

NOURISHINGSELF FOR TEENS:
A PROPOSED FRAMEWORK FOR AN EATING DISORDER PREVENTION GROUP

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Nourishingself for teens

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Abstract

The development of an Eating Disorder is a process that leaves many professionals, family members, friends, and sufferers perplexed. Typically emerging in late adolescence, Eating Disorders appear to stem from a multitude of risk factors in the childhood and adolescent years. But what exactly are the risk factors? When and how best should risk factors be addressed? The comprehensive Eating Disorder prevention program entitled *NourishingSelf for Teens* described herein, includes a substantial follow-up period, themes of media literacy, stress and trauma coping, interpersonal skills, body acceptance, and self-reflection. This thesis found that early intervention, especially around age 14 in the form of an interactive closed-group would likely be positively impactful in preventing Eating Disorders.

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NourishingSelf for Teens:

A Proposed Framework for an Eating Disorder Prevention Group

Chapter 1: Introduction

Purpose

The purpose of this thesis is to provide a framework for a comprehensive eating disorder (ED) prevention group. Other prevention programs exist and will be touched upon. However, the author failed to find any which target a multitude of risk factors at once and perform follow-ups over a significant time period. The author introduces a comprehensive prevention intervention entitled *NourishingSelf for Teens* (NSFT) with a lengthy follow-up period targeted to youth who are vulnerable to developing an ED.

Research Question

This thesis outlines a proposed ED prevention intervention for adolescent females aged 14-18 with the intent of providing the foundation for a pilot study. It is anticipated that the application of this program and subsequent follow-ups will show a decline in the incidence rate of EDs for participants when compared to the incidence rate in the general population who would not have received this intervention.

Background

EDs have been a recognized pathology for some time. The first recorded ED was described by Richard Morton in 1689 (Silverman, 1995, as cited in Pearce, 2004). William Gull and Charles Laseque are credited with giving the first complete medical characterization in the late 1800's (Lasegue, 1873; and Gull, 1874, as cited in Dell'Osso et al., 2016). By 1873, this wasting disease was pursued for an experience of bodily perfection, provoking attention from medical and psychiatric communities (Eating Recovery Center, 2018). Today, the class of EDs

has expanded beyond the wasting disease, now known as Anorexia Nervosa (AN), to include a broader group of eating pathologies consisting of Bulimia Nervosa (BN) and Binge Eating Disorder (BED).

Although the general public may not be aware of the serious nature of EDs, it is a group of pathologies that impacts an enormous amount of people. In Canada, 1.5% of women 15-24 years of age have an ED (The National Benefit Authority, 2015). This number may grow, as EDs are on the rise in youth (Rohde, Stice, & Marti, 2015). In their work looking at more than 10,000 adolescents aged 13-18, Swanson, Crow, LeGrange, Swendson, and Merikangas (2011) found a 0.3%, 0.9%, and 1.6% lifetime prevalence rate of AN, BN, and BED. In America, Kazdin, Fitzsimmons-Craft, and Wilfley (2017) found lifetime prevalence estimates of AN, BN, BED, subclinical Binge Eating Disorder (sBED), and any binge eating are 0.6%, 1.0%, 2.8%, 1.2%, and 4.5%. EDs affect 10 million females at any given time (National Eating Disorder Information Centre, n.d.). For a population of 300,000,000 in the United States, this means roughly a startling 30,000,000 people are affected by EDs.

However, those numbers may prove grossly underestimated. Urvelyte and Perminas (2015) argued that ED are rare in the general population, but the overall prevalence may increase by almost 20% with vulnerable groups such as adolescent girls. Community studies have found the prevalence of EDs in adolescents to be as high as 4%-22%, a range which is in stark contrast to clinical studies that follow strict DSM-IV criteria (Holling & Schlack, 2007; Swanson et al., 2011). Furthermore, researchers found an incidence rate in excess of 13% in young women across the classes of EDs with the application of DSM-5 criteria (Stice, Marti, & Rohde, 2013; Eisenberg, Nicklett, Roeder, & Kirz, 2011; Rohde et al., 2015). One can see that conservative incidence rates may capture only a small window of the eating pathologies that actually exist.

Additionally, several researchers found subclinical Eds (sED) to be more frequent than threshold EDs. The incidence of sED behaviours such as dieting and other unhealthy behaviours (for example, laxative use and/or fasting) to maintain an artificially low weight affected one-third to one-half of all teenage girls (Neumark-Sztainer, Wall, Larson, Eisenberg, & Loth, 2011). There is a clear need to provide targeted ED interventions to young women aged 14-18, especially in a form that is matched to the client and their struggles (Kazdin et al., 2017; Micali et al., 2015). This thesis will propose a comprehensive framework (NSFT) that addresses these struggles.

Statement of the Issue

The problem professionals and the community face in the field of EDs is a lack of comprehensive, accessible, and efficacious preventive measures targeted to adolescents. Although diagnostic categories are available, there is a gap in research with respect to when and how risk and protective factors emerge (Sánchez-Carracedo, Neumark-Sztainer, & López-Guimerà, 2012). Researchers have suggested identifying risk and escalation factors in this age group will give more opportunity for prevention (Rohde et al., 2015). There is also a lack of long-term studies, which assess the effectiveness of prevention protocols for vulnerable populations (like adolescence) that may help to avoid the emergence of an ED in adolescence. In fact, it is suggested that intervention may be most beneficial when symptoms are not present, but risk factors are (Keel & Brown, 2010; Stice, Ng, & Shaw, 2010; van der Leer et al., 2012). A comprehensive prevention intervention targeted at a vulnerable youth is clearly needed.

Significance of the Study

The impact of EDs is far-reaching and felt on an individual, familial and societal level. Overvaluation or extreme levels of concern of weight or shape is a feature believed to be

common in all EDs and has a significant impact on health-related quality of life for the person who experiences it (Jenkins et al., 2014; Latner, Mond, Vallance, Gleaves, & Buckett, 2013). For instance, researchers found adolescents with eating pathology experienced significant negative impact in quality of life across the domains of self-esteem, psychological health, physical health, family, peers, and school - even when they endured only seemingly minor levels of symptomatology (Wade, Wilksch, & Lee, 2012; Jenkins, Hoste, Meyer, & Blissett, 2011; Wagner, Stefano, Cicero, Latner, & Mond, 2016). For example, Swanson et al. (2011) found 45% of responders with BED reported there was at least some impairment with household chores, 45.7% with family relationships, 46.2% with work and school, and 51.6% in social life. However, a traditional ED diagnosis is not even necessary to suffer complications. Participants with sBED showed impairment levels of 23.5%, 21.3%, 20.6% and 20.9%, respectively. Individuals with Eating Disorder Not Otherwise Specified or Feeding or Eating Conditions Not Elsewhere Classified (EDNOS or FEC-NEC, per the *Diagnostic and Statistical Manual - IV* or *Diagnostic Statistical Manual – 5*, respectively) versus more traditional AN and BN diagnoses had “similar functional impairment, morbidity, psychiatric comorbidity, and risk for future physical and mental health problems” (Horney, Stice, & Rohde, 2015, p. 518). It is evident struggling with disordered eating can negatively impact the quality of a sufferer’s life, whether or not the pathology has reached extreme levels.

Furthermore, EDs are often linked to comorbid disorders. Struggling with an ED often associated with simultaneous struggles with other mental health issues even in adolescence (Swanson et al., 2011; Fitzsimmons-Craft et al., 2019). In adolescents with AN, BN, BED, subclinical Anorexia Nervosa (sAN), and sBED, 55.2%, 88%, 83.5%, 79.1%, and 70.1%, respectively, had least one comorbid disorder assessed in this study (mood, anxiety, substance

abuse or dependence, or behaviour). Additionally, death by suicide is a major risk in those suffering from an ED. Every ED subtype was associated with an elevated risk of suicidal ideation, with BN and sAN being especially associated with suicidal plans. SAN had comparable levels of suicide ideation to the threshold disorder but carried a greater frequency of plans and attempts. BN and BED also showed significant levels of suicide ideation and attempts (Swanson et al., 2011). Over half of all people, including adolescents, struggling with eating will also experience at least one other diagnosis. This aspect of EDs itself is enough to warrant immediate attention be paid to prevention efforts.

Furthermore, EDs are also associated with medical complications. In fact, there are several chronic medical conditions that may be associated with EDs in children and adolescents (van der Leer et al., 2012). These include diabetes (insulin dependent), inflammatory bowel disease (Crohn's Disease and Ulcerative Colitis), Cystic Fibrosis, Celiac Disease, illnesses requiring long-term use of steroids, and nutritional problems. Body Mass Index (BMI) is a measure which reflects a relationship between height and weight in order to classify people into groups (Nuttall, 2015). Contrary to popular belief, serious nutritional problems at a higher percentage BMI can and does occur in youth who are losing weight rapidly or those whose bulimic symptoms include extreme over-exercise (van der Leer et al., 2012). Left untreated, children and adolescents suffering from an ED may experience the following medical complications: malnutrition, slowed growth, gastrointestinal distress, bone loss, fainting, fatigue and overall weakness, cognitive distortions, body dysmorphia, injuries to the internal organs, heart problems, kidney failure, and death (The Meadows Ranch, 2017; Sandstrom et al., 2017). Given that some of these complications are irreversible, when professionals address EDs in their practice, a review of associated medical complications is essential.

Additionally, family and friends have a hard time knowing how to react or help when a loved one exhibits eating pathologies. Families and friends are under great stress when a loved one suffers with an ED. Family members can carry guilt and blame, feel anxious about the future of their loved one, and may face stigma in having a child, sibling, or friend with a mental health disorder (Government of Canada, 2006). On a societal level, there is productivity cost and deadweight loss (foregone productive opportunity to society linked to higher taxes due to illness) associated with EDs in general (Gatt et al., 2014). EDs impact families and society in addition to the youth who experiences it directly.

Consequently, the prevention program explored in this thesis is indeed significant because an ED engulfs its female adolescent sufferers by eroding self-esteem, self-worth, and negatively impact their quality of life and health. In the author's opinion, adolescence and the period of "youth" in general, is a time in life which should be full of creativity, discovery and risk-taking, all areas from which an ED will steal, leaving shells of forgotten girls.

Outline of the Remainder of the Paper

The remainder of this thesis will present evidence in support of the outlined 12-session, in-person prevention intervention, *NourishingSelf for Teens*, to target eating, weight, and esteem-related concerns in adolescent females, aged 14-18. The following chapters will focus on a literature review to identify the critical components and best practices for a comprehensive ED prevention group for adolescent girls, methodology, anticipated results and a discussion on ethical issues and limitations.

Chapter 2: Literature Review

Introduction

This chapter will discuss general and specific risk factors that lead to EDs, protective factors that buffer against the development of them, prevention interventions, and the typical course of identification, diagnosis and treatment for female youth.

Risk Factors

As EDs do not typically carry the same history for each sufferer, risk factors are variable and unique to the individual. However, research has identified some common elements associated with EDs that span from the neo-natal period to adolescence. The Meadows Ranch is a treatment centre for adolescent and adult females with EDs. The Meadows Ranch (2017) states that 20% of children diagnosed with EDs have a history of eating or feeding problems, and almost 50% had a close family member who battle or have battled a mood or anxiety disorder. A vulnerability to the development of EDs in children is thought to be due to a combination of biological and genetic factors, external or environmental factors, and psychological stressors (The Meadows Ranch, 2017). It is a combination of risk factors that accumulate and set the foundation for the development for an ED.

