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Psychotherapists' Assessment and Treatment of Executive Functioning Skill
Deficits in Clients with Eating Disorders

by
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MSW Clinical Research Paper

Presented to the Faculty of the School of Social work
St. Catherine University and the University of St. Thomas
St. Paul, Minnesota
In Partial fulfillment of the Requirements for the Degree of

Master of Social work

Committee Members
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The clinical Research Project is a graduation requirement for MSW students at St. Catherine University/ University of St. Thomas School of Social work in St. Paul, Minnesota and is conducted within a nine-month time frame to demonstrate facility with basic social research methods. Students must independently conceptualize a research problem, formulate a research design that is approved by a research committee and the university Institutional Review Board, implement the project, and publicly present the findings of the study. This project is neither a master's thesis nor a dissertation

Abstract

The purpose of this project was to determine: how clinicians assess whether or not their eating disorder patients have decreased executive functioning skills, if personality type effects executive functioning, and how clinicians treat executive functioning deficits. Using a qualitative design, six licensed clinicians, in the twin cities, with between 3.5 and 20 years of experience working with eating disorder participants, were interviewed to capture their thoughts on the research questions. The researcher then analyzed the data utilizing grounded theory coding techniques by transcribing each interview, annotating the texts and grouping codes that emerged more than three times into themes. A correlation analysis was also done to assess correlation between years of experience in working with eating disorders and percentage of clients participants believed suffered form executive functioning deficits. The findings indicate eating disorder clinicians have little consensus on the number of clients they see who suffer from executive functioning deficits. There is also no correlation between years of experience and percentage of individuals believed to suffer with executive functioning deficits ($R^2 = .0088$), leading us to believe that years of experience does not give more or less awareness of clients who have deficits in their executive functioning. Eighty Three percent of participants reported they had no assessment measure for executive functioning deficits, and 100% reported relying on clinical observation to determine behaviors that let them know if an individual has executive functioning deficits. One hundred percent of participants reported that all eating disorder patients tend to be high achieving in at least one area of their lives. Finally 100% of participants indicated that the number one strategy used to help their clients regain executive functioning skills is through proper reestablishment of feeding. The findings of this study demonstrate the need for a field-friendly assessment development that can allow clinicians to measure and analyze executive functioning deficits, as well as the need for research that explores how clinicians can help foster the regaining of cognitive and executive functioning skills during the re-feeding process.

Introduction

Nearly 24 million people in the United States suffer from an eating disorder (*Eating disorder Statistics*). These disorders do not discriminate based on age, gender, ethnicity, or socioeconomic status and have the highest rate of mortality of any mental illness (Buckner, 2004; Castellanos, Sonuga-Barke, Milham, & Tannock, 2006; Just, Cherkassky, Keller, & Kana, 2007; Watkins & Brown, 2002). While the prevalence of eating disorders on the rise (Tasca & Balfour, 2014), there is still little evidence pointing to a direct etiology of these illnesses (Klump et al., 2009; Walsh & Devlin, 1998). There is also a great deal of mystery surrounding how eating disorders affect patients diagnosed with them. Without these two vital pieces of information, clinicians are forced to rely on antiquated therapeutic practices that tend to offer a 50% relapse rate (Ben-Porath et al., 2014).

Recent studies have aimed to identify the neurobiological effects of eating disorders to determine if there are more effective ways of treating these disorders (Fassino et al., 2001; Galderisi et al., 2003; Kaye et al., 2005; Schienle et al., 2009; Uher et al., 2004; Sanson et al., 2011). There is research to suggest that when an individual has an eating disorder, they experience a decrease in executive functioning skills (Fassino et al., 2001; Galderisi et al., 2003; Kaye et al., 2005; Schienle et al., 2009; Uher et al., 2004; Sanson et al., 2011). Executive functioning skills allow individuals to monitor impulses, make informed decisions, control and regulate their emotional responses to every day stressors, reason through situations and connect actions to outcomes. They are essential in day-to-day functioning, and may be severely decreased in individuals living with an eating disorder. The frontal lobe is the portion of the brain that houses these executive

functioning skills (Anderson, 2002; Blakemore & Choudhury, 2006; Dahlin, Nyberg, Backman & Stigsdotter Neely, 2008; Stuss & Alexander, 2000; Inbinder, 2006), leading researchers to believe that there may be a neurobiological connection between eating disorders and executive functioning skills.

Ultimately, researchers have found that it is very difficult to assess the level of executive functioning decreases in individuals with eating disorders because of the high-functioning nature of patients that typically present with this mental illness (Galderisi et al., 2003). Studies have also indicated that in order to know, definitively, that there is diminished activity in the frontal cortex, they must run a Magnetic Resonance Imaging (MRI) test. (Schienle et al., 2009; Uher et al). This is obviously not available to most therapists, making the diagnosis of decreased executive functioning skills even more challenging.

The goal of this study is to add to the body of eating disorder knowledge, the voices of experienced clinicians who work with eating disorder patients and see and treat executive functioning deficits without the use of advanced brain-imaging technologies. This study will utilize one-on-one qualitative semi-structured interviews of eating disorder clinicians. The research questions this study is asking is: How do clinicians determine a decrease in executive functioning skills amongst their patients with eating disorders? Are these decreases linked to any specific demographics? If decreases are present, how do clinicians treat the patient to help him/her gain back those skills?

Conceptual Framework

A conceptual framework is a guiding theory or philosophy that informs the research study. The conceptual framework for this study relies on the Piaget's theory of Cognitive Development. Piaget believed that individuals are naturally curious and throughout their lives build schemes that allow them to organize information, make sense of their world, and regulate behavior (Kail & Cavanaugh, 2013). As children develop into adolescents and young adults, they move through the sensorimotor period (ages 0-2years) characterized primarily by egocentrism and object permanence, the preoperational period (ages 2-7years) characterized by egocentrism, language development, and centration, the concrete operational stage (7-11 years) characterized by logical thought and operations linked to physical objects, and finally the formal operational period (ages 11 and up).

Piaget describes the formal operational period as the time in an individual's life when they are: capable of drawing conclusions based on a hypothesis, planning systematic tests to explore multiple variables, or employ scientific reasoning, able to think abstractly about ideas that are not real or tangible, capable of separating reality from possibility, able to think about multiple aspects of a problem and solve that problem logically, and think reflectively (Kail & Cavanaugh, 2013). As demonstrated in the literature review, the skills developed in the formal operational period, are those that this study identifies as executive functioning skills, which is why we utilize this theory to inform our research.

