Reducing Variability in a Cognitive Behavioral Therapy Group in an Eating Disorders Program

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Abstract

Patients with anorexia, bulimia, or eating disorder not otherwise specified (NOS) represent a psychiatrically and medically complex population. These disorders are characterized by chronicity, psychiatric comorbidities, and potentially serious medical and dental consequences carry the highest mortality rates of any psychiatric illness. Psychotherapy, particularly cognitive behavioral therapy (CBT), is the cornerstone of evidence based treatment. Variation is defined as the way the performance of a treatment process changes over time. While some random variation is normal, too much variation may result in deviation from fundamental CBT principles and may be less effective. Reducing non-random variation in group CBT delivery thus is an important part of maintaining fidelity to CBT principles and improving patient outcomes. The purpose of this project was to conceptualize and reduce causes of unwanted variability in the delivery of a twice weekly cognitive behavioral group therapy intervention, a core component of the partial hospitalization and intensive outpatient eating disorders programs at a Portland hospital. The group intervention curriculum was redesigned with the input of program staff, and presented to program staff. Pre- and post-tests were also developed and provided to the program for their administration and further development of the curriculum**.**

Introduction

Patients with anorexia, bulimia, binge eating disorder, and other eating disorders represent a psychiatrically and medically complex population. The disorders are characterized by chronicity, psychiatric comorbidities, and medical consequences including cardiac arrhythmias, dental enamel erosion, and seizures. (Sadock & Sadock,

2007; Ciao, Loth, & Neumark-Sztainer, 2014).

Compounding this problem is the fact that there are few standard psychotropic medications for the treatment of eating disorders. Only fluoxetine and lisdexamphetamine are FDA approved for the treatment of bulimia and binge eating disorder respectively (McElroy, Guerdjikova, Mori, & Keck, 2015; Food and Drug Administration, 2015). Psychotherapy is the cornerstone of treatment for eating disorders with cognitive behavioral therapy, motivational interviewing, cognitive remediation, and family therapy being the most common modalities (Bryne, Fursland, Allen, & Watson, 2011; Ciao, Loth, & Neumark-Sztainer, 2014).

Description of the Clinical/Health/Organizational/Policy Problem

The Cognitive Behavioral group at a local Portland, Oregon eating disorders program meets twice per week for sixty minutes and is a core component of the partial hospitalization and intensive outpatient treatment programs. Based on program supervisor feedback, this DNP student's experience leading the group and the literature, the curriculum for the group is outdated and varies significantly in its fidelity to cognitive-behavioral therapy (CBT). Although CBT is the largest component of the curriculum, the group is currently an eclectic mix of different theoretical approaches, mainly dialectical behavioral, motivational interviewing and existential therapies. It is not clear how much an evidence-based treatment can be modified and still be considered evidence-based (S.M. Byrne, personal communication, 11/31/15). While there is no evidence from program data that patient outcomes have declined or that less than optimal outcomes have been identified, program staff only recently began tracking patient

satisfaction and outcomes data (program director, personal communication, August 2015). Patient feedback in exit interviews had however, requested more "real world" application of the cognitive behavioral strategies in their own lives. The Cognitive group's CBT curriculum was originally evidence based but as it had been updated over time by various therapists, it shifted to a more eclectic approach, which is not supported by the literature. Evidence-based psychotherapeutic modalities for eating disorders include family therapy, specialist supportive clinical management, and motivational interviewing. The mainstay evidence-based treatment modalities for all eating disorders are nutritional rehabilitation, psychotherapy, and pharmacotherapy (Hay et al., 2015; Hay et al., 2014). It is important to remember that there is variability in treatment response and remission across both eating disorder diagnoses and their specific treatments (psychopharmacological versus psychotherapy). However for a group-based treatment program which may include a variety of eating disorders, such as this one, the curriculum and program necessarily incorporates interventions that are most effective for all eating disorders. Specialized treatment modalities tailored to specific individuals or diagnoses are impractical because of the group treatment delivery system (program director, personal communication, August 2015). CBT is one of the most evidence based psychotherapeutic approaches for patients who struggle with eating disorders; thus CBT continues to be the foundational approach for this program.

Population Affected

The population affected by the variability included patients and staff therapists in the eating disorders program as they either received or provided group therapy interventions. Variability also impacted patients' long term outcomes; thus this has

implications for the broader Psychiatry Department, hospital, and the larger medical system as a whole. The desire is to have optimal patient outcomes by having an evidence based, patient centered program.

