

THE EFFECTS OF A DISORDERED EATING INTERVENTION PROGRAM ON
BODY IMAGE AND DISORDERED EATING ATTITUDES IN FEMALE
PARTICIPANTS AT KENT STATE UNIVERSITY

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The purpose of this study is to determine the effectiveness of a five week long preventative disordered eating (DE) support program on Kent State University's Campus for women concerned with body image and DE. The participants (n=5) were full or part-time female students on Kent State University's main campus that wanted to learn more about healthy eating or that felt they have a problem with DE. Criteria that excluded a participant was a previous clinical diagnosis of an eating disorder or a score on the Eating Attitudes Test (EAT 26) score above 26, being under the age of 18, or being male or faculty. Instruments used to measure changes in body image and disordered eating perceptions were the Eating Attitudes Test, ORTO15, a self-efficacy and body esteem survey. A dependent t-test was used to determine differences between pre- and post-test scores for each instrument used.

There were no significant differences found in the ORTO 15, self-efficacy, or body esteem surveys ($p \leq 0.05$). A significant difference was found between scores for the EAT 26, which shows a decrease in DE behaviors with small group intervention ($p \leq 0.001$). Intervention groups such as these may be able to prevent the onset of eating

disorders by decreasing the behaviors, feelings, and outlooks of participants with body image disorders or disordered eating behaviors.

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CHAPTER I

INTRODUCTION

The Diagnostic and Statistical Manual of Mental Disorders (DSM) is the universal manual of epidemiology, diagnostic criteria, and explanatory materials that is used in the United States for diagnosing and quantifying mental disorders (American Psychiatric Association, 2015). It defines an eating disorder (ED) as a diagnosis of one of the feeding/ED by a professional clinician according to the fifth edition. Disordered eating (DE) is defined as any irregular eating behavior that causes significant distress, and that may model after a certain ED but not meet all the criteria to be diagnosed (American Psychological Association, 2013).

It has been demonstrated that ED's and DE primarily affect young adults and the highest rates are of those enrolled in college. Approximately 8-17% of students experience an ED at some point during their college career (Tavolacci, M., et al., 2015 & Eisenberg, D., et al., 2011). Although it is extremely difficult to determine exact percentages of college populations that are affected, it is agreed upon many researchers that this is the largest population that experiences ED's and DE.

Cognitive Behavioral and intrapersonal therapy support groups have been shown to change sub cultural ideals of body standards, improve body image in its participants, and target the original problem that causes the DE, which reduces risk of development of an ED (Choate, L. 2010a & Butters, J., & Cash, T., 1987). Meal support also may be effective in helping those at risk to eat socially, reducing the anxiety related to eating and

determine proper portion sizes (Lock, L., et al., 2012). Prevention through promoting a healthful body image may also be prominent in reducing ED prevalence on college campuses by increasing body image, the ability to judge body size and respect for all body sizes, as well as decreasing anti-fat attitudes (Butters, J., & Cash, T., 1987 & Humphrey, L., Clifford, D. d., & Neyman Morris, M., 2015).

Many researchers also believe that college-aged individuals should be the target of programs that would prevent onset of ED's (Beintner, I., Jacobi, C., & Taylor, C., 2012). ED prevention programs should be multifaceted and appeal to a large population, which should include both males and females, as well as faculty and staff that may be exhibiting symptoms of DE. Some things that should be included in these programs are; resources for nutrition and psychological counseling, support groups, and consulting physicians (Prouty, A., Protinsky, H. & Canady, D., 2002 & Clark, L., Levine, M., & Kinney, N., 1988).

Problem Statement

It is shown that 8-17 percent of college students experience an ED during their college career, this number is even higher for disordered eating, or those who may only be exhibiting one to three symptoms of an ED (Tavolacci, M., et al., 2015 & Eisenberg, D., et al., 2011; Flament, M., et al., 2015). This may be due to the influence of socionorms and the media causing body image distortion, which is one of the biggest risk factors for developing DE or a(n) ED (Butters, J., & Cash, T., 1987 & Smith-Jackson, T., Reel, J., & Thackeray, R., 2014; Humphrey, L., Clifford, D. d., & Neyman Morris, M., 2015).

There are many effective programs that exist for the treatment of ED, depending upon the kind and severity of the disorder, but it is possible to prevent long term ED with intervention before an ED occurs. Programs targeting ED's have shown to reduce the risk of developing an ED and the onset of the disease. Some programs, such as one at Stanford University, have been successful in reducing risk factors and decreasing the onset of ED's on campus (Beintner, I., Jacobi, C., & Taylor, C., 2012). Many of the current programs available on college campuses are focused on prevention in students with clinical definitions of ED's and are not targeting the problem of body image, which affects a much larger percentage of the college population and should be the core of the program (Smith-Jackson, T., Reel, J., & Thackeray, R., 2014). Even though it is known that this age group is increasingly susceptible and body image is the biggest risk factor for developing an ED, programs that focus directly on promoting a healthy body image are extremely infrequent, and of those that target college populations, it is typically only a small component of a larger ED prevention program (Butters, J., & Cash, T., 1987 & Smith-Jackson, T., Reel, J., & Thackeray, R., 2014). Although these two initiatives are closely related, they are very different in practice, since body image concerns effect a much larger percentage of women than ED's, and can be more easily addressed (Smith-Jackson, T., Reel, J., & Thackeray, R., 2014).

While there are many mass media movements such as "Dove Real Beauty", "No Body Shame" and "Healthy at Every Size", there are very few college programs that target body image as the core of their program (Butters, J., & Cash, T., 1987 & Smith-

Jackson, T., Reel, J., & Thackeray, R., 2014). Of the programs that do exist, they have shown to increase positive body image and decrease anti-fat attitudes, therefore preventing symptoms of DE (Humphrey, L., Clifford, D. d., & Neyman Morris, M., 2015). Since DE can progress into ED's, prevention should be aimed at the DE and body image in order to prevent a more severe disorder.

Kent State University students have shown interest in this topic by forming a campus wide body acceptance movement. There are currently no eating disorder groups or body image groups on campus or in the surrounding areas, it is clear that a program tackling the problem of body image is needed. Intervention programs should be focusing on prevention in the college aged population because they have the highest prevalence rates of ED's and it is shown that programs targeting prevention do successfully lower the risk developing symptoms and onset of ED's (Beintner, I., Jacobi, C., & Taylor, C., 2012).

Purpose Statement

The purpose of this thesis is to determine the effectiveness of a five week long preventative disordered eating support program on Kent State University's Campus for women concerned with body image and disordered eating.

Hypothesis

Women participating in the DE program at Kent State University will show a change in the pre- and post- test scores of disordered eating behaviors.

Women participating in the DE program at Kent State University will show a change in the pre- and post- test scores of orthorexic behaviors.

Women participating in the DE program at Kent State University will show a change in the pre- and post- test scores of self-efficacy.

Women participating in the DE program at Kent State University will show a change in the pre- and post- test scores of body esteem.

Definitions

Disordered eating - is "a wide range of irregular eating behaviors that do not warrant a diagnosis of a specified eating disorder" (American Psychiatric Association, 2013).

Disordered eating behaviors will be measured by the eating attitudes test, by a score of greater than 20 indicates a need for intervention by a professional (Garner, et. al. 1982).

Eat 26 - A survey used for screening, not diagnoses of ED, a score over 26 will be excluded from the study, a score under 26 will be considered disordered eating (Garner, et. al. 1982).

Orthorexia - A psychological obsession with the type and quantity of food eaten to improve health (Chaki, B., Pal, S., & Bandyopadhyay, A., 2013). Orthorexic behaviors will be measured by total score on the ORTO 15 of less than 40 will be considered a diagnosis of orthorexia nervosa (Bratman & Knight 2000).

Body Image - How the participant views herself, either positively or negatively, as measured by a score from the body esteem scale, the higher the score, the more positively the participant views herself (Franzoi & Shields, 1984).

CHAPTER II

LITERATURE REVIEW

DSM-5

Throughout history there have been many ways proposed on how to classify and quantify mental disorders (American Psychiatric Association, 2015). It was with the development of the Diagnostic and Statistical Manual of Mental Disorders (DSM) that health professionals in the United States are all able to classify mental disorders according to the same criteria standards. The DSM aims to provide information on diagnostic criteria, epidemiology, and explanatory materials on mental disorders. Eating and feeding disorders are a category within the DSM (American Psychiatric Association, 2015).

There are changes made with every revision of the DSM, and with the fifth edition there have been major changes to the classifications of ED. Many of the changes occurred because there was such a high rate of diagnosis of the "ED not otherwise specified". Standards were lowered for Anorexia Nervosa and Bulimia nervosa, and Binge eating disorder was made a specified eating disorder (Smink, F. E., van Hoeken, D., & Hoek, H. W., 2013). Previous diagnosis requirements for anorexia nervosa included amenorrhea in premenopausal women, but after reevaluation, this was not included in the 5th revised edition of the DSM. The patient is able to have an extremely low body weight which may or may not cause amenorrhea (Watters, J. E., & Malouff, J. M., 2012). In previous editions, the clinician had to specify the subtype of bulimia

nervosa, if applicable. These were the purging subtype, and non-purging subtype, depending upon if the patient participated in compensatory behaviors after a binge. This was not included into the new edition, but they do all fall under the category of BN, although some scientists argue BN-NP is more closely related to binge eating disorder (Jordan, J., et al., 2014). The new Unspecified Feeding and ED category has been formerly known in older editions of the DSM as ED Not Otherwise Specified (Wade, T., & O'Shea, A., 2015). Binge eating disorder was previously included into the "ED Not Otherwise Specified" category, although with the new edition of the diagnostic manual, it is considered prevalent enough to be its own category (Jordan, J., et al., 2014).

Eating Disorders and Disordered Eating

An eating disorder (ED) is defined by specific criteria that the patient must meet, as outlined in the Diagnostic and Statistical Manual of Mental Disorders (Anderson, Marci, 2015). These criteria are listed below for each ED.

Disordered eating (DE) is defined as "a wide range of irregular eating behaviors that do not warrant a diagnosis of a specified eating disorder" (American Psychiatric Association, 2013). DE is not a diagnosis, although often those who suffer from DE can meet the criteria to fall into the Other Specified Feeding and ED diagnosis (Anderson, Marci, 2015).

The difference in ED and DE is if the patient does not meet the criteria for an eating disorder, they may have a problem with disordered eating (Anderson, Marci, 2015 & Mahn, H., & Lordly, D., 2015). DE and body image disorders have been identified as risk factors for developing an eating disorder (Mahn, H., & Lordly, D., 2015).

Epidemiology

ED's affect less than 5% of the general population, with those at the highest risk being young adults and females (Flament, M., et al., 2015). The incidence rate for ED's is 10,000 people per year (Smink, F. E., van Hoeken, D., & Hoek, H. W., 2013). It is hypothesized that 1-3% of American women meet the criteria for DE, with a higher prevalence rate during young adulthood (Prouty, A., Protinsky, H. & Canady, D., 2002 & Beintner, I., Jacobi, C., & Taylor, C., 2012).