In addition, common risk factors emerge in adolescence, and may predict late-adolescence / early adulthood onset of full-blown EDs. The risk factors in adolescence include a significant perceived pressure to be thin, thin-ideal internalization, body dissatisfaction, negative affect (depressive moods), and self-reported dieting (Rohde et al., 2015; Stice & Shaw, 2010; Stice, Gau, Rohde, & Shaw, 2017). Rohde et al. (2015) found that body dissatisfaction appears prior to a sense of pressure to attain an unrealistic level of thinness, and BMI was not associated with ED onset. Stice et al. (2017) found participants who strive for the thin ideal also had

resultant body dissatisfaction, dieting behaviours, and weight control measures to sustain an artificially low level of weight, which increased the risks for binge eating and compensatory behaviour. The only factors that were linked to all of the four classes of disorders studied (AN, BN, BED, and Purging Disorder, PD) were negative affect and impaired psychosocial functioning. They also found risk factors for full- or sub-threshold ED to have more similarities than differences. Therefore, common risk factors do exist and emerge in adolescents. These risk factors should be addressed in an efficacious prevention intervention.

Additionally, some specific contributing variables have been identified. Parents may have an influence on their child's later development of an ED. An insecure attachment along with a daughter's poor mentalizing (the limited capacity to comprehend one's own desires, beliefs, needs, goals, reasons and thoughts) has recently been considered a risk factor (Kelton-Locke, 2016). By five years of age, a mother's current or recent dieting gave 24%-65% of girls' ideas about dieting. These girls were more than twice as likely to have ideas about dieting compared to daughters of mothers who did not diet (Abramovitz & Birch, 2000). Between the ages of five and eight, body image concerns and dietary restraint emerges for yet unknown causes (Rodgers, Nichols, Damiano, Wertheim, & Paxton, 2019). It appears that risk factors begin to emerge much younger than traditionally thought and can be environmental in origin.

Furthermore, these trends continue to late childhood. Evans et al. (2017) looked at children at ages seven, nine and 12 years. At nine years, higher ED symptoms significantly predicted higher ED symptoms at age 12. At 12 years of age, there was a concurrent development of greater body dissatisfaction and greater depressive symptoms. BMI did not predict a girl's dietary restraint at seven years old, and dietary restraint at age seven did not predict ED symptoms at age 12. Body dissatisfaction at both ages seven and nine did not predict

ED symptoms at age 12. They recommend prevention efforts start at younger ages than is currently typical. This is additional support for early interventions as evidence that ED risk factors seem to extend from childhood.

The incidence of EDs in the late childhood - early adolescent years of 10-14 is very low but on the rise. This age group is also associated with risk factors and syndromes that escalate quickly (Rhode et al., 2015). Klump, Culbert, O'Connor, Fowler, and Burt (2017) found puberty influences the expression of genes for disordered eating. It appears that some identified risk factors in this age group that later led to the development of EDs include thin body preoccupation, social pressure to be thin, and for some, an increase in negative life events (Micali et al., 2015). Intervention around pubertal changes may have an impact in prevention.

In addition to a parent's behavior affecting their young children, a parent's behavior can impact their adolescent child as well. A mother's own ED predicts body dissatisfaction, weight bias internalization and shape concerns in adolescent females, which are all a risk factor for the development and maintenance of chronic EDs (Micali et al., 2015; Klein, Brown, Kennedy, & Keel, 2017; Puhl, Himmelstein, & Quinn, 2018; Scarborough, 2019). Additionally, Canals, Sancho, and Arija (2009) found "a mother's body dissatisfaction, drive for thinness, ineffectiveness and interoceptive awareness, and the father's drive for thinness and perfectionism were related to long-term eating disorder [in their adolescent children]" (p. 353). Fujimori, Wada, Yamashita, & Choi (2011) found participants with EDs reported low paternal care, and over 50% felt fathers exhibited what they call "Affectionless Control." In their study, participants with an ED without self-injuring behaviours (SIB) presented with more conflicts with their mothers, whereas for participants with ED and SIB, conflict was present with fathers as well. Ketisch, Jones, Mirsalimi, Casey and Milton (2014) found paternal infantilization, or

overprotection, was significantly related to a daughter's drive for thinness, while maternal enmeshment and psychological control was associated with eating pathology. Adolescent children seem to adopt the beliefs and attitudes of food and bodies from their parents, and some express issues with their parents through disordered eating and related behaviour.

In addition, it appears weight stigma and resultant weight stigma internalization also begins early. In their meta-analysis, Rees, Oliver, Woodman, and Thomas (2011) found that children aged 4-11 had an awareness of the abuse and isolation of children who experienced a greater body weight and they held negative attributions toward those in larger bodies, perhaps because body weight was seen as under an individual's control. Children also assessed their own bodies and wished their bodies were different. In fact, social appearance anxiety influenced the relationship between body esteem and ED vulnerability in adolescents (Li, 2019), with frequent exposure to social media being linked to body dissatisfaction (Tamplin, McLean, & Paxton, 2018). The author believes there is a strong correlation between weight stigma, weight stigma internalization, body dissatisfaction, and EDs.

Specifically, the diet industry and resultant weight stigma is almost impossible to renounce. The insidious nature of the diet industry sets the stage for the development of ED risk factors (Greenhalgh, 2016). For example, in schools, Sánchez-Carracedo et al. (2012) reported on a growing concern about the increase of incidence rate of EDs influenced by the childhood obesity prevention campaigns. Childhood obesity is a risk factor in developing an ED (van der Leer et al., 2012), but school-based childhood obesity prevention programs are associated with influencing eating pathology in children aged 6-14, perhaps due to weight bias and stigmatization (Carels et al., 2013). It is of this author's opinion that weight stigma is huge, often unspoken, underlying factor in mindset and behaviours that lead to and maintain EDs.

Furthermore, the war on fat has helped to increase disordered eating and EDs through the pathologization of larger bodies, the promotion of stigmatizing *fat-talk*, and the exclusion of bodies that do not meet thin ideals. Weight stigma leads to discrimination, social devaluation, and rejection of individuals who carry excess body weight (Kahan & Puhl, 2017). Cain and Donaghue (2018) and Curhan et al. (2014) found that their participants viewed excess body weight as under one's control and health as a moral obligation. Puhl et al. (2015) report that strong weight bias was present in countries which excess weight was believed to be under personal control and to originate behaviourally through lack of willpower. Weight loss programs re-branded and disguised as "wellness" (for example *Clean Eating* and *Whole 30*) serve to push anti-fat agendas, and thin idealization, which is a main risk factor for the development of EDs. Again, this is further evidence of the link between weight stigma and EDs.

Additionally, media influence was a debated contributing factor to the development of ED for some time. However, Izydorczyk and Sitnik-Warchulska (2018) reported that adolescent females are vulnerable to developing ED as a result of media influence through social media especially. Internalization and pressure of sociocultural norms are two sociocultural predictors that explain the development of body dissatisfaction and pursuit of thinness, both of which are associated with social media. Balantekin, Birch, and Savage (2018) found media sensitivity influenced dieting practices in 15 year old girls in groups who associated as Lifestyle [Dieters], Dieters, and Extreme Dieters. Having a friend who engaged in dieting behavior and experiencing weight-teasing triggered dieting and extreme dieting. Social pressure to be thin and body image preoccupation led to a higher risk of full-blown and sBN over four years (Rohde et al., 2015) and elevated dieting restraint over five years (Tanofsky-Kraff et al., 2011). Weight bias appears to

play a major role in influencing vulnerable viewers of social media to strive for unattainable ideals.

EDs also occur in athletics. Participation in certain athletics where leanness is valued and a lower body fat is thought to enhance performance such as figure skating, tennis, long distance running, ballet and gymnastics is associated with a higher risk of developing an ED (Otis, Drinkwater, Johnson, Loucks, & Wilmore, 1997; Powers, 2000). Female athletes also face a higher risk that their EDs will go undetected (Wagner, Erickson, Tierney, Houston, & Bacon, 2016). Arthur-Cameselle et al. (2018) reported sport-specific performance pressure, team weigh-ins, and injuries as triggers EDs in female athletes. Negative comments, advice on food restriction, and weight monitoring from and by coaches in dance and gymnastics are risk factors (Francisco, Alarcão, & Narciso, 2012). For all levels of sports intensities, extrinsic motivation to do well in a sport (for example, potential receipt of a scholarship) was associated with higher rates of EDs, in comparison to participation due to intrinsic motivation (Homan, Crowley, & Sim, 2019). Female adolescent athletes must not be an overlooked population when reviewing vulnerabilities.

Anorexia Nervosa. There are specific risk factors in the development of AN. Berkowitz et al. (2016) found a *higher* childhood BMI was a risk factor for the development of AN. In contrast, Stice et al. (2017) found *low* BMI, low dieting behaviour, functional impairment (difficulty getting along with people) and negative affect *did* predict onset. Steinhausen, Jakobsen, Helenius, Munk-Jorgensen, and Strober (2015) found risk factors to include the sufferer being female and having a sibling with AN, a comorbid condition such as anxiety, affective, personality, or obsessive compulsive disorder, and at least some family members with an affective disorder(s). Cardi, Mallorqui-Bague, Albano, and Monteleone (2018) found a sufferer's

perceived lack of social competence which manifested as an involuntary social submissive nature along with a fear of negative evaluation to be a risk factor. Furthermore, Cardi et al. (2018) support these findings with research that shows a key tenet of treatment for AN is minimizing social exclusion (Brandt & Crawford, 2019). Social impairment appears to be a main characteristic of AN prior to its onset.

Bulimia Nervosa. BN has its own specific risk factors. When mothers experienced grief through loss of a loved one during the pre- and early post-natal period, the overall incidence rate of BN was found to have increased in their daughters more than a decade later (Su et al., 2016). Childhood sexual abuse was prospectively associated with all binge/purge disorders (Micali et al., 2017). Stice et al. (2017) found thin-ideal internalization, positive expectancies for thinness, body dissatisfaction, dieting, overeating, and mental health care predicted onset of BN. BED was also associated with higher rates of lifelong BN (Alsio et al., 2010; Burger & Stice, 2012). Furthermore, Laporta-Herrero, Jauregui-Lobera, Barajas-Igelsias, and Santed-German (2018) found participants with BN had the most significant levels of body dissatisfaction in comparison with other EDs. Body dissatisfaction was also associated with lower self-esteem, higher levels of depressive and disordered eating attitudes, and had the greatest influence by the aesthetic body-shape-model. Behaviourally, excessive exercise did not predicted either BN or sBN (Stice et al., 2017). Body dissatisfaction seems to be a main facet of BN.

Binge Eating Disorder. BED has shown to have specific risk factors in addition to the general ones previously mentioned. Thin-ideal internalization, positive expectancies for thinness, body dissatisfaction, dieting, overeating, mental health care, and excessive exercise predicted onset of BED (Stice et al., 2017). Sehm and Warschburger (2015) reported “low self-esteem, lack of interoceptive awareness, perfectionism, body dissatisfaction, dietary restraint, weight

teasing, and internalization of the societal body ideal are known to be associated with BE in adolescents” (p. 1563). Additionally, it appears the eating pathology itself has a self-propelling mechanism. Stice et al. (2013) found “diagnostic progression from subthreshold to threshold EDs was higher for BN and BED (32% and 28%) than for AN (0%), suggesting some sort of escalation mechanism for binge eating” (p. 2). It appears the ideal time to intervene with binge eating especially, is as early as possible.

Additionally, weight-related stigma often exacerbates the bingeing and isolation in the sufferer (Mizock, 2012). Childhood sexual abuse was prospectively associated with all binge/purge type disorders and an external locus of control was associated with BED (Micali et al., 2017). Goldschmidt et al. (2008) found both BED and sBED in 96 adolescents aged 13-17 were associated with a greater sense of loss of control and higher depression scores. It is evident the risk factors for BED and sBED appear to start much before onset of the disorder, and an external locus of control is meaningful in this category.

Purging Disorder. Although there is controversy around the validity of PD (Smith, Crowther, & Lavender, 2017), there seems to be a trend of fasting which showed a stronger relation to onset of subthreshold or threshold PD than compensatory-behavior onset (Stice et al., 2017). More research is needed in the field for this specific classification.

