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Treatment Responses among Youth with Anxiety Disorders and Body-Focused Repetitive Behaviors in a Clinic Sample

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by

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Abstract

Anxiety disorders are considered to encompass multiple conditions, including generalized anxiety disorder, social anxiety disorder, separation anxiety disorder, panic disorder and specific phobias. Related conditions include post-traumatic stress disorder and obsessive and compulsive disorder. Body-focused repetitive behaviors (BFRBs) are a group of disorders that result in repetitive touching, picking, and/or pulling to areas of the body such as the scalp or skin (American Psychiatric Association, 2013). An anxiety disorder and a BFRB commonly co-occur in youth. This comorbid presentation produces further impairment in school attendance, peer socialization, or other functional domains. These difficulties youth experience make it pertinent to study treatment outcomes for anxious youth with a BFRB (anxiety+BFRB). The current study examined treatment differences among anxious youth (anxiety) with and without a BFRB. Specifically, the duration and overall response to exposure-based anxiety interventions, as well as resulting changes in social impairment and quality of life, were compared between the two groups. It was hypothesized that duration of treatment would be longer for youth in the comorbid group, and that there would be lower levels of quality of life and increased social impairment for the comorbid group. Data from 244 patients who received treatment at a large behavioral health clinic with locations across the country were included in this study. The patients ranged from 7-18 years of age. Independent samples t-tests were conducted to compare differences in pre- and post-treatment scores on measures of quality of life, social impairment, length of stay, and response to intervention. No statistical difference was found when comparing the anxiety only

and anxiety and BFRB groups on the clinical outcome measures. Follow-up paired samples t-tests were then conducted for pre-post scores on all measures for the anxiety group. Results were statistically significant, demonstrating that scores on these measures improved with treatment. This same analysis was conducted for the comorbid group with similar results. This demonstrates that although there were no significant differences between the anxiety and comorbid group, when looking at the groups separately improvements following treatment were demonstrated. Implications for clinicians to consider when providing treatment to youth, comparisons of life satisfaction, treatment duration, and quality of life were explored.

Chapter 1:

Introduction

Anxiety disorders in youth are debilitating, and cause social, academic, emotional, and behavioral impairments (Crawell, Waite, & Hudson, 2020). Youth can be affected by a number of anxiety and related disorders including social anxiety, separation anxiety, phobias, post-traumatic stress disorder (PTSD), and obsessive-compulsive disorder (OCD). Anxiety disorders are increasingly common among children and adolescents. Ghandour and colleagues (2018) found that about 7.1% of youth ages 3-17 years have a diagnosable anxiety disorder. The impairing nature and relatively common occurrence of anxiety disorders demonstrate the rationale for better understanding their etiological and maintaining factors, clinical correlates, and effective treatment approaches.

Anxiety affects youth in a multitude of ways. For example, youth with social anxiety disorder have difficulty interacting with, peers, teachers, family or other individuals in their lives. These difficulties are commonly manifested in decreased participation in school, and avoidance or lack of completion of academic assignments (Swan & Kendall, 2016). Youth with OCD spend more time as compared to their peers without OCD engaging in compulsive behaviors or experiencing distraction due to the distressing nature of intrusive thoughts, the combination of which reduces time available for engagement in peer relationships, academics or other activities (Piacentini, et al., 2003). Due to the impairing nature of these disorders, it is imperative to evaluate treatment approaches that result in the most positive outcomes. For the purposes of this study, comorbidity of an anxiety disorder with a body-focused repetitive

behavior was the focus. Youth with both disorders require treatments for both components. Youth with BFRBs and anxiety disorders may experience higher frequency of their BFRB as their anxiety increases. Additionally, for youth with comorbid disorders, it is important to determine the components of treatment that result in the best outcomes based on the way the two disorders influence each other.

Overview of BFRBs

Body-focused repetitive behaviors (BFRBs) are a sub-category of behaviors classified under Obsessive Compulsive and Related Disorders in the Diagnostic and Statistical Manual-5 (American Psychiatric Association, 2013). This group of disorders involves repeated contact with affected areas of the body, such as the scalp, and may result in physical symptoms, such as bald spots or wounds (Trichotillomania Learning Center, 2019). Common examples of BFRBs include hair pulling (trichotillomania), skin picking (excoriation), nail-biting (onychophagia), and hair eating (trichophagia). The prevalence rate of trichotillomania is about 2-4% of the population and, for excoriation, it is about 2-5%. However, onychophagia typically has higher estimates ranging from 20-30% of the population (Trichotillomania Learning Center, 2019). These disorders tend to affect all genders and ages. Presently, adult women outnumber men 4:1 in terms of diagnosed cases. This difference in diagnosed cases for trichotillomania may be attributed to a socially acceptable presentation of hairstyles for men (i.e., it may be more appropriate for a man or boy to have a buzz cut or be bald). For children, it is thought to be of equal prevalence across genders (Grant, 2019).

Additionally, many individuals go undiagnosed due to these conditions not being as well known in comparison to other mental health conditions. The presentation of the behaviors varies from individual to individual. For example, the behavior may be performed on an unobservable

part of the body, or hidden under hairpieces, clothing, make-up, or even misdiagnosed as alopecia or another dermatological condition.

Due to preoccupation with the obsessive behavior, such as touching the head or other body part, youth may experience difficulty with their schoolwork. For example, assignments may take longer due to diminished focus. Students may become too embarrassed to attend school. As a result, these behaviors have the potential to create a detrimental snowball effect on youth. For instance, if youth do not attend school due to embarrassment, they may miss out on academic instruction. Youth may then perform poorly in school which can lead to decreased interactions with peers, lowered self-esteem as a result of these combined factors, and the need for academic remediation. Youth may also feel particularly self-conscious because of these behaviors. Additionally, individuals with BFRBs may have decreased self-esteem in addition to comorbid conditions (Brennan et al., 2017). This can be due to the physical imperfections that result from the repetitive behavior or from other feelings of distress. Due to these academic and social impairments, it is important to examine the effect of BFRBs among anxious youth. Regardless of etiology, BFRBs are a concern for youth in terms of overall functionality and general well-being.

Youth with BFRBs may have comorbid conditions, such as anxiety, depression, or obsessive and compulsive disorders (OCRDs), eating disorders, attention deficit hyperactivity disorder (ADHD), or a specific learning disability (SLD). This unique combination of presenting issues results in the need for more complex treatment, including education on how the co-morbidity may affect the individual. For example, an anxious child may use BFRBs to reduce their anxiety. However, a child with obsessive-compulsive disorder (OCD) and a BFRB may engage in the behavior alongside OCD rituals. This may manifest in the child pulling a certain

number of hairs because the purpose of OCD rituals are to reduce the anxiety related to the intrusive thoughts present.

Specific treatment for BFRBs includes a type of cognitive behavioral therapy called Habit Reversal Training (HRT; Azrin & Nunn, 1972). HRT involves the implementation of stimulus control and removal of reinforcing aspects of the BFRB (Jones, Keuthen, & Greenberg, 2018). Patients are asked to self-monitor their behavior as well as cover areas they are likely to pick or pull from, or any other action that can provide an antecedent to the behavior. Another aspect of HRT is a competing response. Patients are asked to come up with competing responses that make it difficult for the behavior to occur.

Diagnostic Criteria for BFRBs

Body-focused repetitive behaviors are classified under Obsessive-Compulsive Related Disorders in the DSM-5 (APA, 2013). Currently, the DSM-5 lists trichotillomania (hair-pulling) and excoriation disorder (skin-picking) as individual disorders in this category. The DSM-5 also has a section for "Other Specified Obsessive-Compulsive and Related Disorder" with a subsection for body-focused repetitive behaviors. This section includes nail biting (onychophagia), cheek chewing, and lip biting. Additionally, some mental health professionals have recognized other similar behaviors on this spectrum to be included in this definition, such as hair eating, (trichophagia) nail/cuticle picking (onychotillomania), skin eating (dermatophagia), tongue chewing, and hair cutting (trichotemnomania) (Trichotillomania Learning Center, 2019).

Diagnostic criteria further require that the behavior not be caused by tics, stereotypic movements, or intentional self-harm. Additionally, dermatological-based conditions, such as alopecia or other autoimmune conditions, should be ruled out. The behavior must not be

attributed to another disorder, such as body-dysmorphic disorder (BDD) or other symptoms, such as hallucinations or delusions. Youth with trichotillomania may have experienced repeated attempts to stop engaging in the behavior. An individual's repeated pulling will typically result in bald patches or thinning patches of hair, and an uneven presentation of the hair. Trichotillomania can be diagnosed as a disorder for youth if it causes impairment in different aspects of life, such as social, occupational, or other necessary areas of functioning. The examples above pertain to trichotillomania but can be applied similarly to other BFRBs.

Concerns Relevant to the Pediatric Population

According to the Trichotillomania Learning Center (2019), BFRBs affect individuals of all ages and genders. Youth may experience particular circumstances that are relevant to their age group. Below, concerns specific to youth are described.

BFRBs and Co-Morbidity with Anxiety Disorders

Many mental health conditions are comorbid with one another. However, when a BFRB and an anxiety disorder become comorbid, it is more likely for the function of the BFRBs to reduce feelings of anxiety. However, there is no way to tell if this relationship is necessarily reciprocal in this order (Grant, Redden, Leppinik, & Chamberlain, 2017). It also is possible that the stress of these behaviors brings on the functionality of an anxiety disorder, but it is impossible to determine which comes first (Lochner et. al, 2019).

