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Exposure Response Prevention for Adolescents with High-Functioning Autism and Social Anxiety

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Abstract

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

Anxiety disorders are the most common comorbid mental health condition seen in individuals with neurodevelopmental disorders. This study was an exploration of the benefits of exposure and response prevention (ERP) for high-functioning adolescents with autism and comorbid social anxiety. The research problem was the lack of qualitative description of trained clinicians' experiences of ERP delivery to high-functioning adolescents with autism and social anxiety. Data for this study were collected through semi structured interviews with six ERP clinicians who had experience in practicing ERP with this population. Analysis of the data revealed the following four core themes: (a) professional recommendations for use of ERP, (b) increased confidence in social settings for clients with high functioning autism, (c) modified ERP effectiveness incorporating repetition, and (d) treatment interfering behaviors. Results indicated that clinicians supported the use of ERP for this patient population. Clinicians believed that ERP was effective and achieved clinically significant improvement in symptoms and function for high-functioning adolescents with autism and social anxiety, dependent on the clinician's awareness of assessing the need and application of a modified approach. The findings of this study have potential implications for positive social change that include support for establishing training in ERP for therapists of high-functioning adolescents with autism and anxiety, thus making the treatment mode more accessible for this population.

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Dedication

This study is dedicated to my father in heaven.

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Chapter 1: Introduction to the Study

Introduction

Anxiety disorders are the most common mental health comorbidity with autism (Briot et al., 2020). Among individuals diagnosed with autism, 70% are reported to meet diagnostic criteria for an anxiety disorder (Briot et al., 2020). Applied behavior analysis (ABA) is the gold-standard treatment for autism; however, the treatment model does not treat anxiety symptoms for the autism population (Link, 2018). In this study, I explored the potential benefits of the evidence-based treatment of exposure and response prevention (ERP) for adolescents with high-functioning autism (HFA) and social anxiety. The specific research problem addressed was the lack of description of how trained clinicians experience ERP adaptation. Although researchers have investigated the use of ERP for individuals with autism, the topic has not been explored in the manner of a modified ERP approach for those with HFA from a clinician's perspective. The goal of the study was to understand how a clinician describes the delivery of ERP for autism spectrum disorder (ASD) and social anxiety. The social implications of this study include enhancing the awareness of the presence of effective treatments for anxiety disorders in adolescents with autism. I used thematic analysis to explore the gap in ERP application modified for those with HFA from a clinician's perspective.

Background

Research on ASD has advanced in the past decade with increased insight and awareness of the heterogeneous neurodevelopmental disorder. ASD has a severity range from low functioning to high functioning; however, all affected individuals are

susceptible to having deficits in social communication, learning, language development, and overall development (Faridi & Khosrowabadi, 2017). Treatment for ASD is generally ABA therapy, which aims to enhance a child's social skills, language development, and overall development (Link, 2018). Adolescents with HFA are more likely to have deficits in social skills and communication; however, all individuals with autism are prone to developing anxiety disorders due to the difficulties they experience living in the mainstream world (Briot et al., 2020).

Social anxiety is common among these individuals as social adaptability and function are impaired by rigid routines and a lack of social skills, communication, and awareness (Vasa et al., 2016). Social anxiety may be linked to aberrations in the gene SLCGA4, which transports serotonin to stabilize mood (Frick & Mansson, 2018). The excess of untransported serotonin in the brain leads to adverse symptoms and overactivity of the amygdala (Frick & Mansson, 2018). The amygdala triggers intense anxiety, activating the prefrontal cortex (Wang et al., 2018). Treatment models based in cognitive behavioral therapy (CBT) are used to assist in the activation of the formation of new circuits in the anxious brain (Beck, 2011). One CBT-based treatment model is ERP, which teaches individuals how to sit with their anxiety to overcome their fears (Blakey & Abramowitz, 2016). This model has been proven beneficial for those with autism who demonstrate cognitive awareness of their anxieties (Bolton & Perrin, 2008). In this study, I explored the gap in the application and benefits of CBT treatment, specifically ERP for adolescents with autism and comorbid social anxiety from a clinician's perspective.