This study assumes that individuals do move throughout the cognitive developmental stages described by Piaget, and our aim is to explore the effects of an eating disorder on the formal operational stage, or the development of executive functioning skills. Unlike

Piaget, however, the literature review demonstrates that this study also assumes that eating disorders can cause an individual to experience deficits in the executive functioning skills they've developed in adolescence

Literature Review

Executive functioning

Executive functioning is a term that describes a collection of cognitive processes responsible for purposeful and goal-directed behaviors in humans. (Gioia, Isquith & Guy, 2001 found in Anderson, 2002). Executive processes are essential for an individual's ability to: control impulses, monitor or regulate performance, thoughts, emotion or behavior, plan or organize, reason, and generate and implement strategies (Anderson, 2002; Dahhlin, Nyberg, Bachan & Stigsdotter Neely, 2008; Duchesne et al., 2010; Inbinder, 2006; Shroeder & Kelley, 2009). On a daily level, these skills allow individuals to monitor their impulses and make informed decisions, control and regulate their emotional responses to every day stressors, plan activities from simple morning routines to more demanding tasks such as how to complete a multi-step project at work or school, reason through situations and connect actions to outcomes, and implement strategies for how to solve every day problems. These skills are essential in day-to-day healthy functioning both in school-age tasks as well as adulthood responsibilities. Executive Functioning skills are also imperative to ongoing cognitive development as well as to the success of individuals who are seeking mental health counseling, yet are often decreased when clients come in for therapy (Anderson, 2002; Duchesne et al., 2010; Fassino et al., 2002; Galderisi et al., 2003; Gillberg, Rastam, Wentz & Gillberg, 2007; Gillberg et al., 2010; Shroeder & Kelley, 2009).

Executive Functioning skills are believed to be housed in the frontal cortex of the brain (Anderson, 2002; Blakemore & Choudhury, 2006; Dahhlin, Nyberg, Bachan

&Stigsdotter Neely, 2008; Gillberg, Rastam, Wentz & Gillberg, 2007; Fassino et al., 2001; Inbender, 2006; Schroeder & Kelley, 2008; Schienle, Schafer, Hermann & Vaitl, 2009; Stuss & Alexander, 2000; Uher et al., 2004). While brain development remains largely a mystery, researchers do know there are a number of environmental and physiological stressors that can contribute to decreased executive functioning (Duchesne et al., 2010; Fassino et al., 2002; Galderisi et al., 2002; Gunstad et al., 2006; Kaye, Frank, Bailer & Henry, 2005; Schienle et al., 2009; Yakar, Eviatar, Shamina & Gur, 2010; Uher et al., 2004). Studies have found that adolescents who experience chronic stress and trauma in their home experience an influx of stress hormones that prune the frontal lobe contribute to decreased executive functioning (Anderson, 2002; Blackemore & Choudhury, 2006; Grekin, Brennan & Hammen, 2004; Shroeder & Kelley, 2009). Similarly, individuals who suffer from frontal lobe lesions also have decreased executive skills (Stuss & Alexander, 2000). Other areas of mental health focus that involve individuals with decreased executive functioning include: depression, attention deficit hyperactivity disorder (ADHD), Alzheimer's disease, and Autism (Buckner, 2004; Castellanos, Sonuga-Barke, Milham, & Tannock, 2006; Just, Cherkassky, Keller, & Kana, 2007; Watkins & Brown, 2002).

A growing body of research supports that patients diagnosed with eating disorders experience decreased executive functioning skills throughout the course of their illness and some researchers hypothesize changes in the structure of their frontal lobe (Duchesne et al., 2010; Fassino et al, 2001; Galderisi et al., 2003; Gillberg et al., 2006; Gillberg et al., 2009; Gunstad et al., 2007; Kaye et al., 2005; Schienle et al.,2008; Uher et al., 2004; Yaker et al., 2010)

Eating disorders and executive functioning

Eating disorders are becoming more prevalent in clinical practices as well as in the American population (Tasca & Balfour, 2014). Though The Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM-5; American Psychiatric Association, 2013) has multiple sub-types of eating disorders, research pre-dating 2013 focuses on the three main types found in the DSM-IV-TR (2000): Anorexia nervosa, Bulimia nervosa, and Binge Eating Disorder. Anorexia nervosa is “characterized by a failure to maintain normal body weight, body image distortion and drive for thinness” (Tasca & Balfour, 2014 p.258). Patients typically achieve this through restrictive eating habits. Bulimia nervosa is characterized by individuals binge eating and then purging. (Tasca & Balfour, 2014). Patients diagnosed with Binge eating disorder participate in binge eating, but do not purge and there is usually comorbidity with obesity (Tasca & Balfour, 2014). While eating disorders currently affect a relatively small population of Americans, they are associated with high mortality rates, high rates of serious medical complications, comorbidity with anxiety and depression, and are often linked to trauma (Butryn, 2014; Klump, Bulik, Kaye, Treasure, & Tyson, 2009; Swanson, Crow, LeGrange, Swendesen & Merikangas, 2011; Tasca & Balfour, 2014; Walsh & Devlin, 1998). Despite the serious physical and psychological implications for individuals diagnosed with eating disorders, the cause of the emotional disorder is relatively unknown (Klump et al., 2009; Walsh & Devlin, 1998). Though clinicians may not know exact causes of their clients’ eating disorder, it is vital to know how it is affecting their body and mind so that they can provide the best treatment possible.

Because of the executive functioning decreases seen in eating disorder patients, researchers are now exploring potential neurobiological causes. There is a growing body of research to support that patients diagnosed with eating disorders have altered frontal lobe structure and functions, either occurring before or after the onset of their Eating Disorder. This alteration of their frontal lobe structure may account for a decrease in executive functioning (Fassino et al., 2001; Galderisi et al., 2003; Kaye et al., 2005; Schienle et al., 2009; Uher et al., 2004; Sanson et al., 2011).