Prevalence among college students. ED primarily affect young adults, which includes the group of college students. Approximately 8-17% of college students experience an eating disorder at some point during their college career (Tavolacci, M., et al., 2015 & Eisenberg, D., et al., 2011; Flament, M., et al., 2015). Research also indicates that the reported rate of ED may depend upon the field of study of the college student. Female dominated majors, such as dance, nutrition, and acting may have higher rates, since ED affect women at a much higher rate than men (Mahn, H., & Lordly, D., 2015). Of all women in college, studies show that 15% of this population actually would meet the full criteria to be diagnosed with AN or BN. Another 25% of the female college population exhibit one or more symptoms of a(n) ED/DE (Prouty, A., Protinsky, H. & Canady, D., 2002 & Beintner, I., Jacobi, C., & Taylor, C., 2012).

According to the research, stress and disproportionate perceptions of body weight trigger ED, and these symptoms are reported frequently by young adults. It is also likely that ED are associated with other mental disorders, such as anxiety or depression, and these are also seen in higher rates in college students (Tavolacci, M., et al., 2015). Since many

believe the most common age for onset of a(n) ED is 18, it is imperative that college populations become the target population for screening and treatment (Prouty, A., Protinsky, H. & Canady, D., 2002).

Cost. ED cost a significant amount of money for seeking psychological and nutritional help, or even more if the patient needs to be hospitalized or in a rehabilitation facility (Krauth, C., Buser, K., & Vogel, H., 2002). Typically, since ED's are such an intricate disease, the cost of illness for an ED patient is much larger than that of an average hospitalized patient. According to one study done in Germany, the yearly cost of illness for anorexia is more than two million and for bulimia is 1.3 million (Krauth, C., Buser, K., & Vogel, H., 2002). One researcher found that of the adolescents hospitalized in New York for an eating disorder, it cost somewhere between \$342 and \$148,471, with the mean being \$10,019 (+/- \$16,292) (Robergeau, K., Joseph, J., & Silber, T., 2006). The suggested rates of hospitalization fees per day are approximately \$510, more for children and less for adults, which could account for some variation (Harries, C., 2012). Of these patients, 70% of their costs were being covered by commercial insurance, and 19% were being covered by Medicaid. The other 11% was unspecified or had some other form of payment. Those with Medicaid as their form of payment actually had a longer stay than those being paid for by commercial or other insurance (Robergeau, K., Joseph, J., & Silber, T., 2006). It is possible if screening and treatment happened earlier in the ED, it would cost less to treat patients (Harries, C., 2012).

Anorexia

Anorexia Nervosa (AN) is a restriction of energy intake that causes low body weight, and occurs in patients with an intense fear of weight gain. It typically affects more women than men, and most patients tend to be young adults or adolescents.

Diagnosis/Screening

While the first step to diagnosis is a primary care physician, family member, or friend realizing there is a problem, screening tools are also incredibly helpful in determining who is at risk for or who may already have an eating disorder (Hill, L. S., Reid, F., Morgan, J. F., & Lacey, J. H. 2010). The SCOFF screening tool has been found to be valid, reliable, and is being used worldwide, as it has been translated to six languages, and is now being changed to accommodate specific cultures. The advantage of the SCOFF questionnaire against many other AN screening tools, is that it is relatively short and easy to administer. The S stands for sick, to ask the patient if they make themselves vomit from uncomfortable feelings of fullness. The C stands for Control, to determine if the patient feels a sense of loss of control, and the O stands for one, to determine if the patient has lost more than 15 pounds in the last three months. The F's stand for fat and food, in order to determine if the patient views themselves as fat, and if food dominates their life. All of these questions help the clinician determine if the patient is at risk for an eating disorder, since they all coincide with the diagnostic criteria for AN (Hill, L. S., Reid, F., Morgan, J. F., & Lacey, J. H. 2010). Research suggests that using this particular screening tool for college students may be the quickest way to identify students with an eating disorder (Tavolacci, M., et al., 2015).

The diagnostic criteria for patients being diagnosed with AN center around three features (American Psychiatric Association, 2013). The first is the patient restricts their energy intake according to requirements, and this restriction leads to a significantly low body weight in the context of age, sex, developmental trajectory, and physical health. Significantly low weight would be defined as weight that is less than minimally normal, or a BMI of less than 17, or for children and adolescents, less weight gain than is minimally expected. This guideline is also somewhat up to the clinicians' discretion, based on the patient's history and what would be significantly low body weight for that particular patient (American Psychiatric Association, 2000).

The second criteria for diagnosis is an intense fear of gaining weight or becoming fat, or a behavior that interferes with weight gain, even though the patient is already at a significantly low body weight. The patient may not be aware of this fear, and again these criteria could be at the clinicians' discretion based on patient history, attitude, and making interpretations (American Psychiatric Association, 2000 & Watters, J. E., & Malouff, J. M., 2012).

The final criteria is a disturbance in the way in which the patient's body weight or shape is perceived, self-esteem and evaluation based on the body weight or shape, and a lack of sense of severity of low body weight (American Psychiatric Association, 2000).

Subtypes

The subtypes of AN are based on clinical definitions of the patient, and there are two: restrictive and binge-purging (Lavender, et al., 2013). These subtypes are only indicative of the short term, they are not longitudinal and do not represent the whole AN

diagnosis. The restrictive subtype is when the patient restricts their caloric intake, but does not use any kind of compensatory behavior. The patient simply restricts caloric intake by restricting the quantity of food consumed. The bingeing-purging subtype is a diagnosis for patients who regularly have a binge episode, eating a large quantity in a small period of time, and then purge in some way in order to compensate for the binge. This compensatory behavior can be done any way, including vomiting or voiding caloric intake (Lavender, et al., 2013).

Prevalence

AN is more prevalent in men than in women, particularly young adults. Approximately 0.4% of young females in the U.S. population are diagnosed with AN, and the ration of men to women is 1:10 in the clinical setting (American Psychiatric Association, 2000). This prevalence rate may have dropped from 2009, when it was reported as being 0.5% to 1.0% for women in the U.S. with AN, and a tenth of that for men, or 0.05% to 0.1% (Watters, J. E., & Malouff, J. M., 2012 & Wozniak, G., Rekleiti, M., & Roup, Z., 2012). Specifically in the college population, these rates rise to 3% for females and 0.4% of males (Eisenberg, D., et al., 2011). Those who are related to someone with anorexia are at higher risk for developing AN themselves, as it appears to have a hereditary component (Wozniak, G., Rekleiti, M., & Roup, Z., 2012.)

Consequences

Although cases of early and late onset do occur, AN most commonly affects adolescents and young adults. It is believed by many that this disorder often begins with

the onset of a stressful life event (American Psychiatric Association, 2013 & Wozniak, G., Rekleiti, M., & Roupá, Z., 2012). Other scientists believe that there is no known cause or reason for this disorder beginning (Wozniak, G., Rekleiti, M., & Roupá, Z. (2012). Patients with AN are perceived as exhibiting other personality disorders, such as low emotional stability, and introversion (Watters, J. E., & Malouff, J. M., 2012).

Many patients with AN do experience remission within 5 years of the disorder beginning, and the crude mortality rate per decade is approximately 5% due to medical complications associated with the disorder, or suicide (American Psychiatric Association, 2000). Out of all mental illnesses, AN is reported as the mental illness that has the highest mortality rate, due to suicide. Suicide in female AN patients is eight times higher than that of the general U.S. female population (Watters, J. E., & Malouff, J. M. 2012).

Treatment

It is hypothesized that the time between the onset of AN and seeking treatment is approximately 1.78 years (Neubauer, K., et al., 2014). AN patients are often resistant to treatment and they downplay the severity of their symptoms. There are inconsistent outcomes observed with this eating disorder, where adults tend to have a more longstanding illness, and adolescents or young adults present more of a fear of fat, but are likely to recover more quickly (American Psychiatric Association, 2000 & Higgins, J., Hagman, J., Pan, Z., & MacLean, P., 2013). Patients in therapy for AN often begin by being inpatients and continue their treatment as outpatients (Neubauer, K., et al., 2014). These patients do not thrive very well in group therapies, instead they seem to meet treatment goals more quickly in individual or family therapy (Zaitsoff, S., et al., 2015 &

Clark, L., Levine, M., & Kinney, N., 1988; Choate, L. 2010a). The main nutrition therapy goal is to achieve and sustain weight gain, but the methods of doing so vary within inpatient and outpatient therapy setting. It usually requires the use of a hypercaloric diet with energy dense foods (Higgins, J., Hagman, J., Pan, Z., & MacLean, P., 2013). Often AN patients combat this diet by increasing their physical activity in the inpatient setting (Higgins, J., Hagman, J., Pan, Z., & MacLean, P., 2013).

Bulimia

Bulimia Nervosa (BN) is binge eating with inappropriate compensatory behaviors following the episode, and typically patients have a bad self-evaluation due to distorted body image issues. It affects more males than females, of the young adult or old adolescent age group. There are positive outcomes for patients if they undergo treatment (American Psychiatric Association, 2000).

Diagnosis/Screening

A fairly small amount of those with BN seek treatment, due to stigmatization of the mental disorder, which is one of the many reasons that screening is so important and can help catch patients who would not openly speak about their problem (Rodgers, R., et al. 2015). The SCOFF questionnaire can be used, the same way as it is used to screen for AN, it can also detect BN (Hill, L. S., Reid, F., Morgan, J. F., & Lacey, J. H. 2010). Another screening tool widely used is the EAT 26. It is a 26-question survey that can be used in any setting, although it is particularly useful in high schools and colleges, to assess the risk of an ED. It contains questions about weight loss, eating patterns, and other behaviors, and can be used as a referral tool if a user meets the cutoff point, has an

underweight BMI, or engages in certain behaviors that may put one at risk of an ED (Eat 26 Self-Test, 2009-2015).

The diagnosis of BN is characterized by reoccurring episodes of binge eating. Bulimia is characterized by variability and inconsistency, due to the binge eating component and purging (Meule, A., Rezori, V., & Blechert, J. 2014). An episode of binge eating is only considered an episode if the patient has eaten a large amount of food within a certain period of time, usually two hours, that another person would not eat within the same period of time (American Psychiatric Association, 2000). The episode also has to have a sense of a lack of control of how much the patient is eating. The second diagnostic criteria of BN is recurrent inappropriate compensatory behaviors in order to prevent weight gain. Some of these behaviors could be, but are not limited to: misuse of laxatives, diuretics, or other drugs, fasting, vomiting, or excessive exercise. This binge eating and compensatory behavior must both occur on average once a week for three months. Body shape and weight also has a large influence on the patients' self-evaluation, and the episode cannot occur exclusively during an episode of anorexia nervosa for diagnosis (American Psychiatric Association, 2000).

The clinician must also specify a level of severity for the diagnosis, which is based on the frequency of inappropriate compensatory behaviors the patient has per week. A mild diagnosis is an average of 1-3 inappropriate compensatory behaviors per week, moderate is an average of 4-7 per week, severe is an average of 8-13 per week, and extreme is an average of 14 or more inappropriate compensatory behaviors per week (American Psychiatric Association, 2000).

Differential Diagnosis

The differential diagnosis of BN are based on personality traits of the patient (Lavender, et al., 2013). There are three; under regulated, overregulated and normative. The under regulated diagnosis is characterized by impulsive eating that is emotionally and behaviorally dysregulated. This type of patient may have a lower psychosocial functioning and/or some kind of substance abuse. The overregulated diagnosis is based on the premise of compulsive eating that is inhibited, and this patient usually has an obsessive-compulsive personality and strive for perfection. The normative diagnosis is based on low levels of personality pathology (Lavender, et al., 2013).