Problem Statement

Current literature indicates that CBT treatments such as ERP are beneficial for adolescents with HFA (Kaczkurkin & Foa, 2015). In the current study, I explored the gap in ERP application modified for those with HFA from a clinician's perspective. ASD is a neurodevelopmental disorder characterized by a deficit in social communication, interaction, and restricted, repetitive behavior patterns, interests, or activities (Fujioka et al., 2020). ABA has been proven effective in enhancing social communication in lower-functioning and higher-functioning individuals with autism (Link, 2018). However, ABA does not teach an individual with autism to cope with anxiety appropriately by challenging those thoughts and behaviors that lead to long-term learning and habituation of dysfunctional coping with feared situations.

Social anxiety is a common anxiety disorder among children and adults and has a high prevalence rate in individuals with autism (Vasa et al., 2016). The American Psychiatric Association (2013) defined social anxiety as "marked or intense fear or anxiety of social situations in which others may scrutinize the individual" (p. 203). Symptoms of social anxiety are displayed in children and adolescents through shyness, feeling anxious in unknown situations, or fear of judgment by others (American Psychiatric Association, 2013). The diagnosable age of onset for social anxiety is 13 years of age, and the condition may last from 12 months to a few years (American Psychological Association, 2013). If left untreated, social anxiety can lead to depression (La Greca et al., 2018). Research has shown that 49% of high-functioning adolescents with autism have social anxiety (Briot et al., 2020). The Social Anxiety Scale for

Children-Revised (SASC-R) and Liebowitz Social Anxiety Scale for Children (LSAS_CA) are measurements used to assess childhood social anxiety (La Greca et al., 2018). These tools have been proven effective in identifying social anxiety in adolescents with autism and increasing their chances of receiving appropriate treatment, depending on their anxiety symptoms (La Greca et al., 2018).

A standard therapeutic model proven effective in treating social anxiety is ERP. ERP is the gold-standard treatment for obsessive-compulsive disorder (OCD) but has been used for individuals with autism and anxiety disorders (Boyd et al., 2013). OCD is a subtype of anxiety disorder in which a person experiences reoccurring unwanted thoughts, ideas, or sensations (obsessions) that influence the performance of behaviors to reduce the intensity of unwanted thoughts (compulsions; American Psychiatric Association, 2013). Like anxiety, individuals with OCD perform safety behaviors in response to anxiety-provoking situations and thoughts (American Psychiatric Association, 2013). ERP works by placing individuals in a feared situation while reducing their habituated dysfunctional safety behaviors and avoidance patterns (Bolton & Perrin, 2008). ERP teaches individuals to sit with and tolerate anxiety rather than act on it (Bolton & Perrin, 2008). While sitting with the anxiety, an individual is allowing for their anxieties to subside over time, gaining them a long-term benefit of habituation to feared situations rather than reactive disruptive habits and reducing anxiety over time (Bolton & Perrin, 2008). As with most therapeutic models under the umbrella of CBT, an individual would need to demonstrate cognitive awareness and insight of their anxieties for ERP to work (Zaboski et al., 2019). ERP is beneficial in teaching individuals about

their anxiety and showing them their feared situations can be effectively managed (Zaboski et al., 2019). Generally, adolescents with autism are referred to ABA to treat symptoms of autism (Link, 2018). However, there is evidence that ERP successfully treats behavioral manifestations of social anxiety for high-functioning adolescents with neurodevelopmental disorders, including autism, from a modified approach (Zaboski et al., 2019).

Purpose of the Study

In this qualitative study, I aimed to explore the use of ERP for adolescents with HFA and comorbid social anxiety. The study was conducted through an interpretivism lens; the experience of adolescents with autism and social anxiety is an intrapersonal process, and the intervention process will differ for all users. I explored how to challenge behavioral manifestations of social anxiety in the target population through a modified ERP approach from a clinician's perspective. Using a clinician's perspective, I explored the delivery effectiveness of ERP for high-functioning adolescents with autism and social anxiety.

Research Question

The research problem that was addressed was the lack of qualitative description of trained clinicians' experiences of ERP delivery to high-functioning adolescents with autism and social anxiety.