In order to determine differences in brain functioning amongst individuals with eating disorders and those without, Uher et al. (2004) conducted a study using twenty-six female patients with eating disorders. The sample in this study had ten participants with bulimia nervosa, and sixteen participants with anorexia nervosa. This group was compared with nineteen healthy comparisons. Participants fasted for 3 hours before they were screened. During the magnetic resonance imaging (MRI) exam the women were shown pictures of savory and sweet foods (pizza, cheese, cake, chocolate etc.) and of neutral objects (stationary, flowers). Following the MRI, participants also rated the food stimuli pictures based on their subjective feelings toward the pictures. Researchers then analyzed the MRI and subjective ratings results to find that individuals with eating disorders identified the food to be a threat and found it disgusting ($p < .001$) when compared to their healthy counter parts. They also had significantly ($p < .001$) more activity in the “left medial orbitofrontal and anterior cingulated cortices and less activity in the lateral prefrontal cortex, inferior parietal lobule and cerebellum” (p.1238) than the healthy control subjects. While this study did not examine executive functioning, higher levels prefrontal cortex activity is directly related with higher executive functioning skills

(Anderson, 2002; Blakemore & Choudhury, 2006; Dahlin, Nyberg, Backman & Stigsdotter Neely, 2008; Stuss & Alexander, 2000; Inbinder, 2006), and the decreased activity found in these individuals could contribute to executive functioning dysfunction. This study also holds significance because it shows there is brain structure alterations in individuals with eating disorders. In a similar study done by Schienle, Schafer, Hermann, & Vaitl (2008), sixty-seven women were each assigned to one of four groups “(Overweight binge eating disorder patients, overweight healthy control subjects, normal weight healthy control subjects and normal-weight patients with bulimia nervosa)” (p.654). During the study, participants fasted overnight and then were shown pictures of high-caloric foods, disgusting items (toilets, maggots, etc), and neutral household items while in an MRI machine. Participants were also asked to self-report the pictures they saw using the Behavioral Inhibition/ Behavioral Activation scales (BIS/BAS) to determine levels of disgust associated with the images. Results showed that patients with binge eating disorders reported greater reward sensitivity ($p < .05$) and showed stronger medial orbital frontal cortex ($p < .001$) activity than the other groups and the bulimia nervosa patients reported greater arousal ($p < .01$), stronger anterior cingulate cortex activation ($p < .001$) as well as stronger insula activation ($p < .05$) than the other groups. In comparing these two studies, we can see that while bulimia nervosa and anorexia nervosa patients may have one area of their brain effected and binge eating disorder patients, may have another, eating disorders do effect the structure and function of the brain. Because eating disorder patients have shown to have different brain activities than their control counterparts, researchers believe that this is potentially the physiological cause for

decreased executive functioning skills (Fassino et al., 2001; Galderisi et al., 2003; Kaye et al., 2005; Schienle et al., 2009; Uher et al., 2004; Sanson et al., 2011).

Similarly, Kaye, Frank, Bailer & Henry (2005), confirm in their review, that recent studies indicate serotonin neuronal systems of the brain may “create vulnerabilities related to pathological feeding” (p.15). Kaye et al. (2005) suggest that altered neurotransmitter systems in individuals with eating disorders may be a pre-morbid condition that leads to people being more susceptible to anxiety, obsessions and impulse extremes found in eating disorders. This suggests that the differences in brain structure and functioning may not be the direct result of an eating disorder, but that individuals may be born with these differences.

Whether the difference in brain structure occurs before or after the onset of an eating disorder, research supports that there is a significant difference in the brains of eating disorder patients and their healthy counterparts. This difference could account for the decreased executive functioning of eating disorder patients found in other studies.

Many therapists use cognitive behavior therapy (CBT) to treat eating disorders (Brauhardt, Azaan & Hibert, 2014; Ben-Porath et al., 2014; Tasca Balfour, 2014). This indicates a belief that there is a decrease in executive functioning skills amongst their patients. In a recent study Duchesne et al. (2009) aimed to understand the executive functioning of individuals diagnosed with binge eating disorders when compared to healthy controls. In this study, thirty-eight obese participants presenting with binge eating disorders were compared to thirty-eight obese controls without a binge eating disorder. After administering a variety executive functioning measuring tests including: “Digit Span, Trail Making Tests A and B, Stroop Test and the Wisconsin Card Sorting Test”

(p.381), researchers found that there was a significant difference in the patients with binge eating disorders and those without. There were significant impairments in individuals with binge eating disorders in the areas of: set shifting, the ability to shift cognitive strategies in response to changes in their environment, working memory, the ability to temporarily maintain and manipulate information one needs to keep in mind which is necessary for individuals to have good emotional decision making, as well as planning and problem-solution abilities. All of the skills that were impaired are considered executive functioning skills, showing that binge eating disorder patients had a significant deficit in executive functioning skills when compared with healthy controls. Conversely, A research study done by Gunstad et al. (2007), indicates that body mass index (BMI) may have more of a direct correlation with decreased executive skills. Four-hundred and eight people participated in the study from ages 20-82. The findings report that there was an inverse relationship between BMI and performance on cognitive tests. Overweight and obese individuals with a BMI over 25 performed more poorly than those with a BMI of less than 25 on executive function tests. The limitations of this cross sectional population in comparison with the Duchesne et al. (2009) study is that the participants studied did not indicate whether or not they had an eating disorder, making it impossible to apply this study to eating disorder patients. When comparing these two studies researchers cannot know if binge eating disorder patients would have shown a significant difference in executive functioning skills when compared to healthy, overweight participants with a BMI over 25. However, it is important to note that healthy weight stabilization of obese patients with binge eating disorders may positively affect their executive functioning skills.

While there is a body of research to support decreases of executive functioning in eating disorder patients, there is also another body of research suggesting little to no deficits in executive functioning in eating disorder patients. In a longitudinal study of patients diagnosed with anorexia nervosa with adolescent onset, Gillberg et al. (2006) found that there was little difference in the cognitive abilities or executive functioning of anorexia patients and their healthy control counterparts. One hundred and two individuals were studied over the course of 10 years. Fifty one of the participants suffered from adolescent-onset anorexia. This group was compared to 51 participants representing healthy controls. The initial mean age of the group was 16. They were then assessed at a 6-year follow up and again at a 10-year follow up. Participants were asked to complete a number of tests to determine their executive functioning skill level including: WAIS-R, Wisconsin Card Sorting Test, the Luria memory ten-word retrieval test, Test of facial recognition, and the Birmingham object battery. Overall results after the 10 year study showed that “Executive function deficits and major memory problems were rare both in the anorexia nervosa and comparison group” (p.175) and “the former anorexia nervosa cases showed no major neuropsychological deficits” (p.170). This study is significant in that it shows that over the course of the disease and recovery, patients diagnosed with adolescent onset anorexia nervosa experienced no lasting executive functioning deficits. The limitation to this study is the inability to generalize it to the entire eating disorder population due to lack bulimia nervosa and binge eating disorder patients represented.