Special Considerations for Comorbidity with Obsessive Compulsive Disorder and BFRBs

OCD and BFRBs are in the same diagnostic section of the DSM; however, both are distinct clinical diagnoses (American Psychiatric Association, 2013). Onset for these disorders is typically around the ages of 9-11 years for boys and 11-13 years for girls (Franklin, Zagrabbe, & Benavides, 2011). Symptoms of BFRB and OCD can overlap, as when an individual has the

desire to pull, pick, or otherwise engage in the repetitive behavior until the action feels even or for a certain number or times (Grant et al., 2016). Conversely, having two comorbid BFRBs in adults was shown to decrease adaptive functioning and increase the severity of symptoms overall (Grant et al., 2016). This can be demonstrated by the idea that people with BFRBs do not always pull or pick to prevent recurring obsessions. Treatment providers must take this synergistic response into consideration the function and role of both disorders when presented with comorbidity (Grant et al., 2016).

Transient Presentations of BFRBs in Toddlers and Pre-school Aged Children

BFRBs can present in children of any age. However, the presentation may differ in comparison to older children and adults (Walther, 2013). Younger children, such as those under the age of five years, have less awareness of their BFRB. This means youth may present as engaging in the behavior without marked distress or desire to discontinue. Boys and girls tend to demonstrate more equivalent prevalence of BFRBs. Younger children tend to have fewer overall sites for engaging in their BFRB in comparison to adults (Walther, 2013). Additionally, young children are less likely to have a comorbid diagnosis making treatment solely focused on the child's BFRB.

Differentiation between Self-Injurious Behaviors and BFRBs among Youth

BFRBs are commonly misinterpreted by parents or treatment providers as self-injurious behaviors (SIB); however, self-Injurious behaviors are different than BFRBs (Trichotillomania Learning Center, 2019). Although the behavior may alleviate tension, the individual is not using the behavior to harm themselves. Self-Injurious behavior can function as a form of self-harm and can occur by intentionally causing pain to oneself to get rid of negative feelings (Matthew et al., 2020). It is important for practitioners treating these disorders to recognize the distinction in

presentations between the symptoms and functions of these behaviors. BFRBs are considered to be compulsive behaviors. Self-Injurious behaviors can be impulsive or compulsive. However, while SIBs are different then BFRBs, both behaviors can occur simultaneously. This is vital to acknowledge in order to further contribute to decreasing the shame and isolation individuals with these disorders face.

School and BFRBs in Youth

Youth spend more of their day in school than any other location. This means they are observed more by school personnel than by any other single person. These individuals have the potential to provide interventions to students in the school setting, thus these professionals should be aware of BFRBs. School staff also should be aware of BFRBs because school is a place where youth can experience triggers which disrupt their educational routines. In some cases, school-based treatment providers may be students' sole option for mental health supports.

Social Impairment

Individuals with BFRBs may experience shame, or feelings of abnormality in comparison to peers. Youth may feel that their behaviors make them different or strange. Additionally, peers may call attention to abnormalities in physical appearance such as bald patches, scabs, and bitten or ragged nails. These physical differences can result in isolating or unwanted teasing (Falkenstein & Haaga, 2015). In a school setting, this may translate to students being bullied by peers or engaging in avoidance behaviors (school refusal). Transitional periods (e.g., moving into middle or high school) may prompt more social demands, which can exacerbate the problem.

Executive Functioning Impacts

Executive functioning includes planning, organization, cognitive flexibility, and working memory (Flessner, Francazio, Murphy, & Brennan, 2015). These aspects of working memory were tested in a group of young adults with BFRBs. The only task the group with BFRBs performed significantly lower on in comparison with the other areas was the cognitive flexibility task (Flessner, Francazio, Murphy, & Brennan, 2015). These findings may be useful for practitioners to keep in mind when working with patients with BFRBs.

Academic Impairments

Youth with BFRBs may become distracted by their BFRB making it difficult to focus in school or on specific academic activities. BFRBs can cause youth to be embarrassed so they may miss academic instruction or refuse to participate (McGuire et al, 2013). Youth may not be able to focus because engagement in the repetitive behavior consumes their attention. Additionally, youth may have trouble accessing accommodations if there is not a mental health professional familiar with their condition who is able to generate an acceptable and appropriate 504/ IEP plan.

Theoretical Model

Outcomes from this study were interpreted under the lens of the dual-factor model of mental health. The dual-factor model of mental health deviates from the medical model in that there are four groups (Suldo & Shaffer, 2008). The medical model operates under the idea that the lack of psychopathology is equivalent to mental health. The dual-factor model demonstrates that there are different indicators of well-being aside from the absence of active mental health symptoms. The dual-factor model of mental health includes levels of symptoms and subjective well-being. Subjective well-being includes life satisfaction in multiple domains of life.

The four groups of the dual-factor model are “complete mental health” (low psychopathology and high subjective well-being), “symptomatic but content” (high psychopathology and high subjective well-being), “troubled” (low subjective wellbeing and high psychopathology), and “at risk” or “vulnerable” (low psychopathology and low subjective wellbeing; Antaramian, et al., 2010). The dual-factor model of mental health indicates a change in focus with mental illness balanced against positive indicators of health such as social and emotional behaviors. Students’ present levels of mental health functioning relate to their ability to interact with family, peers, and their academic abilities (Antaramian, et al., 2010). The dual-factor model of mental health demonstrates that individuals can experience various level of mental health rather than simply ‘sick’ or ‘well’. This model is the optimal lens to consider the findings from the current study because it focuses not only on a decrease is psychopathology, but also an increase in quality of life.

Treatment

The current study analyzed previously collected outcome data. Treatments utilized in the Behavioral Health Clinic are rooted in cognitive behavioral therapy (CBT) approaches. Clients are provided psychoeducation for anxiety. Additionally, with the collaboration of behavior specialists who provide the treatment, an exposure hierarchy is created. This is done by the youth and the therapist making a list of fear producing items. The youth ranks which ones can be confronted with most ease and which ones are more difficult. The therapist introduces the youth to easier exposures first and then works up the fear hierarchy. As youth complete these exposures, they provide a subjective rating of distress based on a scale of 1-10. These youth also are taught relaxation strategies such as progressive muscle relaxation and deep breathing. In addition to the behavior aspects of treatment, youth are taught to challenge their anxious

thoughts by identifying cognitive distortions and using cognitive restructuring around anxious thoughts. These youth receive group and individual therapy in this modality. CBT has been used with youth with anxiety disorder and other mental health conditions with success. Exposure-based therapy is considered an efficacious and well-developed approach for treatment of anxiety disorders among youth, and exposure therapy is considered the gold standard for treatment of OCD among youth (Seligman & Ollendick, 2011).

Current Study

This current study aimed to investigate how comorbidity with a BFRB and an anxiety disorder affects treatment duration, levels of quality of life, and social impairment. Much of the prior research on BFRBs alone, and on BFRBs and comorbidity, primarily focused on young adults or adults, thus it is crucial to add studies such as this one to the literature base on youth.

Research Questions

The proposed study aimed to answer the following questions:

1. Do duration of and/or response to intensive treatment for anxiety among youth (anxiety) vary according to the presence of BFRBs (anxiety + BFRB)?

A hypothesis for this question was that the more treatment days attended consistently, the more positive the patient's outcome to treatment would be, regardless of comorbidity status. Duration was defined in terms of full treatment days, which is attending 75% or more of the treatment hours. Additionally, it was predicted that the higher the severity of the anxiety disorder or the BFRB, the longer the duration of treatment for that patient. Duration was measured via treatment days, and severity via the CGI-S/I.

2. Does self-rated quality of life vary among anxious treatment-seeking youth (anxiety), according to the presence of BFRBs (anxiety + BFRB)?

A hypothesis for this question was that self-rated quality of life would be lower for anxious youth with a comorbid BFRB because of the shame and stigma associated with BFRBs. Change in QOL was measured by looking at differences in P-QLES-Q scores between admission and discharge data.

3. Does self-rated social impairment vary among anxious treatment-seeking youth (anxiety) according to the presence of BFRBs (anxiety + BFRBs)?

It was hypothesized that for anxious youth with comorbid BFRBs, self-rated social impairment would be higher due to embarrassment and shame as compared to anxious youth without a comorbid BFRB diagnosis. As mentioned in the literature reviewed, some individuals with BFRBs go to great lengths to cover or hide impacted areas of the body. Social impairment was measured by looking at changes in LSAS-CA scores between admission and discharge data.

Implications for Practice and Contributions to the Literature

Onset of BFRBs is typically in childhood. For some children these disorders dissipate on their own, while for others these BFRBs continue to be chronic. Currently, BFRBs receive limited attention in the clinical literature so the current study helps to fill this gap. Additionally, many individuals with a BFRB have a co-morbid mental health condition; however, few studies tap into this, or solely look at OCD as a related condition. This study examined multiple anxiety and related disorders in comparison to BFRBs.

Key Terms

Body-Focused Repetitive Behaviors

Behaviors that involve repeated impact with a part of the body, that are compulsive in and nature and difficult to stop. These behaviors may result in damage to the afflicted area.

Comorbidity

When more than one condition is present and each significantly contributes to overall impairment. In the context of this study this would be an anxiety disorder and a BFRB (e.g., trichotillomania and generalized anxiety disorder).

Anxious Youth

Described as any youth who has been diagnosed with an anxiety disorder and received treatment at the Behavioral Health Center. Participants do not necessarily have to meet criteria for one specific mental health condition. Youth also may have OCD or PTSD, which are both technically separate from the anxiety section in the DSM-5 (American Psychiatric Association, 2013).

Duration of Treatment

Defined as the total number of days present for treatment. This also related to whether the patient was in the Intensive Outpatient Program (IOP) or Partial Hospitalization Program (PHP), as IOP requires three hours of treatment five days a week and PHP requires six hours of treatment, five days a week.

Response to Intensive Intervention

Determined through scores on the outcome questionnaires. Outcomes vary across questionnaires as some have reverse coding where higher numbers are indicative of increased symptomology, while high scores on others such as the CGI-I represent improvements in response to intervention.