Theoretical and Conceptual Framework

The theories and concepts that grounded this study include social motivation and theory of mind. Treatment for ASD and social deficits is based on social motivation

theory. Social motivation theory indicates that due to impairments in the brain's reward circuitry in individuals with autism, there is a reduction in their motivation for social interaction (Chevallier et al., 2012). Research has concluded that individuals with HFA often develop social anxiety due to awareness that their social skills are weaker than that of their neurotypical peers (Briot et al., 2020). This phenomenon is best described by the theory of mind (TOM), defined as a person's mental capacity to understand others' feelings and behaviors (Conway et al., 2019). Research has concluded that enhancing social cognitive skills through exposure decreases symptoms of social anxiety in high-functioning individuals with autism (Briot et al., 2020). As the TOM connects individuals with social anxiety, there is an association between social anxiety and social cognition (Alvi et al., 2020). If an adolescent with HFA exhibits symptoms of social anxiety, this indicates they have a perception of others' thoughts, intentions, and feelings (Alvi et al., 2020).

The connection between the framework and the nature of the study includes adolescents with HFA who exhibit symptoms of social anxiety due to increased awareness of others' thoughts, feelings, and intentions toward them (Chevallier et al., 2012). Social motivation theory best describes the social communication deficit by reducing motivation to engage in social situations (Chevallier et al., 2012). This represents the idea that individuals with autism develop social anxiety due to the cognitive awareness that they perform on a lower scale than neurotypical same-aged peers. Social motivation theory and TOM connect to the research problem in that modified cognitive therapy approaches can be effective so long as the user has the

cognitive abilities to challenge their thoughts and be aware of others' behaviors toward them.

Nature of the Study

To address the research question in this qualitative study, the specific research design included semi structured interviews to collect data for thematic analysis, which allowed me to analyze themes described by clinicians in their experiences treating adolescents with HFA and comorbid social anxiety (Nowell et al., 2017). This analysis helped close the literature gap relative to the description of the application of modified ERP for adolescents with HFA and comorbid social anxiety from a clinician's perspective. For my planned research design, I conducted, recorded, and transcribed semi structured interviews with clinicians who have experience practicing ERP with adolescents with HFA and social anxiety. Individual semi structured interviews were conducted via Zoom with clinicians to gain insight and observations of the therapeutic process of ERP delivery for adolescents with HFA and social anxiety. The data points were used for transcripts of semi structured interviews with clinicians. Clinicians were provided space to share additional information and converse about their clinical experiences.

Definitions

Applied behavioral analysis (ABA): A behavioral therapy focused on teaching children and adults how to modify behavior and how they can learn new behaviors, especially in the areas of speech, communication, and occupationally (Link, 2018).

Autism spectrum disorder (ASD): A complex developmental condition that involves persistent challenges in social interaction, speech, and nonverbal communication and restricted/repetitive behaviors (American Psychiatric Association, 2013).

Cognitive behavioral therapy (CBT): An evidence-based treatment for anxiety, depression, eating disorders, and other mental health disorders that aims to develop a new way of thinking through thought challenges and behavior reduction (Beck, 2011).

Exposure and response prevention (ERP): A CBT-based behavior intervention known as the gold-standard treatment for OCD but has been found effective in treating anxiety and feeding disorders through exposing a person to their fears in a controlled setting (Bolton & Perrin, 2008).

High-functioning autism (HFA): A neurobiological disorder that causes deficiencies in social skills such as difficulty in communication and changing routines (Faridi & Khosrowabadi, 2017).

Neurodevelopmental disorders: A group of conditions with onset in the developmental period of early development (American Psychiatric Association, 2013).

Social anxiety: Marked fear or anxiety about one or more social situations in which the individual is exposed to possible scrutiny by others (American Psychiatric Association, 2013).

Assumptions

ERP is an effective evidence-based approach for the treatment of autism and social anxiety symptoms (Boyd et al., 2013). I assumed that clinicians' perspectives

would help begin to fill the gaps in describing and understanding best practices for effective use of ERP for anxiety in those with HFA.