Similar results were found in a study done by Galderisi et al. (2003). The study aimed to determine if there was a significant difference in: general abilities, attention, noneffortful learning, or learning that takes place as a byproduct of another activity, and

executive functioning in individuals with eating disorders when compared to healthy controls. In the study, 45 female participants were recruited. Participants had no previous history of neurological or mental illness, drug abuse or alcoholism, but did have an eating disorder diagnosis. Thirty-one of the women had bulimia nervosa and fourteen had anorexia nervosa. They were compared to healthy controls matched on age and gender. Researchers administered a number of evaluations including: Wechsler Adult Intelligence Scale-Revised, Verbal Intellectual Quotient, Spatial and Non-Spatial Conditional Associative learning task, and the Self Ordered pointing Task for Drawings and for Words, Block Span, Digit Span Block Tapping Task, and Hebb's Digit Recurring Sequences. When compared with the healthy controls, individuals with anorexia and bulimia were found to have subtle impairment of noneffortful learning, or the ability to learn a task without awareness of effort given to the task. There were no other significant differences between individuals with eating disorders and those without in their executive functioning skills. A significant limitation of this study is the matching of the control group. Galderisi et al. (2003) believed that individuals with eating disorders have a specific personality type that is described as perfectionistic and seeking of external approval. Individuals with this personality type tend to have enhanced executive control, which makes it difficult to determine if there are any decreases in executive functioning. Furthermore, it is challenging for researchers to find a healthy comparison group with these high levels of executive functioning and control. The healthy controls in this study were not assessed to determine if they had similar personalities to the eating disorder participants. This is a significant limitation in that it is one eating disorder therapists face every day. They see and treat clients with these enhanced executive control personality

types, and must determine if there is decreased executive functioning and how to address it.

Overall, research regarding executive functioning in eating disorder patients and its link to brain functions is unclear. There is research to support: brain function differences resulting in decreased executive functioning in anorexic, bulimic and binge eating disorder patients, as well as little executive functioning difference in eating disorder patients (Duchesne et al., 2010; Fassino et al., 2002; Gillbert et al., 2006; Gillberg et al., 2009; Gunstad et al., 2007; Kaye et al., 2005; Rothschild-Yaker et al., 2010; Schienle et al., 2009; Galderisi et al., 2003; Uher et al., 2004). Ultimately the research indicates that personality traits typically seen individuals with eating disorders make it difficult to find a comparable control group (Galderisi et al., 2003) Eating disorder patients have personality traits “often described as pursuing the highest possible standards of behavior and external approval. These traits might promote a focused style of processing, which enhances executive control” (Galderisi et al., 2003 p.925). Because of this, it is essential for clinicians to be aware of potential executive functioning decreases, and have practices and therapeutic models designed to help patients gain those executive functioning skills back. The brain is a plastic organ with the ability to grow back even if it has been pruned away but it requires intense targeted therapy to do so (Dahlin et al., 2008).

Current clinical practices for treating eating disorders

Researchers are still attempting to identify the etiology of eating disorders. In a study done by Gual et al. (2001) eating disorder patients were examined to determine if there is a relationship between personality factors and self-esteem.. In this study, 2862

girls, ages 12-21, participated in a baseline assessment which measured: their attitudes toward eating (using the EAT scale and the Eating Disorder Inventory), personality traits including neuroticism, sincerity and extraversion (using the Eysenck Personality Inventory), self esteem (using the Self-Esteem Form A), and body mass index. Results showed there was a “strong, independent, and consistent association of both neuroticism and low self-esteem with the prevalence of eating disorders” (p. 270). Neuroticism is defined as a personality trait closely associated with perfectionism, rigidity and a abnormal concern over mistakes. This study is significant in that there seems to be a positive relationship between low self-esteem and perfectionistic personality types with eating disorders. The limitation of this study is that it does not address the potential interpersonal, social and biological factors that have also been linked to eating disorder etiology (*National Eating Disorders Association: Factors; The Emily Program: Facts*). According to the National Eating Disorder Association (2014), other factors that can contribute to the onset of an eating disorder include: history of being teased based on body shape or size, history of abuse, cultural pressures glorifying a specific body type as well as cultural norms that value individuals based on appearance and not inner qualities, and genetics. The Emily Program (2014) also affirms that there is no one clear origin of an eating disorder, but its cause can be affected by “biological, psychological, emotional, familial, cultural, spiritual, sexual, gender and social factors” (p.1).

Because of the unclear etiology of eating disorders as well as the limited knowledge on the physiology of how they affect the brain, therapist must rely on a variety of methods and practices when working with individuals with eating disorders.

The most widely used method of therapy for eating disorders is Cognitive Behavioral Therapy (CBT) (Brauhardt, Azaan & Hibert, 2014; Ben-Porath et al., 2014; Tasca & Balfour, 2014). In this model, eating disorders are seen as cognitive theories about shape and weight that are held by the patient. The maintenance of these cognitions may lead a patient to restrict, binge or purge based on his/her beliefs about themselves (Tasca & Balfour, 2014). This model operates under the context of both social and cultural pressures for a thin body as well as biological factors that may lead to different healthy weight points (Tasca & Balfour, 2014). While CBT is the “gold standard” of eating disorder therapeutic practices, 50% of individuals who participate in CBT relapse into their old eating disorder habits (Ben-Porath et al., 2014).