How Youth are Typically Identified, Diagnosed, and Treated

Identification. The median age of onset of EDs is decreasing. Stice et al. (2013) found the peak age of onset of EDs is 19–20 for AN, 16–20 for BN, and 18–20 for BED, PD and FEC-NEC; however, the age of onset across all classes is decreasing, especially for AN (Favaro, Busetto, Collantoni, & Santonastaso, 2019). Swanson, et al. (2011) found the median age of

onset for AN, BN, BED, and sBED, to be 12.3, 12.4, 12.6, and 12.6 years old, respectively. This trend implies there is a great need for interventions to delay or prevent the onset of ED.

It is often a concerned person in the sufferer's life who suggests there may be an issue. It is often family members, friends or school personnel who contact the primary care provider (PCP) to report they have noticed that a child or adolescent has made significant food, eating, and weight-related changes (van der Leer et al., 2012). Common parental concerns about a youth's feeding habit include closeted eating, hiding food, changes in eating patterns (e.g. cutting food into small pieces, moving food around on the plate), skipping meals, patterns or rituals around food preparation, avoidance of particular food groups, a continual denial of hunger, frequent trips to the bathroom and evidence of vomit. Mood fluctuations and changes in sleep patterns and activity levels are also associated with abnormal eating attitudes and behaviours in youth (Katzman, Kanbur, & Steinegger, 2010). These types of behaviours may be evident much before a PCP is contacted and may offer a critical window for prevention efforts.

Given the trend downward in age of onset, doctors especially need to be aware of a possibility of an ED in their patients. Linville, Benton, O'Neil, and Sturm (2010) reported PCPs are typically the first to be accessed if an ED in youth is suspected. In fact, the PCP may be the first line treatment, the total prevention team, and the key figure to interrupt the medical consequences that may otherwise arise (van der Leer et al., 2012). PCPs play a critical role in the intervention of ED onset.

In practice, signs of EDs are often missed. Researchers found the majority of the 10,000 adolescents in their study sought treatment from their PCPs for an ailment, but only a minority were treated for an ED and most EDs went undetected (Higgins & Cahn, 2018; Gaudiani & Mehler, 2016; Swanson et al., 2011; Homan, Sim, Crowley, Lebow, & Kransdorf, 2019). A

general physician practitioner or nurse practitioner is likely to miss signs of disordered eating. In fact, one study indicated that 92% of these practitioners admitted to missing ED symptoms in their patients (Linville et al., 2010). Therefore, rates of referral from PCP to mental health services in problematically low (Homan et al., 2019). This means that many sufferers will be overlooked by their medical team and that must deal with an ED and its consequences in isolation.

There are often barriers that prevent a PCP from detecting and/or diagnosing an ED. Many PCPs having little to no experience with EDs and therefore may be anxious about mismanagement (Roehrig & McLean, 2010), or they may have little sympathy for symptoms they attribute to be under one's control (Higgins & Cahn, 2018; Gaudiani & Mehler, 2016). PCPs may not take an ED seriously if it's reported at an early stage, and they may miss symptoms if presented in a non-stereotypical fashion. For example, presentation with a low socioeconomic status, or being a minority, transgender, and/or youth (NICE, 2004). Despite patients under 13 years of age are less likely to endorse more typical ED behaviours (binge/purge episodes, concerns with weight and shape) and are equally likely to be male or female (van der Leer et al., 2012). It appears front-line medical practitioners need additional skills in order to improve diagnoses of EDs.

Amongst all the challenges, if a dietary intake or weight concern is not presented, it is particularly challenging for PCPs to detect an ED (Bjornely, 2014; Surgenor & Maguire, 2013; Roehrig & McLean, 2010; Head, 2019). There are further barriers that affect detection. Additionally, time constraints of doctor-patient appointments, the secretive and sometimes deceptive nature of EDs (Swanson et al., 2011; Eisenberg et al., 2011), and being part of a minority group (African American, Hispanic, and Native American) which will typically have

less access to initial and/or follow-up care than European Americans or non-Hispanic Whites, are all further impediments (McGuire & Miranda, 2008; Edens, 2017). The first line of defense in the identification of EDs in youth is simple yet difficult - the most significant screening device is a PCP who is aware of EDs (NICE, 2004). Rosen, MPH, and The Committee on Adolescence (2010) suggested incorporating screening as part of a routine annual exam, especially given that adolescents are unlikely to acknowledge the presence of an ED.

Thankfully, more and more research emerging with respect to neurological traits associated with EDs. For instance, Wallace, Richard, Peng, Knodt, and Hariri (2019) found even subclinical ED traits to be associated with cortical thickness in brain regions that are activated by food reward and perception. Using a Functional Magnetic Resonance Imaging scan, Cyr, Yang, Horga, and Marsh (2018) found abnormal fronto-striatal activation in both sufferers of BN and sBN. The results were accurate to the degree sufferers could be discriminated from non-ED patents, and can be detected early in course, allowing physicians a useful biomarker for assessment. Perhaps objective tools and scans will be a future key piece in diagnosis.

Diagnostic Criteria. The *Diagnostic and Statistical Manual 5* (American Psychological Association, 2013) offers the current diagnostic criteria for Feeding and Eating Disorders. In addition to the newly included BED this version differs from the DSM-IV (American Psychological Association, 2000) in that there is now a category for subclinical sufferers, who previously did not meet the criteria for full-blown AN or BN, under the Other Specified Feeding or Eating Disorder category.

The current diagnostic criteria for Anorexia Nervosa is [307.1 (F50.01 or F50.02)]:

- A. Restriction of energy intake relative to requirements leading to a significantly low body weight in the context of age, sex, developmental trajectory, and physical health.

Significantly low weight is defined as a weight that is less than minimally normal or, for children and adolescents, less than that minimally expected.

- B. Intense fear of gaining weight or becoming fat, or persistent behavior that interferes with weight gain, even though at a significantly low weight.
- C. Disturbance in the way in which one's body weight or shape is experienced, undue influence of body weight or shape on self-evaluation, or persistent lack of recognition of the seriousness of the current low body weight.

The current diagnostic criteria for Bulimia Nervosa [307.51 (F50.2)] is as follows:

- A. Recurrent episodes of binge eating. An episode of binge eating is characterized by BOTH of the following: 1. Eating in a discrete amount of time (ex: within a 2 hour period) an amount of food that is definitely larger than what most individuals would eat in a similar period of time under similar circumstances. 2. Sense of lack of control over eating during an episode.
- B. Recurrent inappropriate compensatory behavior in order to prevent weight gain, such as self-induced vomiting; misuse of laxatives, diuretics, or other medications; fasting; or excessive exercise.
- C. The binge eating and inappropriate compensatory behaviors both occur, on average, at least once a week for three months.
- D. Self-evaluation is unduly influenced by body shape and weight.
- E. The disturbance does not occur exclusively during episodes of anorexia nervosa.

The current diagnostic criteria for Binge Eating Disorder [307.51 (F50.8)] is as follows:

- A. Recurrent episodes of binge eating. An episode of binge eating is characterized by both of the following:

1. Eating, in a discrete period of time (e.g., within any 2-hour period), an amount of food that is definitely larger than what most people would eat in a similar period of time under similar circumstances.

2. A sense of lack of control over eating during the episode (e.g., a feeling that one cannot stop eating or control what or how much one is eating).

B. The binge-eating episodes are associated with three (or more) of the following:

1. Eating much more rapidly than normal.

2. Eating until feeling uncomfortably full.

3. Eating large amounts of food when not feeling physically hungry.

4. Eating alone because of feeling embarrassed by how much one is eating.

5. Feeling disgusted with oneself, depressed, or very guilty afterward.

C. Marked distress regarding binge eating is present.

D. The binge eating occurs, on average, at least once a week for 3 months.

As previously mentioned, subclinical EDs are captured in the category labeled:

Other Specified Feeding or Eating Disorder: 307.59 (F50.8) This category applies to presentation in which symptoms characteristic of a feeding and eating disorder that cause clinically significant distress or impairment in social, occupational, or other important areas of functioning predominate but do not meet the full criteria for any of the disorders in the feeding and eating disorders diagnostic class. The other specified feeding or eating disorder category is used in situations in which the clinician chooses to communicate the specific reason that the presentation does not meet the criteria for any specific feeding and eating disorder. This is done by recording “other specified feeding or eating disorder” followed by the specific reason (e.g.,

bulimia nervosa of low frequency). Examples of presentations that can be specified using the "other specified" designation include the following:

1. Atypical anorexia nervosa: All of the criteria for anorexia nervosa are met, except that despite significant weight loss, the individual's weight is within or above the normal range.
2. Bulimia nervosa (of low frequency and/or limited duration): All of the criteria for bulimia nervosa are met, except that the binge eating and inappropriate compensatory behaviors occur, on average, less than once a week and/or for less than 3 months.
3. Binge-eating disorder (of low frequency and/or limited duration): All of the criteria for binge-eating disorder are met, except the binge eating occurs, on average, less than once a week and/or for less than 3 months.
4. Purging Disorder: Recurrent purging behavior to influence weight or shape (e.g., self-induced vomiting, misuse of laxatives, diuretics, or other medications) in the absence of binge eating

Night eating syndrome: Recurrent episodes of night eating, as manifested by eating after awakening from sleep or by excessive food consumption after the evening meal. There is awareness and recall of the eating. The night eating is not better explained by external influences such as changes in the individual's sleep-wake cycle or by local social norms. The night eating causes significant distress and/or impairment in functioning. The disordered pattern of eating is not better explained by binge-eating disorder or another mental disorder, including substance use, and is not attributable to another medical disorder or to an effect of medication.

Typical Course of Treatment. Youth with EDs battle suffer for years before they are diagnosed and treated. The average length of pathology is seven years before sufferers present for treatment, and 80% of sufferers don't receive any treatment, perhaps due to costs and accessibility of treatment (Stice et al., 2013; Shaw & Stice, 2016; Fitzsimmons-Craft et al, 2019). Many mental health professionals are not trained and therefore do not provide services to high-demand populations like children (van der Leer et al., 2012).

Furthermore, treatment itself has its own barriers. Cost is one. Oftentimes, treatment offered through the public healthcare is limited and therefore, much treatment must be sought in the private sector. The cost of counselling appointments, co-payment requirements, medication, and transportation are major deterrents to treatment. Economic costs can lead to non-adherence to treatment, even when subsidies exist through universal health care and private insurance coverage. Approximately 97% of families experience financial hardship when trying to manage and treat EDs (Gatt et al., 2014). Over 40% of people suffering from EDs in Gatt et al.'s (2014) study allocated more than 10% of their income on treatment. In comparison, only 12% of people suffering with non-ED related chronic illnesses spend 10% of their income toward their treatment (McRae, Yen, Jeon, Herath, & Essue, 2013; Gatt et al., 2014). Bellows et al. (2015) found that healthcare costs on average are \$18,152 greater for those suffering with BED compared to those with no ED. Furthermore, the financial burden may contribute to maintenance of the illness by negatively influencing health outcomes; for example, disposable income spent on addressing an ED is not available to improve health in other way, such as engaging in exercise, holidays and relaxations, and so on (Gatt et al., 2014).

However, when adolescents do engage in treatment, based on the severity of symptoms, funding, and patient readiness, a typical path is as follows: wait list, self-help referrals, outpatient

treatment facilities, and inpatient treatment facilities. Referrals are based on resources, patient and family needs, and capacity of the program to meet the patients' and families' needs (van der Leer et al., 2012). Treatment options are described in detail below.

For instance, low intensity outpatient where the primary focus is engagement and recovery is the most common referral, has the greatest evidence-base and is cost-effective (Gowers et al., 2010). It is intended as a first line treatment and a post-intensive treatment. Patients suited for this type of treatment are medically stable with low to moderate medical and/or psychiatric symptoms, and are able to maintain some level of day-to-day function. Day treatment should not be an option if any of the following criteria are met: acute substance dependence, suicidal or para-suicidal behaviours, psychiatric crisis (psychosis, hallucinations, delusions), unsafe home environment (homelessness, physical or sexual abuse), repeated failure of day hospital treatment, or very low body mass index or percentage ideal body weight (van der Leer et al., 2012). If these are present, the next level of care is suitable.