Scope and Delimitations

The scope of the study was focused on a modified ERP approach for high-functioning adolescents with autism from a clinician's perspective. As adolescents with developmental disabilities are a protected class, they were not active participants in the study. Instead, clinicians who have experience using ERP for anxiety disorders in patients with autism were interviewed to give their perspective on treatment effectiveness. A delimitation of this study included only analyzing high-functioning adolescents with autism from a specific clinician's client base. A delimitation of the study fell under locating a set number of clinicians who have experience in using ERP for adolescents with HFA and social anxiety with the availability to meet for a semi structured interview. In this event, I expanded my search to providers outside my geographic location to meet the study's criteria for providers.

Limitations

Limitations of this study included the limited number of clinicians trained in ERP application for adolescents with HFA. A challenge of this study was drawing from a certain geographic location may have influenced the type of clients treated for social anxiety with HFA. To address these limitations, I focused on obtaining data from clinicians in my area who have experience in practicing ERP with high-functioning adolescents with autism and social anxiety.

Significance

This study was significant because social anxiety is the most common comorbid disorder associated with autism and is often left untreated (Bolton & Perrin, 2008). Furthermore, adaptations for treatment used are not well-described in the literature. Outcomes of this study will contribute to filling the gap in the literature on resources available for adolescents with autism and social anxiety. Outcomes also contribute to informing practitioners further on the process of delivering behaviorally focused ERP to adolescents with HFA. Given that adolescents with autism have limited access to treatment outside of ABA, outcomes of this study may increase clinicians' awareness for treating anxiety disorders in adolescents with autism, given the high prevalence rates of anxiety disorders in this population. More training with adapted treatment descriptions will enhance opportunities for adolescents with HFA to receive treatment for anxiety-related symptoms.

Summary

In this study, I investigated the use of ERP for high-functioning adolescents with ASD and comorbid social anxiety. Evidence-based treatments generally used for ASD, such as ABA, do not treat symptoms of anxiety in individuals with autism. ERP has been proven effective in reducing symptoms for anxiety comorbid with ASD, but the treatment adaptation and therapists' experiences of its delivery have not yet been fully described in the literature. In the following chapter, I discuss the current literature, which provides evidence of the use of ERP for high-functioning adolescents with autism and social anxiety.

Chapter 2: Literature Review

Introduction

Social anxiety is an anxiety disorder that affects both neurotypical and atypical populations and causes a person to become avoidant of social situations due to the fear of judgment or ridicule from others (Vasa et al., 2016). In this qualitative study, I aimed to explore the use of ERP for adolescents with HFA and comorbid social anxiety. I explored the gap in the application of ERP modified for those with HFA from a clinician's perspective; there is a lack of description existing for how ERP is adapted and experienced by trained clinicians. This study was conducted through a qualitative interpretative and thematic analysis to discuss the use of a modified ERP approach for adolescents with HFA and social anxiety from a clinician's perspective. The following chapter provides an overview of the literature regarding the gap and the problem and introduce the theoretical framework for the research question and methodology.

Literature Search Strategy

For the literature review, I identified articles related to ASD, emphasizing HFA in adolescents and evidence-based treatments for autism. Additionally, I identified articles related to anxiety comorbidities in the autism population. I identified articles related to social anxiety and its presentation in individuals with autism and evidence-based treatments for anxiety disorders within this category. All articles used for the literature review were found through the Walden University Library, U.S. National Library of Medicine National Institutes of Health, National Center for Biotechnology Information, Psych Info, and Google Scholar. I researched articles through all databases to obtain

research articles published between 2017 and 2021. Key search terms for my research included: *autism spectrum disorder, adolescent development, high functioning autism, anxiety disorders, social anxiety, social anxiety and autism comorbidity, cognitive behavior therapy, exposure and response prevention, modified cognitive behavior therapy, modified exposure and response prevention, social anxiety in autism, autism treatment, autism anxiety treatment, applied behavior analysis, autism neuroscience, autism neurobiology, social anxiety neuroscience,* and *social anxiety neurobiology.* A comprehensive literature search revealed that existing literature was focused on the application and benefits of CBT treatment, specifically ERP for adolescents with autism and comorbid social anxiety. However, there was an absence of literature relating to the application of ERP modified for those with HFA from a clinician's perspective, which I explored in my research.