Because of the high rate of relapse seen in eating disorder patients who undergo CBT (Ben-Porath et al., 2014), researchers are now pursuing other methods for treating their clients. Another therapeutic model becoming more prevalent in eating disorder treatment is attachment theory and a psychodynamic perspective (Tasca & Balfour, 2014 & 2014). Attachment theory is based on the idea that individuals build internal working models as children that become the basis for how they interact with the world, both in their childhood as well as in adulthood (Tasca & Balfour, 2014). If individuals have a working model that is characterized by insecure attachment with their primary caregivers, this attachment categorization remains relatively stable through adulthood and can greatly influence: affect regulation, interpersonal style, coherence of mind, and reflective functioning (Tasca & Balfour, 2014). Research points to an “increased probability of adult psychopathology among those with insecure vs. secure attachment in childhood” (Tasca & Balfour, 2014 p.2). Tasca & Balfour (2014) suggest that clinicians consider

evidence-based treatment oriented practices that are now emerging for attachment insecurity when working with individuals who suffer from eating disorders.

Another form of therapeutic practice that has been shown to work well with individuals with eating disorders is Dialectical Behavior Therapy (DBT) (Ben-Porath et al., 2014). While DBT was originally designed and used as a treatment for self-injurious patients diagnosed with borderline personality disorder, it also can be a useful tool when addressing the affect regulation deficits often seen in individuals with eating disorders (Ben-Porath et al., 2014). In a recent study completed by Ben-Porath et al. (2014), researchers found that when women with anorexia and bulimia participated in weekly DBT sessions, there was a significant improvement in their ability to regulate their affect and how they responded to emotional situations. Being able to respond to daily demands in an appropriate and socially acceptable way, without turning to food restriction or bingeing, could be significant in helping individuals with eating disorders overcome their illnesses.

In examining the multifaceted nature of eating disorders as well as the treatment perspectives and options for patients and clinicians, Clinical social workers must begin looking at how, in session without and MRI, they can determine the executive functioning levels of their patient best therapeutic model based on that clients specific needs.

Research Question:

The goal of this qualitative study is to determine how clinicians assess whether or not their eating disorder patients have decreased executive functioning skills. The researcher also asks clinicians if personality type (high achieving, type A, pursuing best

possible body) affects executive functioning. Finally this study aims to find if a clinician does determine there is a decrease in executive functioning, what do they do to help patients gain those skills back so they can still develop their cognition toward recovery.

Methodology

Introduction

The goal of this study is to gather information on how participants assess executive functioning skills in individuals with eating disorders. Furthermore, this study aims to explore how clinicians treat decreased executive functioning skills once they are identified. This was an exploratory, qualitative study utilizing semi-structured interviews with eating disorder therapists. The focus of this research is to determine the most common practices for identifying and re-establishing lost executive functioning skills in eating disorder patients.

Sample

A non-probability sample of 6 clinicians experienced in, and currently working with, eating disorder patients was obtained. Participants chosen had at least 2 years experience working with individuals with eating disorders and all held one of the following licenses: licensed marriage family therapist, licensed independent clinical social worker, or licensed clinical psychologist. All participants were from the Twin Cities area or within a 30 mile driving distance from University of St. Thomas. The sample of participants was obtained by sending a letter to all clinicians practicing in the Emily Program as well as the Melrose Center (See Appendix B). Permission from both organizations was obtained before sending out the letters. Both are well-established eating disorder clinics and have clinicians with a variety of licenses, experiences and therapeutic approaches. Individuals who agreed to participate were asked to identify other clinicians in their field who could contribute, expanding our sampling strategy to include

snowball collection. This type of sampling was chosen because of the ease of gathering participants from experienced practices.

Demographics:

Six participants took place in this study. All of the participants were women. The participants were from both private practices and eating disorder clinics. Their years of experienced ranged from 3.5 years to 20 years. The mean years of experience was 8.75 years with a standard deviation of 6.04. One participant was a Licensed Marriage Family Therapist, three were Licensed Psychologists, and two were Licensed Independent Clinical Social Workers. Participants have worked with clients ranging from 11 years to clients in their mid 80s.

All participants reported being eclectic in their theoretical orientation. Five participants (83%) included Cognitive Behavior Therapy and Dialectical Behavior Therapy in their eclectic orientation. Three participants (50%) reported interpersonal psychotherapy as part of their eclectic orientation.

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Data Collection

Before the identifying any potential interviewees, the primary researcher contacted, by phone, the Emily Program as well as Melrose Center to gain permission from the clinical manager to send email to all qualifying clinicians asking them to participate in this project. Once granted permission, an email, sent by the clinical supervisor, went to each clinician's mailbox explaining the goal of this project and requesting their participation. Once participants agreed, they were given a letter

explaining the research project (see Appendix B), what to expect during the interview, a copy of the consent form, and a copy of the questions they would be asked during the interview. They were also informed of any potential benefits or risks resulting from participating in this study. Once participants signed the consent form, a one-on-one qualitative semi-structured interview was conducted with each clinician. The interview took place in an area agreed upon by both the interviewer as well as the participant and was private in order to protect any sensitive information. In most cases, this was the clinician's office.

A semi-structured interview was developed to capture the following themes: the demographics of the clinicians, clinician's assessment of executive functioning deficits, clinician's understanding of how they determine an increase or decrease in executive functioning amongst their patients with eating disorders, and how clinicians treat executive functioning deficits. Each interview lasted for approximately 30 minutes

Analysis of data

Interviews were transcribed and coded by the primary researcher. During the coding process, the primary researcher utilized the technique of Grounded theory. Grounded theory allows the researcher to analyze the raw data “and weave in theoretical ideas and concepts without permitting them to drive or constrain the study's emergent findings” (Padgett, 2008). The data in this study utilized grounded theory by transcribing the full interview, then annotating in the text, or coding, concepts that emerged. Codes that emerged more than 3 times were then grouped into themes.

A correlation analysis was also done to determine if there was any correlation to years of experience in working with eating disorders and percentage of clients participants believed suffered from executive functioning deficits.