Prevalence

Developing BN is very common for young adults and older adolescents, and rarely occurs before puberty or after age 40, and primarily affects females. The twelve-month prevalence for females in the U.S. with bulimia nervosa is 1-1.5%. There are less statistics on males, but it is known that there is a 10:1 ratio for females to males that are diagnosed with the disorder (American Psychiatric Association, 2000). In the college population, 2-19% of females and 0.2-5% of males have been diagnosed with BN at some point in their lives. 40-60% of patients diagnosed with BN or binge eating disorder in the clinical setting are also able to be diagnosed with an addiction to food (Meule, A., Rezori, V., & Blechert, J. 2014 & Clark, L., Levine, M., & Kinney, N., 1988).

Consequences

BN usually primarily occurs after multiple stressful life events, or dieting to lose weight (American Psychiatric Association, 2000). When BN is developed, many patients experience social rejection due to stigmatization of a mental disorder, and a belief that BN patients have negative personality characteristics. This can also harm the patients self-view, which can also have a negative outcome because these patients already hold much self-evaluation in weight and shape based characteristics (Rodgers, R., et al., 2015 & American Psychiatric Association, 2000). In most clinical patients, the onset of the diagnosis and illness is for at least several years. During these years, there can be periods of remission or reoccurrence (American Psychiatric Association, 2000). A small number of patients with BN do cross over to a diagnosis of AN, and either tend to revert back to characteristics of BN, or have multiple cross-overs of these disorders during the course of the eating disorder diagnosis (American Psychiatric Association, 2000). Some scientists question is these remission phases could be due to foods such as sugar and fat having an addictive component to them (Meule, A., Rezori, V., & Blechert, J. 2014). Patients who are in remission for more than one year have better long-term outcomes. The crude mortality rate for patients with bulimia nervosa is 2%, due to all causes and suicide.

Treatment

Due to the distortion of body image and food perceptions, psychotherapy is the core treatment for BN (Harrington, B., Jimerson, M., Haxton, C., & Jimerson, D., 2015). Cognitive behavioral therapy and support groups work very well for BN patients, since they are willing to discuss with others their problems and want help to be treated

(Zaitsoff, S., et al., 2015 & Clark, L., Levine, M., & Kinney, N., 1988 & Harrington, B., Jimerson, M., Haxton, C., & Jimerson, D., 2015). Other treatments include putting the patient on an antidepressant, if they do not respond to psychotherapy, and nutrition education for normal diet restoration (NOW). Diet therapy should focus on stopping bingeing and purging behaviors, and then reducing the caloric intake in order to restore a normal body weight (Amianto, F., Ottone, L., Abbate Daga, G., & Fassino, S., 2015). Caloric intake and weight should never be discussed in front of the patient, as often the treatment outcomes depend upon the bond, or the therapeutic alliance formed between the clinician and the patient (Harrington, B., Jimerson, M., Haxton, C., & Jimerson, D., 2015).

Binge Eating Disorder

Binge eating disorder (BED) is binge-eating episodes of two hours or less, at least once per week for three months, associated with a feeling of a sense of loss of control, or inability to stop eating. It typically effects adolescent and college-aged samples, but can also begin in later adulthood.

Diagnosis/ Screening

One relatively new way to screen for BED is the Patient Health Questionnaire Eating Disorder Module (Striegel-Moore, R. H., Perrin, N., DeBar, L., Wilson, G. T., Rosselli, F., & Kraemer, H. C. 2010). The six questions are all yes/no answers, and if a patient answers yes to certain questions, more may be asked. For example, respondents are first asked if they feel a sense of loss of control when eating and if they normally consume what would seem an unusually large amount of food to someone else within a

two-hour period. If they answer yes to these questions, they are then prompted to answer if they have experienced this as often as twice a week within the last three months, and if they use compensatory behaviors to avoid weight gain after binge eating. While this method of screening is valid and reliable, it is suggested that it should be used in conjunction with other follow up questions in order to rule out false positive diagnoses (Striegel-Moore, R. H., Perrin, N., DeBar, L., Wilson, G. T., Rosselli, F., & Kraemer, H. C. 2010).

The central feature of binge eating disorder is reoccurring episodes of binge eating, at least once per week for three months (American Psychiatric Association, 2000). The episode is defined as eating more than the average person would eat within a similar time frame and circumstances. The episode must occur within a particular period of time, which is usually less than two hours. Excessiveness of the meal eaten has to be determined by the clinician, as sometimes there can be circumstances, such as holidays or religious celebrations, where more than average meal size is eaten. The episode of binge eating also may not occur in just one setting, for example, in a college student, the episode may begin in the dorm room, and then continue in the cafeteria, or vice versa (American Psychiatric Association, 2000).

This excessive eating must occur in combination with a sense of lack of control in order to be considered an "episode". The loss of control is indicated by the inability to refrain from eating, or to stop eating once the episode has started. The inability to control eating is not absolute, since some patients will have different triggers to stop eating. One patient may stop if their mother would enter the room, and one may stop for something as

simple as a phone call. Some patients may lose the sense of loss of control, and have a more general feeling of uncontrolled eating (American Psychiatric Association, 2000).

Binge eating is characterized by the amount of food consumed.

Binge eating disorder also has to be characterized by marked distress, and three of the following; eating much more rapidly than normal, eating until feeling uncomfortably full, eating large amounts of food when not having physical feelings of hunger, eating alone because of the embarrassment of how much one is eating, and feeling disgusted, depressed, or guilty after the episode.

Binge patients will often feel ashamed of their eating problems, and try to hide them from friends, family, and clinicians. There can be multiple triggers, including but not limited to; interpersonal stressors, negative feelings about body weight, shape and food, and/or boredom (American Psychiatric Association, 2000).

Prevalence

Binge eating disorder occurs mostly in adults, and is much less skewed from males to females than anorexia nervosa or bulimia nervosa. Approximately 1.6% of females and 0.8% of males over the age of 18 develop binge eating disorder (American Psychiatric Association, 2000). Other sources suggest that as much as 2-5% of the general population would actually qualify for diagnostic criteria of BED (Saules, K. et al. 2009).

Consequences

While not every BED patient does become overweight or obese, it is a very common trait for patients to have weight gain. Binge eating is often coupled with increased body fat, weight gain, and increases in psychological symptoms (American Psychiatric Association, 2000 & Saules, K. et al. 2009). Some of these psychological symptoms include negative mood characteristics, such as depression, especially on days when a binge occurs. After a binge, negative mood characteristics tend to be reported as worse than during the binge (Saules, K. et al. 2009). It is also suggested in research that the masking theory is possible, that depression and negative mood characteristics are not caused by the binge eating, but instead these problems already existed within the patient and can more easily be blamed on binge eating, than discovering the actual reason for them (Stein, R., et al., 2007). Social functioning is also often affected because of the presence of BED, since many patients feel uncomfortable eating in front of others, or find it extremely difficult to eat with family and friends. Social functioning can be a co morbidity with a mood characteristic, because both cause distress within the patient, and cause more binge eating (Stein, R., et al., 2007).

Treatment

The treatment for BED should be multidisciplinary, since this disorder so often comes with many co morbidities (Amianto, F., Ottone, L., Abbate Daga, G., & Fassino, S., 2015). The main goal of nutrition therapy should be to focus on a reduction of a caloric intake in order to achieve weight loss, and to stop the binging behavior. The restriction of food intake is a trigger for a binge episode, so the treatment may have to

focus on a normal or even hyper caloric diet until the patient is able to stop binges and reduce daily intake (Amianto, F., Ottone, L., Abbate Daga, G., & Fassino, S., 2015). These patients tend to respond very well to group and behavior therapies (Zaitsoff, S., et al., 2015 & Clark, L., Levine, M., & Kinney, N., 1988). Behavior therapy may be critical to stopping binges if there is an underlying cause, so that the patient can manage stress, anxiety and depression (Stein, R., et al., 2007).

Avoidant/Restrictive Food Intake Disorder

Avoidant/Restrictive food intake disorder is a feeding disturbance that causes inability to meet nutritional and energy needs, that typically affects children, but may persist into adulthood. In children, it is equally as prevalent in boys and girls (American Psychiatric Association, 2000).

Diagnosis/Screening

The diagnostic criteria for Avoidant/Restrictive food intake disorder is centered around an eating or feeding disturbance cause by a reoccurring failure to meet daily nutritional and/or energy needs (American Psychiatric Association, 2000). In order to be diagnosed, the patient also must have one or more of the following: significant weight loss, or failure to achieve appropriate weight gain if the patient is a child, a clear nutritional deficiency, reliance on enteral feeding or oral nutrition supplements, and/or marked interference with psychosocial functioning. The clinician may need to determine if the disturbance could be due to unavailability of food or a special occasion such as a religious holiday that includes fasting for long periods of time, or a small child that is a picky eater, as these would all not qualify for this diagnosis. Some individuals who have

medical conditions or mental disorders also do not qualify for this diagnosis, as it may be more or less severe than this particular medical condition (American Psychiatric Association, 2000).

Prevalence

This is a(n) ED that is most prevalent in children, and is seen equally in boys and girls (American Psychiatric Association, 2000). The prevalence rate of this ED is unknown within the general population, but of the adolescents that are evaluated at clinics, about 14% of them meet criteria for ARFID (Eddy, K., 2015).

Consequences

Children with this eating disorder may be irritable, apathetic, or withdrawn during eating/feeding times. In children, it will often cause delays in expected growth and malnutrition. It is suggested by literature that this diagnosis is fairly long standing and can persist into adulthood, but when an adult is diagnosed they often can be normal functioning. Regardless of age, this diagnosis often causes stress during mealtimes and may have an effect on family functioning (American Psychiatric Association, 2000).

Treatment

Since this ED primarily applies to children, the main nutrition therapy goal is often to increase the intake of kilocalories, and promote weight gain to meet their percentile on a growth chart (Strandjord, S. E., Sieke, E. H., Richmond, M., & Rome, E. S., 2015). In adults with this disorder, the main nutrition therapy is to also increase kilocalorie intake and weight gain to a normalized body mass index. These patients tend

to have less readmission to hospitals after one hospitalization, and have a higher remission rate than other ED's (Strandjord, S. E., Sieke, E. H., Richmond, M., & Rome, E. S., 2015).

Unspecified Feeding and Eating Disorder

This category is for situations where the patient does not meet the criteria for any other category of ED (American Psychiatric Association, 2000).

Diagnosis

This diagnosis is commonly used in situations where the clinician either cannot, or chooses not to specify the reason that the criteria are not met for any of the previously listed disorders. Usually this is a temporary diagnosis used by clinicians when there is insufficient information to give a specific diagnosis of another feeding or eating disorder, until further information can be obtained (American Psychiatric Association, 2000).

Prevalence

One study suggest that the less restrictive nature of this diagnostic criteria causes about 16% of those diagnosed with any eating disorder to be diagnosed with unspecified feeding and eating disorder (Wade, T., & O'Shea, A., 2015).