Quality of Life

Defined from the PQ-LES-Q, and examines how satisfied youth are with their current level of physical and emotional functionality.

Social Impairment

Defined as how socially anxious youth avoid socializing and/or interacting with others in novel situations and other scenarios based on the Liebowitz Social Anxiety Scale – Child (LSAS-CA).

Purpose of the Current Study

Overall, the purpose of this study was to examine aspects of treatment, such as the duration, type of treatment provided, quality of life, social impairment, and reduction of symptoms for youth at the Behavioral Health Center who have BFRBs and co-morbidity with an anxiety disorder in comparison to youth diagnosed with anxiety disorders only. It was proposed that the understanding of these distinct factors could be used to inform and better bolster or change current behavioral and psychosocial treatment for youth with BFRBs.

Chapter 2:

Literature Review

This chapter explores the literature related to common childhood anxiety disorders, BFRBs, and recommended treatments. Risk and protective factors for youth with anxiety disorders and BFRBs also are examined. Gaps in the literature are identified to support the rationale for this study.

Overview of Anxiety and Related Disorders in Youth

Anxiety disorders affect youth's abilities in multiple domains of their lives with varying degrees of impairment from their symptoms (Compton et al., 2010). Anxiety disorders include generalized anxiety disorder (GAD), social anxiety, panic disorder, separation anxiety disorder, specific phobia, posttraumatic stress disorder, and obsessive-compulsive disorder (OCD). BFRBs are included as a separate category as they are a part of the Obsessive Compulsive and Related Disorder sections in the DSM-V (APA, 2013). These disorders may be comorbid in youth as well (Kendall et al., 2010). The following paragraphs provide a brief overview of various types of anxiety disorders common among youth. Additionally, implications for comorbidity with BFRBs is discussed.

Generalized Anxiety Disorder (GAD)

Generalized anxiety disorder can be defined as recurrent non-specific worry present in all domains of life (APA, 2013). Youth with GAD may worry about things like something bad happening to their loved ones, academic performance, or have physical symptoms like frequent stomach and headaches. GAD can make it difficult for youth to complete schoolwork based on

symptoms such as perfectionism. In terms of social impairment, youth with GAD may not have the level of difficulties with friendships as is common for youth with social anxiety (Scharfstein, 2011). BFRB symptoms may increase with anxiety severity; however, research examining the connection between GAD and BFRBs in youth in limited.

Social Anxiety

Social anxiety may present as a preoccupation and worry surrounding social interactions (APA, 2013). Children with social anxiety may be less likely to interact with other children and participate in school. Youth with social anxiety may be preoccupied with what others think about them or may refrain from participating in class due to the fear of being wrong and embarrassing themselves in front of peers. Researchers have found that the higher the levels of social impairment and anxiety at the start of treatment, the longer treatment lasts (Settipani & Kendall, 2013). The current study expanded on this by examining treatment duration in anxiety disorders. No empirical studies were identified showing a direct linkage between BFRBs and social anxiety symptoms in youth.

Panic Disorder

Panic disorder is a type of anxiety disorder youth or adults may experience. Symptoms may present as reoccurring flashes of about 10-15 minutes of intense anxiety symptoms (APA, 2013). The symptoms of panic disorder can be potentially debilitating to individuals. This disorder is more common in youth ages 14-17 years (Pincus, 2010). Youth frequently perceive physical sensations of anxiety as indicative of a medical emergency. Many youth with panic disorder avoid feared places because of concerns they may have a panic attack or because they have comorbid agoraphobia (need citation for this statement). These fears can lead youth to miss out on salient social and academic experiences, thus diminishing life satisfaction. No studies

have currently been identified specifically discussing the link between panic disorder and BFRBs.

Separation Anxiety

Separation anxiety may present as extreme anxiety and distress when away from a caretaker or parent (APA, 2013). Separation anxiety also can lead youth to miss out on salient social and developmental activities to avoid leaving their caregiver (Ehrenreich, 2008). Additionally, separation anxiety can impact functionality in domains such as education if children refuse to attend school. There presently are no standalone studies looking at the relationships of symptoms in separation anxiety and BFRBs.

Specific Phobias

Phobias may present as intense fears related to specific places, objects, or things (APA, 2013). Specific phobias can impact youth's quality of life based on how much the specific phobia is present in their daily life. Researchers found that youth experiencing phobias in the natural domain (weather, heights, etc.) versus the animal domain (insects, rodents etc.) report a lower quality of life (Ollendick et al.,2010). There presently are no standalone studies looking at the relationship of symptoms in specific phobias and BFRBs.

Post-Traumatic Stress Disorder

PTSD is a disorder that emerges in some individuals following exposure to traumatic situations (APA,2013). Individuals with PTSD experience a variety of intrusion symptoms such as nightmares, flashbacks, and disassociations. Other symptoms include irritability, hypervigilance, and negative feelings about self or others. Houghton et al. (2016) examined whether BFRBs result from trauma. Specifically, Houghton hypothesized that abuse creates an environment of anxiety and hostility. This then creates tension that gets released or soothed

through BFRB behaviors. They used measures to determine the frequency, intensity, and impact the disorder had on these individuals. Researchers selected a sample of 85 participants and found that 52.9% of them experienced a trauma. This was lower compared to 86% of participants in prior studies. It was found that those with trauma had higher scores on measures that looked at frequency and self-control. Houghton and colleagues (2016) demonstrated that BFRBSs are related to emotion regulation as opposed to being a predictor to trauma. Researchers had originally predicted that anxiety from trauma would be a precipitator for causing BFRBs, however the study did not support prediction. It did, however, support the hypothesis that the individuals with BFRBs have self-regulation deficits. A limitation of this study is that researchers asked participants about depression, anxiety, and frequency of behaviors, but did not ask direct questions tying together the BFRB and the abuse history. With this additional information, they might have gained a clearer understanding of the connection between the disorders.

Obsessive-Compulsive Disorder (OCD)

OCD may present itself as repeated obsessions and compulsions such as hand washing and worrying about contamination (APA, 2013). Obsessions cause the individual to experience anxiety and compulsions are used to neutralize the thoughts. Compulsions can be physical such as handwashing for an individual with obsessions with germs. For someone who has obsessions around offending someone they may have mental rituals of compulsively re-reviewing conversations with others. Individuals with OCD have difficulty resisting their thoughts and compulsions. These obsessions and compulsions can be impairing as they may consist of an hour or more of the person's day. In a study completed with college students, it was found that trichotillomania and OCD symptoms might be impacted by each other when particular subsets of

OCD are present. This means that if the participants had obsessions related to their hair appearing or feeling "just right", and pulling their hair released that tension, the symptoms could impact one another (Hajack, Franklin, Simons, & Keuthen, 2006). There was no noted relationship to obsessive compulsive symptoms and skin-picking. With regard to quality of life and individuals with OCD, Lack and colleagues (2009) found that quality of life for girls was lower than for boys in their study.

BFRBs

BFRBs are body-focused repetitive behaviors such as pulling or picking in particular areas of the body that result in physical or visual abnormalities (TLC, 2019). Individuals with BFRBs may have difficulty stopping these behaviors on their own. However, there are effective treatments available, and these treatments will be reviewed later in this chapter. The following paragraphs present the various types of BFRBs, the symptoms, risks, and protective factors of BFRBs, and associated gender and age differences as well as implications for quality of life.

Phenomenology of BFRBs

BFRBs, as with any other mental health condition, are experienced differently for every youth who is diagnosed. Young people with BFRBs may have rituals that are specific to their BFRB. For example, there may be an element of “just rightness” or “evenness” that must be obtained in order for individuals with BFRBs to feel “successful” in their pulling, picking, or other behavior. This may result in extended periods of pulling, picking, or biting. Certain types of the behavior may “feel” more desirable to the youth. For example, some individuals with trichotillomania report being drawn to particular patterns of hairs, such as those with more texture (Grant & Chamberlain, 2016).

BFRBs can present as focused, where an individual is aware of their behavior or unfocused, where behaviors seemingly happen without awareness (Jones, Keuthen, & Greenberg, 2018). This is not to say that individuals who engage in BFRBs in a focused manner are necessarily doing so intentionally; the behaviors just may target more specific types of hair, skin, or other parts of the body. School settings may offer situations that increase the incidence of unfocused behaviors. This increased activation of the behavior can be due to students being required to sit still for long periods of time, such as listening to a lecture. Focused engagement of the behavior also may occur in situations where a youth has increased stress, such as during an exam. In trichotillomania this may look like searching for specific types of hair, while in excoriation disorder, it may present as the student inspecting their skin for imperfections such as raised areas or discoloration. Some youth may have only focused or unfocused presentations of the behavior, while others may experience episodes of mixed presentations of the behavior. One of these subtypes is not categorically more severe than the other. It is simply a manifestation of the behavior in that individual (Jones et al., 2018).

BFRBs are not only present when youth experience anxiety. BFRBs may coincide with boredom, frustration, or even in times of happiness, or impatience. This is possibly due to a buildup of tension, and thus the BFRB is used to self-soothe the emotions (Roberts, O'Connor, Arardema, & Belanger, 2015). The idea that stress is the only emotional state when these behaviors can emerge is a common misconception. This can be demonstrated through colloquial phrases, such as "I'm so stressed that I could pull my hair out."

Self-regulation is related to trichotillomania and other BFRBs because the motor-based behavior is utilized in response to emotions. Diefenbach, Tolin, Meunier, and Worhunsky (2006) examined how emotional regulation is inhibited in individuals with BFRBs in comparison to a

non-clinical sample. Their participants consisted of women with BFRBs and a non-clinical sample. The participants were matched on demographic categories such as age and race. Participants were given the "Hair Pulling Survey" (HPS), which measures individual's feelings before and after pulling (this was modified for the non- clinical sample). Diefenbach and colleagues (2006) found that after pulling episodes, individuals in the clinical sample had increased feelings of guilt, sadness, and anger. Individuals in the clinical sample also were found to have decreased feelings in boredom and tension after pulling episodes.