Protection of Human subjects

Before conducting the interview, each participant signed a consent form, and all questions were answered at that time (see Appendix A). No apparent risks were identified in participating in this research project, but participants were informed that they could choose not to answer any of the questions asked. Participants were informed that the interview would last for 30-45 minutes, be audio recorded and the researcher would transcribe the conversation. Participants were informed that their names would not be linked to the research in any way and once the data was transcribed, the audio recording would be destroyed. The informed Consent form template was approved by the University of St. Thomas institutional Review Board (IRB) before any research began

Results/Findings

Assessment of Executive Functioning Deficits

Participants were asked how they determine if executive functioning skills were decreased amongst eating disorder patients. Five participants (83%) reported they had no assessment measure. The sixth participant indicated that she utilized intake evaluations (where individuals are screened for depression and anxiety), along with clinical observation to determine executive functioning deficit. . Though 83% reported they used no formal assessment, they did report seeing behaviors in their clients that revealed some level of executive functioning deficits. Three participants (50%) reported seeing fixation and pre-occupation in their clients as an indicator of decreased executive functioning. Three participants (50%) also reported that their clients were often caught up in diagnosis thoughts (pre-occupation with eating, weight and shape), and had trouble with decision-making. Three participants (50%) reported emotional dysregulation. Three participants (50%) also stated that in-order to determine executive functioning deficits they would do clinical observations. For example, one participant stated they would assess “patterns and quality of relationships and quality of a person’s capacity to hold clear boundaries and warm self-regard and be in the world in that way”.

Participants were also asked their opinion on whether anorexic patients, bulimic patients and patients with a binge eating disorder had core personality differences. Participants reported that all eating disorder patients tend to be high functioning and over-achieving in regards to one or more areas of their lives. As one participant reports about individuals with an eating disorder: “Folks that have very high standards for themselves. High expectations. Often a sense that they’re not ever good enough”. Four

Participants (67%) reported that anorexic patients tend to be high achieving, perfectionistic, driven, and people pleasing. One participant said anorexic patients are “Able to do well in school, and maintain a home, and get [themselves] together to go out into the world, and maintain relationships to some extent, and usually are very successful in their careers, maybe to a fault”. Three participants (50%) reported that bulimic patients are also perfectionistic, but that bulimic and binge eating patients often tend to be more impulsive. Three participants (50%) agreed that personality traits are risk factors that can contribute to an eating disorder, and when an individual is suffering from the disorder, those personality traits tend to be amplified.

Percentage of Clients with Eating Disorders

Participants were asked to estimate the percentage of clients they saw with an executive functioning deficit. Table one shows participants reported a range from 40%-100% of their clients who had executive functioning deficits. The mean percentage reported was 74.16% with a standard deviation of 21.34.

Table 1 shows the percentage of individuals with an executive functioning deficit reported along with the number of years that participant has been working with individuals with eating disorders. There is no correlation between participants' years of experience and percentage of their clients whom they believe to have executive functioning deficits ($R^2 = 0.0088$). Table 1 also illustrates there is distinct pattern between years of experience and percentage of individuals believed to have executive functioning deficits.

Table 1

*A Cross-Tabulation Between Years of Experience and Participants Estimated Percentage
of Clients Seen with Executive Functioning Deficits*

<u>Years of experience</u>	<u>%</u>
3.5 years	100%
5.5 years	40%-45%
6 years	60%-70%
6.5 years	95%
11 years	65%-70%
20 years	70%-80%

*Average years of experience= 8.75 (standard deviation=6.04). Average percentage of
clients with executive functioning deficits reported= 74.16% (standard
deviation=21.34). $R^2 = 0.0088$.*

Treatment of Decreased Executive Functioning Skills

Participants were then asked what therapeutic interventions they used to help eating disorder patients recover, and what specific modalities they would use with a person who had decreased executive functioning skills to help them gain those skills back. Four participants (67%) reported using the same interventions with patients regardless of executive functioning deficits being present. All participants reported that the number one strategy used to regain executive functioning skills is assuring that the patient has been taking in enough food/nutrition. They believe that individuals need to have stabilized nutrition before they can begin therapeutic work with the underlying issues. According to one participant:

“You can’t reason with someone whose executive functioning is impaired like that. The example I give is you can’t reason with someone who’s drunk. You have to wait until they sober up. You can talk to someone whose drunk, you can give them a cup of coffee, but then they’re just an alert drunk”.

Participants reported that once nutrition is stabilized, there then needs to be behavioral therapy in order to change the eating disorder behaviors. “Often if you can

make some changes to your behaviors then you can change your thoughts and your feelings”. Five Participants (83%) reported utilizing Cognitive Behavior Therapy and Dialectical Behavior Therapy to do this. Only one clinician (17%) discussed doing work to re-establish connection to executive functioning. Two participants (33%) reported that in order to access their executive functioning skills, they taught clients to ask questions. As one participant reports, “you can’t ask yourself questions with your limbic system”. These clinicians were addressing the fact that executive functioning skills are housed in the frontal lobe of the brain, while more basic survival skills are housed in the limbic system.

Miscellaneous Themes

Through the course of the interviews, a few other themes emerged. The first was that eating disorders are almost always co-morbid with another mental illness, most commonly anxiety and/or depression. The next theme was that only two participants (33%) discussed where executive functioning skills are housed in the brain. One participant called it the “upstairs brain”, and discussed how she teaches her clients to build ladders between their downstairs and upstairs brain in order to access those executive functioning skills. The other participant knew it was in the pre-frontal cortex and discussed how this area of the brain develops in adolescence, so the executive functioning skills “for an 11 year old and an 18 year old and a 25 year old are different. So an 11 year old would have a deficit compared to a 25 year old, but could be appropriate for an 11 year old”.

Discussion

Percentage of clients with executive functioning deficits

The first aim of this study was to examine how clinicians identify whether or not individuals who have been diagnosed with an eating disorder have decreased functioning skills. In order to initially probe at clinicians' awareness of executive functioning deficits in their clients, they were asked what percentage of their clients they believed to have some type of executive functioning deficit. Clinicians reported a range between 40%-100% with a mean percentage of 74.16%. There was a standard deviation of 21.34. This indicates that there was little consensus amongst clinicians on the number of eating disorder clients they see who suffer from executive functioning deficits. This also suggests there is not a standardized way of determining a client's level of executive functioning skills.

Clinicians were also asked how long they've been working in the eating disorder field. The data was analyzed to find if there was correlation between years of experience and awareness of executive functioning deficits. There was no correlation between years of experience and percentage of individuals believed to suffer with executive functioning deficits ($R^2 = .0088$). This leads us to believe that years of experience doesn't give more or less awareness of clients who have deficits in their executive functioning skills.