Patients with moderate to high levels of ED or psychiatric conditions likely require referral to residential, day-treatment or inpatient treatment. Recovery-focused intensive (day, residential, inpatient) supports moderate to high level symptom severity and level of interference (suicide attempts, severe SIB, comorbid conditions, or failing to make changes at home). Intensive treatment should ideally occur in units that are able to distinguish between the needs of children and adolescents. The care of older adolescents should be flexible depending upon their level of maturity, and when necessary, transition to adult services is planned and facilitated by members of both adolescent and adult programs. Careful advance planning is necessary to ensure smooth transitioning when an adolescent is transferring from a pediatric to an adult program (van der Leer et al., 2012). Residential treatment is also a good choice for those that are not in

proximity of a day treatment. Outpatient with inpatient support is not appropriate for children, adolescents, or young adults as it applies to a population where repeated treatment attempts have failed. High intensity inpatient has a medical stabilization focus and supports those who require a high level of medical acuity where the focus is medical stabilization rather than a recovery (van der Leer et al., 2012). Based on the needs of the patient, they will hopefully will be referred to the appropriate services.

Additionally, key treatment recommendations for children and adolescents include parental involvement from the beginning and through all levels of treatment. Parents play a central role in weight restoration and normalization of eating. Families play a central role in working with younger patients, but their support may not always be available. Familial weight-teasing and encouragement of dieting increased eating pathology in youth (Neumark-Sztainer et al., 2010). Services should be delivered in an age-appropriate manner and setting, taking into account the young person's developmental, social and educational needs (van der Leer et al., 2012). For example, key pieces in the treatment of AN target starvation and social exclusion (Brandt & Crawford, 2019). Parental involvement can be an exceptional resource to provide the social support sufferers of EDs need.

Treatment for BN has had success with modalities that provide skills for emotional regulation. With respect to BN, Fischer and Peterson (2015) studied adolescent females during a six-month DBT treatment program along with a post-treatment follow up at six months. They found support for treating multiple forms of psychopathology by improvement in areas so often evidenced with BN in adolescents: non-suicidal SIB, frequency of objective binge episodes and/or purging, and better scores on the *Global Eating Disorder Examination*. Emotional regulation is an important part of NSFT.

Additionally, treatment for trauma appears to be a critical gap in practice. Olofsson, Oddli, Hoffart, Eielsen, and Vrabel (2019) found ED treatments are lacking for people who have experienced childhood trauma. ED sufferers report higher rates of experienced physical and sexual assault, other forms of victimization, and post-traumatic stress disorder (Brewerton, Rance, Dansky, O'Neil, & Kilpatrick, 2014). Olofsson et al. (2019) found sensory and emotional trauma work, fostering patient agency and a focus on a balanced relationship of vulnerability and self-assertion between therapist and client to produce enduring good outcomes for their patients with ED. A trauma-informed approach may be a necessary component of an effective treatment intervention.

In addition to PCP barriers, a sufferer's treatment-seeking, motivation and compliance in treatment may also be inhibited. Those who suffer with EDs struggle with ambivalence to change. Possible resistance to change can stem from the function of the ED itself which is oftentimes a mechanism to regulate painful emotions, to provide a sense of safety and/or control, to provide a sense of identity, as a method (albeit artificial) for maintaining a certain level of weight, and it may be considered a friend (van der Leer et al., 2012). These factors complicate the delivery of treatment and recovery in adolescence.

Undermining Risk Factors for Eating Disorders - Protective Factors

As EDs are difficult to treat, efforts in prevention are key. There are currently few effective treatment methods for EDs, and barriers to deliver treatment to people in need are real and extensive (Pennell, Webb, Agar, Federici, & Couturier, 2019). Some protective elements which aid in the prevention of EDs are identified in research. With respect to the family system, family support, a sense of connection in the form of a perceived sense of belonging and identification with others, social interaction, frequent shared family meals, an absence of

comments about weight, and a healthy mentality around food and eating are tentatively found to be protective factors through the promotion of general adaptive development (Langdon-Daly & Serpell, 2017; Nunez, 2019). Paternal support specifically offers a buffer against negative events in school associated with disordered eating and maternal support offers a buffer against negative family events associated with disordered eating (McVey & Davis, 2002). Hill, Hart, and Paxton's (2020) intervention *Confident Body, Confident Child* showed parents who were provided workshops had children who developed higher body esteem and lower external-cue eating, through the positive impact it had on parenting variables. It is evident that family can influence and maintain a buffering system against the development of an ED.

There are individual factors that offer protection against the development of EDs. High self-esteem, positive self-evaluation, positive body image, rejection of media ideals of body shape and weight (namely thinness), feeling encouraged to express opinions and feelings, and athletic participation serve as protective functions (Micali et al., 2015; Gustafsson, Edlund, Kjellin, & Norring, 2009). According to Las Hayas et al. (2016) a state of resilience which includes active coping, social support, increased well-being, knowledge of EDs, new projects, mindfulness and self-knowledge, precedes recovery from EDs. Therefore, these may be key elements in the disruption of the chronic nature of EDs. Preserving an individual's protective mechanism is a key focus of intervention in NSFT.

There are certain protective factors for the vulnerable athletic population. This includes receiving person-centered coaching and social support as opposed to bullying and criticism from coaches and teammates (Powers, 2000). Additionally, avoiding team weigh-ins, a focus on injury prevention and a decrease of performance pressure may be protective (Arthur-Cameselle et al., 2018). Vigilance in the athletic population is necessary as EDs often go undetected in athletes.

Prevention programs also safeguard against an onset of EDs. ED prevention programs targeted to populations who exhibit eating pathology have shown some improvement on behavioural outcomes and dieting behavior (Langmessaer & Verscheure, 2009). In a study of sixth-grade girls who participated in the *Free to Be* program aimed to discuss body image, weight, appearance, exercise, food, and create a mindful practice over five 50-minute sessions, results indicated that participants enjoyed the exploration and received positive influence with respect to developing a healthier relationship with their bodies, food, exercise and improving skills in emotional regulation (Klassen-Bolding, 2018). This is promising evidence that interventions can be applied and efficacious in vulnerable groups, thereby preventing later-onset EDs. However, the mechanisms that work in ED prevention need to be narrowed, implemented and monitored to ensure best practices in ED prevention.

Current Prevention Methods

General Prevention. In general, prevention programs aim to reduce eating pathology and/or ED risk factors, in hopes that this will lead to a reduction in the development of an ED. This is known as a gold standard intervention. However, in practice, many prevention efforts are not studied for a sufficient length of time post-intervention to demonstrate sustainable results (Ciao, Loth, & Neumark-Sztainer, 2014). This leaves professionals in the field hoping their prevention efforts are efficacious without evidence that their interventions actually impact the rate of EDs.

EDs are on the rise in the youth population. Much recent research suggests ED prevention efforts should target female adolescents around age 14 with the aim of circumventing a full-blown ED in late adolescence and early adulthood. Despite this, Green and Venta (2018) found most first-year university students had never been exposed to an ED prevention program

in high-school. This implies that opportunities for utilizing ED prevention programs are commonly missed in adolescence, which appears to be a critical time period.

There exists some notable prevention groups and studies. In their 2014 study, Ciao et al. reviewed nine ED prevention programs that included at least a six-month follow-up period. Participants were at least middle-school age. Each was based on a cognitive- or behaviour- based theory and intervened on one or more ED risk factor. Each program was delivered in group settings and included interactive material. Most included discussion around healthy food, media literacy (ML), social pressures, and body image. Of note, personal stories of those who facilitated groups were not shared and ED-specific psychoeducation was not a primary focus, if mentioned at all. These researchers recommend future studies should include offering prevention to a broad array of weight- or eating- related problems, across a large range of ages. It appears a variety of setting and programs can produce efficacious results.

Other reviews found additional components. Shaw, Stice, and Becker (2009) studied elements that form a successful ED prevention program, targeted toward those aged 15 and over: interactive, multi-session, delivered by a trained professional, and included body image or dissonance-induced content. They concluded not only should an ED prevention program reduce ED risk factors, but it should also show a reduction in symptoms and prevent later-onset ED development. They found a reduction in ED risk factors in general did not necessarily mean prevention of ED. This was due perhaps to body dissatisfaction being the only significant predictor studied of future EDs, but results may have been influenced by the severity of the ED symptomology as well (Horney et al., 2015; Rohde et al., 2015). In any case, body dissatisfaction appear to be a necessary component in ED prevention.

Other risk factors should be addressed as well. The targeted risk factors which have been shown to have the greatest effects when preventing eating pathology include decreasing adolescents' sense of an "elevated perceived pressure to be thin, internalization of the thin-ideal standard of female beauty, body mass, body dissatisfaction, and negative affect" (Shaw et al., 2009, p. 2). Randomized studies for older adolescents have also shown that targeting and reducing the intensity of risk factors such as thin-ideal internalization, body dissatisfaction, and negative affect reduced ED symptoms (Stice, Shaw, Burton, & Wade, 2006; Burton, Stice, Bearman, & Rohde, 2007). A reduction in the thin ideal as an intervention itself affects other variables studied (Horney et al., 2015). Examples of exercises of cognitive dissonance are: writing a letter to the participant's younger self warning of the costs of the thin ideal, complimenting the appearance of peers, and a discussion of who benefits from the thin ideal (Stice, Rohde, & Shaw, 2015; Culbert, Racine, & Klump, 2015). Again, body dissatisfaction and cognitive dissonance interventions appear fundamental in treatment intervention. There are a variety of prevention programs available that will be discussed next.

Girl Talk. Short-term interventions have some evidence of efficacy. McVey and Davis (2002) created an interactive, six-session cognitive behaviour therapy-based intervention that consisted of a peer-support group and was delivered by public health nurses. Participants, a group of girls in grades six through eight, were recruited via a mass invitation to all parents for students to join a study where attitudes and feelings about eating were studied. It included lessons on critical media use, body acceptance, healthy weight control behaviors, peer relation skills, self-esteem building and stress management skills (McVey & Davis, 2002; McVey, Lieberman, Voorberg, Wardope, & Blackmore, 2003; Shaw et al., 2009). Results showed weight-related self-esteem increased and dieting behaviour decreased; however, results were not replicable (McVey,

Lieberman, Voorberg, Wardope, Blackmore, & Tweed, 2003; Shaw et al., 2009). In NSFT there is a focus on introducing and implementing these.

Student Bodies. Another prevention program that focuses on body image is available and has replicable results. Winzelberg et al. (2000) created an eight-week online intervention found to be effective in reducing weight and shape concerns in high school and college students who were at high risk for EDs. It was based on cognitive-behavioral body dissatisfaction interventions.

Student bodies provided information on improving body image, healthy weight control behaviors, nutrition, and included unstructured email support. Participants joined the program voluntarily, with the only requirement being to have a desire to improve body image. Results from studies of *Students Bodies* have shown that guided group discussions improves the efficacy of the program (Kass et al., 2014). Positive results such as a reduction in the onset of ED in participants with higher BMIs, a reduction in weight and shape concerns, and lower body dissatisfaction have been replicated.

The Body Project. Other interventions are short and simply focus on one risk factor. *The Body Project* is an empirically supported cognitive dissonance based in-person group program to prevent EDs through a critique of the thin ideal using verbal, written, and behavioural exercises (Stice, Mazotti, Weibel, & Agras, 2000; Stice et al., 2006; Stice, Rohde, Gau, & Shaw, 2009). It is delivered over three to four sessions, once per week. It is thought to help reduce motivation of unrealistic beauty standards, thereby reducing body dissatisfaction, dietary restraint, negative affect, eating restraint, functional impairment and future onset of EDs. Results indicate a reduction for future risk of ED symptoms and an improvement in psychosocial functioning and mental health care utilization.