Epidemiology

Although there is variation in the medical literature regarding mortality rates, it is widely accepted that anorexia nervosa has the highest mortality rate of any mental illness, with bulimia and eating disorder NOS following closely behind (Hay et al., 2015; Crow et al., 2009). Crude mortality rates for anorexia nervosa are 4.0%, 3.9% for bulimia nervosa, and 5.2% for eating disorder NOS; in general, patients with eating disorders are more likely to experience premature mortality than the general population (Crow et al., 2009; Keshaviah et al., 2014). Anorexia nervosa is an uncommon illness in the population as a whole, with a point prevalence of no more than 0.5% of the female population over the age of 15; men can present with anorexia but it is ten times as common in women (Hay et al., 2015; Gueguen et al., 2012). Very few studies focus on anorexia nervosa in men, but findings suggest that men present with a later onset of illness (20.78 years), are more likely to have a premorbid overweight background, and are less likely to have attempted suicide, but die sooner after hospitalization (Gueguen et al., 2012).

Because those who suffer from an eating disorder may ultimately die from heart or other organ failure, malnutrition, complications from substance abuse, or suicide, it is likely that some deaths that are primarily a result of an eating disorder are lost due to underreporting (National Association of Anorexia Nervosa and Associated Disorders, 2015). The epidemiological findings stated above underscore the importance of timely,

evidence-based interventions to decrease morbidity and mortality from eating disorders.

Purpose of the Project

The purpose of this project was to conceptualize and reduce causes of unwanted variability in the delivery of a sixty minute twice weekly seven week cognitive behavioral group therapy intervention that is a core component of the partial hospitalization and intensive outpatient eating disorders programs at a Portland hospital. Variation is defined as the way the performance of a process changes over time; some variation within a normally identified range is expected as some fluctuation happens in all processes (Fauz, 2013). This inherent variation is defined as common cause or random variation, which happens routinely in any workplace and does not have negative consequences. To reduce this type of variation, the focus is on knowing what to change. Although there may not be immediately observable negative consequences from common cause variation, reducing it allows for greater precision and enhanced adherence to standards of practice, in this case CBT delivery (Fauz, 2013) Special cause or nonrandom variation occurs when something unusual happens that causes an unusual fluctuation in values outside the standard identified common cause variation range that can be attributed to a specific cause, and is generally more easily identified (Fauz, 2013). A run or shift is defined as seven or more consecutive values that are above or below the average for the process; seven or more consecutive values that are all going up or down is indicative of a trend; and any non-random pattern recurring seven or more consecutive times is defined as a pattern (Fauz, 2013). “Control limits” are established based on the collected data, and represent the range of variation expected in the measurement of a process and provide another method to detect special cause variation (Fauz, 2013).

A process that is operating consistently with no runs, shifts, patterns, or points beyond the control limit is described as stable or in control (Fauz, 2013). When a process is operating inconsistently, there will be runs, shifts, patterns, or points beyond the normal range indicating instability and lack of control (Fauz, 2013). In the eating disorders treatment program, common cause variation may appear based on the patient population and their presenting eating disorder behaviors, as well as different therapist styles within a normal acceptable range for the program.

For the purposes of this project, undesired special cause (nonrandom) variation was identified as the variation occurring when regular therapists varied in their delivery relative to each other and/or to CBT principles. Special cause variation also occurred when an on-call or staff therapist covered for the regular group leader who was out for a short or extended period of time. The specific aim of this DNP project was: to reduce this unwanted special cause variation in Cognitive Behavioral group delivery. This was to be accomplished by: improving adherence to CBT practices by updating the curriculum and developing clearer guidelines and procedures for group leaders, for a more consistent approach to patient care. Staff were also expected to have a better understanding of how to integrate cognitive and behavioral approaches, and a better sense of what to do if they had to cover a group. Last, while the program did not formally graph their processes and values in this way, these concepts provide a useful way of conceptualizing and explaining QI processes for this project.

Review of the Literature and Gaps in the Literature

Psychotherapy is considered essential to the treatment of eating disorders, particularly anorexia nervosa; recent systematic reviews and meta-analyses of

pharmacological treatment for anorexia nervosa provide only weak evidence for the use of any particular psychopharmacological agent (Hay et al., 2014). Low dose olanzapine may be helpful for patients who are severely anxious and engage in obsessive eating-related compulsions but more evidence is needed to support pharmacotherapeutic options (Hay et al., 2014). Currently, CBT with an interdisciplinary team-based approach that emphasizes integration and continuity of care is the most supported evidence-based therapy intervention for all eating disorders, although some research shows that the combination of CBT and antidepressant therapy results in the highest remission rates (American Psychiatric Association, 2006; Hay et al., 2014). Family, friends, or other support persons should be involved to support the patient with all matters related to meal planning, cooking, and eating in pragmatic and psychological ways (Hay et al., 2015) This is the current interdisciplinary team approach employed by the eating disorders program where this DNP project will be implemented.