School age youth spend most of the day engaged with curriculum content that is either above or below their academic abilities in terms of difficulty. This may cause a youth's BFRB to become exacerbated. Alexander, Houghton, Bauer, Lench and Woods (2018), examined BFRBs impact on self-regulation in a clinical and non-clinical sample. Researchers found that when individuals with BFRBs are distressed it is more difficult for them to stop engagement in their behaviors. However, in terms of describing their feelings, the clinical sample did not have difficulty identifying emotions in comparison to the non-clinical sample. This is important to note as identifying states of emotions are an integral part of treatment for BFRBs. Individuals are taught to become aware of their feelings and make connections to when they should utilize barriers against the behaviors (Alexander et al, 2018). With regard to youth, understanding one's feelings and the connection to the BFRB would be important. This is especially true in adolescence, which developmentally can be a time of turbulence. For example, it may be difficult for adolescents to experience states of decreased emotional reactivity, which in turn, may cause increased spikes in BFRBs. The following sections review the most commonly identified BFRBs.

Hair Pulling Disorder

Hair pulling disorder is sometimes referred to as trichotillomania or trich for short. It involves pulling hair from any part of the body (APA, 2013). Some individuals with this BFRB report feeling a relief of tension upon pulling. However, it can result in bald spots and infection from repeated contact with skin, and sores that can lead to infection. It is these bald spots and skin sores/infections that can lead to social difficulties for youth.

Skin Picking Disorder

Skin picking disorder is sometimes referred to as dermatillomania or excoriation disorder. This is when an individual has an irresistible urge to pick at his or her skin (APA, 2013). There does not need to be a blemish or scab of any kind necessary for the individual to engage in the picking behavior. However, following the picking, individuals may end up with cuts or wounds, which can then create a cycle where the wound repeatedly becomes reopened. This leaves the potential for infection.

Nail Biting Disorder

Nail-biting disorder, also referred to as onychophagia is thought to affect up to 20% of the population (TLC, 2019). This is considered to be one of the more socially acceptable BFRBs. Individuals may have jagged nails that can get infected. For some individuals, this disorder also impacts the joints from the repetitive movements.

Hair Eating Disorder

Hair eating disorder and is also known as trichophagia or Rapunzel syndrome (Grant & Odlaug, 2008). Individuals with this disorder are thought to pull out their hair and also chew and/or swallow it. It is thought to pose a health hazard as with extended swallowing of hair trichobezoars may form in the stomach, which can require surgical removal.

Other BFRBs

Other BFRBs that are not explicitly listed in the DSM-5 but included under body-focused repetitive behaviors may include cheek biting (cheek keratosis), haircutting (trichotemnomania), lip biting (lip bite keratosis), tongue chewing, and skin eating (dermatophagia). As with any disorder, levels of impairment, distress, and symptom severity are what dictate when a behavior has reached a clinical level of functional impairment (APA, 2013).

Presentation of Symptoms

There are several theories on the function behind BFRBs. Little support was found for the psychodynamic model, which follows the idea that unconscious conflicts lead to unresolved turmoil and that is what causes these behaviors (need citation for the psychodynamic model here). However, there is support for cognitive-behavioral models and emotional regulation models of understanding the function of BFRBs (Roberts, O'Connor, & Belanger, 2013). Within the cognitive-behavioral model, BFRBs are conceptualized as behaviors that have been shaped (through social reinforcement) and increased or maintained (thorough sensory reinforcement). In the emotional regulation model, BFRBs are used to keep emotional and sensory equilibrium.

Risk Factors

There are strong potential components for heritability in BFRBs (TLC, 2019). Researchers examined the link between a family history of either a BFRB or a Substance Use Disorder in relation to an individual having a BFRB (Redden, Leppink, & Grant, 2016). The sample of participants consisted of 265 individuals with BFRBs (92.1% percent of the sample was female and Caucasian). Researchers looked for significant differences in relatives with other disorders such as depression or anxiety. Among the 265 participants, 237 of them had either trichotillomania or excoriation disorder. Of these 265, 29.1% of the participants had a first

degree relative with a BFRB. Additionally, researchers found that 20.7% of relatives of participants with a BFRB had a Substance Use Disorder. When looking at the impact of symptoms on these participants lives, those with family members who had substance use disorders spent more time engaged in their behavior compared to the group without a relative with substance use disorder. The researchers felt that the link between substance use disorders and a BFRB could either be from neurological similarities in BFRBs and addiction or because of a stress response from a home with an individual with a substance use disorder. It is quite possible that either of these issues can be true for adolescents. The age of onset of a BFRB for participants ranged from 12 to 13 years old, providing support for the average age of onset occur during early adolescence. Overall, this study demonstrates that individuals with BFRBs may be more likely to develop a BFRB if a first-degree family member has a BFRB or a substance use disorder in comparison to other clinical diagnoses. Additionally, researchers did not find other presentations of symptoms such as disability level or quality of life to differ between participants who had a relative with a BFRB and those who did not.

Another study examined the onset of trichotillomania in a 13-year old boy and found the disorder to be present in the grandfather and father (Ramot, Maley, Horov, & Zlotogoraki, 2008). Taken together, this research supports the importance of gathering information on family history when assessing youth for risk factors related to the development of BFRBs.

Quality of Life

Quality of life has the potential to be diminished in individuals with physical health and mental health disorders (Franklin, Zagrabbe, & Benavides, 2011). For example, comparisons between an adult sample with trichotillomania, and a non-clinical sample, found the clinical sample to have higher levels of distress and lower life satisfaction (Diefenbach, Tolin, Hannon,

Crocetto, &Wornhunsky, 2005). It was found that the more psychosocial and functional impairment factors that impacted the participants, the greater disability the disorder caused. Some examples of this would be spending time alone, or avoiding dating or recreational activities. Some individuals with trichotillomania or other BFRBs will avoid recreational activities due to the fear of wigs or makeup coming off while partaking in such activities. Other ways this disorder can impact individuals psychosocially and functionally is through decreased work behaviors, such as being less productive or having less attention due to the motor behavior. This is why quality of life was included as an outcome measure in this current study. Although other clinical measures included can explain the impairment and difficulties, measuring quality of like provides a more comprehensive viewpoint of progress and is more aligned with the dual-factor model of mental health.

Protective Factors

Having a supportive family/guardians and access to treatment, if needed, are crucial factors to children and adolescent's success. This is true for youth who have BFRBs as well. Although treatment can be provided, it is best to intervene early while these behaviors are mild or emerging. Having a set structured environment with rules, parent-involvement and increased opportunities for peer interactions can be positive aspects in youths' lives (Matz & Domzalski). Additionally, teaching students with BFRBs coping skills can benefit them in managing symptoms. In a school setting, supports can be provided in a multi-tiered system of supports. Using response to intervention (RTI) and having a Tier 1 system of positive behavioral supports that focuses on teaching students to speak up when they need help, or using mentoring can help decrease stress and create a supportive environment. For Tier 2, social skills or coping skills may be taught, and professional development opportunities to teach educators about these disorders is

recommended (Matz & Domzalski). Tier 3 interventions may include individualized behavior intervention plans (BIP) that include reinforcement, self-management, and self-monitoring systems. Overall, parental monitoring and involvement in a child's life can provide earlier identification and support. Presently, much of the literature currently focuses on risk factors and reactive treatments for these behaviors, rather than prevention and early intervention.

Gender-Related Differences

In terms of trichotillomania, women are four times more likely than men to have trich in an adult sample (Grant, 2019). In terms of clinical implications, females typically report being more impacted by the physical consequences of pediatric trichotillomania (Panza, Pittenger, &Bloch, 2013). In terms of pulling sites, level of urges, and engaging in focused or unfocused pulling, gender differences were not observed.

Age-Related Differences

Throughout the literature, there do not appear to be any cohesive studies examining age-related differences for all BFRBs. Many studies examine either a pediatric BFRB such as trichotillomania or excoriation disorder in isolation from each other or solely examined a young adult or adult population. This limited research may be partly explained by the fact that BFRBs were not officially classified under OCD and Related Disorders until the fifth edition of the DSM (APA, 2013).

Currently, much of the literature focuses on trichotillomania as opposed to other BFRBS individually. The availability of treatment and medications that are effective for adults with BFRBs are not typically supported with research-based evidence for use with children and adolescents. Youth also may experience different negative outcomes of having a BFRB as compared to adults. For example, youth had the added pressure of peer perceptions during this

critical time in their development. Youth also may be victims of bullying based on physical differences (ex. bald spots, scabs, scars; Harrison & Franklin, 2012). In general, the amount of articles that discuss BFRBs as a classification of disorders as a whole is limited particularly in pediatric research. Many articles typically focus on a narrow age group, such as a college or young adult population. The current study sought to address this gap in the literature related to BFRBs in youth.

Comorbidity

Anxiety disorders, eating disorders, personality disorder, and substance abuse are common in adults, and anxiety disorders and disruptive mood disorders are common in youth (Franklin, Zagrabbe, & Benavides, 2011). In terms of comorbidity, there have been studies in adult samples examining comorbidity between trichotillomania and excoriation disorder. Research suggests that symptoms are more severe when more than one BFRB is present (Grant et al., 2016). In a study examining psychometrics for the Repetitive Body-Focused Repetitive Behavior Scale in youth, it was discovered that youth with a variety of anxiety disorders such as GAD, separation anxiety, and panic disorder had increased BFRB symptoms (Selles et al., 2018).