Treatment

The treatment for unspecified feeding and eating disorders will depend upon the symptoms that the patient is exhibiting.

Other feeding and eating disorders

This category is used as a diagnosis for situations when characteristics or symptoms of a feeding or eating disorder are present, but do not meet the full criteria for any of the fully-fledged ED. It can also be used by clinicians for a specific reason that the patient does not meet the criteria for a(n) eating disorder, for example, they binge eat, but not as frequently as once a week for the past three months (American Psychiatric Association, 2000). If this diagnosis is used as not fitting into any other category, it still has to cause significant distress or some form of impairment on the patient's life (Wade, T., & O'Shea, A., 2015).

Diagnosis/Screening

Some examples of typical diagnosis that fall into this category are;

Bulimia nervosa of low frequency or limited duration is when the patient meets all requirements except they do not compensate for binge eating as frequently as once per week for three months. This diagnosis can also happen for binge eating disorder patients who do not have binge episodes as frequently as once a week for three months.

Purging disorder is the purge behavior without the presence of the binge eating behavior.

Night eating syndrome (NES) is diagnosed as episodes of night eating after awakening from sleep or excessive food consumption after the evening meal that the patient is aware of and can also recall at a later time. It has to be eating that cannot be explained by a changing sleep and wake schedule, any medical disorder or effect of medication, and must cause distress and/or impairment of functioning (American Psychiatric Association, 2000). NES is most closely able to be associated with binge eating disorder, because the

patients who are diagnosed are consuming a large amount of food in an amount of time that others would not consume during the same amount of time, the difference is that many NES patients restrict food intake during the day and eat large meals at night. They also share the characteristic with BED that many patients with NES are overweight and gain weight due to large binges (Allison, K., Grilo, C., Mashed, R., & Stunkard, A., 2005).

Prevalence

About 2% of the general population may experience NES, but anywhere from 9-19% of those enrolled in an outpatient obesity clinic are able to meet diagnostic criteria for NES (Allison, K., Grilo, C., Mashed, R., & Stunkard, A., 2005).

Treatment

Treatments for other feeding and eating disorders may be varied depending upon the symptoms that the patient is exhibiting.

Orthorexia Nervosa

Orthorexia Nervosa is a psychological obsession with the type and quantity of food eaten to improve health (Chaki, B., Pal, S., & Bandyopadhyay, A., 2013).

Orthorexia falls into the category of Avoidant/Restrictive Intake Disorder, but it is a variable for this thesis and for that reason has its own implication section. Many other ED's focus on the quantity of food eaten, while with this disorder the fixation is more about the quality of food consumed (Chaki, B., Pal, S., & Bandyopadhyay, A., 2013 & Moroze, R., Yager, J., Weintraub, P., Dunn, T., & Craig Holland, J., 2015; Koven, N. &

Abry, A., 2015). Patients with this disorder might avoid foods that are high in sodium, fat, sugar, or other contents that seem undesirable for health (Moroze, R., Yager, J., Weintraub, P., Dunn, T., & Craig Holland, J., 2015). They also have a fixation with the way their food is prepared, packaged and manufactured, meaning they may avoid food that has been overly processed, has genetically modified organisms, or had pesticides used on them (Koven, N. & Abry, A., 2015). This DE pattern can cause unbalanced and insufficient diets due to the patient only wanting to obtain certain vitamins and minerals, or omitting certain food groups that seem undesirable altogether from their diet (Moroze, R., Yager, J., Weintraub, P., Dunn, T., & Craig Holland, J., 2015 & Koven, N. & Abry, A., 2015). The proposed diagnostic features of this ED are most similar to Avoidant/Restrictive Food Intake than any other disorder, although it is not yet a recognized diagnosis in the DSM (Moroze, R., Yager, J., Weintraub, P., Dunn, T., & Craig Holland, J., 2015).

Prevalence

Orthorexia Nervosa is most prevalent among healthcare professionals, yoga instructors, and athletes. A new study shows that patients with AN or BN may have a comorbidity of ON, with a prevalence rate of 28%, and this rate actually grows with treatment to 58% (Segura-Garcia, C., et al., 2015).

Treatment

There are no specific treatment guidelines for orthorexia nervosa, since it is not yet a recognized diagnosis in the DSM.

Preventative Interventions

Interventions for ED's should improve eating behaviors as well as self-efficacy and competence (Lock, L., et al., 2012).

Effective Prevention

It has been shown that programs targeting ED's reduce the risk of developing an ED and the onset of the disease (Beintner, I., Jacobi, C., & Taylor, C., 2012). Research suggests that women on a college campus would be most likely to seek the help of a friend first, should they develop an ED/DE, and consult with a physician or dietitian as a second resource. As a treatment option, college aged females also are most likely to seek individual therapy first, with group therapy as their second choice (Prouty, A., Protinsky, H. & Canady, D., 2002).

For these reasons, college campuses should be at the core of detecting and treating ED, and should do so with a multifaceted treatment plan for patients which should include but not be limited to; support groups, physicians, therapy for nutrition and psychological reasons (Prouty, A., Protinsky, H. & Canady, D., 2002 & Clark, L., Levine, M., & Kinney, N., 1988). Campuses should develop programs that target a wide variety of students, as well as staff and faculty that may be in need of help (Clark, L., Levine, M., & Kinney, N., 1988). These programs should primarily focus on identifying individuals with an eating problem, and refer them to specialists to seek treatment. Secondly, the program should have individualized treatment, as no two individuals with an ED exhibit the same symptoms or will respond the same way to treatment. The

programs should finally focus on preventing the ED epidemic on campus (Clark, L., Levine, M., & Kinney, N., 1988).

Cognitive Behavioral Therapy

Cognitive behavioral therapy (CBT) is a short term, general psychotherapy that focuses on changing thinking in order to directly change behavior, attitudes and feelings.

Etiology. CBT is a type of psychotherapy that focuses on the belief that a person's perception of a situation causes their feelings and behavior, not the situation itself that causes feelings and behavior (Beal, G., 2014 & Ellis, A., 1957). The three basic assumptions that CBT is based on are; cognitive activity affects behavior, cognitive activity can be monitored and altered, and behavior change can be caused by cognitive change. CBT is an effective base for many therapies, and it has been shown to be effective for ED/DE as well as body image promotion (Butters, J., & Cash, T., 1987 & Beal, G., 2014 & Ellis, A., 1957).

History. The first therapy approach that was developed based on CBT was by Albert Ellis in the mid 1950's who coined Rational Emotive Therapy, which was originally called the ABC model of emotions (Ellis, A., 1957). In the 1960's, Aaron Beck founded Cognitive therapy, and around the same time period, Maxie Maultsby Jr. founded rational behavior therapy. These are known today as the three most widespread approaches to CBT (National Association of Cognitive-Behavioral Therapists, 2008).

Group Therapy

There are many reasons why group therapy may be an excellent option for the treatment of eating disorders. While cognitive behavioral therapy is typically the gold standard for treating ED, it has been shown that other therapy may be just as effective in a group setting. These results could be because group psychotherapy provides many benefits that would not happen in individual therapy such as; group cohesion, peer interpersonal learning and feedback, safe emotional expression, social skill building and clear rationales for symptoms of (Grenon, R., Schwartz, D., Hammond, N., Ivanova, I., McQuaid, N., Proulx, G., & Tasca, G. A., 2017).

There is still limited research in the area of cost effectiveness for group therapy versus individual therapy of eating disorders, it has been widely acknowledged by researchers that it is more cost effective to treat multiple patients at the same time. Finally, acceptance and dropout rates of group therapy have been evaluated by multiple meta-analysis and are similar to those of individual therapy, and will likely not effect outcomes (Grenon, R., Schwartz, D., Hammond, N., Ivanova, I., McQuaid, N., Proulx, G., & Tasca, G. A., 2017).

Eating Disorder Treatment Programs

There are many types of eating disorder programs available that are effective.

Support groups. Support groups can have an impact on the individual and subculture ideals, where other individual programs can only change the ideals of one individual at a time (McVey, G. L., Lieberman, M., Voorberg, N., Wardrope, D., & Blackmore, E., 2003). These types of programs where friends can join together and

encourage one another as well as focus on healthy eating habits as a team benefit the participants greatly (McVey, G. L., Lieberman, M., Voorberg, N., Wardrobe, D., & Blackmore, E., 2003). This may be because of the bond formed between support group members, where as many ED patients who seek therapy are subject to high dropout rates (Zaitsoff, S., et al., 2015). Many patients start exhibiting symptoms of an ED because of a stressful life event, and cope with stress and life events by the onset of an ED (Choate, L. 2010a). Since so many patients with a(n) ED resist change, support groups are effective and benefit the patient by causing all members to reach treatment outcomes together (Zaitsoff, S., et al., 2015). Targeting the original issue through intrapersonal therapy may cause stemming issues to cease (Choate, L. 2010a).

College programs may be more effective when focusing on an intrapersonal therapy, for individuals or group settings, rather than behavioral therapy when working with a mental disorder such as ED's (Choate, L. 2010a). A(n) intrapersonal therapy support group would not focus directly on eating behaviors, instead it would place more of a focus on modifying the stresses and intrapersonal issues that a client may be dealing with. A(n) intrapersonal group therapy model should be approximately 8-10 members per group with two co-leaders who disperse written information. After an initial screening to identify type of ED, members should be assigned to a group based on where he or she may best fit with others (Choate, L. 2010a). Type of ED needs to be determined, because research has found that clients with different disorders respond differently to intrapersonal therapy. For example, BN clients respond well, while AN clients do not see much progress with this therapy (Zaitsoff, S., et al., 2015 & Clark, L.,

Levine, M., & Kinney, N., 1988 & Choate, L. 2010a). Meetings should be weekly for approximately 5 months, and after the first meeting each member should make a written document of their summary of progress and goals toward their own individual treatment (Choate, L. 2010a).

Eating Disorder Prevention Programs

Some programs, such as one at Stanford University, have been successful in reducing risk factors and decreasing the onset of ED's on campus (Beintner, I., Jacobi, C., & Taylor, C., 2012). This is an online program in which students actively participate at least once a week in listening to lessons, journaling for reflection, using a discussion board as a support group and completing assignments. By being online, it is able to reach a more widespread audience and provide an anonymous space for the participants. It is also able to be more cost effective, and easily translated into different languages and be just as effective when used in other countries (Beintner, I., Jacobi, C., & Taylor, C., 2012).

Meal support. It has been confirmed in inpatient and outpatient settings that ED patients need support during meal times to reduce their anxiety and help them to stabilize their diet (Cardi, V., et al., 2013). For adolescents, parents are the primary supporters, but for inpatients, nurses are often the primary supporters. It is possible that there needs to be a different kind of support for meal times in order to reduce the anxiety it causes ED patients (Cardi, V., et al., 2013). There has been a minimal amount of studies on the ability of meal preparation and group meals to be an effective treatment for ED patients (Lock, L., et al., 2012). Of the studies that do exist, they show that many ED patients

typically avoid eating socially and are unable to determine correct portion sizes. Group meals and preparation are an effective part of a complete treatment plan for these individuals in order for them to have a normal life. This type of therapy should include the meal planning based on a dietetic exchange list to ensure proper portion sizes, meal preparation, and eating the meal in a socially acceptable environment, including time restrictions of 25 to 45-minute window for consuming the meal (Lock, L., et al., 2012 & Steedman, C., & Hutton, A., n.d). Other forms of meal support include using vodcasts that reduce food related anxiety and music to increase food consumption by relaxing the patient (Cardi, V., et al., 2013). This therapy has been effective in both inpatients and outpatients, although some prefer music and some prefer the vodcasts, so this therapy should be individualized for the patient (Cardi, V., et al., 2013).