Two randomized control trials of the *Body Project* looked at 503 young women and adolescents with body image concerns who volunteered to participate. Would-be participants with threshold EDs were excluded. The mean age of participants in the *Body Project* condition was 16.33. Results include 0% ED rates over three-year follow-up with respect to participants who refused to acknowledge the cost of pursuing the thin ideal, compared to results of the assessment only control group at 50% and alternative interventions at 18% (Stice, Marti, Spoor, Presnell, & Shaw, 2008; Stice et al., 2000; Stice, Rohde, Durant, & Shaw, 2012; Stice et al., 2006; Stice et al., 2009). The significant results were found only with respect to EDs as categorized in the DSM-IV, not the DSM-5 (Horney et al., 2015); however, Green, Willis, Fernandez-Kong, and Reyes (2017) found efficacious results with the *Body Project* in their recent work. A drawback of the *Body Project* is that there is no data with respect to dosage or treatment engagement, or the impact of participants' peer and familial environment.

Key Themes Included in Efficacious Eating Disorder Prevention Programs

Media Literacy. ML focuses on educating different categories of public (children, young people and adults) to critically and consciously consume media messages. It encompasses various skills such as “critical thinking, problem solving, autonomy, communication and participation” (Ciurel, 2016, p. 13). In the current social media environment, ML is suggested as a preventive force because of heightened vulnerability to images of the thin ideal (McLean, Wertheim, Masters, & Paxton, 2017). McLean et al. (2017) found a social media intervention looking at body image, disordered eating and ML in relation to ED risk factors caused an improvement after only three lessons. The author believes ML is a necessary component in an ED prevention intervention given the social media climate of the day.

Coping with Stress and Trauma. Stress and trauma affect many adolescents. Some interventions include a component of stress management, and have found it helped lead to a reduction in dietary restraint, eating and shape concerns, and ED pathology (Stewart, Carter, Drinkwater, Hainsworth, & Fairburn, 2001). Childhood maltreatment is common in those who experience EDs. It is considered a non-specific risk factor, though it is not clear how it and subsequent onset of eating pathology occurs (Tasca et al., 2013; Tasca & Balfour, 2014; Kuipers & Bekker, 2012; Caglar-Nazali et al., 2014). Tasca et al. (2013) looked at childhood maltreatment, ED psychopathology and adult attachment. They found anxious and avoidant attachments, both characterized by affect dysregulation and interpersonal sensitivities, mediated the development of EDs. Childhood maltreatment should be a facet of both prevention and treatment efforts. The inclusion of stress-coping techniques along with a trauma-informed approach is a significant piece of NSFT.

Elevated Eating Disorder Symptoms. Participants in ED prevention groups have varying baseline scores on assessment. Horney et al. (2015) combined results from two trials to determine why some participants developed EDs (n=20) while most did not (n=216) during a three-year follow up period after participation in *Body Project*. They found higher baseline scores for thin-idealization, reported dieting (although this predictor variable did not reach statistical significance), negative affect, body dissatisfaction, and ED symptoms characterized the group that experienced later-onset ED. The control group participants who developed later-onset EDs had higher baseline scores including thin-ideal internalization which trended toward significant. This suggests thin-ideal internalization predicts the onset of ED regardless if one did or did not participate in *Body Project*. For the higher-risk sub-population, they suggested the development of a more intensive version of *Body Project*, to perhaps deliver it to a younger age

group, and to deliver boosters to the high-risk group and to participants who did not see large effects in a decrease of symptoms (Horney et al., 2015). Matching intervention with baseline scores may be a critical component to an efficacious program.

Combating the Thin Ideal through Cognitive Dissonance. Body acceptance appears to be a main theme across interventions. In general, interventions that focused on body acceptance through cognitive dissonance were more effective than psychoeducational programs, perhaps because body dissatisfaction is correlated with disturbances such as unhealthy dieting, negative affect, and ED behavior (Shaw et al., 2009; Bailey et al., 2014; Stice et al., 2009). Stice's (2001) dual pathway model explains an internal pressure to be thin and thin-ideal internalization predicted subsequent growth in body dissatisfaction, and initial body dissatisfaction predicted growth in dieting and negative affect. Dieting and negative affect predicted growth in bulimic symptoms. Challenging beliefs about the thin ideal is an imperative component of all ED prevention programs (Green, Scott, Diyankova, & Gasser, 2005; Stice et al., 2006; Horney, et al., 2015; Stice, Marti, Shaw & Rohde; 2019). In fact, researchers reported the more dissonance, the better the outcome (Stice, Marti, Shaw, & Rohde, 2019; Stice et al., 2009). NSFT will incorporate exercises cognitive dissonance, in order to improve body dissatisfaction and promote body acceptance.

It appears that interventions focusing on cognitive dissonance with respect to body dissatisfaction are imperative as they produce significantly greater decreases in thin-ideal internalization, body dissatisfaction, dieting attempts and ED symptoms in comparison to a psychoeducational-only comparison group. Activities that promote cognitive dissonance and reduce risk factors and symptoms can include voluntary discussion and reflection on the cost of the thin ideal and disordered eating practices in and on one's life (Matusek, Wendt, & Wiseman,

2004; Halliwell & Diedrichs, 2014). These lead to an internalization of a new viewpoint, perhaps because inconsistent cognitions lead to psychological discomfort and motivates people to resolve the inconsistencies (Festinger, 1957; Stice et al., 2015). The author hopes to shift participant perspectives in participants through cognitive dissonance exercises, thereby reducing ED risk factors.

Improving Intervention Effects. There are specific elements that can influence the effectiveness of an intervention. Participation factors, universal versus specific programs, a focus on specific skills like emotional regulation, facilitator selection, and increasing participants' home exercises, may improve intervention effects (Stice et al., 2009). Stice et al. (2009) found selected (versus universal), interactive (versus didactic), multi-session (versus single-session) programs offered to participants over age 15, and delivered by professional interventionists (versus endogenous providers) produced larger intervention effects. They also found enhancing self-esteem, stress management skills, body acceptance, healthy weight control behaviors, and critical analysis of the thin-ideal had a beneficial effect (Shaw et al., 2009). Below is a more in-depth look at these factors.

Participant Factors. Intervention effects have been shown to be affected by participant variables of risk status, voluntary participation and age.

Risk Status. Risk status (high versus low) affects outcomes. Programs that selected high-risk individuals, or high-risk subgroups within universal programs had a larger effect compared to universal programs alone (Buddeberg-Fischer, Klaghofer, Gnam, & Buddeberg, 1998; Stewart et al., 2001; Stice, Fisher, & Martinez, 2004; Weiss & Wertheim, 2005; Kass, 2017) except for dissonance-based programs, which had similar effects.

Voluntary Participation. Voluntary versus mandated participation can have an effect on intervention outcome. Young women were invited to participate voluntarily in the *Body Project*, perhaps adding to the positive results of the intervention (Horney et al., 2015; Stice et al., 2000). Group cohesion, participant engagement and results are impacted by whether or not participation is voluntary.

Age. Additionally, age can affect the efficacy of the intervention. Shaw et al. (2009) found participant age to be an important influence on intervention results. When participants were older (over 15), there were larger effects – perhaps due to a critical age when eating pathology emerges, or perhaps due to an increased ability for insight and processing of the intervention. The mean age of various versions of the *Body Project* range from 16-18. Rohde et al. (2015) found that variables of perceived pressure to be thin, thin-ideal internalization, and dieting doubled the likelihood of developing an ED if participants had experienced these by age 14. At age 14, risk factors that appear to be most predictive of later onset eating disorders include body dissatisfaction, perceived pressure to be thin, and thin-ideal internalization (Rohde et al., 2015). Research suggests that 14 may be a key age to target perhaps due to post-pubertal time alongside cognitive and interpersonal changes including an increase in peer influence and the onset of romantic relationships. NSFT welcomes adolescents once they reach age 14.

Universal Programs. There is debate whether targeted or universal programs deliver the greatest benefit. Rohde et al. (2015) argue it's important to identify youth at elevated risk for *any* ED because prevention programs should ideally target all EDs rather than just one type. Although ED prevention programs have greater effects on high-risk population, there may be some benefit to provide universal programs to challenge the zeitgeist surrounding food and body, which are thought to influence the development and maintenance of eating pathology (Shaw et

al., 2009). Bailey et al. (2014) found in 46 trials and six meta-analytic reviews, universal prevention programs increased participants' knowledge of EDs but did not decrease risk factors. However, researchers found for children and adolescents aged 10-16, a universal program showed significant effect, even at the one year follow up, on all risk factors of disordered eating except for perceived teasing (Warschburger, Helfert, & Krentz, 2011; Warschburger & Zitzmann, 2018). Interestingly, their program did not include psychoeducation on disordered eating but did include the topics of healthy eating, healthy exercise, stress coping, self-esteem and body acceptance, media related pressures, peer pressure, general life skills and resources. Universal programs appear to deliver results with respect to all EDs, but the author hypothesizes in high-risk subgroups, a more targeted approach may be necessary.

Negative Affect. Specifically, if a participant experiences increased levels of negative affect, which is a distressing emotion common to all EDs. Negative affect can be considered the experience of negative emotions such as nervousness, hopelessness, loneliness, fear, irritability, shame, anger, or frustration (Curhan et al., 2014). Negative affect adversely influences health and is associated with personal responsibility. In America, if one experiences negative health, they are typically perceived as responsible for its occurrence and solution (Curhan et al., 2014; Pressman, Gallagher, & Lopez, 2013). Heron, Scott, Sliwinski, and Smyth (2014) found unhealthy eating and weight control behaviour such as meal skipping was not preceded by negative affect. However, when women reported large food consumption, a loss of control around eating, and/or restricting food intake, they also reported experiencing negative affect. In the author's opinion, negative affect is a major factor in the development and maintenance of EDs and therefore this will be a focus of NSFT.

Self-Esteem and Self-Concept. Another focus is self-esteem and self-concept is a common struggle for adolescent females - even in those who don't experience disordered eating. Adolescence is a time where youth develop a sense of self-concept and self-esteem through interactions with peers, activities they engage in, and things they hear about themselves (Searcy, 2007). In their 2016 study, Bleidorn et al. (2016) reviewed over 950,000 people across 48 nations aged 16-45. They found that over a 10-year period, females' self-esteem trended downward whereas males' trended upwards. Perhaps an intervention on self-esteem and self-concept would help prevent their decline along with any additional associated negative consequence, such as using or restricting food as a coping mechanism.

For adolescents, body weight and self-esteem appear to be linked. Physical appearance, romantic appeal, athletic and social competence, overall self-esteem and global self-worth are negatively associated with body weight (Brown, McMahon, Biro, & Crawford, 1998; French et al., 1995; Phillips & Hill, 1999; Strauss, 2000; O'Dea, 2006; Kass et al., 2017). Heavier body weight girls are more likely to have poorer self-concept across all above-mentioned subscales than lower-weight girls. O'Dea (2006) found statistically significant impacts on self-concept with respect to categories of *Physical Appearance*, *Romantic Appeal* and *Job Competence*. Over a three-year time period, participants in heavier bodies had the most significant decrease in scores related to self-concept *Physical Appearance* and *Close Friendship* (O'Dea, 2006). Poor self-concept was also associated with body image concerns, EDs, poor nutritional status, and depression (Button, Sonuga-Barke, Davies, & Thompson, 1996; Newell, Hammig, Jurich, & Johnson, 1990; Hoare & Cosgrove, 1990; O'Dea, 2006). The author is curious as to what drives the relationship between body size and self-concept (is it the excess weight itself that is the

problem or the weight stigma) and believes this link could be uncoupled with the proposed program.

Self-Objectification. Another key element is self-objectification. This involves monitoring one's body as an object from an external observer's perspective with constant scrutiny over how one's body looks. It is thought to derive from appearance idealization (Dakanalis, Timko, et al., 2016; Dakanalis, Clerici, et al., 2016; Riva, Gaudio, & Dakanalis, 2015; Hausenblas et al., 2013). Self-objectification is a significant factor with respect to ED onset and maintenance that has demonstrated up to half the predictive power of the inception and chronicity (Dakanalis et al., 2017). If one sees oneself as an object, they no longer see themselves as subjects with voices, thoughts, opinions, ideas, or values. NSFT is aimed to expand these aspects of the participants, thereby decreasing self-objectification, which the author believes is a key facet of EDs.

