the following sections.

Primary, Secondary and Tertiary Prevention and Intervention Strategies

Life skills programs. According to the JED Foundation Campus Program (n.d.), the PSE experience is a time in a student's life which is characterized by change, growth, and challenges. Washburn and Mandrusiak (2010) contended that PSE students are in a vulnerable life stage and therefore PSE institutions need to provide students with opportunities to learn and develop skills that will help them to manage the high demands of university life. For example, navigating academics, new relationships, financial responsibilities, family relationships, and friends can be daunting and difficult. Providing students with an opportunity to learn various skills such as critical thinking, stress management, coping, and psychoeducation related to suicide and suicide prevention better equips students to manage and deal with the various stressors and risk factors, all the while building on students' protective factors which builds resilience (Benson, 2013; JED Foundation Campus Program, n.d.; Suicide Prevention Resource Centre, n.d.). Student resilience is characterized as optimism, positive self-concept, and being hopeful all the while managing the pressures and stress of university life (Suicide Prevention Resource Centre, n.d.). In addition to increasing the functional capacity of the student population, engaging in small inclusive community groups creates a sense of belonging and connectedness. Furthermore, many divisions on campus including student affairs, student health and counselling services, academic learning communities, library programs, residence life, and access and equity programs can offer many of the programs identified to make it a community-wide initiative.

JED Foundation Campus Program (n.d.) also identifies academic performance as a specific component of their framework. They hold that academic performance can be a contributor to distress and suicide-related ideation, communication, and behaviours and therefore strategies specific to academic performance are important to the positive health and mental health of students. Notably, a study completed by Drum et al (2009) determined that of the 18% of undergraduates and 15% of graduate students surveyed, who seriously considered attempting suicide, 43% of undergraduates and 45% of graduate students identified academic pressure and struggles as having a large effect on their suicide-related ideation. Given this statistic, the JED Foundation Campus Program suggested that in addition to programs teaching life skills, programs focusing on study skills, time management, and course planning should be available to students (JED Foundation Campus Program, n.d.).

Connectedness and student wellness. According to the JED Foundation Campus Program (n.d.), an important suicide prevention initiative is building and promoting a social network where students feel connected to others, their program, and their institution. This time in their life can be described as a period of transition as many changes occur at this stage. Some of the changes students experience are moving away from their home and parents for the first time, and experiencing changes within their familial and peer relationships. The result is limited social supports, isolation and loneliness, more opportunities to use alcohol and drugs, financial strain, adapting to a new culture, and sometimes there are additional pressures placed upon students by their family to succeed (Arria et al., 2009; Suicide Prevention Resource Centre, n.d.). Wei (2007-2008) added that student populations living on campus, who do not have family support, are susceptible to engaging in risk-taking behaviours such as increased drug and alcohol use, which make them even more vulnerable. Accordingly, promoting social connectedness within the campus community can help mitigate some of the risk factors associated with PSE student populations (Arria et al., 2009).

Washburn and Mandrusiak (2010) posited that PSE institutions recognize the need for social connectedness and create "opportunities for students to develop meaningful connections with the campus community" (p. 106). The creation of smaller communities within the larger PSE community may help with isolation and loneliness and

promote a sense of belonging and connectedness (JED Foundation, 2006). For example, Arria et al. (2009) promoted peer group membership, student leadership opportunities, and learning communities as ways to build connectedness. In a study by Drum et al. (2009) the authors discovered that students who participated in student leadership opportunities and campus recreational sports "were less likely than those who did not participate in the organizations to have seriously considered attempting suicide in the past 12 months" (p. 219). The study highlights the importance of creating and maintaining an inclusive campus environment and providing opportunities for students to connect with others as a possible means for decreasing the numbers of student who enter the suicide continuum (Drum et al., 2009).

The JED Foundation Campus Program (n.d.) identified student wellness as one of the framework components. Notably, this speaks to the promotion of positive health and mental health and can be found imbedded in the other frameworks as well. The JED Foundation Campus Program holds that if you provide awareness and services to support positive health and mental health initiatives and coping strategies, you can impact students who may experience distress and find themselves on the suicide continuum (n.d.).