Body Image Promotion Programs

It has been seen that one of the biggest risk factors for developing an ED/DE is a negative body image (Smith-Jackson, T. s., Reel, J. J., & Thackeray, R., 2014 & Humphrey, L., Clifford, D. d., & Neyman Morris, M., 2015). A negative body image occurs exceedingly in women before they enter college, and persists throughout their time in college (Butters, J., & Cash, T., 1987 & Smith-Jackson, T., Reel, J., & Thackeray, R., 2014).

One major reason for this may be due to the influence of the media on this age group. A recent study comparing how designers from across the globe view the ideal body image for their country shows that being thin is an ideal quality (Superdrug Online Doctor). Designers were asked to Photoshop an image to show what citizens view as

being "perfect", and then scientists assigned a body mass index (BMI) and weight to the female in the photo shopped picture by asking outsiders to guess her body weight and taking the average. Two of the BMI's were classified as underweight, from China and Italy, fifteen were "normal" weight, and only one would be classified as overweight, from Spain (Superdrug Online Doctor). While media can have a negative effect, some colleges and social movements have been using mass media to promote a healthy body image. The media on college campuses may be able to help with promoting a positive body image (Smith-Jackson, T., Reel, J., & Thackeray, R., 2014). It is suggested that displaying all different kinds of body sizes and shapes on campus posters and commercials would show the support of the university to a positive body image to all students (Smith-Jackson, T., Reel, J., & Thackeray, R., 2014). There also appears to be a mass media movement focused on body image, by grassroots campaigns like "No Body Shame", "Dove Real Beauty" and "Health at Every Size" (The Dove Campaign for Real Beauty, n.d. & Way, Whitney; Health at Every Size, n.d.). These are all grassroots campaigns that promote a healthy, rather than a slim body type, and respectfulness for all different body shapes and sizes.

While many studies show that body image cannot be improved through intervention, one study proves that using cognitive behavioral therapy is effective in elevating body image in multiple ways (Butters, J., & Cash, T., 1987). The experimental group in the study had a significant improvement on the ability to judge their body size, reduced the fixation of themselves on their own appearance, and reduced approval of beliefs in false statements about physical appearance, as compared to the control group,

who did not improve in any of these areas (Butters, J., & Cash, T., 1987). Another study looked at the benefits of a "Healthy at Every Size" class on a college campus (Humphrey, L., Clifford, D. d., & Neyman Morris, M., 2015). The curriculum focused on writing analysis about how dieting, societal standards and the media influence body image. The results found that the Healthy at Every Size class had a significant decrease in anti-fat attitudes and a significant increase in their own body image (Humphrey, L., Clifford, D. d., & Neyman Morris, M. (2015).

Even though it is known that this age group is increasingly susceptible and body image is the biggest risk factor for developing an ED, programs that focus directly on promoting a healthy body image are extremely infrequent, and of those that target college populations, it is typically only a small component of a larger ED prevention program (Butters, J., & Cash, T., 1987 & Smith-Jackson, T., Reel, J., & Thackeray, R., 2014). Although these two initiatives are closely related, they are very different in practice, since body image concerns effect a much larger percentage of women than ED's, and can be more easily addressed (Smith-Jackson, T., Reel, J., & Thackeray, R., 2014).

Opposition

When dealing with eating disorder patients, even the best efforts to help may not go as planned and cause more attention and obsession of the patient to be placed on their eating habits, weight, and body shape (Clark, L., Levine, M., & Kinney, N., 1988). In recent years, there have also been platforms developing in which individuals with ED's can support one another, and encourage to lose weight, or prevent weight gain and achieve thinness. Thousands of websites, YouTube videos, and social media accounts

can be found online that are social support groups for individuals with ED's (McCabe, J., 2009 & Juarez, L., Soto, E., & Pritchard, M. E., 2012). It has been demonstrated that of those who use these platforms, they are more likely to have a decreased self-image, and participate in negative feeding or eating behaviors (Juarez, L., Soto, E., & Pritchard, M. E., 2012). It is suggested that maintaining a disease such as an ED is difficult to do alone, and when provided with validation, the patient's symptoms will worsen (McCabe, J., 2009). It is possible that developing a support group for ED students may cause the students to become more obsessed with their ED and support each other in ways that will worsen their disease.

There is also a high incidence of "Failure to engage" in patients with ED's, which may mean that the patient never goes to seek help or they are not motivated to utilize the help that they are receiving (Bell, L., & Newns, K., 2004). 14-18% of those who make an initial appointment for ED treatment do not attend the appointment. Some reasons for not keeping the appointment may include uneasiness toward change, fear of trusting others, and doubt about treatment outcomes. It is unclear why these patients do not keep their appointments or stop coming to them, but this is another common reason why an ED treatment may not be effective (Bell, L., & Newns, K., 2004).

Tools Used to Diagnose Eating Disorders

There are a number of tools used to diagnose eating disorders, such as the SCOFF, EAT 26, ORTO 15, and many more. The tools focused on in this section are the tools used for this research study.

Eating Attitudes Test

The EAT26 is a 26-question form that focuses on preoccupation with food, control, and behaviors. Each question is ranked on a hedonic scale and the corresponding responses are always, usually, often, sometimes, rarely, and never. Each response has a numerical score associated, always is a three, usually is a two, often is a one, and sometimes, rarely and never are a zero (Garner, et. al., 1982). The scores can add up to the highest possible score of 78, and anything above a score of 20 is evident of the person taking it needing to seek professional help. For the purpose of this study and based on clinical guidelines, disordered eating was considered to be less than a score of 26. There is a separate component with different scoring that addresses behaviors. The Five behavioral questions in the EAT26 also are rated on a Likert scale with responses being never, once a month or less, 2-3 times per month, once a week, 2-6 times per week, and once a day or more. Any box marked in, as compared to the scoring box marks, is evident of needing to seek professional help (Garner, et. al., 1982).

ORTO 15

The ORTO15 is a fifteen-question survey based off of Steven Bratman's study, and has answers ranging from always, often, sometimes, and never. It is used to determine the presence of orthorexia within a patient. The questions address if, and how the participant is fixated on the quality of food they consume (Bratman & Knight, 2000). Answers are then associated with a numerical score from 1 to 4, where 4 is a normal eating behavior and a score of 1 indicated orthorexic behaviors. A total score of less than 40 indicates an orthorexia diagnosis (Bratman & Knight, 2000).

Body Esteem Scale

The body esteem scale has thirty-five factors that the participants rate themselves on from 1-5, with 1 being strong negative feelings, 2 being moderate negative feelings, 3 being no feeling one way or the other, 4 being moderate positive feelings, and 5 being strong positive feelings (Franzoi & Shields, 1984). The factors are classified into categories, and evaluate the participants' satisfaction with her body. For females, the categories are sexual attractiveness, weight concern and physical condition. Each category has a designated score range, 13-65, 10-50 and 9-45 for sexual attractiveness, weight concern, and physical condition, respectively. A higher score designates more satisfaction that the patient feels about the category (Franzoi & Shields, 1984).

Perceived Importance Profile

The perceived importance profile has four columns with statements that assess the participants feelings about physical condition, physical strength, sports competence and body attractiveness. The participants response is associated with numbers 1-4, but they did not indicate that one score was better than the other.

CHAPTER III

METHODOLOGY

The purpose of this study was to determine the effectiveness of a five-week preventative disordered eating support program on Kent State University's Campus for women concerned with body image and disordered eating (DE). This research was approved by the Institutional Review Board at Kent State University. The program was a weekly support group for female students on Kent State University's main campus. The program provided nutrition education and spread body positivity, as well as informed the participants of resources on campus for more serious DE issues. The primary goals of this program were to develop a support group that has nutrition, body image, and disordered eating education. The secondary goals were for participants to be able to identify key differences between eating disorders (ED) and disordered eating, and recognize their own triggers for DE.

Participants

Participants were recruited through email and flyers with a code that lead those interested to a qualtrics survey that was used to screen participants. Exclusion criteria of the study included male gender, under 18 years of age, previously diagnosed eating disorder or a score of 20 or more on the Eat-26, and a current Kent State University student on main campus.

Instruments

There were four instruments used; the Eating Attitudes Test, EAT26, ORTO15, a self-efficacy and body esteem survey (Garner, et. al., 1982, Bratman & Knight, 2000, & Franzoi & Shields, 1984). They were administered using the paper and pencil technique, and kept in a file for each participant. The administration took thirty minutes or less for all four surveys at once.

The EAT26 was acquired by asking permission and the permission, as well as the survey and scoring can be found in appendix D. It is a 26-question form that focuses on preoccupation with food, control, and behaviors. Each question is ranked on a hedonic scale and the corresponding responses are always, usually, often, sometimes, rarely, and never. Each response has a numerical score associated, always is a three, usually is a two, often is a one, and sometimes, rarely and never are a zero (Garner, et. al., 1982). The scores can add up to the highest possible score of 78, and anything above a score of 20 is evident of the person taking it needing to seek professional help. For the purpose of this study and based on clinical guidelines, disordered eating was considered to be less than a score of 26. There is a separate component with different scoring that addresses behaviors. The Five behavioral questions in the EAT26 also are rated on a Likert scale with responses being never, once a month or less, 2-3 times per month, once a week, 2-6 times per week, and once a day or more. Any box marked in, as compared to the scoring box marks, is evident of needing to seek professional help (Garner, et. al., 1982).

The ORTO15 did not require permission to reproduce, and can be found in appendix B. It is a fifteen-question survey based off of Steven Bratman's study, and has

answers ranging from always, often, sometimes, and never. It is used to determine the presence of orthorexia within a patient. The questions address if, and how the participant is fixated on the quality of food they consume (Bratman & Knight, 2000). Answers are then associated with a numerical score from 1 to 4, where 4 is a normal eating behavior and a score of 1 indicated orthorexic behaviors. A total score of less than 40 indicates an orthorexia diagnosis (Bratman & Knight, 2000).

The body esteem scale did not require permission to reproduce, and can be found in appendix C. It has thirty-five factors that the participants rate themselves on from 1-5, with 1 being strong negative feelings, 2 being moderate negative feelings, 3 being no feeling one way or the other, 4 being moderate positive feelings, and 5 being strong positive feelings (Franzoi & Shields, 1984). The factors are classified into categories, and evaluate the participants' satisfaction with her body. For females, the categories are sexual attractiveness, weight concern and physical condition. Each category has a designated score range, 13-65, 10-50 and 9-45 for sexual attractiveness, weight concern, and physical condition, respectively. A higher score designates more satisfaction that the patient feels about the category (Franzoi & Shields, 1984).

The PIP was obtained by permission from the authors, Ken Fox and Chuck Corbin and can be viewed in appendix E. The four columns were compared and associated with numbers 1-4, but they did not indicate that one score was better than the other. The pre-and post tests were compared to observe if the participants' felt differently about their perceived importance before and after the study.