Treatments

Cognitive Behavioral Therapy (CBT). CBT is a treatment used for a variety of mental health conditions. CBT focuses on making connections between behaviors, thoughts, and emotions. Patients are often asked to self-monitor through the use of thought records to make these connections. Other aspects of treatment may include behavioral experiments, cognitive restructuring through the use cognitive distortions, and psychoeducation. Treatment may focus on anxiety-related cognitions, BFRB related cognitions, or both. An example of CBT reframing for trichotillomania would involve explaining to patients that when they say, “I’m only going to

pull one more hair" this is faulty thinking. CBT teaches the individual to replace the behavior and substitute it with something more socially appropriate (Roberts, O'Connor, & Belanger, 2013).

Exposure for Anxiety Disorders. Exposure therapy is commonly used as a part of CBT or on its own. It is a type of behavior therapy where there is a gradual introduction to produce desensitization to feared stimuli used in various anxiety treatments. This is done through a series of trials. Typically, there is a hierarchy created where the clinician and patient collaboratively create a list of feared stimuli or treatment targets and order them from least to most anxiety producing. Clinicians ask patients to rate their level of anxiety before and after the exposure and patients are asked to complete the exposures on their own as well (Craske et al., 2008). This may involve working down a hierarchy of least aversive stimuli to the most aversive. In social anxiety, this may look like raising one's hand in class as an initial exposure to giving a public speech as a more advanced exposure. Each time the patient is exposed to a stimulus, ideally the anxiety decreases, and they can move on to a higher rated exposure. This is typically practiced in multiple settings or with varying stimuli to produce generalization.

Habit Reversal Training (HRT)

HRT is a type of cognitive-behavioral therapy incorporating awareness, competing response, and social support. It relies upon data collection and massed practice of skills (Roberts, O'Connor, & Belanger, 2013). HRT is potentially a more effective treatment for children and adolescents with trichotillomania because these age groups tend to engage in more automatic pulling. When an individual is unable to recognize their behavior, it may be more difficult to prevent the behavior.

Exposure as an element of Habit Reversal Training

In a systematic review study examining the ability of Exposure and Response Prevention (ERP) to treat compulsions such as tics, obsessive and compulsive related disorders (OCRDS; including BFRBs), researchers demonstrated that exposure to the stimuli and the ability to reframe from engaging in the behavior led to increased adherence to treatment (i.e., not pulling, picking; Lee, Mpavaenda, & Fineberg, 2019). Literature was scarce in this area with more of the literature related to exposure for OCD or tics.

Treatment Outcomes

Woods and Houghton (2015) conducted a meta-analysis on BFRB treatments finding CBT and HRT to be effective. This study contributed to these areas because it included new data and was not another meta-analysis or meta-synthesis in the area of treatment outcomes. Franklin and colleagues (2011) also reported that CBT and HRT are effective for youth with BFRBs. Much of the literature in this area highlights the effectiveness of treatments in trichotillomania or excoriation disorders rather than BFRBs in general. Several studies have been conducted demonstrating the effectiveness of cognitive-behavioral therapy-based treatments such as HRT in youth. Habit reversal therapy was provided to youth with trichotillomania for 8 weeks and was compared to treatment as usual (Rahman, McGuire, Storch, Lewin, 2017). Youth also were given 1- and 3-month post-treatment follow-ups. Patients in the HRT group had significantly decreased scores on the Trichotillomania Severity Scale Score and other relevant scales. Patients were shown to have decreased symptoms at one month and three months. This study was conducted with youth ages 7-17 years. This study is an important contribution to the literature because it demonstrates HRT as being an effective treatment for youth even after a sustained amount of time. However, a younger elementary or pre-school age population was not included.

In another study, researchers examined the response of youth to treatment with cognitive behavior therapy (Tolin et al., 2007). In their descriptive study, researchers found that youth were distressed by their symptoms of trichotillomania. Youth were given CBT with relapse prevention sessions reminding them to use their strategies. Competing response training, cognitive restructuring, stimulus control, and psycho-education were used. At the conclusion of the study researchers found that 77% of the patients responded to treatment and 32% were "excellent responders". At the 6-month follow-up, this was 63% and 32%. Tolin et al. (2007) also found youth with anxiety and depression to have decreases in these domains as well. An issue with this study, however, is there was a dropout rate of 36% without a complete explanation available. The children who dropped out were more likely to have lower anxiety or no comorbid conditions which leaves a gap in the literature about what part of treatment may have contributed to patients not completing the treatment. Additionally, for this study, the mean age was 12.6 and the sample was 86.4% was Caucasian.

Summary

Many studies currently focus exclusively on trichotillomania in young adults or adults. Additionally, many studies regarding children and BFRBs have typically been meta-analyses of treatments for youth. Finally, a multitude of studies were published before the latest edition (2013) of the DSM (DSM-5). This is what officially classified BFRBs under OCD and Related Disorders. Conceptualizing these disorders under OCD and Related Disorders rather than Impulse Control Disorders provides clearer guidelines about the repetitive nature of these disorders. Additionally, this study adds to more current literature that uses updated diagnostic criteria that do not require an individual to feel the release of tension as a part of the behavior, which may have excluded many participants. Additionally, many of the published studies focus

on research trials and outpatient settings, while this current study adds to the literature as it examines an intensive treatment program. Overall, the current study contributes to the much-needed gap in terms of studying youth with BFRBs in general.

Chapter 3:

Methods

The purpose of this study was to examine differences in treatment and symptom reduction when comparing youth with anxiety disorders and youth with anxiety disorders and a comorbid BFRB**.** This chapter explores the quantitative methodology in the current study. Specifically, the participants, setting, research design, measures, ethical considerations and planned analyses are described.

Participants

Participants in this study came from an intensive outpatient Behavioral Health Clinic with locations in metropolitan areas across the United States. Data from a total of 244 anxious intensive treatment-seeking youth (aged 7-18 years) participating in the OCD and Anxiety treatment programs were included in the study. Participants were divided into two groups: anxious youth (Group 1) and anxious youth with a comorbid BFRB (Group 2). Inclusion criteria for Group 1 included the diagnosis of any anxiety disorder (i.e., panic disorder, OCD, social anxiety). For Group 2, the diagnosis of an anxiety disorder and a comorbid BFRB was required (i.e., panic disorder and excoriation disorder, OCD and trichotillomania, social anxiety and onychophagia). Additionally, to be included in this study participants must have completed a treatment program at the Behavioral Health Clinic. The measures and intake packets used at the Clinic are available in a multitude of languages and patients come from a wide variety of ethnic backgrounds and geographic locations.

Exclusion criteria included patients who attended less than 10 days of treatment to see viable progress (e.g., recommended treatment times are on average 4-6 weeks). The purpose of utilizing this information was to gauge how long the individual was in treatment. Partial Hospitalization Programs (PHP) and Intensive Outpatient Programs (IOP) can vary in length from patient to patient (e.g., patients can be in PHP 4-12 weeks, and IOP 3-6 weeks). The exclusion criteria were determined based on average lengths of treatment with patient success. The exact number of weeks varied based on response to treatment. The data provided included number of days in treatment.

Data were obtained from the clinical effectiveness team based on the requested variables. These variables included outcomes for the Clinical Global Impression Scale, and admissions and discharge outcomes on the Liebowitz Social Anxiety Scale – Child and Pediatric Quality of Life Enjoyment and Satisfaction Questionnaire. Additional variables included the patient's age, diagnoses, gender, race/ethnicity, and length of stay (excluding weekends). Patients with anxiety disorder were coded with 0's and patients with BFRBs were coded with1's. Originally the data set included 254 participants, however due to missing data, 10 of these participants were excluded. Missing data consisted of any participant missing baseline or post treatment scores. The demographics information for the sample is presented in Table 1. The current study's sample included responses from 244 youth ranging in age from to 7 to 18 years of age (M=15.35, SD=*2.42* years) with 67.7% of the sample identifying as female (n=165), 83.2% identifying as White, and 89.3% identifying as non-Hispanic.

The prevalence of diagnoses is presented in Tables 2 through 6 below. In terms of diagnoses, 100% (n=244) of the sample had a diagnosis of an anxiety disorder and 8.19% (n=20) had an anxiety disorder and BFRB. Specifically, 18.4% of the sample had Generalized Anxiety

Disorder, 13.5% had Major Depressive Disorder-Single Episode/unspecified, 10.2% had Major Depressive Disorder reoccurring, 8.6% had Major Depressive Disorder- Single Episode - Moderate, 8.2% had Major Depressive Disorder-Reoccurring without psychotic features, 5.7% had social anxiety, 4.5% had Major Depressions Reoccurring/Unspecified, 3.7% had Major Depression Disorder single episode in remission, and 3.7% had Obsessive Compulsive Disorder.

For secondary diagnoses, 38.9% of the sample had Generalized Anxiety Disorder, 26.6% had Social Phobia, 5.3% had Obsessive and Compulsive Disorder unspecified, 4.1% had a diagnosis of Mixed Obsessional Thoughts and Acts, and 3.3% had panic disorder. Tertiary, Quaternary, Quinary, diagnoses also are listed in Tables 4-6. For BFRBs and related disorders, 2 participants had Skin-Picking Disorder, 6 participants had Hair-Pulling Disorder, 4 had Tourette's Disorder, and other unspecified obsessive-compulsive disorders. For the 20 BFRB participants, 14 were female and 6 were male.