Weight Stigma. In the authors opinion, weight stigma is a main contributing factor in the origin, risk factors, and maintenance, of EDs. Weight stigma is the prejudice, discrimination and negative stereotyping based on weight (Puhl & Heuer, 2009) and includes weight-related bullying and teasing (Bucchianeri, Eisenberg, Wall, Piran, & Neumark-Sztainer, 2014; King, Puhl, Luedicke, & Peterson, 2013). Munro (2017) and Sue (2010) argued fat micro-aggressions appear in an oppressive system to reflect a worldview of inclusion/exclusion, superiority/inferiority, desirability/undesirability, or normality/abnormality. Many girls with EDs appear to encompass this binary thinking-style.

Researchers found approximately 29% of adolescents reported being victimized by weight-stigma even though 65% were classified in a normal weight range (Puhl & Luedicke, 2012). Both explicit and implicit bias was present in children aged four to seven years old with regards to body weight perceptions (Hutchison & Müller, 2018). For those that are "overweight,"

being overweight often begins in childhood, can be commonplace in adolescence and produces negative effects in psychological, physical and mental well-being (Puhl, 2011). Internalized weight bias is associated with poorer psychological functioning – namely depression, anxiety, comorbid psychiatric problems, disordered eating, poor body image and low self-esteem (Puhl et al., 2018). Puhl et al. (2018) showed that the higher the adolescent's weight, the greater level of internalized weight stigma existed, with no differences in reported weight teasing history. However, a mother's (and not father's) comments about an adolescent's weight, an encouragement to diet, and comments about her own weight or dieting behavior increased weight bias internalization (WBI) in youth. It is of this author's opinion that it may be the weight stigma itself and not the excess body weight that produces negative consequences.

For instance, public health and media messages against obesity can lead to anti-fat attitudes and stigma. Messaging that “fram[es] fatness as negative, unhealthy, controllable, acceptable to stigmatize” (p. 543) pushes the agenda that body fat carries great health risks and is totally under one's control. Every member of this culture is an unwitting consumers of fat-negative messages. This messaging leads to greater anti-fat prejudice, more willingness to discriminate against fat people, less willingness to celebrate body diversity, and less ability to believe one could maintain both health and excess weight (Frederick, Saguy, Sandhu, & Mann, 2016). Diet culture is an insidious element of our cultural milieu and anti-fat messaging serves only to promote discrimination and negative psychological and physical health impacts.

Furthermore, experiencing micro-aggressions due to weight stigma can be a stressful and/or traumatic experience. It leads to increased stress levels and reduced self-control (Major, Eliezer, & Rieck, 2012). In one study, adults with the highest internalized weight bias tried to lose weight, but had higher BMIs, self-perceived weight, and had experienced micro-aggressions

of weight stigma, namely teasing (Puhl et al., 2018). We have already seen teasing linked to risk factors for the development of EDs in adolescent females, and therefore the author hypothesizes there is a strong link between weight stigma and the origin and maintenance of EDs.

In addition, weight stigma also affects quality of life. It leads to disordered eating behaviours including overeating, and psychological distress (Papadopoulos & Brennan, 2015; Puhl & Suh, 2015; Salwen-Deremer, Hymowitz, Bannon, & O'Leary, 2015; Schvey, Puhl, & Brownell, 2011). Especially amongst overweight women, experiencing weight stigma increases overeating and challenges the idea that weight stigma (through behaviours such as “tough love” or media messaging about the dangers of excess weight) is a positive motivating force for weight loss (Schvey et al., 2011). The author suspects similar processes happen for youth.

Furthermore, in “overweight” adults and presumably for higher BMI adolescents, the unsustainable pursuit of weight loss produces feelings of failure, guilt, and inadequacy (O’Dea, 2006). O’Dea (2006) recommends dieting to be avoided during adolescence in order to protect one’s self-concept and provide a buffer them against weight stigma. It is the author’s hope that NSFT will create the space for this to occur.

Dialectical Behaviour Therapy. An approach that may be useful to adopt in an ED prevention group is Dialectical Behavior Therapy (DBT). DBT is a theoretical approach originally developed by Marsha Linehan for the treatment of Borderline Personality Disorder (Linehan, 1993). DBT makes the assumption that individuals with Borderline Personality Disorder lack interpersonal skills including emotional regulation and distress tolerance. People with BPD may exist in an environment that may not support the use of any skills they may have. In fact, their environment typically supports dysfunction (Foundation for Alcohol Research and Education, 2015; Linehan, 1993). Some researchers believe treatment-resistant EDs are resistant

due to encounters with treatment methods that lack interventions to combat emotional dysregulation (Federici, Wisniewski, & Ben, 2012; Zeeck, Herzog, & Hartmann, 2004). It is this authors' hypothesis that teaching these skills to adolescents as part of a comprehensive prevention intervention will play a significant role in helping decrease the incidence rate of EDs through impacting substance (food) -dependent or –avoidant coping mechanisms to manage emotional regulation.

There is already support in research that this approach works. For example, Federici and Wisniewski (2013) presented an intensive blended DBT and ED intervention (providing food exposure, weight monitoring, cognitive modification, and ED psychoeducation) for patients with comorbid ED presentations who experienced failed treatment attempts, and chronic emotional dysregulation. Results included a reduction in ED symptoms, suicidal and non-suicidal SIB, treatment-interfering behaviors, hospitalizations (psychiatric and medical), and clinician burnout. Lenz, Taylor, Fleming and Serman (2014) examined DBT for treating participants who experienced EDs and co-occurring depression. Results support the treatment of EDs with DBT, with respect to a reduction in the frequency of ED episodes. Additionally, the intervention may increase a sense of self-efficacy, thereby reducing potential mood disorders and/or episodes. Emotional regulation and interpersonal skills are a basic part of NSFT.

Facilitator Characteristics. Facilitators are an important key in delivering interventions. Interventions delivered by trained facilitators were more effective than those delivered by endogenous providers, like teachers, nurses, and counselors (Shaw et al., 2009). However recent research is contradicting this, finding peer-led interventions producing similar results to those that are clinician-led (Stice et al., 2017). Having interventions led by peers is ideal as perhaps peers are more viable and sustainable choice in natural settings (Shaw et al., 2009). NSFT will be

led by facilitators; initially however, students and peers may be a viable alternate or support for future applications of the program.

Summary

In this chapter, we focused on literature that spoke to the risk factors of EDs in general and then specifically for AN, BN, BED, and PD. Protective factors were then reviewed, much of which centred around eliminating weight stigma, an internalization of a drive for thinness, and increasing self-esteem.

A typical pathway of identification, diagnosis and treatment was reviewed, along with barriers in diagnosis and treatment-seeking was discussed. Notably, a PCP is typically a first line of defense in identifying and addressing developing EDs in youth. Annual screening provided by a PCP is an opportune time to screen for EDs. Neumark-Sztainer et al. (2011) found early prevention is critical as adolescents who engaged in dieting and disordered eating maintain or increase these behaviours over a 10-year follow-up period. Their study highlights the need to pinpoint when risk factors emerge, when these risk factors predict a full-blown ED, and qualities of an efficacious prevention program in the teenage years.

Some efficacious prevention programs were reviewed and important components of the programs were explored. These factors include ML, stress coping, and elevated ED symptoms, universality of the program, combating the thin ideal through cognitive dissonance, negative affect, self-esteem and self-concept, self-objectification, weight stigma, dialectical behaviour therapy, and facilitator characteristics.

Based on the research presented above, the prevention framework this thesis supports is one targeted toward 14-18 year old people who identify as female. It includes interventions on

social media literacy, ED mindset, social support, mindful self-care, negative affect, psychosocial functioning, and interpersonal skills.

Chapter 3: Methodology

Introduction

This chapter will provide a detailed overview of the proposed comprehensive ED prevention program targeted to girls aged 14-18. NSFT is focused on the prevention of threshold and subthreshold EDs by improving self-esteem, cognitive dissonance, stress management, assertive communication, body image, ML, negative affect, and interpersonal skills.

Trained facilitators will receive referrals to the program, select candidates (and refer out would-be participants that will not be eligible), hold an intake meeting to discuss informed consent, expectations, and collect baseline scores. When NSFT begins, they will follow the *Weekly Session Guideline*. Post-group, participants will complete follow-ups. Follow-ups will occur immediately after group terminates, six months after group terminates, and annually for nine years post-termination, thereafter.

Description of Research Methodology

The method used is qualitative research methodology. It lays the foundation for a pilot experiment, which is a small-scale exploratory study conducted to assess usability, cost, strengths, and limitations, in order to sharpen the study design prior to full-scale execution.

Group Format

The format of this group is influenced by psychoeducation, which involves advising clients about building a network of resources, skills development which involves communication strategies, self-confidence-boosting activities, and cognition challenges which involves the monitoring of thoughts, beliefs, decisions, opinions, and assumptions to identify destructive pathways that lead to maladaptive behaviors. Additionally, NSFT is heavily focused on peer support in the format of group exercises and supporting members to manage thinking and

emotions, increasing self-confidence, and interpersonal exercises to enhance self-reflection. The group will be a closed 12-week group. It will meet once per week for 90 minutes each session. Once the group of six to eight participants has begun, no other people will be allowed to join and participants will remain stable until the end. Sessions are designed around a particular theme and new learning, and there will be time allotted for practical application. Each participant is expected to contribute encouraging group cohesion (Corey, Corey, & Corey, 2010; Watkins, 2015). Group format for adolescents is particularly appropriate as peers are often the most poignant influence in an adolescent's life, and therefore group work can likely influence an adolescent in positive ways.

For adolescents, a group can be a pleasurable experience that triggers personal development and bolsters self-esteem. Adolescent feedback of a high-school voluntary-participation ED prevention group was positive and perceived as enjoyable, empowering and educational (Searcy, 2007; Breithaupt, Eickman, Byrne, & Fischer, 2019). In fact Drumm (2006) believes group work can provide therapeutic aid to its members, where members can learn to assert their own needs, recognize points of connect and disconnection among members and practice new skills in a contained environment. In their review of studies on increasing self-esteem in youth, Haney and Durlak (1998) found group therapy produced increases in self-esteem when targeted activities were utilized. Positive influence found in group work can offer protection against the later development of EDs.

This prevention program will include a variety of methods to achieve its goals. There will be in-session application in the form of exercises and group discussion to facilitate skills acquisition, reflective thinking, group support, and group cohesion (Shaw et al., 2009). Homework will be assigned at the end of each session and will include reflective (journal)

questions and exercises to reinforce skills learned in-session. Besides personal growth, the aim of in-group discussions and corresponding homework is to re-affirm the costs of adhering to the thin ideal, body dissatisfaction and disordered eating, in order to internalize a perspective shift (Stice, Rohde, & Shaw, 2015). Journaling will hopefully allow space for participants to achieve a perspective shift that will hopefully help to prevent future-onset EDs.

Selection of Participants

School Boards will be contacted to obtain permission to contact high schools in any given surrounding area. The recruitment message will be posted at the school and be delivered through normal channels of communication (teachers, school counsellors, administrative staff), offering the group to any girl aged 14-18 who has concerns about body image.

Interested girls will be screened via telephone. Inclusion criteria entails: girls must have body image concerns, girls must be willing to commit time to in-group sessions, assessments and follow-ups, at-home application of lessons, and girls must be willing to share their experiences in front of peers. Yalom and Leszcz (2005) noted the most important factor with respect to inclusion and formation of a successful group is that the candidate is highly interested and motivated to attend and engage in the group. Girls will be excluded should they be identified as, or suspected of having, a mental health disorder, SIB or suicide attempts, if they refuse to participate fully, if refuse to follow group rules or agreements including time commitments, or, if they are in the midst of acute situational crisis (Yalom & Leszcz, 2005). If any student is excluded, they will be provided with referrals (Corey et al., 2010) such as the Fraser Health Crisis line at # [1-877-820-7444](tel:1-877-820-7444). Applying inclusion and exclusion criteria will help to ensure matching of participant needs to the intervention and peers who face their same struggles. Doing so will help to improve group cohesion and effectiveness.