Increase help-seeking behaviour. A study by Westefeld et al. (2005) found that 42% of college students felt suicidality was a problem on North American PSE campuses, but only 10% felt it was a problem on their own campus. Given people typically evaluate their circumstances as more favourable than others, this finding may suggest that college students are in danger of under-recognizing the risk of suicide in themselves and in their peers (Cerel, Bonlin, & Moore, 2013). The frameworks described above all identify increasing help-seeking as an important component of their frameworks. Increasing help-seeking behaviour includes the implementation of awareness campaigns regarding mental health promotion and suicide to provide information and educate the campus community on issues related to mental health promotion, suicide, and the resources available to students on the campus (Miller, Eckert, & Mazza, 2009). While there is limited research on the impact of suicide awareness campaigns in decreasing suicidality, Westefeld et al.'s (2005) found that only 26% of sampled students were aware of the mental health resources on their campuses.

In a study by Drum et al. (2009), the authors determined that some students did not want to disclose suicide-related ideation, communication, and/or behaviours because they were afraid of the stigma attached to suicide. These beliefs about suicide can negatively impact a student's decision to seek help and help-seeking behaviours are important in the prevention of suicide. The JED Foundation Campus Program (n.d.) also identified the importance of increasing help-seeking behaviours. Initiatives to reduce stigma attached to mental health, raise awareness of risk factors, protective factors and warning signs associated with suicide, and the promotion of on and off campus supports will empower students to know when and how to seek help.

Restrict access to means. Restricting access to lethal means is another measure identified by the three frameworks, which support suicide prevention efforts. According to a study completed by Sarchiapone, Mandelli, Losue, Andrisano, and Roy (2011), restricting access to lethal means is one of the most effective strategies for reducing suicide. Another study completed by Mann et al. (2005) also concluded that "restricting access to lethal methods reduce suicide rates" (p. 2064). In order to restrict access, it is imperative that PSE institutions be aware of the means in which people commit suicide. According to Statistics Canada (2009), the most common method of suicide between the ages of 15 to 38 (the age range of typical PSE students) is hanging, which includes strangulation and suffocation. The second most common method is poisoning followed by the use of firearms.

In terms of restricting access, Canadian gun legislation limits access to firearms as there are strict laws on the handling and carrying of a firearm. Unfortunately, limiting access to the means required for hanging are incredibly difficult to limit on campuses. However, some ways to restrict other means on university campuses include, prohibiting access to rooftops, windows and high places, safely storing medication, and limiting access to poisonous chemicals (JED Foundation Campus Program, n.d.; Suicide Prevention Resource Center, n.d.). As for restricting access to poisonous chemicals, some measures have been taken by outside industries such as the reduction of carbon monoxide in household gas (Nordentoft, 2010). There is concern noted within the research that if you limit or restrict access to the means an individual wants to use to commit suicide, the individual may seek out another means. Essentially, if a student wants to end their life, they will find whatever means are available to do so (Sarchiapone et al., 2011). However, efforts should be made wherever possible to structure the campus so that it is as safe as possible. The JED Foundation Campus Program (n.d.) suggests PSE institutions conduct an "environmental scan for potential access to lethal or dangerous means" (para. 14).

Policy and strategic planning. The JED Foundation Campus Program (n.d.) identifies the need to implement policy, systems, and strategic planning within PSE environments to support suicide prevention efforts. Strategic planning allows institutions "to anticipate and evaluate clinical and programming needs, examine how they deploy both personnel and financial resources to address challenges, coordinate efforts across campus, and evaluate programming effectiveness" (JED Foundation Campus Program, n.d., para. 3). Furthermore, the JED Foundation Campus Program (n.d.) also recommends policies "in order to establish norms, build awareness, improve the quality of health services, protect students and discourage harmful behaviours across campus" (para. 4).

Identification of at-risk students. Many PSE institutions support training programs for faculty, staff and students to assist with the early detection of students at-risk. Gatekeeper programs are considered training programs for PSE community members who are "in a natural position to carry out informal surveillance, detection, and assistance for those in need" (Cross, Matthieu, Cerel, & Knox, 2007, p. 660). These training programs are designed to enhance knowledge about mental health and suicide-related ideation, communication, and behaviours including the awareness of risk factors, protective factors, and warning signs. They offer ways to connect with at-risk students and help community members in understanding when to intervene and how to refer students to mental health services (Indelicato, Mirsu-Paun, & Griffin, 2011).