Procedures

First, participants were recruited for the study through fliers and emails asking if they would like to participate in a healthy eating program related to body image and disordered eating. If someone was interested, she would click the survey link in the email or use the QR code on the flier to open the screening survey. The initial screen of the survey was a consent form. The first questions of the survey were to ensure participants met the inclusion criteria such as female gender, at least 18 years of age and a student on the main campus at Kent State University. If the participant met all of these criteria, they continued on to the Eat-26 form as a way of screening for those who already had a clinical ED. If the participant reached a score of 26 or greater, they were thanked for taking the survey and directed to facilities on campus that provide professional help for eating disorders. If the participant did not reach a score of 26, they were redirected to another page that allowed them to give contact information to be contacted about participating in the group. The researcher then contacted participants for participation in the intervention.

The intervention program was five weeks long, for two hours at a time and run by the nutrition graduate assistants. The program was grounded in cognitive behavioral therapy to help identify situations in which participants think about or feel like participating in DE activities, as well as helping to reduce their negative thinking towards food or their body and then how to redirect those thoughts into a positive manner (Ellis, A., 1957). It was held in the kitchen in Nixon hall, meal lab 102, on Kent State University's Kent campus. In the event of room scheduling conflicts, the meetings were

moved to the lecture hall, room 100 in Nixon hall. Each week approximately an hour was used to discuss the designated topic, and an hour was used for a group activity and/or group discussion points. Appendix A demonstrates the topic, activity, learning objectives and discussion point that will be used for each week. Each week time was needed for arrival of participants, and reflection at the end of the activities and discussions. On the first week consent to participate was granted by participants through a consent form. After the consent process, participants were given a paper and pencil version of the PIP, body esteem scale and ORTO-15 in order to obtain baseline data. On the last day of the program, all surveys were taken again in order to compare it to the baseline data.

Participants all had to have at least an 80% attendance rate, which all achieved.

Statistics

The statistics used were descriptive. Each instrument was measured by a dependent t-tests that will be pre- and post- the intervention period. A P-value of 0.05 was used to measure significance.

CHAPTER IV

JOURNAL ARTICLE

Introduction

It is shown that 8-17 percent of college students experience an ED during their college career, this number is even higher for disordered eating, or those who may only be exhibiting one to three symptoms of an ED (Tavolacci, M., et al., 2015 & Eisenberg, D., et al., 2011; Flament, M., et al., 2015). Research also indicates that the reported rate of ED may depend upon the field of study of the college student. Female dominated majors, such as dance, nutrition, and acting may have higher rates, since ED affect women at a much higher rate than men (Mahn, H., & Lordly, D., 2015).

Of all women in college, studies show that 15% of this population actually would meet the full criteria to be diagnosed with AN or BN. Another 25% of the female college population exhibit one or more symptoms of a(n) ED/DE (Prouty, A., Protinsky, H. & Canady, D., 2002 & Beintner, I., Jacobi, C., & Taylor, C., 2012). This may be due to the influence of socionorms and the media causing body image distortion, which is one of the biggest risk factors for developing DE or a(n) ED (Butters, J., & Cash, T., 1987 & Smith-Jackson, T., Reel, J., & Thackeray, R., 2014; Humphrey, L., Clifford, D. d., & Neyman Morris, M., 2015). There are many mass media movements that are targeting increasing body image, but there is a gap in studying them and their effect on those that view the images (Butters, J., & Cash, T., 1987 & Smith-Jackson, T., Reel, J., & Thackeray, R., 2014 & Whyte, C., Newman, L. S., & Voss, D., 2016).

One of the ways dietitians prevent and treat DE is through programs and many researchers also believe that college-aged individuals should be the target of programs that would prevent onset of ED's, which is why college campuses are a great place to have such programs (Beintner, I., Jacobi, C., & Taylor, C., 2012). There are currently few programs but of those that do exist, they have shown to increase positive body image and decrease anti-fat attitudes, therefore preventing symptoms of DE (Humphrey, L., Clifford, D. d., & Neyman Morris, M., 2015). Many of the current programs available on college campuses are focused on prevention in students with clinical definitions of ED's and are not targeting the problem of body image, which affects a much larger percentage of the college population and should be the core of the program (Smith-Jackson, T., Reel, J., & Thackeray, R., 2014). Dietitians need research to support the claims of using college campuses to prevent DE, therefore the purpose of this thesis is to determine the effectiveness of a preventative disordered eating support program on Kent State University's Campus for women concerned with body image and disordered eating.

ED prevention programs should be multifaceted and appeal to a large population, which should include both males and females, as well as faculty and staff that may be exhibiting symptoms of DE. Some things that should be included in these programs are; resources for nutrition and psychological counseling, support groups, and consulting physicians (Prouty, A., Protinsky, H. & Canady, D., 2002 & Clark, L., Levine, M., & Kinney, N., 1988). Meal support also may be effective in helping those at risk to eat socially, reducing the anxiety related to eating and determine proper portion sizes (Lock, L., et al., 2012).

Kent State University students have shown interest in this topic by forming a campus wide body acceptance movement. There are currently no eating disorder groups or body image groups on campus or in the surrounding areas, it is clear that a program tackling the problem of body image is needed.

Methodology

Study Design

The purpose of this thesis is to determine the effectiveness of a preventative disordered eating support program on Kent State University's Campus for women concerned with body image and disordered eating.

Participants

The participants were female students on Kent State University's main campus that felt they would like to learn more about healthy eating or that felt they have a problem with DE. They could have been full or part time students as long as they are enrolled at Kent State University's main campus. Criteria that excluded a participant was a clinical diagnosis of an ED based on Eat 26 score (above a score of 20), being under the age of 18, or being male or faculty. Those with a subclinical diagnosis based on Eat 26 score were still included in the data.

Program Development

The program was five weeks long, for two hours at a time and run by the nutrition graduate assistants. It was held in the kitchen in Nixon hall, meal lab 102, on Kent State University's Kent campus. Each week approximately an hour was used to discuss the

designated topic, and an hour was used for a group activity and/or group discussion points.

Procedures

There were four instruments used; the Eating Attitudes Test, EAT 26, ORTO 15, a self-efficacy and body esteem survey (Garner, et. al., 1982, Bratman & Knight, 2000, & Franzoi & Shields, 1984). They were administered using the paper and pencil technique, and kept in a file for each participant. The administration took thirty minutes or less for all four surveys at once.

Statistics

The statistics used were descriptive. Each instrument was measured by a dependent t-tests that will be pre- and post- the intervention period. A P-value of 0.05 was used to measure significance.

The researcher asked and collected qualitative data on the program after each lesson. The responses were themed based on participation status, and then by positive feedback and areas for improvement. Within these themes, the frequency of responses was counted and can be seen in table 1.

Results

The data was entered into Statistical Package for Social Sciences (SPSS) version 21.0. Data collected from all surveys were analyzed by the SPSS software and by the researcher. Means and standard deviations were utilized to analyze participant body

esteem and disordered eating habits. Paired t-tests were used to compare answers before and after intervention. A significance of $p \leq 0.05$ was set for all tests.

Table 1

Qualitative Feedback on Program from Participants and Non-Participants in Females at Kent State University that Participated in a Disordered Eating Intervention Program

Participants	Positive Feedback	<ul style="list-style-type: none"> • Participants that enjoyed having snacks (n=5) • Participants that enjoyed a small group and felt a personal connection (n=4) • Participants that asked the researcher to speak at Kent State's Body Acceptance Movement meeting (n=1) • Enjoyed individual lessons: <ul style="list-style-type: none"> ○ What are triggers for DE and to combat them with mindfulness (n=5) ○ Body Image/Body Positivity (n=3) ○ Body Positivity (n=5)
	Areas of Improvement	<ul style="list-style-type: none"> • Lesson was boring: <ul style="list-style-type: none"> ○ MyPlate PowerPoint (n=3) ○ What is DE and ED? PowerPoint (n=2)
Non-Participants	Positive Feedback	<ul style="list-style-type: none"> • "We need programs like this on campus" (N=1) • Need reminder emails to remember to come (n=5)
	Areas of Improvement	<ul style="list-style-type: none"> • Unable to meet at this time (n=6) • Needs babysitter at this time to attend (n=1) • Already in another group (n=2) • Not a current Kent student wanting to participate (n=2) • Diagnosed with an ED and wanted to participate (n=1)

The researcher asked and collected qualitative data on the program after each lesson. The responses were themed based on participation status, and then by positive feedback and areas for improvement. Within these themes, the frequency of responses was counted and can be seen in table 1.

Figure 1 shows the differences in the mean scores of the Eating Attitudes Test before and after intervention. The mean score before intervention was 22.75 ± 4.99 and the mean score after intervention was 8.25 ± 4.78 . There was a significant difference between data before and after the intervention ($p \leq 0.001$).

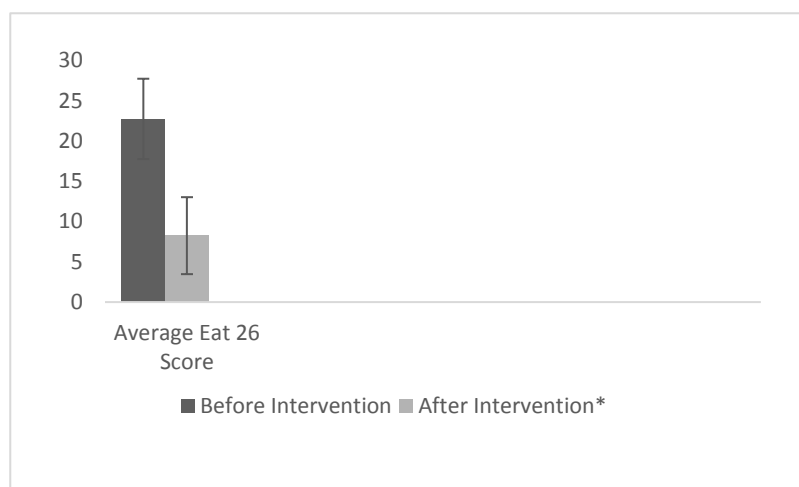


Figure 1. Differences in Average Eating Attitudes Test Scores in Females at Kent State University that Participated in a Disordered Eating Intervention Program (n = 4)¹

*Shows Statistical Significance, where statistical significance was set at $p \leq 0.001$

¹These results only relate to part B of the EAT 26 test, part C of the EAT 26 test showed no statistical significance for this research.

Table 2, 3 and 4 show the difference in the mean scores of the ORTHO 15, the Perceived Importance Profile and the Body esteem scale, respectively. No statistical difference was found in any of the data ($p \leq 0.05$).