Table 1

Demographic Variables from the Admission Screening Interview

Demographic Characteristic	*n*	%
Gender		
Male	79	32.45%
Female	165	67.6%
Ethnicity		

Table 1 (Continued)

Non-Hispanic	218	89.3%
Hispanic	15	6.1%
Refused to Respond	11	4.5%
Race		
American Indian/Alaska Native	1	0.4%
Asian	9	3.7%
Black or African American	3	1.2%
Multiple	9	3.7%
Unknown	18	7.8%
White	203	83.2%

Table 2

Primary Diagnoses

	n	%
MDD-Single episode Moderate	21	8.6%
MDD- Single Episode Severe	8	3.3%
MDD-Single Episode/In-Remission	9	3.7%
Other Depressive Episode	7	2.9%

Table 2 (Continued)

MDD- Single Episode	33	13.5%
MDD-Reoccurring	25	10.2%
Reoccurring MDD without psychotic features	20	8.2%
MDD- Reoccurring unspecified	11	4.5%
Social anxiety	14	5.7%
Generalized Anxiety Disorder	45	18.4%
Obsessive Compulsive Disorder	9	3.7%

Table 3

Secondary Diagnoses

	n	%
Social Phobia	65	26..6%
Generalized Anxiety Disorder	95	38.9%
Panic Disorder	8	3.3%
Mixed Obsessional Thoughts/Acts	10	4.1%
Obsessive Compulsive Disorder-Unspecified	13	5.3%

Table 4

Tertiary Diagnoses

	n	%
None Diagnosed	44	18%
Generalized Anxiety Disorder	71	29.1%
Social Phobia	8	3.3%
Mixed Obsessional Thoughts/Acts	27	11.1%
Obsessive Compulsive Disorder-Unspecified	29	11.9%

Table 5

Quaternary Diagnoses

	n	%
None Diagnosed	126	51.6%
Generalized Anxiety Disorder	5	2.0%
Obsessive Compulsive Disorder	12	4.9%
Mixed Obsessional Thoughts/Acts	5	6.6%
Attention-Deficit Hyper/Activity Disorder	10	4.1%

Table 6

Quinary Diagnoses

	n	%
None Diagnosed	193	79.1%
Generalized Anxiety Disorder	5	2.0%
Post-Traumatic Stress Disorder	5	2.0%
Mixed Obsessional Thoughts/Acts	5	2.0%

Setting

Youth in the current study were recruited from various Behavioral Health Clinic locations. The Clinic treats children, adolescents and adults with various mental health conditions such as anxiety disorders, substance use, mood disorders, eating disorders and trauma. The Clinic keeps and maintains treatment outcomes that are available to the public on its website. Treatment outcomes refer to data kept on outcome measures such as a variety of clinical rating scales. The department of clinical effectiveness maintains these data, and safeguards and verifies the data. Clinicians gather data from the moment patients begin treatment through follow-up to assess the effectiveness of treatment modalities used. The Clinic is a reputable private, not for profit behavioral health treatment service provider. Overarching values of the Clinic include providing compassionate and quality care to all patients.

The Clinic has many locations across the country including Tampa, Chicago, Philadelphia, Miami, and San Francisco. Data for this study were not restricted based on location. These locations provide patient care at the levels of Intensive Outpatient care (IOP) and Partial Hospital care (PHP). IOP requires patients to attend treatment for five days a week, three

hours a day. PHP requires patients to attend treatment for five days a week, six hours a day. Patients engage in group therapy, individual therapy, experiential therapies, and psycho-educational sessions based on cognitive behavioral therapy (CBT) approaches. These CBT approaches may be supplemented with mindfulness, art therapy, and medication. Each patient is assigned a multidisciplinary treatment team that may include a nurse, psychiatrist, nutritionist, social worker, and other key providers. For children and adolescents, parents are typically required to be present for a portion or all of a child's treatment to understand the treatment their child is receiving, their child's goals, and skills they can learn to better assist in helping their child reach these goals. The Clinic places a great deal of emphasis on family education and involvement in treatment to promote the best possible outcomes for patients.

The Clinic regularly keeps intake, progress monitoring, and outcome data on their patients as a part of their efforts to provide the highest quality treatment possible. Data are maintained to track patient progress to stay abreast of the most efficacious treatments. Youth entering treatment and their parents receive consent forms to review and sign. These forms include information about confidentiality, rights to privacy and the potential for de-identified data to be used to examine the Clinic's outcome data.

The Clinic promotes awareness around effective and evidence-based treatments. The Clinic does this by making their aggregated outcome data available to the public on their website. However, no identifying information is available to protect patients' privacy. Additionally, a patient's right to private medical information is maintained by the Health Insurance Portability and Accountability Act (HIPAA). As a result, review by IRB through the university and the Clinic was required prior to being granted access to any data.

Research Design

A non-experimental quantitative study design was used to compare the anxious youth with and without comorbid BFRBs in answering the research questions. The research questions were addressed following initiating and submitting an Institutional Review Board application through the university and the Clinic. Once approval was received from the Clinic, de-identified data were available for analysis. The University did not consider the study human subjects research. Inferential and descriptive statistics were completed on the data set. This included examining means and standard deviations to ensure all assumptions of normality were met.

Dependent variables for the current study included the outcomes of the scores on the measures described below that indicate symptomatology. For question one, days of treatment and the Clinical Global Impression-Impairment scale (CGI-I) were evaluated. For question two regarding quality of life, the Pediatric Quality of Life Enjoyment and Satisfaction Questionnaire (PQ-LES-Q) was utilized. For question three with respect to social impairment, the Liebowitz Social Anxiety Scale – Child (LSAS-CA) was utilized, specifically looking at the avoidance sub-scale. Independent variables included two groups—anxious youth without BFRBs, and anxious youth with a comorbid BFRB.

Measures

Data from three different measures were utilized in the study to answer the research questions. These data were drawn from portions of the clients' demographics form; Clinical Global Impression – Severity/Improvement (CGI-S/I); Liebowitz Social Anxiety Scale – Child (LSAS-CA); and Pediatric Quality of Life Enjoyment and Satisfaction Questionnaire (PQ-LES-Q). A description of each measure is provided below.

Clinical Global Impression Scale (CGI-S/CGI-I)

The Clinical Global Impression Scale- Severity/Improvement (CGI-S/CGI-I) is a measure completed by the clinician. The Severity and Impairments scales utilize a 0-7 Likert Scale. For the impairment scale the clinician is asked to rate the patient's level of impairment, from 0 (not having assessed the patient) to 7 (the highest rating of severity). Items on the improvement scale are rated from 0 to 7, with 0 being not assessed and 7 meaning the individual is doing worse. The CGI-I is a valid and reliable measure (Berk et al., 2008). It also was found to be sensitive to change from admission to discharge.

Liebowitz Social Anxiety Scale – Child (LSAS-CA)

The Liebowitz Social Anxiety Scale – Child (LSAS-CA) is a 24-item self-report measure that examines fear or anxiety and avoidance in social-based situations (Masia-Warner et al., 2003). For fear and anxiety, the scale is rated from 0 (none) to 3 (severe), and then there is a concurrent avoidance rating per question that ranges from 0% (never) to 3 (67% to 100% of the time). Each item presents a social situational analogue such as, "Talking with people you don't know very well" or "Taking a written test". This is done to ensure the patient understands what the question is asking and can rate their anxiety and propensity for avoidance on the 3-point scale appropriately. Clinicians consider this to be a reliable and valid measure for measuring social anxiety in youth and adolescents (α =0.90 to .97). For the 24 social situations given, two different scores are provided by the youth - one for their rating of anxiousness and one for levels of avoidance.

Pediatric Quality of Life Enjoyment and Satisfaction Questionnaire (PQ-LES-Q)

The Pediatric Quality of Life Enjoyment and Satisfaction Questionnaire (PQ-LES-Q) is a 15-item self-report measure that assesses the health habits of youth in relation to overall physical

and emotional health (Wellen et al., 2017). All questions begin with "Over the past week, how have things been with… (e.g., your health, school, or learning?). Answers are on a five-point scale from 1 (Very Poor) to 5 (Very Good). The responses for the first 14 questions are added together and the fifteenth question is considered to be as standalone score, as it asks globally about quality of life. Scores on the first 14 questions therefore range from 14-84, with higher scores indicating higher life satisfaction. This measure has test re-test reliability and high internal consistency ($\alpha \geq 0.89$) (Endicott, Nee, Yang, & Wohlberg, 2006).

Procedures

Approval to conduct this study was requested from the Clinic's Institutional Review Board. First, a proposal was approved from this study's thesis committee. Next, an application was submitted to the university Institutional Review Board (IRB). Upon determination by the university IRB that the study did not qualify as human subjects research, the Clinic approved the study. The PI then completed a data use agreement (DUA) that explicitly indicated how the data were to be utilized and protected. Specifically, only individuals supervising the thesis had access to view the data and were not permitted to share these data. Additional considerations about patient privacy were provided as well. Once DUA was approved by both parties, the de-identified data were requested from the Clinic and were supplied to the PI of this study via an excel file, on a password protected laptop with an encrypted hard drive. All data were reported in aggregate form and the PI refrained from attempts at reidentification of patient data.

The data set represented patients from multiple treatment sites. These data were pulled from patient's intake packets, bi-weekly (for progress monitoring) sessions, and measures completed upon discharge. Upon accessing to the data in a password protected excel file, data were examined for outliers or incomplete data, and analyses were conducted.

Ethical Considerations

All data received from the Clinic were de-identified and stored on a password protected and encrypted computer owned by the university. As part of the Clinic's standard protocol, patients were informed that their treatment was not dependent on allowing their data and personal health information to be utilized in a research study. All possible efforts were made to ensure data integrity was upheld to the highest degree.

Analyses

The following section presents each research question along with the planned data analyses:

1. Do duration of and/or response to intensive treatment for anxiety among youth vary according to the presence of BFRBs (anxiety +BFRBs)?

An independent samples t-test was completed with factors from this portion of the demographic's questionnaire (i.e., treatment days attended) and an outcome measure for treatment response (CGI-S/I). For duration, the number of treatment days attended were compared for the two groups: (anxiety) and (anxiety+ BFRB). Additionally, response to intensive treatment was determined by comparing the scores of the CGI-S/I with an independent t-test between these two groups.