Ethical Considerations

Although the described prevention group is not intended as group therapy, it is prudent to be aware of relevant guidelines. Applying ethical guidelines from the following publications will help to ensure safety for all members and facilitators of the group: *Canadian Counselling and Psychotherapy Association* (Canadian Counselling and Psychotherapy Association, 2015); *Association for Specialists in Group Work* or *American Group Psychotherapy Association* with respect to general group guidelines, cultural sensitivity, and social justice (Thomas & Pender, 2008; Singh, Merchant, Sudrzyk, & Ingene, 2012). Our intention with group is to provide a safe space for processing that does not perpetuate harm.

Instrumentation

Facilitators will identify each participant's baseline scores on the scales and assessments listed below. There sheer number of scales and assessments may seem excessive, but the author feels there is a gap in other prevention groups with the lack of benchmarks. The scales and assessments below relate to multiple risk factors and align with the comprehensive nature of NSFT. Items one and two listed below are available in the appendices as examples.

1. *Demographic Questionnaire* (see Appendix A)
2. *Weight Bias Internalization (WBI)* (Durso & Latner, 2008; Pearl & Puhl, 2018). This scale helps one to become aware of held beliefs around negative stereotypes about weight and identity, one's level of agreement with these ideas, and one's application of these ideas to oneself via engaging in self-devaluation, self-disparagement and self-blame (Corrigan, Watson, & Barr, 2006; Puhl et al. 2018). The *Weight Bias Internalization Scale* has been modified for adolescents as the *Weight Bias Internalization*. It has been recently applied to youth population who seek weight loss treatment to assess their levels

of binge eating, eating as an emotional coping mechanism, weight teasing and dieting behaviour, and familial attitudes toward dieting and dieting behaviour. See Appendix B for an unofficial version of the *Weight Bias Internalization* (Ciupitu-Plath, Wiegand, & Babitsch, 2018) and *Weight Self-Stigma Questionnaire* (Lillis, Luoma, Levin, & Hayes, 2010).

3. *Perceived Stress Scale – 10 item version - PSS-10* (Cohen, 1994)
4. *Coddington’s Life Events Scale for Adolescents - CLES-A* (Coddington, 1972)
5. *Self-Compassion Scale – SCS* (Neff, 2003)
6. *Coopersmith Self-Esteem School Inventory Short Form - CSEI-SF* (Coopersmith, 1967; Coopersmith, 1981; Hills, Francis, & Jennings, 2011)
7. *The Ideal-Body Stereotype Scale—Revised* assesses thin-ideal internalization (Stice et al., 2008)
8. *Sociocultural Attitudes Towards Appearance Questionnaire-4-Revised - SATAQ-4R* (Schaefer, Harriger, Heinberg, Soderberg, & Thompson, 2016)
9. *Body Image Acceptance and Action Questionnaire - BI-AAQ* 1-factor, 12-item (Sandoz, Wilson, Merwin, & Kellum, 2013) & *Body Image Avoidance Questionnaire Factor BIAQ* 2-factor, 14-item (Lydecker, Cotter, & Mazzeo, 2014)
10. *Body Shape Questionnaire – BSQ* (Cooper, Taylor, Cooper, & Fairburn, 1987)
11. *The Dutch Restrained Eating Scale - DRES* (van Strien, Frijters, van Staveren, Defares, & Deurenberg, 1986) assesses the frequency of dieting behaviors.
12. *Harter Self-Perception Profile for Adolescents* (Harter, 1988; Harter, 2012). This instrument measures the following domains of self-concept: scholastic competence (how intelligent the respondent feels they are), social acceptance (perceived popularity,

acceptance by peers, the presence of friends), athletic competence (perceived athletic ability), physical appearance (level of happiness with appearance, body and level of attractiveness), job competence (perception of job skills and competence), romantic appeal (perceived sense that they are attractive to those whom they are interested in, and that they are fun and interesting on a date), behavioural conduct (like the way they behave, they like to do the right thing, and act the way they are supposed to), *close friendship* (the ability to make close friends, and share personal thoughts and secrets), *global self-worth* (feelings of overall self-worth and self-esteem).

Weekly Session Guideline

PHASE 1				
<p>In Phase 1, participants will learn and use tools to <i>RECLAIM</i> their lives. They will set the foundation for the life they desire – their Ideal Reality and identify pieces of their lives that are taking them away from their Ideal Reality. By the end of Phase 1, participants will learn to sense and identify their feelings and emotions, recognize signs of stress and learn tools of self-containment, self-regulation and self-care.</p>				
Session	Title	Theme / Overview	Main Tasks	Preparation work for next session
	Pre-Group	Complete Assessments	Complete Assessments	Join the online support group and introduce themselves

Session 1	All About Me	Getting to know group members, how they came to the group and develop understanding of the intention of the group Self-Image - This lesson helps students understand how self-image can influence lifestyle choices	<ol style="list-style-type: none"> 1. Welcome Message 2. Group Rules 3. Icebreaker 4. Students begin by identifying those qualities they admire most in peers, and by comparing their self-image with these qualities. They learn to identify self-image “problems” and self-limiting beliefs and develop positive strategies for dealing with these problems 5. Discussing Group Purpose 6. Check-out 	<ol style="list-style-type: none"> 1. Complete journal questions and exercises, and handouts 2. Create Vision Board (bring it to next session) 3. https://www.viacharacter.org/survey/account/register
Session 2	Feel Your Feelings	In this session, we delve into painful feelings – what they are, how to identify them, and tools to manage them.	<ol style="list-style-type: none"> 1. Check-in 2. Learn about common emotions 3. Start to appreciate emotions instead of resisting them 4. How to manage emotions effectively 5. Check-Out 	<ol style="list-style-type: none"> 1. Complete journal questions and exercises 2. Engage in peer support
Session 3	Think your Thoughts	In this session, we identify helpful and unhelpful thoughts	<ol style="list-style-type: none"> 1. Check-in 2. Learn to cultivate thoughts that bring them toward their ideal reality 3. Learn to disconnect from thoughts that bring them away from their ideal reality 4. Manage painful thoughts and associated emotions 5. Check-Out 	<ol style="list-style-type: none"> 1. Complete journal questions and exercises 2. Engage in peer support
Session 4	Express Yourself	In this module, participants discover how to express themselves in a way that brings them closer to their ideal reality.	<ol style="list-style-type: none"> 1. Check-in 2. Learn to express themselves using non-violent communication 3. Learn how to express their needs 	<ol style="list-style-type: none"> 1. Complete journal questions and exercises 2. Engage in peer support

			<ol style="list-style-type: none"> 4. Learn to receive criticism in a way to moves them toward their ideal reality 5. Check-Out 	
Session 5	Self-Care	In this module, participants discover how to increase their self-compassion and self-care	<ol style="list-style-type: none"> 1. Check-in 2. Recognize the importance of self-care 3. Identify ways to engage in self-care 4. Learn mindfulness 5. Check-Out 	<ol style="list-style-type: none"> 1. Complete journal questions and exercises 2. Engage in peer support

PHASE 2

In Phase 2, participants will learn and use tools to *REINVENT* their communication patterns – both receiving and giving constructive criticism, expressing themselves in a prosocial manner which will bring them and the people in their lives closer to their goals. They will learn tools to improve create and maintain successful relationships. Their relationship with food will be analyzed as a gateway to identify patterns that may be blocking them from participating in life in a meaningful way. Participants will learn how to create long-lasting habits that bring them closer to the life they desire.

Session 6	Family and Relationships	In this module, participants learn to cultivate important relationships and step away from ones that don't serve them	<ol style="list-style-type: none"> 1. Check-in 2. Learn how to approach people in a way that builds relationships 3. How to stop acting in ways that make your relationship worse 4. Learn about judging others 5. Check-Out 	<ol style="list-style-type: none"> 1. Complete journal questions and exercises 2. Engage in peer support
Session 7	Eating Behaviours	In this module, participants examine their eating behaviours as doorways to greater life challenges	<ol style="list-style-type: none"> 1. Check-in 2. Identify your challenging eating behaviours 3. Identify the hidden meanings that cause disordered eating 4. Identify triggers to disordered eating and 	<ol style="list-style-type: none"> 1. Complete journal questions and exercises 2. Engage in peer support

			<p>how to overcome them</p> <p>5. Check-Out</p>	
Session 8	Change your Habits	Participants learn to decode, restructure and live by, new habits	<ol style="list-style-type: none"> 1. Check-in 2. Become aware of habits in their lives that create obstacles to reaching their goals 3. Make a plan that will 4. Implement our plan 5. Check-Out 	<ol style="list-style-type: none"> 1. Complete journal questions and exercises 2. Engage in peer support
Session 9	Stress	In this module, participants learn how stress affects their lives, and tools to increase their resilience	<ol style="list-style-type: none"> 1. Check-in 2. Learn basic trauma physiology 3. Learn tools to instantly increase calm in stressful situations 4. Build resiliency against current and future stress and trauma 5. Check-Out 	<ol style="list-style-type: none"> 1. Complete journal questions and exercises 2. Engage in peer support
<p>PHASE 3</p> <p>In Phase 3, participants will learn and use tools to RADIATDE. They will recognize and boost their sense of self-worth, embrace their bodies and selves. By the end of Phase 3, participants are prepared to take the tools they have learned over the last 6 months in order to transition out of the program and into a rich and meaningful life that brings them toward their goals and dreams.</p>				
Session 10	Self-Worth	In this module, participants learn lasting tricks to improve their self-confidence and self-worth	<ol style="list-style-type: none"> 1. Check-in 2. Learn tools to improve their self-confidence 3. Learn tools to improve their self-worth 4. Accept and embrace their uniqueness 5. Check-Out 	<ol style="list-style-type: none"> 1. Complete journal questions and exercises 2. Engage in peer support

Session 11	Body Devotion	Participants learn media literacy, and how to love their body!	<ol style="list-style-type: none"> 1. Check-in 2. Learn media literacy – what are advertisements <i>really</i> trying to tell you? 3. Learn tricks to start appreciating their bodies more 4. Try new activities that feel good to their bodies 5. Check-Out 	<ol style="list-style-type: none"> 1. Complete journal questions and exercises (including mirror work) 2. Engage in peer support
Session 12	Wrap-Up	In this module, participants reflect on learnings over the past sessions and make a plan for the future.	<ol style="list-style-type: none"> 1. Check-in 2. Final Assessments 3. Re-write their autobiography from Module 1 4. Check Out – future plans 	None

Summary

This chapter discussed the standard operating procedures in the implementation of this intervention including recruitment and screening procedures, exclusion criteria and referring resources.

Chapter 4: Presentation and Discussion of Findings

Introduction

This chapter will discuss the anticipated results after implementing the intervention including the full length of follow-up period, including data collection, recording, and analysis.

Anticipated Results

The author believes the 12-week group program will immediately improve symptoms from baseline scores on all of the assessments and scales initially completed pre-group which include the *Weight Bias Internalization* (Durso & Latner, 2008; Pearl & Puhl, 2014), *Perceived Stress Scale* (Cohen, 1994), *Coddington's Life Events Scale for Adolescents* (Coddington, 1972), *Coopersmith Self-Esteem School Inventory Short Form* (Coopersmith, 1967; Coopersmith, 1981; Hills et al., 2011), *The Ideal-Body Stereotype Scale—Revised* (Stice et al., 2008), *Sociocultural Attitudes Towards Appearance Questionnaire-4- Revised* (Schaefer et al., 2016), *Body Image Acceptance and Action Questionnaire*, *Body Shape Questionnaire – BSQ* (Cooper et al., 1987), *The Dutch Restrained Eating Scale - DRES* (van Strien et al., 1986), and the *Harter Self-Perception Profile for Adolescents* (Harter, 1988; Harter, 2012). Perhaps in part because participants will have just participated in the intervention for the previous 12 weeks. At each subsequent follow-up over the subsequent nine-year period the author anticipates improved scores in comparison to initial baseline scores.