Table 2

Differences in ORTHO 15 Scores in Females at Kent State University that Participated in a Disordered Eating Intervention Program (n = 4, χ = Mean, SD= Standard Deviation)

Statement	Average Score Before Intervention ¹ ($\chi \pm SD$)	Average Score After Intervention($\chi \pm SD$)	P Value
When eating, do you pay attention to the calories in food?	2.75 (± 0.50)	3.25 (± 0.50)	0.39
When you go in a food shop do you feel confused?	1.25 (± 0.50)	1.50 (± 0.57)	0.39
In the last 3 months, did the thought of food worry you?	2.25 (± 0.50)	3.00 (± 1.15)	0.22
Are your eating choices conditioned by your worry about your health status?	2.25 (± 1.25)	2.25 (± 0.95)	1.00
Is the taste of food more important than the quality of food you eat?	2.50 (± 0.57)	2.00 (± 0.81)	0.18
Are you willing to spend more money on healthier food?	2.75 (± 0.50)	3.25 (± 0.50)	0.39
Does the thought of food worry you for more than three hours a day?	3.00 (± 0.81)	2.75 (± 0.95)	0.39
Do you allow yourself eating transgressions?	1.75 (± 0.95)	2.25 (± 1.25)	0.60
Do you think your mood affects your eating behavior?	2.25 (± 0.50)	2.75 (± 0.50)	0.18
Do you think the conviction to eat only healthy food increases self-esteem?	2.25 (± 0.95)	3.00 (± 0.00)	0.22
Do you think that eating healthy food changes your life-style (frequency of eating out, friends, ...)?	3.25 (± 0.95)	3.50 (± 0.57)	0.64
Do you think that consuming healthy food may improve your appearance?	2.00 (± 0.81)	1.75 (± 0.50)	0.72
Do you feel guilty when transgressing?	2.50 (± 1.29)	2.00 (± 1.41)	0.39
Do you think that on the market there is also unhealthy food?	1.75 (± 0.95)	1.75 (± 0.50)	1.00
At present, are you alone when having meals?	2.5 (± 0.57)	2.25 (± 0.50)	0.39

¹These means are calculated from data from a 4-point Likert Scale where one equals 'Always' or indicates orthorexic eating behaviors and 4 equals 'Never' or indicates normal eating behaviors.

Table 3

Differences in Perceived Importance Profile Scores in Females at Kent State University that Participated in a Disordered Eating Intervention Program (n = 4, χ = Mean, SD= Standard Deviation)

Statements	Average Score Before Intervention($\chi \pm SD$)	Average Score After Intervention($\chi \pm SD$)	P Value
Some people feel that being good at sports is vitally important to them BUT others feel that being good at sports is not so important to them	3.5 (± 0.57)	3.5 (± 0.57)	1.00
Some people do not feel that maintaining a high level of physical conditioning is very important to them BUT Others feel that maintaining a high level of physical conditioning is extremely important to them	2.75 (± 0.96)	2.75(± 0.96)	0.36
Some people believe that having an attractive physique or figure is vitally important to them BUT others believe that having an attractive physique or figure is not all that important in their lives	2.5(± 1.29)	2.25 (± 1.26)	0.08
Some people believe that being physically strong is not so important to them BUT others feel that it is extremely important to them to be physically strong	2.5 (± 1.29)	2.75 (± 0.96)	0.06
Some people feel that having very good sports ability and skill is not so important to them BUT others feel that having high level of sports ability is really important to them	1.75(± 0.96)	2.25 (± 0.50)	0.13
Some people feel that maintaining regular vigorous exercise is vitally important to them BUT others feel that keeping up regular vigorous exercise is not of prime importance to them	2.5(± 1.00)	2.5 (± 0.58)	0.42
Some people do not feel it so important to them to spend a lot of time and effort maintaining an attractive body BUT others think that it is vitally important to spend time and effort maintaining an attractive body	2.5(± 0.58)	2.75 (± 0.50)	0.42
Some people feel that being strong and having well developed/toned muscles is vitally important to them BUT Others feel that being strong and having well developed/toned muscles is not so important to them	2.75(± 0.50)	2.75(± 0.50)	0.42

Table 4

Differences in Body Esteem Scale Scores in Females at Kent State University that Participated in a Disordered Eating Intervention Program (n = 4, \bar{x} = Mean, SD = Standard Deviation)

Sub-Scale	Average Score Before Intervention ¹ (\bar{x} ±SD)	Average Score After Intervention(\bar{x} ±SD)	P Value
Sexual Attractiveness	36.25 (±7.27)	36.00 (±2.94)	0.24
Physical Condition	18.00 (±3.92)	23.00 (±6.48)	0.13
Weight Concern	32.75 (±11.79)	32.35 (±9.50)	0.12

¹These means are calculated from data from a 5-point Likert Scale where one equals 'Have strong negative feelings' and 5 equals 'Have strong positive feelings' and are added together into three sub sections

Five participants were included in the intervention program and only four of those students were able to complete both sets of data, resulting in four total participants. All participants were females currently enrolled at Kent State University.

Discussion

This study was developed as an intervention program for females at Kent State University to determine the effectiveness of a preventative disordered eating support program on Kent State University's Campus for women concerned with body image and disordered eating. The program was five weeks long, for two hours at a time and run by the nutrition graduate assistants. Each week approximately an hour was used to discuss the designated topic, and an hour was used for a group activity and/or group discussion points.

It was hypothesized that there would be a difference in the pre- and post- test scores for each of the four instruments used. The hypothesis was rejected for the difference in scores of the pre- and post- ORTO 15, body esteem and self-efficacy scales. The hypothesis is accepted for finding a difference in the pre- and post- scores of the EAT 26 scale.

Positive feedback from participants shows that the lesson areas of body image/positivity, mindful eating, and understanding how to identify triggers for disordered eating were well received by participants as well as the small group and snacks available. This kind of feedback shows that current research stating DE prevention needs to be held in small groups, with multifaceted lessons and have food available is correct and will impact participants positively (Smith-Jackson, T., Reel, J., & Thackeray, R., 2014). One of the largest ways that these results show that there is a need for this kind of programming on campus and the participants were affected by this program was the researcher was asked to speak at Kent State's Body Acceptance Movement meeting, due to feedback about the program spreading around campus.

There is interest in this type of programming, but participation is needed in order for the intervention to work. One of the major flaws of this study was the low participation rate. It was likely that for many of the surveys, no statistical significance was found due to the low rate of participants. It is known that 14-18% of those who make an initial appointment for ED treatment do not attend the appointment, and there is a high "failure to engage" rate with these patients (Bell, L., & Newns, K., 2004). One way to increase rates of participation could be to hold the program online, such as the one

at Stanford University, which has been successful in reducing risk factors and decreasing the onset of ED's on campus (Beintner, I., Jacobi, C., & Taylor, C., 2012). Other ways to improve this could include making multiple meeting times, and one study suggest that having more restrictive inclusion criteria will decrease the likelihood of participant withdrawal in nutrition intervention programs. This would ensure participants are a good fit for the intervention and the intervention can be more focused on the target population (McAuley, W. J., McCutcheon, M. E., Travis, S. S., & Lloyd, J., 2005).

For many average scores on the Perceived Importance Profile, Body Esteem Scale and the ORTHO 15, scores were already in the normal ranges for designating not having a diagnosis of orthorexia nervosa, and no significant difference was found because scores did not need to be improved. For the several scores on the ORTHO 15 that were around one (indicating orthorexia behaviors), it was likely that a change was not found due to the low subject number.

The Eating Attitudes Test did find a significant difference in the average score before and after intervention. For the purpose of this study and based on clinical guidelines, disordered eating was considered to be less than a score of 26. There was overall a 14.5-point change in the pre- and post test scores of the EAT 26.

Overall, this study found a significant difference in the scores of the pre- and post- Eating Attitudes Test. This study further confirms the findings of other research, showing that intervention in populations with subclinical eating disorders can decrease the EAT 26 score. Two other studies with larger sample sizes show these results. One study included 17 undergraduate nutrition majors, ages 18 to 20, and then participated in

an intervention that lasted one hour per week for six weeks. The pre- and post- test scores decreased significantly ($p \leq 0.014$), from 27.9 ± 8.7 to 22.3 ± 6.3 (Tsitsas, G., & Blachaki, C., 2008). The second study included 73 women with body dissatisfaction, who participated in a one day Acceptance and Commitment therapy workshop that targeted body dissatisfaction and disordered eating. The participants in the workshop (as opposed to being in the control group), showed a significant improvement in EAT 26 score ($p=0.00$) (Hayes, S., Pearson, A. N., Follette, V. M., n.d).

The difference between the current study and other studies conducted is that it was led in a small group format, for two hours at a time. The time frame and small size of the group allowed for much more talking to be done by participants, and they were engaging each week in being the leader of their own intervention in order to work through their concerns with one another. This study was dietitian led, and as seen in appendix A, each week a topic was provided, but not always taught by the dietitian, and it was discussed by the group. For this reason, the participants were able to come up with their own solutions that worked for them in order to combat feelings of DE and poor body image. As seen in table 1, the participants actually did not enjoy the two lessons in which the dietitian was using a PowerPoint to teach them, and they preferred the lessons in which they were able to speak. Group therapy is an on the rise treatment for ED's for the reasons of cost effectiveness and all of the positive outcomes that coincide with peer interpersonal learning and feedback (Grenon, R., Schwartz, D., Hammond, N., Ivanova, I., Mcquaid, N., Proulx, G., & Tasca, G. A., 2017). This study proves that there may be a

need for more utilization of small group therapy due to its effectiveness in cost and reducing behaviors of DE through group cohesion.

Limitations

There were proven to be multiple barriers to the utilization of disordered eating intervention, and limitations that exist within this study. There was overall a small sample size in this study and that could have affected the results. There was one participant in the study that did not finish the post data. Many of those initially surveyed wanted to participate, but were unable to attend due to scheduling conflicts.

Secondly, only female participants were included and they had to be enrolled at Kent State University's main campus. There were males that were interested in participating in this study and they were referred to another intervention group on campus.

Finally, methods of recruitment and distribution of the survey could be limitations of the study. Participants were recruited via email invitation and a flier with a link to the survey. This may have limited the number of individuals with lower technology skill or those with limited access to technology in the study. Future research should attempt to expand the sample to faculty and male participants.

Applications

The current study provides information regarding how nutrition intervention can decrease the rates of disordered eating on a college campus. Overall, this study found great potential for the use of nutrition programming to decrease rates of disordered eating as measured by the eating attitudes test. Implications are seen in regards to target

audience, potential methods for utilizing disordered eating intervention and perceived barriers to the utilization of disordered eating interventions by female college students.

It has been seen through the research that disordered eating intervention on college campuses shows promise, although it may be best administered in small group settings due to participant preference. Two other studies show significant decreases in EAT 26 scores with participants that have sub clinical eating disorders (otherwise, disordered eating). One intervention shows a decrease in EAT 26 scores with just one day of intervention therapy for acceptance and commitment therapy (n=73), while another had a decrease in EAT 26 scores after meeting once a week for six months (n=17) (Hayes, S., Pearson, A. N., Follette, V. M., n.d & Tsitsas, G., & Blachaki, C., 2008). A third study shows a significant decrease in the EAT 40, or the lengthened version of the eating attitudes test, for both boys and girls after a media literacy intervention group (González, M., Penelo, E., Gutiérrez, T., & Raich, R. M., 2011).

The difference between the current study and those that already show decrease in EAT 26 scores, is the small sample size. The participants in the current study stated they felt a strong personal connection to the intervention, other participants, and the researcher. This may have contributed to the significant decrease in the EAT 26 score and the long-term effects of the intervention. Intervention groups such as these may be able to prevent the onset of eating disorders by decreasing the behaviors, feelings, and outlooks of participants with body image disorders or disordered eating behaviors.