As indicated above, Drum et al.'s (2009) study confirmed that many students experiencing suicide-related ideation do not tell anyone. This study also determined that if students do share these feelings it tends to be with a peer, so training the student body, especially to those living on campus is important. Interestingly, "almost no undergraduates and not a single graduate student confided in a professor" (Drum et al., 2009, p. 218). However, training professors are important as they are the individuals who have regular contact with students and if trained, can identify a student who may be in distress or struggling. Even if the student does not disclose, professors are in a favourable position to recognize, intervene and refer, even without a disclosure of suicide. Furthermore, another important group to obtain the training are academic advisors, who also have a pathway to intervene and engage students who may be in distress. Given they meet with students regularly, they can identify students who are struggling (academically or emotionally) and ensure they are referred on to the appropriate supports (Drum et al., 2009). Drum et al. (2009) agreed that a broad spectrum of individuals within a PSE environment should be educated and trained to identify students who are struggling. Catching the early onset of symptoms of depression, other mental health disorders, and suicide-related ideation allows for the effective treatment of the symptoms by reducing the intensity, severity and duration of the symptoms before they are fully expressed (Hage, Romano, Conyne, Kenny, Matthews, Schwartz, & Waldo, 2007). According to Benson (2013), assessment of risk, screening for illnesses such as depression and suicide-related ideation fall within the category of identification of at-risk students.

Luoma, Martin, and Pearson (2002) established that physicians need to continue to work on detecting depression and suicidal ideation. The implementation of screening tools are another measure used to identify students who may be at-risk. These tools are easy to administer and can provide early detection of people who are experiencing distress (Washburn & Mandrusiak, 2010). This strategy can activate health care professionals earlier, intervening and delaying the onset of depression before thoughts of suicide are fully expressed.

Access to mental health services. Ensuring access to mental health services is also identified as important in the three frameworks. By ensuring students have access to mental health services on and off campus, they are more likely to address the early onset of symptoms of mental illness which may delay or stop the movement through the continuum of suicide. Notably, PSE counselling centres are reporting an increase in the numbers of students in distress and seeking assistance. As indicated earlier, they are also reporting an increase in the severity of students' needs (Gallagher, 2015). This change resulted in counselling centres managing increasing demands for service while working with limited resources. According to Washburn and Madrusiak (2010), counselling centres need to be creative in their service delivery models which may include the introduction of a triage intake system and same day emergency appointments, which assist with rapid access to counselling services for those in need.

Mental health counsellors are those who provide therapy to work on the underpinnings of the suicide-related ideation, communication, and behaviour. Cognitive behavioural therapy (CBT) interventions such as behavioural activation and cognitive restructuring can help increase the amount of positive experiences clients have while diminishing the tendency to view their environment through a distorted lens (Klonsky, May, & Saffer, 2016). Additionally, students require access to physicians and psychiatrists who can diagnose and provide

psychopharmalogical treatment for mental health illnesses (Drum et al., 2009). Depression is one of the main risk factors related to suicide and therefore requires intervention from physicians or psychiatrists (Nydegger, 2014). Bipolar disorder and schizophrenia are also mental health illnesses which correlate with suicide-related ideation, communication, and behaviours are require medical intervention. Given the medical nature of these illnesses, many individuals, including students, seek treatment from physicians and/or psychiatrists. Interestingly, a study by Luoma et al. (2002), in a meta-analysis of 40 studies where information was present on the rates of contact between people who had completed suicide and health care providers, found that "[o]n average, 45% of suicide victims had contact with primary care providers within 1 month of suicide" (p. 909). Therefore, ensuring access and using screening methods can identify students on the suicide continuum or with mental health illnesses.