The core psychopathology of all eating disorders includes a pronounced tendency to evaluate self-worth in terms of controlling weight, shape, and eating, which is cognitive in nature (Byrne, Fursland, Allen, & Watson, 2011; Murphy, Straebler, Cooper, & Fairburn, 2010). In addition to this core psychopathology, the eating disorders share four mechanisms that maintain the illness; clinical perfectionism, core low self-esteem, difficulty coping with intense mood states, and interpersonal difficulties (Byrne et al., 2011). These core psychopathologies and maintaining behaviors are the focus of psychotherapeutic interventions for eating disorders and underscore the importance of Cognitive Behavioral therapy as a treatment modality for eating disorders since its focus is to address core automatic thoughts and thinking errors to create alternative thoughts,

beliefs, and behaviors (Murphy, Straebler, Cooper, & Fairburn, 2010). Some of the strongest support for the use of CBT is in the eating disorders, particularly bulimia, and anxiety disorders, which are highly comorbid (Hofman, Asnaani, Vonk, Sawyer, & Fang, 2012). Between session homework, requiring behavioral activation and experimentation, is the primary means by which patients transfer the skills and strategies learned in therapy into their everyday lives and thus situations in which their problems exist. This component of CBT has been studied more than any other therapeutic process in CBT and studies find that behavioral experimentation, or "homework completion" in CBT is predictive of outcome in psychotherapy (Cronin, Lawrence, Taylor, Norton, & Kazantzis, 2015; Rees, McEvoy, & Nathan, 2005). Homework is a form of behavioral activation, the component of CBT that uses the principles of operant conditioning through goal setting and scheduling to encourage patients to set goals and connect with positive reinforcements in their environment and is strongly supported as an evidence based practice to alter negative thinking (Ekers et al., 2014). This component is referred to as behavioral activation in this project.

Clinical practice guidelines also assert that CBT treatment is better than pharmacotherapy or nutritional counseling alone; an interdisciplinary approach involving CBT, individual therapy, pharmacotherapy, and nutritional counseling is the approach that has the most successful outcomes (American Psychiatric Association, 2010; Royal Australian and New Zealand College of Psychiatrists, 2014; Hay et al., 2014). For all eating disorders, outpatient group or individual maintenance CBT and ongoing work with a treatment team comprised of a psychiatrist/PMHNP, therapist, and dietitian upon completion of partial hospitalization or intensive outpatient treatment is highly

recommended (Cook, Wonderlich, Mitchell, Thompson, Sherman, & McCallum, 2016). In chronic anorexia nervosa, a harm reduction approach is also recommended (Hay et al., 2014).

There are several gaps in the literature regarding the treatment of eating. There is significant evidence in the literature suggesting that highly individualized cognitive behavioral therapy, such as Enhanced CBT (CBT-E), particularly for anorexia nervosa, is the most effective treatment delivery method and has better outcomes; however it is very expensive, not widely available, and the evidence is limited to small scale studies (Hay et al., 2014; Yager et al., 2010).

Another gap is that while eating disorders have significant clinical overlap with obsessive-compulsive disorder, anxiety disorders, depression, and substance abuse, disorders in which CBT is also the most evidence based treatment modality, more research is needed to improve response and remission rates and individual patient outcomes for these illnesses within the eating disorders population, particularly anorexia.

Until recently, there was a considerable gap represented by the lack of accepted clinical practice guidelines for the use of exercise in ED treatment. However, Cook et al., (2016). published the results of their systematic review as a proposed set of clinical practice guidelines for the use of exercise in eating disorders treatment. Thus there is a growing body of evidence, including several literature reviews and a recent meta-analysis, that have all independently concluded that closely monitored, nutritionally supported exercise is safe and may convey multiple benefits for patients of all eating disorder variants (Cook, Wonderlich, Mitchell, Thompson, Sherman, & McCallum, 2016). Given what is known now, more incorporation of evidence based principles for exercise re-

integration was appropriate for the Portland eating disorders program. The program plans to implement more exercise re-integration, specifically following the Loughborough Eating Disorders Activity Therapy Program (LEAP) which was designed to address compulsive over-exercising, a key target behavior for many patients (program supervisor, personal communication, May 25, 2016). The LEAP program uses problem oriented, present-focused CBT to educate and work with patients, instead of against them via long term significant activity restrictions, to gain control over compulsive over-exercising though a standardized group or individual therapy (Brauser, 2014).