2. Does self-rated quality of life vary among anxious treatment-seeking youth (anxiety), according to the presence of BFRBs (anxiety +BFRBs)?

An independent samples t-test was conducted using an aggregated score from the Pediatric Quality of Life Enjoyment and Satisfaction Questionnaire (PQ-LES-Q) measure. This was done to compare meaningful differences between the means of the anxiety and anxiety + BFRB groups.

3. Does self-rated social impairment vary, among anxious treatment-seeking youth, according to the presence of BFRBs?"

An independent samples t-test was conducted using the avoidance subscale from the Liebowitz Social Anxiety Scale – Child (LSAS-CA). This was done to compare meaningful differences between the means of the anxiety and anxiety + BFRB groups.

Chapter 4:

Results

Introduction

The purpose of this study was to examine aspects of treatment and treatment outcomes, such as the duration, type of treatment provided, quality of life, social impairment, and reduction of symptoms for youth at the Behavioral Health Clinic who have BFRBs and co-morbidity with an anxiety disorder in comparison to youth diagnosed with anxiety disorders only. This chapter presents the results from the various analyses completed. The research questions examined were:

1. Do duration of and/or response to intensive treatment for anxiety among youth (anxiety) vary according to the presence of BFRBs (anxiety + BFRB)?
2. Does self-rated quality of life (from admission and discharge) vary among anxious treatment-seeking youth (anxiety), according to the presence of BFRBs (anxiety + BFRB)?
3. Does self-rated social impairment (from admission and discharge) vary among anxious treatment-seeking youth (anxiety) according to the presence of BFRBs (anxiety + BFRBs)?

Missing Data

The original data set included 254 participants. Ten participants were removed from the data set due to missing baseline or post treatment scores on the given measures. Pairwise deletion was utilized. Participants were not removed if they were only missing information from some of the measures (e.g., if a participant had baseline and post treatment scores for the LSAS-C/A and the CGI but not the PQ-LES-Q). However, if there was an absence of baseline and/or post treatment data, then the participants was removed. Of the ten participants removed, five

were missing baseline data, and the other five participants had only baseline data and no post treatment data.

Research Questions

Initially, four independent samples t-tests were conducted. Follow-up analyses are discussed in the next section. For all t-tests completed, equal variances were not assumed, as separate variance t-tests were conducted.

Research Question One

Do duration of and/or response to intensive treatment for anxiety among youth (anxiety) vary according to the presence of BFRBs (anxiety + BFRB)?

In order to test the difference in duration of treatment for youth with anxiety and youth with anxiety and BFRBs an independent samples t-test was conducted. Contrary to what was predicted, results from an independent samples t-test indicated patients with anxiety disorders (M = 35.97, SD = 22.88, N = 224) and patients with anxiety disorders and BFRBs (M = 39.85, SD =17.87, N = 20) did not have a statistically significant difference in number of days of treatment attended, $t(24.93) = -0.91$, $p = 0.37$;d=-0.17.The amount of days for the sample ranged from 11 to 127, and the 95% confidence interval around difference between the group means was -12.69 to 4.93.

In order to compare the response to intervention of treatment for youth with anxiety and youth with anxiety and BFRBs an independent samples t-test was conducted looking at the CGI-Improvement scores. When testing the difference in Clinical Global Impression Scores-Improvement between the group with anxiety disorders (M = 2.12 SD = 0.76, N = 129) and patients with anxiety disorders and BFRBS (M = 1.92, SD =0.67, N = 12), a statistically

significant difference in the improvement scores was not found, $t(13.76) = 0.98$, $p = 0.35$; $d = -0.267$. The 95% confidence interval around difference between the group means was -0.24 to 0.64.

For the CGI-Severity scores an independent samples t-test could not be conducted because severity data were only collected at intake for four participants in the sample. Therefore, meaningful comparisons were unable to be made.

Research Question Two

Does self-rated quality of life (from admission and discharge) vary among anxious treatment-seeking youth (anxiety) according to the presence of BFRBs (anxiety + BFRB)?

In order to compare scores on quality of life for youth with anxiety and youth with anxiety and BFRBs an independent samples t-test was conducted looking at the differences in Pediatric Quality of Life Enjoyment and Satisfaction Questionnaire (PQ-LES-Q) total scores from admissions to discharge for the two groups. When testing the difference in PQ-LES-Q scores between the group with anxiety disorders ($M = 12.36$, $SD = 17.07$, $N = 219$) and patients with anxiety disorders and BFRBS ($M = 8.84$, $SD = 12.73$, $N = 20$) a statistically significant difference in quality of life was not found, $t(25.69) = 1.15$, $p = 0.35$; $d = -0.21$. The 95% confidence interval around difference between the group means was -2.70 to 9.83.

Research Question Three

Does self-rated social impairment (from admission and discharge) vary among anxious treatment-seeking youth (anxiety) according to the presence of BFRBs (anxiety + BFRBs)?

In order to compare scores on social impairment for youth with anxiety and youth with anxiety and BFRBs and independent samples t-test was conducted looking at the differences Liebowitz Social Anxiety Scale – Child/Adolescent (LSAS-CA-Avoidance) scores from

admissions to discharge for the two groups. When testing the difference in LSAS-A scores between the group with anxiety disorders (M = -9.43 SD = 13.89, N = 216) and patients with anxiety disorders and BFRBS (M = -5.40, SD =13.15, N = 20) a statistically significant difference on the LSAS-A was not found, $t(23.1) = -1.31$, p =0.56;d=-0.29. The 95% confidence interval around difference between the group means was -10.41 to 2.33.

Table 7
Results of t-test and Descriptive Statistics for Outcomes

	Group						95% CI for Mean		
	Anxiety			Anxiety+BFRB					
	M	SD	n	M	SD	n	Difference	t	df
Days	35.97	22.88	224	39.85	17.87	20	-12.69, 4.93	-0.907	24
CGI-I	2.12	0.78	129	1.92	0.67	12	-0.24, 0.64	0.98	13
LSAS-CA-A	-9.44	13.89	216	-5.40	13.15	20	-10.43, 2.35	-1.31	23
PQ-LES-Q	12.36	17.07	219	8.83	12.73	20	-2.8, 9.83	1.15	25

Follow-Up Analyses

A series of paired samples t-tests was completed to compare means for the PQ-LES-Q and LSAS-A before and after treatment for youth in the sample. Pre (M = 55.40, SD = 17.40, N = 219) and Post (M = 67.76, SD = 17.19, N = 219) PQ-LES-Q scores for the anxiety group [$t(218)$= -10.71, $p < 0.001$] and the pre(M = 58.04, SD = 14.82, N = 20) and post (M = 66.87, SD = 12.67, N = 20) scores for the comorbid group [$t(19)$=-3.11, $p < 0.05$] were found to be statistically significant. This demonstrated that quality of life increased significantly between the start and completion of treatment for youth with anxiety disorders and for youth in the comorbid group.

The third paired samples t-test was completed to compare means for LSAS-A scores before and after treatment. There was a significant decrease in anxiety on the LSAS scores pre

(M = 29.10, SD = 17.19, N = 216) and post (M = 19.66, SD = 16.26, N = 216) treatment for the anxiety group [t(215)=9.99, $p < 0.001$] and pre (M = 27.00, SD = 15.07, N = 20) and post (M = 21.60, SD = 12.15, N = 20) treatment for the anxiety and BFRB comorbid group [t(19)=1.84, $p < 0.05$]. These results indicate that treatment for both the anxiety and the anxiety and BFRB group increased quality of life and decreased anxiety symptoms within this sample.

Conclusion

Based on the results of the independent samples t-tests there was no statistical difference found between the anxiety and comorbid groups in terms of differences in scores pre- and post-treatment on the following measures: LSAS-CA-A, PQ-LES-Q, CGI-I. Additionally there was no statistical difference in the length of stay between the two groups. Follow-up paired samples t-tests were conducted to evaluate differences in pre- and post-treatment scores for the LSAS-CA-A and PQ-LES-Q for both groups. These paired samples t-tests showed a statistical difference in pre- and post-treatment scores for the comorbid group as well as the anxiety only group. Therefore, the treatment is potentially a source of increase in scores.

Chapter 5:

Discussion

This study examined differences in quality of life, social impairment, duration of treatment and improvement in symptoms for two groups of patients, those with an anxiety disorder and those with an anxiety disorder and a comorbid Body-Focused Repetitive Behavior (BFRB). When an individual has an anxiety disorder and comorbid BFRB, symptoms can affect each disorder. For example, individuals may use their BFRB to soothe anxiety symptoms (Grant, Redden, Leppinik, & Chamberlain, 2017). The goal of this study was to expand on implications for treatment for individuals with comorbid anxiety disorders and BFRBs.

This chapter first reviews the demographics of the study sample (e.g., age, race and ethnicity, and sex). Next, interpretations of the pre- and post- treatment outcome measures (i.e. LSAS-CA-A, PQ-LES-Q, and CGI-Improvement) are reviewed. Finally, implications for practitioners, limitations of the study, and future directions are discussed.

Demographic Characteristics

The data set received included information on patients who ranged in age from 7 to 18 years. The average age of onset for BFRBs is typically around puberty (Franklin, Zagrabbe, & Benavides, 2011). For some anxiety disorders this is the case as well (Lijster, 2017). Thus, the age range of this sample captured the range within which youth are typically diagnosed with an anxiety disorder and/or a BFRB. A majority of the participants in the sample were female. In prior studies examining youth with anxiety disorders, the samples tended to be more evenly split

with about half identifying as male and the other half as female (Kendall et al., 2010). A majority of the sample was Non-Hispanic and White (83.2%). This is similar to other large scale studies examining anxiety disorders in youth (Kendall et al., 2010). This demonstrates a consistent finding that youth from diverse populations are typically underrepresented in clinic-based programs. It is hypothesized that this underrepresentation may be the result of insurance enrollment and availability of providers (Alegria et al., 2011), thus limiting access for minoritized youth to seek or receive clinic-based care.