Theoretical Foundation

The theories and concepts that grounded this study include social motivation theory and TOM. Treatment for ASD and social deficits is based on social motivation theory. Social motivation theory states that due to impairments in the brain's reward circuitry in individuals with autism, there is a reduction in their motivation for social interaction (Chevallier et al., 2012). Research has concluded that individuals with HFA often develop social anxiety due to awareness that their social skills are weaker than the social skills of their neurotypical peers (Briot et al., 2020). This phenomenon is best described by TOM, defined as a person's mental capacity to understand others' feelings and behaviors (Conway et al., 2019). Research has concluded that enhancing social

cognitive skills through exposure decreases symptoms of social anxiety in high-functioning individuals with autism (Briot et al., 2020).

The logical connections between the framework presented and the nature of my study include those individuals with autism who exhibit difficulties in social communication and motivation (Chevallier et al., 2012). Social motivation theory best describes the social communication deficit by reducing motivation to engage in social situations and activities (Chevallier et al., 2012). This represents the idea that individuals with autism develop social anxiety due to the cognitive awareness that they perform on a lower scale than neurotypical same-aged peers.

Social motivation theory and TOM connect to the research problem in that modified therapy approaches can be effective so long as a clinician is trained in their application. Interviewing clinicians to obtain their perspectives aided in understanding clinicians' training and experience in the application of ERP for the target population, given that it is understood that social communication deficits are present.

Literature Search Related to Key Variables and Concepts

The following section provides a complete overview of the literature I reviewed involving anxiety-related treatments for high-functioning adolescents with autism and social anxiety. As there is an increased awareness to anxiety disorders existing in individuals with neurodevelopmental disabilities, this has influenced researchers to identify treatments appropriate for this population.

Neurodevelopmental Disorders

Morris-Rosendahl and Crocq (2020) stated that developmental disorders were first defined in the *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed.). More recently, the *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*) has renamed developmental disorders as neurodevelopmental disorders (American Psychiatric Association, 2013). The *DSM-5* defines a neurodevelopmental disorder as "a group of conditions with onset in the developmental period" (American Psychiatric Association, 2013, p. 31). Neurodevelopmental disorders typically occur in early developmental years and are generally identified before a child enters grade school (American Psychiatric Association, 2013). Neurodevelopmental disorders are a class of neurological conditions, and research has determined a strong genetic component to the manifestation of these disorders across multiple generations (Yan et al., 2021). The *DSM-5* states that the most common neurodevelopmental disorders include: (a) intellectual disability, (b) communication disorders, (c) ASD, (d) attention deficit–hyperactivity disorder, (e) neurodevelopmental motor disorders, and (f) specific learning disorders. Neurodevelopmental disorders cause impairment in an individual's personal, social, academic, and occupational functioning (American Psychiatric Association, 2013). Specifically, ASD is considered a neurodevelopmental disorder as several genes have been identified to interfere with neurodevelopment in brain regions of individuals with autism, causing developmental delays and the need for treatment (Mann et al., 2021).

Autism

ASD is known as a neurodevelopmental disorder defined as “persistent deficits in social communication and social interaction across multiple contexts, restricted, repetitive patterns of behavior, interests, or activities that occurs in the early developmental period” (American Psychological Association, 2013, p. 50). The Centers for Disease Control and Prevention stated that 1 in 51 children are diagnosed with autism and it is four times more likely to occur in male patients than female patients (Centers for Disease Control and Prevention, 2020). Symptoms of autism include language delay, receptive listening delay, loss of language and social skills previously acquired, impaired ability to make friends, impaired ability to initiate or sustain a conversation, preoccupation with certain objects, and inflexible adherence to specific routines and rituals (U.S. Department of Health and Human Services, 2021).