In addition, the Suicide Prevention Resource Center and Drum et al. (2009) identify the need for crisis response within their frameworks. Crisis response speaks to other mental health services on or off campus that can assist when students are in a state of crisis. Suicide Prevention Resource Center (n.d.) suggests "mobile crisis teams, walk-in crisis clinics, hospital-based psychiatric emergency services, and peer-support programs" (para. 6) as well as case managers, hotlines and helplines who can provide crisis intervention services to the student (Drum & Denmark, 2012).

Postvention. The comprehensive approach to suicide prevention by the Suicide Prevention Resource Center (n.d.) refers to postvention as a component to suicide prevention in PSE institutions. Postvention refers to the interventions implemented to assist those impacted by someone whom they know died by suicide. Furthermore, Szumilas and Kutcher (2011), stated "the intention of postvention programming is to aid the grieving process and reduce the incidence of suicide contagion through bereavement counselling and education among "survivors", encompassing family, friends, classmates, etc. who are affected by the death" (p. 18). The Suicide Prevention Resource Center (n.d.), recommends that PSE institutions implement a plan or a set of protocols to help the institution "respond effectively and compassionately to a suicide death" (para. 7).

Discussion and Implications

The purpose of this paper was to provide some clarity and insight into suicide prevention and intervention strategies available to PSE institutions and what all campus stakeholders, not just mental health professionals, can do to help with the increasing problem of suicide-related ideation, communication, and/or behaviours on campus. As mental health concerns continue to increase within the student population in PSE institutions, continued efforts to be vigilant against suicidality are necessary. Ensuring students receive sufficient and timely support and resources are necessary. While universities will continue to enroll individuals who present with mental health issues and suicide risk factors, we must be mindful that the stress and pressure of academic life can exacerbate mental health issues. Therefore, institutions need to be attentive in delaying the onset and stopping the movement of students who find themselves on the verge of or on the suicide continuum, shifting focus from purely reactive responses to prevention measures. Expanding prevention and intervention efforts to include campus-wide multifaceted approaches will aid in the battle against suicide-related ideation, communication, and behaviours.

Additionally, further research with regard to effectiveness of the frameworks needs to be undertaken. Washburn and Mandrusiak (2010) examined the implementation of the JED foundation framework at the University of British Columbia. They noted that the JED foundation had tried to integrate evidence-informed best practices within their framework, but individual institutions need to continue to monitor their own progress with whichever framework they decide to implement. Moreover, "further research focusing directly on the impact of suicide prevention efforts on the post-secondary community is desperately needed to establish the effectiveness of suicide awareness campaigns and gatekeeper training programs" (Washburn & Mandrusiak, 2010, p. 115). As Washburn and Mandrusiak (2010) identified, suicide awareness campaigns are critical in ensuring that campus stakeholders are aware of and understand the elements of a holistic framework in such a complex organization. Informing the whole community requires a multi-pronged, intentional campaign, including website development and social media strategies, to promote awareness. Articulating and presenting the strategy in a manner that everyone can understand is key.

When examining the three frameworks, one potential drawback of the Drum and Denmark (2012) approach is the terminology. If explanation of the primary, secondary and tertiary stages are required, then the approach is not amenable to dissemination across the various audiences on campus. In addition, it was difficult to uncover information with regard to successful implementation of the approaches presented by Drum and Denmark (2012)

and the Suicide Prevention Resource Center (n.d.). Furthermore, the topics of mental health and suicidality, on campuses and within the broader society, are garnering much more attention within the last decade; the literature in the field is rapidly expanding and there are intensive public awareness campaigns launched to open the dialogue with regard to a previously seldom discussed issue. As a result, it is difficult to keep up with advances in the field and new publications across the many organizations and scholarly journals who are invested in this area of public health. A more intentional and broadly based sharing of best practices and emergent research could support positive changes with regard to addressing this issue.

The three frameworks identified within this review are all considered public health models. All three models recommend multiple primary, secondary and tertiary levels of preventions and intervention. Canadian PSE institutions need to consider establishing or enhancing their frameworks for prevention and intervention. While members of campus may be aware of some of the prevention strategies and programs that are advertised on campus (such as mindfulness programs), they often are unaware of how to intervene when someone close to them is experiencing issues that may require intensive support or where to seek support. These frameworks suggest a more structured approach to address all parts of the spectrum, and emphasize the continuum of supports required for a holistic strategy.