Approach to the Conduct of the Project

Setting

The Eating Disorder Program is a 5 and a half day/week program with partial hospitalization and intensive outpatient services. More information may be obtained by contacting the program.

The Cognitive Behavioral group is held for 60 minutes two times per week and lead by one therapist per group unless the total patient census dips below 8, in which case the two groups are combined. Therapists currently choose a topic for the day based on CBT materials kept in three large curriculum binders; notes are made in the patient's chart on what was covered that day and there may or may not be follow up at the next group. The curriculum topic is tracked and rotated on a shared electronic drive and group leadership is inconsistent. This project seeks to standardize the program curriculum by adhering more closely to CBT guidelines, updating to the current evidence base, and incorporating a significant amount of behavioral activation and goal planning for outside application/experimentation into every group. Behavioral activation and goal planning is

important because many patients struggle to apply what they are learning in day treatment into their unstructured time at home, when the risk of engaging in eating disorders behaviors is highest. Patients also meet with their primary counselor for individual or family therapy once or twice per week and will be encouraged to review what they are working on in the Cognitive group with their individual therapist. .

Organizational/systems or Individual or Population Readiness to Change

The Eating disorders program is ready to change; all therapists, both psychiatrists, the program supervisor, and patients have expressed a desire to update and improve the Cognitive Behavioral group. The next sections will detail barriers, facilitators, and challenges for the project

Anticipated Barriers, Facilitators, and Challenges

Barriers and Challenges to implementation of the updated and standardized Cognitive Behavioral curriculum project include:

- Core psychopathology of eating disorders: These are chronic illnesses with periods of remission and relapse, particularly for patients who are struggling enough with their eating disorder that they meet criteria for admission to this program. Ambivalence about change is a hallmark of eating disorders and could be a barrier to patient acceptance of a new curriculum that emphasizes behavioral experimentation within a CBT framework.
- Organizational structure: Initiatives typically must fit within the hospital wide care delivery model and go through formal channels of change. This is less of a barrier with the eating disorders program because it is one specific unit and separate from the general psychiatry, chemical dependency, and other hospital

programs. It is worth noting that this program is also the only eating disorders specific treatment center for this healthcare system in its entire four state region. . However, the EDO is one of three partial hospitalization and intensive outpatient specialty eating disorder programs in Portland; the other two are part of different healthcare systems and are competitors. Thus the program does not want to share curriculum improvement or outcome data publicly; the DNP student is not permitted to share hard data and details specific to this program in the DNP project and presentation.

- Time and staffing restrictions: the Cognitive Behavioral group has been on the agenda to update for at least three years however the program supervisor and staff therapists are often stretched very thin. It is difficult for the program to allot time for a therapist to continually update the curriculum according to the most recent evidence base because that time would otherwise be spent in revenue generating and patient care activities. This was also a facilitator, however as this project provided a welcome opportunity for change and for DNP student involvement to eliminate strain on staff time.

Facilitators to this project include:

- The DNP student was a therapist in the Eating Disorders program for three years and continues to maintain a solid collegial relationship with the therapists, psychiatrists, dietitians, and program director. This provides her with personal experience leading the Cognitive Behavioral group and other groups that make up the treatment programming. She has knowledge of day to day EDO programing and how the EDO fits in the department partial hospitalization and

intensive outpatient programs.

- EDO functions fairly independently of the larger behavioral health department and the greater hospital system. Therefore, it is easier to make change on a unit level.
- Staff desire for change; the variability in curriculum delivery is a problem for both staff and on-call therapists. On-call therapists or therapists who are covering a group on little notice dislike feeling disorganized and unprepared for this group.

Participants/population

There will be no interaction with patients for this quality improvement project. Direct participants are the program supervisor, dietitians, primary therapists, and group therapists. The DNP student will correspond and meet with the program supervisor as needed to discuss the revision of the Cognitive Behavioral curriculum to best meet the program's needs. There will be monthly meetings with the program supervisor and a senior therapist who helps with treatment schedule development. Once the curriculum is revised, before implementation, the program supervisor has asked this DNP student to present a 1-2 hour training on the new curriculum to all staff at the eating disorders treatment center. While the patients are an impacted population, they are not participants in the development of the new Cognitive Behavioral group curriculum, though past patient comments and feedback provided important information for program development.