Assessment of Executive Functioning skills

In order to explore the next overarching question of this study: how does a clinician determine if an eating disorder client has executive functioning deficits, clinicians were asked what assessments they use to measure executive functioning.

Eighty three percent of participants reported they had no assessment measure. Research suggests that there are a number of assessments that can be used to help clinicians understand the level of executive functioning in their clients. These include the Digit Span, trail Making Tests A and B, Stroop Test, Wisconsin Card Sorting Test, WAIS-R, Luria Memory Ten-Word Retrieval Test, Test of Facial Recognition, Birmingham Object Battery, Verbal Intelligent Quotient, Self Ordered Pointing Task for Drawings and for words, Block Span, Hebb's Digit Recurring and Rey-Osterrieth Complex Figure (Duchesne et al., 2009; Galderisi et al., 2003; Gilberg et al., 2006; Jock et al., 2013). The question then becomes why are these assessments being used in research studies and not in clinical practices. One explanation is that these may not be practice-friendly, in that they may be highly intensive, time-consuming, difficult to interpret, or require specialized training. One hundred percent of participants did report, however, that there are behaviors they see in their clients that let them know if an individual has executive functioning deficits. Fifty percent reported seeing fixation and pre-occupation in their clients, 50% reported they see clients who are caught up in diagnosis thoughts and have trouble with decision-making, and 50% reported seeing emotional dysregulation. Each of these behaviors falls under what research describes as executive functioning skills which is the ability to: control impulses, monitor or regulate performance, thoughts, emotion or behavior, plan or organize, reason, and generate and implement strategies (Anderson, 2002; Dahhlin, Nyberg, Backan & Stigsdotter Neely, 2008; Duchesne et al., 2010; Inbinder, 2006; Schreder & Kelley, 2009). This indicates that clinicians are aware of what executive functioning skills are and do see executive functioning deficits, but that they are not utilizing measures to indicate the specific skills or severity of deficits.

Personality Traits in Eating Disorder Patients

Research suggests that individuals suffering from an eating disorder may have core personality traits that can both predispose them to having an eating disorder as well as make assessment of executive functioning skills difficult (Galderisi et al., 2003). Participants were asked their opinion on whether anorexic, bulimic, or binge eating disorder patients had core personality differences. All participants reported that all eating disorder patients tend to be high functioning and overachieving in at least one area of their lives. Fifty percent of participants also reported that personality traits can be a risk factor that contributes to an eating disorder. Galderisi et al. (2003) indicates that individuals with a high-achieving personality type “might promote a focused style of processing, which enhances executive control” (p.925) making it difficult for clinicians to assess severity of the deficit a person is experiencing.

Treatment of Decreased Executive Functioning Skills

Once all clinicians established that they do see behaviors in their clients that indicate an executive functioning deficit, they were asked what they do to help repair that deficit. Sixty-seven percent reported using no specific strategy outside of Cognitive Behavior Therapy (CBT) or Dialectical Behavior Therapy (DBT). Research supports that the brain is a plastic organ and can be retrained to gain back areas that have experienced decreases, such as those occurring in the frontal lobe that result in executive functioning deficits (Dahlin et al., 2008). Ben-Porath et al. (2014), reports however, that 50% of individuals who participate in CBT relapse into their old eating disorder habits. This

indicates that for individuals who do have executive functioning deficits, there is a possibility they can gain functioning back in their frontal lobe which houses those skills, but also that CBT may not be the most effective way of doing so.

One hundred percent of participants indicated that the number one strategy used to help their clients regain executive functioning skills is through proper reestablishment of feeding. Research supports that proper nourishment is important for brain function (Treasure & Russell 2011). During starvation brain mass is reduced and functioning of higher-level processes, such as executive functioning skills, can be decreased (Treasure & Russell 2011). Other studies indicate that elevated BMI, as would be seen in an individual with binge eating disorder, can also lead to decreased brain function (Gunstad et al., 2007). Proper nutrition is vitally important, but having the emotional and behavioral abilities to maintain that nutrition lies in executive functioning skills (Anderson, 2002; Dahhlin, Nyberg, Backan & Stigsdotter Neely, 2008; Duchesne et al., 2010; Inbinder, 2006; Schreder & Kelley, 2009). If those aren't regained, individuals are at risk of becoming malnourished again and slipping back into their disorder. There is preliminary research being done on methods that help eating disorder patients regain executive functioning skills while being re-nourished and is known as Cognitive Remediation Therapy (CRT) (Baldock & Tchanturia, 2007; Lock et al., 2014). Only one participant (17%) was aware of this therapy and mentioned it. This is significant in that while 100% of participants indicated the need for both re-nourishment and learning of cognitive skills, only 17% knew of a way to achieve both at the same time.

Clinical Social Work Relevance

This study adds to the body of social work knowledge current clinical practices being done with eating disorder patients on executive functioning skills, and illuminates areas where the field still needs to grow.

This study demonstrates the need for field-friendly assessment that can allow clinicians to measure executive functioning deficits. Some research studies suggest that regaining executive functioning skills are important in the recovery for eating disorder patients. Without a way to determine if an individual is suffering from those deficits or the severity of them, clinicians have a challenging time knowing the best course of treatment to use. Also, this study shows the need for the development of clinical interventions that are aimed at emphasizing frontal lobe development, and with it executive functioning skills.

Limitations

One hundred percent of participants were women, therefore there was no male perspective in this study. Also, only one participant (17%) reported being responsible for intake exams. This could influence the amount of time they would be expected to interact with assessments. Only two participants (33%) reported seeing patients outside of those with an eating disorder. This indicates that 67% of participants were not able to compare eating disorder patients' executive functioning skills with those of their other clients non-eating disorder clients. Finally, this was a small sample size, and there for is not representative of the entire eating disorder clinician population.

Suggestions for future research

As indicated earlier, there is a need for field-friendly assessment development that can allow clinicians to measure and analyze executive functioning deficits. There is also the need for research that explores how clinicians can help foster the regaining of cognitive and executive functioning skills during the re-feeding process.

Appendix A

CONSENT FORM
UNIVERSITY OF ST. THOMAS
GRSW682 RESEARCH PROJECT

Eating Disorder Therapy and Executive Functioning Skills

I am conducting a study about how eating disorders affect an individual's executive functioning skills. I invite you to participate in this research. You were selected as a possible participant because you work for either the Emily Program or Melrose center, you have 2 or more years of clinical experience with eating disorder patients, you are a licensed clinician and you self-selected to participate. Please read this form and ask any questions you may have before agreeing to be in the study.