Using a hybrid of these three models can be a strong foundation for the development of a multi-faceted approach tailored for the specific context of individual institutions. Furthermore, a national dialogue and concerted focus should be undertaken, including determining how to gather fulsome national statistics on mental health on Canadian campuses. Given the provincial jurisdiction over education, these actions can be more difficult; however, the urgency of the situation demands intentional and multifaceted approaches to address the increasing concerns expressed over mental health issues and suicides on campus.

Purpose

The purpose of this paper is to examine research related to suicide and identify ways in which PSE institutions can ameliorate the risk of suicide. This knowledge is necessary for it contributes to the understanding and development of the best prevention and intervention strategies for institutions. Given that PSE institutions have unique populations and needs, it is necessary to understand the issue and the institution, so that risk factors and protective factors which require the most attention are included in the prevention and intervention efforts. Furthermore, suicide prevention and intervention is complex and requires a campus-wide effort. Sole reliance on mental health resources to work with students on the suicide continuum is impossible. In order to support all students, ensuring no one falls through the cracks, it is imperative that PSE institutions implement a holistic approach to suicide prevention and intervention using a multifaceted approach.

Research Questions

Individuals exhibiting suicide-related ideation, communication, and behaviours are amongst the student population in PSE institutions. As a result, PSE institutions are in a unique position to assist with suicide prevention and intervention. The following research questions were identified for this study.

1. How can community members within a PSE institution understand the problem of suicide on Canadian campuses and identify students experiencing suicide-related ideation and behaviours?
2. What multifaceted frameworks exist to support a holistic prevention and intervention strategy in a PSE institution?
3. How can prevention and intervention strategies be implemented from a multifaceted framework so PSE institutions are better equipped to assist and support students before they find themselves on the suicide continuum and to intervene and support students who are on the suicide continuum?

Methodology

To investigate the research questions, the researchers undertook a qualitative examination (Merriam, 2009) with regard to campus approaches to address suicidality, where themes and common approaches emerged during the search. Terms such as “suicide prevention”, “suicide intervention” and “suicide higher education” were used to uncover resources. Materials and papers from conferences also provided some information to begin the study. As noted by Jodoin and Robertson (2013), the frameworks needed to go beyond clinical treatment and needed to be more holistic. This consideration meant that the frameworks were delimited to approaches that included primary, secondary and tertiary approaches and thus included a continuum of programs and supports. Several frameworks

were more commonly discussed in the literature, but there was scant literature on the effectiveness on the frameworks, with the exception of the one proposed by the JED Foundation (n.d.). One framework, the Intervention continuum and treatment of suicidality, was proposed by Drum and Denmark (2012), prominent researchers in the field. Furthermore, the frameworks chosen were identified as being established in the North American continent. As noted by the World Health Organization (2017), there can be specific differences across geopolitical boundaries. While this paper does not present an exhaustive list of all the possible frameworks presented in the field, the three chosen frameworks share a similar holistic approach. Indeed, the Suicide Prevention Resource Center noted that their approach (the Comprehensive Approach to Suicide Prevention and Mental Health Promotion) was very similar to the multifaceted approach that Drum and Denmark (2012) proposed and to the holistic framework described by the JED Foundation (n.d.).

Context

Approximately 800,000 people worldwide die by suicide each year, and "suicide is the second leading of death among 15 to 29-year-olds" (World Health Organization, 2017, para. 1). According to Statistics Canada (2015a), of the 252,338 deaths in Canada reported in 2013, 4,054 were deaths by suicide. This statistic places death by suicide as the ninth leading cause of death for Canadians (Statistics Canada, 2015a). Noteworthy, death by suicide has been the ninth leading cause of death in Canada since 2009 (Statistics Canada, 2015b). As indicated earlier, students attending PSE institutions are not immune to suicide or suicide-related ideation and behaviours. While a study by Kisch, Leino, and Silverman, (2000) confirmed that students attending PSE classes died by suicide at about half the rate of the same age peers not attending classes, it still confirms that suicide is a problem in PSE institutions. Therefore, implementing a suicide prevention strategy within a PSE institution is necessary to address and prevent suicide amongst its student population.

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