Inclusion and Exclusion Criteria

All program staff were included in this project, specifically during curriculum

development training, as a program director request. There were no exclusion criteria.

Protection of Participants

With the exception of the program director and senior therapist, no staff will be involved in the revision and development of the Cognitive Behavioral curriculum. Participants in the final training prior to implementation are the Eating Disorders staff; the program supervisor is investigating whether continuing education can be awarded for the final training, in which case their names would need to be provided to receive the certificate.

Implementation of Project

This project was approved by the OHSU IRB as quality improvement and accomplished in stages over the course of 9 months. The DNP student first met with the eating disorders program supervisor to identify areas of strength and weakness in the previous curriculum and create a set of goals. Ongoing meetings helped to further refine the CBT curriculum toward a finished product.

Due to the proprietary nature of the program, the DNP student had no access to the data obtained from the pre and post assessments from training; in addition that would constitute human subjects research rather than QI.. The DNP student developed both assessments and provided them to the eating disorder program supervisor who distributed them to staff and analyzed the collected data. The deliverable product was the 7 week, 14 group updated cognitive behavioral curriculum that was given directly to the program supervisor to implement. Based on patient and staff feedback provided by the program supervisor, the 7 group topics selected were: Thoughts/Beliefs about Change, Flexible vs Inflexible Thinking and Neuroplasticity, Thoughts/Feelings/Behaviors, Exercise in

Balance, Managing Free or Unstructured Time, Shame Attenuation, and Challenging Food Rules. The DNP student developed a 60 minute training on the new Cognitive curriculum that was presented to eating disorders staff including the program supervisor, a psychiatrist, both dietitians, and therapists who were not involved in patient care during the presentation. To help the program assess the effectiveness of the training and emphasize key concepts new to the Cognitive curriculum, the DNP student developed a pre and post training assessment that were provided to the program supervisor who disseminated them in the training and collected them to analyze the data. In keeping with the IRQ approval requirements, the DNP student had no access to data from the assessments. The pre and post training assessments focused on key changes to the curriculum and updates on current evidence based practices taken from the literature review.

Expected Outcomes of Project

The eating disorder program will evaluate outcome data and collect data on patient satisfaction and outcomes related to the program in general over the coming weeks and months; this data is already collected, analyzed, and shared on a quarterly basis in the staff council meeting. Immediate program expected outcomes include greater emphasis and inclusion of behavioral activation and experimentation in the CBT group and increased patient satisfaction and increased patient reports of implementing behavioral experimentation of learned CBT concepts in overall program outcome data. Reduced variability over time and increasing adherence to evidence based CBT principles in the medical literature is also an expected outcome. Finally, an improvement in patient satisfaction and a move in the direction of incorporating exercise re-integration

into the overall program curriculum is an expected long term outcome. Week 4, "Exercise in Balance" is the first group in the entire program to specifically focus on exercise re-integration, a significant unmet need.

To attain adherence to the new curriculum, and reduction in variability, the program supervisor could employ a number of strategies. There are already plans to make a shift from multiple therapists conducting the group to changing the programming schedule to allow one therapist to lead the entire curriculum, which would reduce common cause and special cause variation. Other strategic methods for evaluating and maintaining adherence include meetings with the therapist running the group on a regular basis during implementation, to assess the integration process and problem solve any areas of difficulty. Adherence could be documented by keeping a record or calendar including what group is lead, and on which date, on a shared hard drive.

Practice-related Implications/Recommendations

There was a need for the incorporation of evidence based principles for exercise re-integration in the Portland eating disorders program (Cook et al., 2016). As a long term goal, the eating disorder program is moving toward incorporating exercise re-integration via the LEAP curriculum into treatment and to create a group specifically to address healthy vs disordered exercise, create a contract with patients, and to develop contingency plans for progression/regression of exercise privileges. Session Four of the new Cognitive curriculum, "Exercise in Balance", was the first step in that direction.

Conclusions/Summary

Eating disorders are a common psychiatric illness with core psychopathology centered on food and body image distortions; they are associated with significant quality

of life impairment, economic costs, and medical risks. A multi-disciplinary approach that is grounded in the evidence-based medical research is key to promoting the best outcomes among patients. Decreasing variability in the delivery of CBT, the most evidence based therapy, is a critical part of providing the best care available to patients.

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