Types of BFRBs also tend to be evenly represented in youth (Grant, 2019). In this sample, 20 of the 244 patients in the data set were classified as having BFRBs (8.2%); 14 were female and 6 were male. The percentage of females in this subset is higher than demonstrated in previous studies. However, due to the significantly smaller sample size of individuals with BFRBs, no definitive conclusions can be made. Future research should re-examine prevalence rates of BFRBs by sex and gender.

Interpretation of Results

Research Question One

Do duration of and/or response to intensive treatment for anxiety among youth (anxiety) vary according to the presence of BFRBs (anxiety + BFRB)?

The results of this study demonstrated that there were no significant differences in treatment length or response to intensive treatment between the anxiety and comorbid groups. Prior studies have found that youth with higher anxiety at the start of treatment tend to remain in treatment longer (Settipani & Kendall, 2013). The youth in the current study had treatment stays ranging from 11 to 127 days. This large range in number of days may be attributed to the variation of program types. Youth were either in intensive outpatient or partial hospitalization

programs. Some youth may have been in both programs throughout their stay. Additionally, some youth may have attended a partial hospitalization program or residential program elsewhere thus having fewer treatment days at the behavioral health clinic utilized in the present study.

Within the present study, a number of factors such as insurance allotment may have limited the number of days allotted for treatment. This means that some youth may have had shorter stays than deemed clinically necessary. This may account for the similarity in days for both groups in treatment despite comorbidities present. When looking at response to intensive treatment, initial levels of severity at intake could not be examined for this sample because these data were available for only 4 patients in the data set. Additionally, the CGI-I measure, which examines improvement in outcomes, was given following the completion of treatment (as part of routine discharge procedures), and typically indicates treatment goals have been met. This is another factor that may contribute to the similarity in the scores across groups.

Research Question Two

Does self-rated quality of life (from admission and discharge) vary among anxious treatment-seeking youth (anxiety), according to the presence of BFRBs (anxiety + BFRB)?

Anxiety disorders tend to lead to decreased quality of life in some youth, particularly when they are impaired in multiple domains of life (Lack et al., 2009; Ollendick et al., 2010). The results of this study showed that treatment significantly affected quality of life regardless of comorbidity status. This study adds to the literature by demonstrating change in quality-of-life pre- and post-treatment. These results suggest that treatment at the Clinic was effective at improving youth's quality of life. However, it is noted that there may have been other factors not controlled for in this study that also may have contributed to these findings. There were no

significant results regarding increases in quality of life from pre- to post- treatment between the two groups. One hypothesis for this finding is that the BFRB group may have had similar increases in quality of life because some youth with BFRBs do not experience distress associated with their repetitive behaviors (Walther, 2013).

Research Question Three

Does self-rated social impairment (from admission and discharge) vary among anxious treatment-seeking youth (anxiety) according to the presence of BFRBs (anxiety + BFRBs)?

There were no statistically significant differences between the anxiety and comorbid groups when looking at social impairment. Walther (2016) found that younger youth with BFRBs, who do not have as much insight into social status, may be less socially impaired than school-age youth with BFRBs. Youth within the sample were above school age. However, given the treatment setting, they were with other youth with similar conditions. One hypothesis for this result in that the patients who were part of the sample for this study were among youth with other mental health conditions, and therefore did not experience symptoms related to social impairment in the treatment setting. Overall, for the entire sample of youth, reductions in scores were seen from pre- to post-treatment on the LSAS-CA-A suggesting that treatment at the behavioral health clinic contributed toward this positive outcome for these youth.

Implications for Practitioners

Although there were no significant findings when examining duration and response to intervention, social impairment, and quality of life between the two groups of interest, the current study does provide some implications for practitioners. Consistent with the BFRB treatment literature, Jones and colleagues (2018) noted that BFRBs are difficult to treat. Due to some individuals engaging in the behaviors outside of their awareness, they use these behaviors

to reduce stress and as a mechanism to self-regulate or self-soothe. Thus, despite comorbid diagnoses of a BFRB, patients were not in treatment a significant number of days longer, and had similar decreases in social impairment, and increases in quality of life. These findings may suggest that youth with comorbid anxiety disorders and BFRBs can have similar symptom reduction and length of treatment in comparison to youth with anxiety disorders only. However, due to this small sample size this finding should be further explored.

Another factor for practitioners to consider is to screen for BFRBs when anxiety disorders are present in youth. Within this study, a BFRB specific measure was not utilized to identify patients with BFRBs. Patients were identified with a BFRB by clinicians if they had a diagnosis from the ICD-10 corresponding to a BFRB. However, by directly assessing for BFRBs youth may be identified earlier or disclose sooner then they may have originally. Youth with BFRBs may be embarrassed, may not realize there is a clinically presenting issue, or may be less likely to disclose the need for treatment for these conditions.

Limitations

One of the limitations of this study includes the small sample size of the comorbid BFRB group which increased the standard error present. This may have contributed to the lack of significance for the variables. Additionally, the variances were made further unequal due to the large difference in sample size between the anxiety (N=224) and comorbid group (N=20). In total, there were only 20 youth with BFRBs in the sample. When looking at this clinical population, up to 20% of people have nail-biting disorder (TLC, 2019). Another potential limitation of this sample was the lack of representation of a variety of BFRBs. For example, there were no patients diagnosed with nail-biting disorder. This may be attributed to increased

social acceptance of the behavior, and the level of clinical impairment youth with nail biting disorder experience. Other limitations include type of treatments utilized. All youth in the study received exposure therapy and cognitive behavioral based treatment. However, while Habit Reversal Training is an effective treatment for these disorders, we do not know if and how many patients in this sample received it as a part of their treatment. This difference in the type of treatment has the potential to change treatment outcomes. If youth received targeted treatment for their BFRB or for all of the conditions they had, this provides the opportunity for increased quality of life and decreases on clinical outcome measures. Additionally, when examining the results of the study, it should be noted that because youth are in treatment over a length of time (3- 16 weeks), maturity of the participants over time could have contributed to gains on outcome measures. Other circumstances not related to treatment such as changes within the family, or the youth also could influence youth's responses on treatment outcome measures.

Future Directions

Future studies should examine a more balanced and representative sample. This would include more equal numbers of types of anxiety disorders and more participants in the BFRB sample. Additionally, future studies would benefit from seeking a sample that has more diversity in terms of ethnic/racial groups as well as genders. A more diverse sample would be more representative of the population; however, this may not be possible due to barriers to treatment. Future studies also should seek qualitative feedback from patients to gain more information about quality of life. This would allow for more information regarding how these disorders impact youth in the various domains of their lives. When comorbidities are present, qualitative feedback would allow for specific insight from youth to share how these conditions have impacted them, and specifically which conditions impact specific domains of their lives.

Future research also should consider examining symptom-specific measures when evaluating impairment. This would allow researchers to better gauge which condition is improving when comorbidity is present (i.e., the BFRBs or anxiety symptoms). This would likely include a measure that assesses the BFRB. However, most measures assessing for BFRBs only target one behavior. Options for specific BFRBs may include the Yale-Brown Obsessive Compulsive Scale Modified for Neurotic Excoriation (need citation here) or the Trichotillomania Scale for Children (need citation here). Additionally, there is a scale called the Repetitive Body Focused Behavior Scale, which is broader and does not target one behavior. This scale would be suitable for future research as it targets functional impairment and distress (Selles et al., 2018). Measures such as these would provide a more comprehensive view of how youth are affected by these conditions.

A consideration related to practitioner knowledge would be to examine attitude and knowledge around treatment of BFRBs and comorbid conditions. This might be particularly useful knowledge to gain from school and community-based practitioners to better examine how identification and treatment of these conditions can be improved. The understanding of school and community practitioner's knowledge is salient as schools and community practitioners have the unique opportunity to collaborate. School practitioners and staff frequently observe youth throughout the day, while a community-based practitioner would typically only have one hour of intervention time with youth. Frequent collaboration and communication can bridge these gaps in understanding. Additionally, in some cases of anxiety and BFRBs, specialty clinics may need to be identified and shared with families as possible resources for support. If school practitioners are more aware and knowledgeable of these conditions, they can provide initial vital outreach to youth and their families.

Conclusions

Overall, the purpose of this study was to compare two treatment seeking groups of youth. The two groups examined were youth with anxiety and youth with comorbid anxiety disorders and BFRBs. Differences examined were aspects of treatment, such as the duration, type of treatment provided, quality of life, social impairment, and reduction of symptoms. This study contributes to the existing literature regarding the nature of comorbid disorders in youth, particularly those with comorbid BFRBs. This study also was completed with youth receiving intensive treatment. This study did not find significant differences in outcomes between the anxiety and comorbid group in terms of pre-and post-treatment outcomes or time in treatment. However, past studies have demonstrated that BFRBs are difficult to treat, and this study provides optimism that despite having a BFRB and an anxiety disorder youth were able to make gains in treatment similarly to youth with anxiety disorders. However, it is acknowledged that the results of this study cannot be generalized to larger populations of individuals with comorbid anxiety disorders and BFRBs due to the small amount of patient data available for this cormorbid group. Future studies should seek to have a more balanced sample when comparing groups. The study did seek to be representative of BFRBs, but outside of skin-picking and hair-pulling disorder that diversity of possible BFRBs was not represented. Thus, a larger and more diverse sample of individuals with BFRBs is recommended for future research. Practitioners should be aware of the unique challenges that youth who have comorbid anxiety disorders and BFRBs may face and consider those challenges in assessment and treatment planning.

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