Conclusion

This present study gives new insight into female students at Kent State University's disordered eating attitudes and interest in intervention. The results indicate that there were significant differences in pre- and post- data for the Eating attitudes test. Research is suggesting intervention such as this one can decrease disordered eating and possibly prevent a long term eating disorder. This is the third study to show a decrease in EAT 26 scores in participants with a subclinical eating disorder, and therefore there is a need to continue to research if intervention can decrease long term eating disorders.

APPENDICES

APPENDIX A

WEEKLY PLANS FOR DE PROGRAM FOR KENT STATE UNIVERSITY

Appendix A

Weekly Plans for DE Program for Kent State University

Week Number	Topic	Activity/Discussion Points	Learning Objectives
1	Take Pre-tests What is DE and ED? PowerPoint When should you seek professional help, and what are our resources on campus?	A- With a partner, write positive things you view of the other person D- Introduce yourself & get to know each other. How do you view yourself?	1: Be able to differentiate between types of ED's 2: Be able to differentiate between ED/DE
2	What are triggers for DE and how to combat them with mindfulness	A- Write your own triggers on the board (anyone with the same one makes a mark), Mindful eating YouTube activity D- What are your triggers? How can mindfulness help us with our triggers? What things can you do to combat your feelings of DE?	1: Be able to define mindfulness in relation to DE 2: Be able to identify your personal triggers

3	<p>My Plate - Eating healthy without counting calories</p> <p>PowerPoint</p> <p>Watching YouTube of Wade Hoag</p>	<p>A- Guess portion sizes of commonly eaten foods and then compare to real portions, cook vegetarian tacos together</p> <p>D- Would you be able to stop counting calories? Do you think it could help you? What is your “wheelchair”? Do you think others want your life? What does your body do for you that other bodies don't do for them? What are your top five non-physical traits that you like about yourself?</p>	<p>1: Be able to identify food groups based on examples of food</p>
4	<p>Body Positivity/Body Image</p>	<p>A- Finding what we believe was retouched in magazines, Dove evolution Video & retouching YouTube video</p> <p>D- What kinds of things are you thinking when you know you are negatively viewing your body? How can you stop or change this? Do you notice retouching when viewing media? How does it make you feel? Do you think it should be banned/labeled?</p>	<p>1: Identify what negative thoughts are for self</p> <p>2: Identify ways to effectively stop negative thinking, change it to positive thinking</p>

5	Body Positivity	<p>A- Talk about things we openly say we love, then ask how long it would take for participants to say themselves</p> <p>D- Have you ever been body shamed? How did it make you feel? Do you ever body shame others?</p>	<p>1: Define body image and shaming</p> <p>2: Be able to identify body positivity and negativity in yourself</p>
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APPENDIX B

ORTO 15

APPENDIX B

ORTO 15

	Always	Often	Sometimes	Never
1) When eating, do you pay attention to the calories of the food?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2) When you go in a food shop do you feel confused?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3) In the last 3 months, did the thought of food worry you?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4) Are your eating choices conditioned by your worry about your health status?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5) Is the taste of food more important than the quality when you evaluate food?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6) Are you willing to spend more money to have healthier food?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7) Does the thought about food worry you for more than three hours a day?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8) Do you allow yourself any eating transgressions ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9) Do you think your mood affects your eating behavior?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10) Do you think that the conviction to eat only healthy food increases self-esteem?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11) Do you think that eating healthy food changes your life-style (frequency of eating out, friends, ...)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12) Do you think that consuming healthy food may improve your appearance?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13) Do you feel guilty when transgressing ?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14) Do you think that on the market there is also unhealthy food?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15) At present, are you alone when having meals?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SCORING GRID FOR ORTO-15 TEST RESPONSES				
ITEMS	RESPONSES			
	Always	Often	Sometimes	Never
2-5-8-9	4	3	2	1
3-4-6-7-10-11-12-14-15	1	2	3	4
1-13	2	4	3	1

APPENDIX C

BODY ESTEEM SCALE

Appendix C

Body Esteem Scale

Instructions: On this page are listed a number of body parts and functions. Please read each item and indicate how you feel about this part or function of your own body using the following scale:

- 1 = Have strong negative feelings
- 2 = Have moderate negative feelings
- 3 = Have no feeling one way or the other
- 4 = Have moderate positive feelings
- 5 = Have strong positive feelings

Factor Loading (see below)

		Male	Female
1.	body scent		SA
2.	appetite	PC	WC
3.	nose	PA	SA
4.	physical stamina	PC	PC
5.	reflexes	PC	PC
6.	lips	PA	SA
7.	muscular strength	UBS	PC
8.	waist	PC	WC
9.	energy level	PC	PC
10.	thighs	PC	WC
11.	ears	PA	SA
12.	biceps	UBS	PC
13.	chin	PA	SA
14.	body build	UBS	WC
15.	physical coordination	UBS, PC	PC
16.	buttocks	PA	WC
17.	agility	PC	PC
18.	width of shoulders	UBS	
19.	arms	UBS	
20.	chest or breasts	UBS	SA
21.	appearance of eyes	PA	SA

22.	cheeks/cheekbones	_____	PA	SA
23.	hips	_____	PA	WC
24.	legs	_____		WC
25.	figure or physique	_____	UBS, PC	WC
26.	sex drive	_____	UBS	SA
27.	feet	_____	PA	
28.	sex organs	_____	PA	SA
29.	appearance of stomach	_____	PC	WC
30.	health	_____	PC	PC
31.	sex activities	_____		SA
32.	body hair	_____		SA
33.	physical condition	_____	PC	PC
34.	face	_____	PA	SA
35.	weight	_____	PC	WC

APPENDIX D

EAT 26 SCREENING FORM AND PERMISSION

Appendix D

Eat 26 Screening Form and Permission

Part B: Check a response for each of the following statements:		Always:	Usually:	Often:	Some times:	Rarely:	Never:
1.	I Am terrified about being overweight.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2.	I Avoid eating when I am hungry.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3.	I Find myself preoccupied with food.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4.	I Have gone on eating binges where I feel that I may not be able to stop.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5.	I Cut my food into small pieces.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6.	I Am aware of the calorie content of foods that I eat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7.	I Particularly avoid food with a high carbohydrate content (i.e. bread, rice, potatoes, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8.	I Feel that others would prefer if I ate more.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9.	I Vomit after I have eaten.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10.	I Feel extremely guilty after eating.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11.	I Am occupied with a desire to be thinner.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12.	I Think about burning up calories when I exercise.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13.	I Other people think that I am too thin.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14.	I Am preoccupied with the thought of having fat on my body.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15.	I Take longer than others to eat my meals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16.	I Avoid foods with sugar in them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17.	I Eat diet foods.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18.	I Feel that food controls my life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19.	I Display self-control around food.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20.	I Feel that others pressure me to eat.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21.	I Give too much time and thought to food.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22.	I Feel uncomfortable after eating sweets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23.	I Engage in dieting behavior.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24.	I Like my stomach to be empty.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25.	I Have the impulse to vomit after meals.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26.	I Enjoy trying new rich foods.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Part C: Behavioral Questions: In the past 6 months have you:		Never	Once a month or less	2-3 times a month	Once a week	2-6 times a week	Once a day or more
A.	Gone on eating binges where you feel that you may not be able to stop? ^a	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B.	Ever made yourself sick (vomited) to control your weight or shape?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C.	Ever used laxatives, diet pills or diuretics (water pills) to control your weight or shape?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
D.	Exercised more than 60 minutes a day to lose or to control your weight?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
E.	Lost 20 pounds or more in the past 6 months	YES <input type="radio"/>			NO <input type="radio"/>		
F.	Have you ever been treated for an eating disorder?	YES <input type="radio"/>			NO <input type="radio"/>		

^aDefined as eating much more than most people would under the same circumstances and feeling that eating is out of control.

- Items 1-25 are scored as follows: Always = 3; Usually = 2; Often = 1; Other answers = 0
- Item 26 is scored in the opposite direction (Never = 3 etc.)
- Total Test Score: Add item scores for a "total test score."

- Is the total 20 or more? ☐ No ☐ Yes, make a referral

• Behavioral Questions:

- Did the respondent check **✓any** of the boxes as shown below? ☐ No ☐ Yes, make a referral

	Never	Once a month or less	2-3 times a month	Once a week	2-6 times a week	Once a day or more
A) Binge	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
B) Vomit	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
C) Laxatives, diuretics	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
D) Exercise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Lost 20 pounds or more	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>				



eat26_reproduce_permission@eat-26.com

Apr 4 (9 days ago) ☆



to me ▾

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Best wishes,

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APPENDIX E

PERCEIVED IMPOARTANCE PROFILE AND SCORING

Appendix E

Perceived Importance Profile and Scoring

HOW IMPORTANT ARE THINGS TO YOU? (PIP)

	Really True for Me	Sort of True for Me			Sort of True for Me	Really True for Me
1	<input type="checkbox"/>	<input type="checkbox"/>	Some people feel that being good at sports is vitally important to them	BUT	Others feel that being good at sports is not so important to them	<input type="checkbox"/> <input type="checkbox"/>
2	<input type="checkbox"/>	<input type="checkbox"/>	Some people do not feel that maintaining a high level of physical conditioning is very important to them	BUT	Others feel that maintaining a high level of physical conditioning is extremely important to them	<input type="checkbox"/> <input type="checkbox"/>
3	<input type="checkbox"/>	<input type="checkbox"/>	Some people believe that having an attractive physique or figure is vitally important to them	BUT	Others believe that having an attractive physique or figure is not all that important in their lives	<input type="checkbox"/> <input type="checkbox"/>
4	<input type="checkbox"/>	<input type="checkbox"/>	Some people believe that being physically strong is not so important to them	BUT	Others feel that it is extremely important to them to be physically strong	<input type="checkbox"/> <input type="checkbox"/>
5	<input type="checkbox"/>	<input type="checkbox"/>	Some people feel that having very good sports ability and skill is not so important to them	BUT	Others feel that having a high level of sports ability is really important to them	<input type="checkbox"/> <input type="checkbox"/>
6	<input type="checkbox"/>	<input type="checkbox"/>	Some people feel that maintaining regular vigorous exercise is vitally important to them	BUT	Others feel that keeping up regular vigorous exercise is not of prime importance to them	<input type="checkbox"/> <input type="checkbox"/>
7	<input type="checkbox"/>	<input type="checkbox"/>	Some people do not feel it so important to them to spend a lot of time and effort maintaining an attractive body	BUT	Others think that it is vitally important to spend time and effort maintaining an attractive body	<input type="checkbox"/> <input type="checkbox"/>
8	<input type="checkbox"/>	<input type="checkbox"/>	Some people feel that being strong and having well developed/toned muscles is vitally important to them	BUT	Others feel that being strong and having well developed/toned muscles is not so important to them	<input type="checkbox"/> <input type="checkbox"/>

Scoring PIP (Perceived Importance Profile)

SportIM 1IM, 5IM

CondIM 2IM, 6IM

BodyIM 3IM, 7IM

StrenIM 4IM, 8IM

Recode 3,4,5,6,7,9,14,16,18,20,22,24,26,27,28,30, 1IM, 3IM,6IM,8IM (4=1,3=2,2=3,1=4)

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