This study is being conducted by: Sarah Russell a graduate student at the School of social work, Catherine University/University of St. Thomas and supervised by Dr. Colin Hollidge

Background Information:

The purpose of this study is: explore executive functioning skills decreases in individuals with eating disorders from a clinician's perspective. Executive functioning skills allow individuals to monitor impulses, make informed decisions, control and regulate their emotional responses to every day stressors, reason through situations and connect actions to outcomes. They are essential in day-to-day functioning, and research suggests, may be severely decreased in individuals living with an eating disorder. Ultimately, researchers have found that it is very difficult to assess the level of executive functioning decreases in individuals with eating disorders because of the high-functioning nature of patients that typically present with this mental illness. In this study, I will be asking clinicians how they determine if an individual with an eating disorder has executive functioning decreases, whether or not those decreases are linked to specific demographics, and what is done if the clinicians determine their patient does have decreased executive functioning skills.

Procedures:

If you agree to be in this study, I will ask you to do the following things: Meet me for a 20-30 minute interview. During that time I will be audio taping our conversation. Your name will not be linked to the research in any way, and once the data has been collected, I will destroy the audiotape. I will have a fellow student viewing all data to check for reliability.

Risks and Benefits of Being in the Study:

The study has no risks.

The study has no direct benefits

Confidentiality:

The records of this study will be kept confidential for this study. Research records will be kept in a locked file in my home office. I will also keep the electronic copy of the transcript in a password protected file on my computer. A research partner and my research professor will see a copy of the interview transcript, but will not know who you are. I will delete any identifying information from the transcript. Audiotape and transcript will be destroyed by June 1, 2014.

Voluntary Nature of the Study:

Your participation in this study is entirely voluntary. You may skip any questions you do not wish to answer and may stop the interview at any time. Your decision whether or not to participate will not affect your current or future relations with St. Catherine University, the University of St. Thomas, or the School of Social Work. If you decide to participate, you are free to withdraw at any time without penalty. Should you decide to withdraw, data collected about you will not be used in the study.

Contacts and Questions

My name is Sarah Russell. You may ask any questions you have now. If you have questions later, you may contact me at (937)408-5277. You may also contact the University of St. Thomas Institutional Review Board at 651-962-5341 with any questions or concerns.

You will be given a copy of this form to keep for your records.

Statement of Consent:

I have read the above information. My questions have been answered to my satisfaction. I consent to participate in the study and to be audiotaped.

Signature of Study Participant

Date

Print Name of Study Participant

Signature of Researcher

Date

Appendix B

Sarah Russell

1015 St. Clair Ave, Unit 2
St. Paul, MN 55105

Dear Clinician,

Hello, my name is Sarah Russell, and I am conducting a research study I would like you to consider participating in.

The Purpose of this study is to: explore executive functioning skills decreases in individuals with eating disorders from a clinician's perspective. Executive functioning skills allow individuals to monitor impulses, make informed decisions, control and regulate their emotional responses to every day stressors, reason through situations and connect actions to outcomes. They are essential in day-to-day functioning, and research suggests, may be severely decreased in individuals living with an eating disorder. Ultimately, researchers have found that it is very difficult to assess the level of executive functioning decreases in individuals with eating disorders because of the high-functioning nature of patients that typically present with this mental illness. In this study, I will be asking clinicians how they determine if an individual with an eating disorder has executive functioning decreases, whether or not those decreases are linked to specific demographics, and what is done if the clinicians determine their patient does have decreased executive functioning skills.

I have asked you to participate because you work for either the Emily Program or Melrose center, you have 2 or more years of clinical experience with eating disorder patients, and you are a licensed clinician.

Should you choose to participate, I will ask you to meet me for a 20-30 minute interview. During that time I will be audio taping our conversation. Your name will not be linked to the research in any way, and once the data has been collected, I will destroy the audiotape. I will have a fellow student viewing all data to check for reliability.

Your participation in this study is entirely voluntary. You may skip any questions you do not wish to answer and may stop the interview at any time. Your decision whether or not to participate will not affect your current or future relations with St. Catherine University, the University of St. Thomas, or the School of Social Work. If you decide to participate, you are free to withdraw at any time without penalty.

If you choose to participate please contact me, Sarah Russell, by either phone or email to set up a time to interview. Interviews will be taking place between **January 15th** and **February 27th**. Please contact me by **January 9th** to set up an interview.

Thank you so much for considering to participate! Your voice is highly valued and I would appreciate being able to use it in my study.

Sincerely,

Sarah Russell

Contact information:

Phone: (937) 408-5277

Email: sarah.e.lemay@gmail.com

Appendix C Interview Guide

Driving overarching questions:

- How do clinicians assess decreased executive functioning in eating disorder patients
- How frequently are executive functioning impairments seen? Is there a diagnosis (i.e.: anorexia nervosa, bulimia nervosa, binge eating disorders) that tends to have more patients with decreased executive functioning skills?
- Do the personality types of the patients' effect executive functioning? (i.e.: high achieving, type A, pursuing best possible body)
- What do you do to help individuals with decreased executive functioning gain those skills back?

Questions to ask clinicians:

1. Can you tell me how long you've been working with eating disorder patients?
2. What is your professional license
3. What is your theoretical orientation?

Before I go into the next few questions, I'd like to refer you to the consent form where I give a definition of what executive functioning skills are.

4. What percentage of your clients do you see with executive functioning deficits?
5. Based on the research I've done, it is my belief that individuals with anorexia and bulimia may have core personality differences that may be related to executive functioning. For instance, individuals with an anorexia diagnosis may be more high achieving and perfectionistic, while individuals with a bulimia diagnosis may be more impulsive. What are your thoughts about this?
6. Do you see the personality traits that I listed (or other personality traits that you mentioned) to be associated with changes in executive functioning?
7. I'm wondering if you can point to any specific techniques you would use with the orientation you talked about earlier?
8. Can you give me any direction on how you'd work specifically with a person with decreased executive functioning skills to help regain those skills??

9. What differences do you see in a person who has successfully gone through treatment in their executive functioning skills?

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