Additionally, the author expects to see a lower rate of full-blown ED onset for participants of the group when compared to the incidence rate of EDs in the general population who did not receive the intervention. However, should any full-blown ED develop, we do expect it will occur in those participants with the more severe scores on baseline assessments.

Furthermore, the author hopes to see trends in a decrease in disordered eating behaviours and

less perceived pressure to manipulate bodies in the hopes of improving appearance. Additionally, the author hopes to see greater body acceptance and greater critical analysis with respect to cultural appearance ideals and media messages which require females to prioritize appearance at the expense of the development of other areas of their lives (social, relationship, academic/career, spiritual development, for example). And finally, the author expects to see growth in self-esteem, self-concept, and interpersonal relationships.

Data Collection and Recording

Data will be collected and reviewed at 13 touch points: pre-group, post-group, at a six-month follow up, at a 12-month follow up, and each year thereafter for a total of nine additional years. Data will be collected through the following means: participant-completed assessments, audio/video recording of groups (transcribed and reviewed for common themes/responses), journals (which may be collected and copied with the participants' permission), and feedback forms.

Feedback forms will be collected post-group to encourage comments from participants about what worked, what didn't work, and what could be improved upon, with respect to syllabus, timetable, topics, facilitators, and the like. Feedback will be transcribed and matched with the participants' follow-up assessments to explore any trends.

Follow-up assessments will occur on site at the high-school where the group ensued. Participants will be notified of dates and times of follow-ups within the pre-group and will be reminded via text and email, thirty, ten, five, two and one day prior to assessment day.

Should any of the participants move or cannot attend the follow-up session, packages of assessment forms will be sent to their current home address and include a return envelope. The only additional question expanding original set of questions will be: *Since the last follow up,*

have you been diagnosed with an Eating Disorder? If yes, please describe the nature of the diagnosis, when the diagnosis occurred and any precipitating event you believe may be linked to the onset of the Eating Disorder?

Data Analysis

All completed assessments will be photocopied and stored under lock and key according to current Privacy Acts and Record-Keeping Guidelines. Data will be transcribed into software (such as Excel) which can be then be manipulated and exported into visual charts and graphs to help expose trends via an inductive thematic analysis to expose common themes – topics, queries, ideas, meaning-making, that arise during review. Researchers will analyze both the semantic, or direct, raw data and the latent content – the subtext of the collected data. Questions researchers may ponder include:

1. For participants who developed Eating Disorders, which risk factor(s) (if any) increased significantly and which (if any) lessened or remained level preceding the Eating Disorder? Is this trend dependent on the type of Eating Disorder?
2. For participants who developed Eating Disorders, is there a reported variable, previously not considered, which seemed to have significant impact on the development of an Eating Disorder?
3. For participants who developed Eating Disorders, is the rate higher than the development of Eating Disorders in the general population? Is this rate influenced by type of disorder?
4. In general, what impact did this group have on assessment results (ie/ internalized weight bias, self-compassion, perceived stress, ideal-body stereotypes, attitudes toward appearance, body image acceptance, body shape concerns, restricted eating, self-

perception), and is there a common factor which may be associated with any trend downward or upward?

5. For participants who developed Eating Disorders, Is there any particular theory of origin that emerges?
6. What are general themes exposed through the data?
7. Is there any association with demographics and patterns?

With the results of the data analysis, we will amend the current NSFT program to maintain or increase focus on areas that produced strongest effect-sizes in ED prevention, to determine if even stronger effects can be (re)produced. We will also be able to examine areas which showed weak, little, or no effects, to determine if it is useful to retain these components, retain and amend, or exclude them altogether. Additionally, we will be able to examine if there are any participant variables that made this program more or successful, to perhaps target specific populations in future versions of implementation.

Summary

The author anticipates a lower rate of EDs in participants when compared to the general population and greater levels of adaptive behaviours these participants can employ in lieu of disordered eating behaviours. Through a thematic analysis of data, NSFT will be refined to produce strongest effect sizes in order to achieve its intended goals.

Chapter 5: Summary, Recommendations and Conclusions

Summary of Findings

The first chapter of this thesis discussed the history and background of EDs in youth. The second reviewed current literature in the field, and the third provided an outline for a group prevention program for youth which included instructions for recruitment, education, dissemination, and data collection and review. The fourth chapter discussed anticipated results and this final chapter will explore implications, strengths, limitations, and recommendations with respect to this comprehensive prevention program.

Implications

This thesis provides evidence for the need of efficacious ED prevention programs applied to youth, as both subclinical and clinical EDs impact the mental, emotional, psychosocial, and financial well-being of youth and their families. This research is significant and its application impactful as there is currently a lack of comprehensive studies examining the prevention of EDs in youth. Youth is the absolute critical time period with respect to the emergence of eating pathology.

To better understand the role of various etiologic ED risk factors, more randomized, experimental trials of prevention programs are also needed. Currently, ED prevention programs are evaluated in the following ways: some provide pre-and post-test measures, some complete follow-ups (typically up to six months, but some as long as three years), and most are not conducted as a randomized control trials. Most prevention programs don't include an active control condition, nor do they collect data on ED symptomology at the outset of the intervention or effect sizes or differential change in outcomes, making it impossible to interpret them (Shaw et al., 2009). Randomized control trials are sorely needed with respect to EDs in youth.

If a prevention intervention is efficacious, what is the underlying mechanism of action? Unless a prevention program has been found to outperform an active control condition, it is impossible to conclude demand characteristics, or participant expectancies or attention, aren't influencing results. It is also impossible to determine if intervention effects occur due to the passage of time, regression to the mean, or measurement artifacts. These issues will not be immediately addressed with this program - for instance, an active control group will not be included in a pilot study. However, completing this pilot study will allow for a randomized control trial to be an option in the future.

An additional concern and current overall gap in the ED field is how prevention programs are disseminated so that anyone who needs it can gain access - larger and more ethnically diverse samples need to be included in the trials. Another shortfall is length of follow-up periods, which typically do not exceed six months. A sufficient follow-up period is important as Horney et al. (2015), found for participants who developed a full-blown EDs post-intervention, it emerged by the 10-30-month follow-up mark. With NSFT, results and trends will be assessed over a 10-year time period, giving researchers a holistic view of what happens in the lives of participants post-intervention.

Strengths

The strengths of this group are that it is a closed, close-knit, comprehensive group which seeks to appraise scores over multiple dimensions, a feature other ED prevention groups for youth do not seem to focus on. Qualitative research allows for an in-depth discovery of details and subtleties that influence a group like NSFT. Furthermore, re-assessment at annual intervals over 10 years, including gathering data on any participants who develop eating pathologies is a positive and rare attribution in this line of work.

Limitations

This research proposal carries with it, inherent limitations:

- The time commitment from participants is quite extensive – 12 weekly 90-minute group sessions in addition to time for intake, assessments and follow-ups, is demanding. Given the length of the follow-up period, risk of attrition is increased.
- The group itself is small and therefore results may not be generalizable. As it is the first group, a clinician will run the first group; however, in future versions, results may increase in efficacy if the group is run by a peer in the role of facilitator or co-facilitator.
- This group does not include male children which leaves out a vulnerable population as male children with EDs is a fast-growing population (Coelho et al., 2018).
- Recent research has suggested prevention groups can start at much younger ages, even at as young as five years (Rodgers et al., 2019). The prevention group proposed may have better results if applied to younger ages.
- The program as presented is uninformed with respect to the nature of the order of module presentation, if they touch on enough risk factors to actually prevent future onset of EDs, and/or if the program itself lacks any critical aspect.
- Rigour is difficult to maintain and assess in qualitative research and interpretations of results may be subject to researcher bias.
- Lastly, whether it is idealistic to expect adolescents to participate fully in assessments, group and follow-up, remains to be seen in the implementation stage of the proposed study.

Recommendations

At the very least, this work provides evidence for the need for future research surrounding the emergence of EDs, risk factors and their associated critical time periods, and how to prevent future onset. Research in the youth population can be divided between children and adolescents, along with the impact of gender, sexuality, and ethnicity on difference in incidence and presentation of eating pathology, if any.

Current research shows divergent results when these variables are considered. Prevention and treatment must account for racial and ethnic difference. In their study, Lydecker and Grilo (2016) showed developmental trajectories and presentations of ED varied with ethnic background. Groups and/or treatment modalities may not be available across cultures and ability level required. Language barriers, entering treatment, therapeutic alliance, and staying in treatment can all be influenced by a shared sense of culture and ethnic background (Kazdin et al., 2017). Cultural competency and inclusion is recommended in interventions.

The delivery of prevention groups is also an important factor. In delivering prevention programs, it may be difficult to recruit school clinicians, teachers, or other appropriate facilitators, with the capacity to deliver interventions appropriately (van der Leer et al., 2012). Further research for peer-led programs is recommended.

Research for understanding the impact of mindfulness on disordered eating and the impact on eating pathology, food, body image and exercise, from a prevention lens, is also needed. Furthermore, a closer examination of differences and similarities in diet culture, subclinical and clinical EDs and their presentation in youth is relatively non-existent in current research, and yet sorely needed.

Conclusion

The importance of accessible and efficacious ED prevention programs is clear, especially given the lack of treatment-seeking and -delivery for those already diagnosed with EDs. Research shows up to 22% of adolescents experience some form of ED. EDs have the highest mortality rate of all psychiatric conditions and are typically chronic in course (Rohde et al., 2015). In fact, in their study, Pearson et al. (2017) found 75% of ED participants maintained their ED 10 years later. The average length of course is seven years before sufferers present for treatment, and 80% of sufferers don't receive any treatment (Stice et al., 2013; Shaw & Stice, 2016). The rates of EDs when including subclinical eating pathologies is staggering and in the author's opinion, a major public health crisis requiring prevention interventions.

Regardless of the actual origin of an ED for any one individual, the hope in writing this thesis is that with a comprehensive prevention program like the one proposed herein, one can touch on or at least improve factors that maintain or increase an individual's vulnerability. Achieving this will then hopefully prevent the development of later onset EDs, as well as return opportunities for girls and women to take up space in the world – literally and figuratively – that is renounced with every forsaken bite of food.

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Appendix A – Demographic Intake

1. Age_____
2. Height_____
3. Weight_____
4. Members of Household and Occupation_____
5. Parental Marriage Status_____
6. How often do you see your mother_____% father_____%
7. Sought medical treatment in the previous 12 months_____
8. Sought psychiatric or psychological treatment in the past 12 months_____

Appendix B - Combination of Weight Self-Stigma Questionnaire and Weight Bias**Internalization Scale for Youth**

(Ciupitu-Plath, Wiegand, & Babitsch, 2018; Lillis, Luoma, Levin, & Hayes, 2010)

1. As an overweight person, I feel that I am just as competent as anyone
2. I caused my overweight problems
3. I am less attractive than most other people because of my weight
4. Because of my overweight, I am concerned about what others think of me
5. I wish I could drastically change my weight
6. Whenever I think a lot about being overweight, I feel depressed
7. I hate myself for being overweight
8. I feel guilty because of my weight problems
9. I became overweight because I'm a weak person
10. I don't have enough self-control to maintain a healthy weight
11. My weight is very important for my self-esteem
12. I don't think I deserve to have many friendships, as long as I am overweight
13. I am OK being the weight that I am
14. Because of my overweight, I feel like I am not myself
15. Because of my weight, I don't understand how anyone attractive would want to date me
16. It's difficult for people who haven't had weight problems to relate to me
17. Others will think I lack self-control because of my weight problems
18. People think that I am to blame for my weight problems
19. Others are ashamed to be around me because of my weight