Historically, ASD was referred to as *infantile autism*, named by Ivan Lovass in 1986 as a developmental disability characterized by onset of disturbances in social and language development before the age of 30 months (Lee-Dukes, 1986). Hodges et al. (2020) stated that the ASD diagnosis was created through combining the *DSM-5* separate pervasive developmental disorder, autistic disorder, Asperger’s disorder, childhood disintegrative disorder, and pervasive developmental disorder not otherwise specified. Presently, there are five subtypes of ASD: (a) with or without accompanying intellectual impairment; (b) with or without accompanying language impairment; (c) associated with a known medical or genetic condition or environmental factor; (d) associated with another neurodevelopmental, mental, or behavioral disorder; and (e) with catatonia

(American Psychiatric Association, 2013). The autism severity levels include Level 1, requiring support; Level 2, requiring substantial support; and Level 3, requiring very substantial support, pertaining to the need level in social communication and restricted and repetitive behaviors (American Psychiatric Association, 2013).

The gold-standard symptom evaluation for autism is the Autism Diagnostic Interview-Revised (ADI-R) (Lefort-Besnard et al., 2020). The ADI-R is a semi structured interview conducted with parents by a trained clinician who focuses on current presentation and life history. Secondary to the ADI-R, the Autism Diagnostic Observation Schedule (ADOS) is a semi structured diagnostic assessment conducted through one-to-one personal interaction and direct observation by a trained clinician of an individual suspected to have ASD (Maddox et al., 2017). Both the ADI-R and ADOS indicate the severity level of the child and are the two most popular instruments to diagnose ASD (Lefort-Besnard et al., 2020). Clinicians will use the ADI-R and ADOS results to conclude if an individual meets the diagnostic criterion for ASD and guide parents to appropriate treatments to serve their child.

High-Functioning Autism

HFA was previously referred to as *Asperger's syndrome* until the *DSM-5* revision. Asperger's syndrome was established by Hans Asperger, who sought to understand autistic psychopathy and described Asperger's syndrome as featuring social–communication impairment, eccentric manners, unusual interests, and cognitive domains of hyperfunctioning (de Giambattista et al., 2019). Since its establishment, Asperger's syndrome has been referred to as HFA. High-functioning individuals with autism have

typical symptoms of social difficulties, emotional sensitivity, rigidity, and fixation on objects, as do individuals diagnosed with ASD (Faridi & Khosrowabadi, 2017). However, the difference between HFA and ASD is that higher-functioning individuals have an absence of an intellectual disability, decreasing the impairment in functioning across life domains (Rabiee et al., 2019). The American Psychiatric Association (2013) defines an intellectual disability as a neurodevelopmental disorder that affects aspects of intellectual functioning, such as reasoning, problem solving, planning, abstract thinking, judgment, academic learning, and learning from experience. Common symptoms of HFA identified by Braconnier and Siper (2021) include: (a) emotional sensitivity, (b) fixation on particular subjects or ideas, (c) linguistic oddities, (d) social difficulties, (e) problems processing physical sensations, (f) devotion to routines, (g) development of repetitive or restrictive habits, (h) dislike of change, (i) focus on self, and (j) unusual movement patterns.

High-functioning individuals with autism differ in their cognitive awareness, prognosis, and need for assistance in their daily lives (de Giambattista et al., 2019). High-functioning adolescents with autism have a higher quality of life as they are likely to be in mainstream schooling, have few developed interpersonal relationships, hold a job, and live independently compared to lower-functioning individuals with autism who typically need lifelong support to maintain quality of life (Oakley et al., 2021).

There are brain and structural changes found in high-functioning adolescents with autism that differ among mild to moderate cases of autism. Children with HFA are known to have a more prevalent impairment of social awareness and communication

compared to same-aged typical peers, which is a manifestation of their brain composition. Affected brain structures for high-functioning adolescents with autism include the cerebellum, amygdala, hippocampus, and prefrontal cortex (Friederike et al., 2017). Adolescents with HFA also commonly have abnormalities in the serotonin and dopamine transporter binding. The hippocampus in this population is larger, affecting episodic memory retrieval (Cooper et al., 2017). This affects how they learn and interpret situations in their world (Grainger et al., 2016). The prefrontal cortex, which is responsible for our executive functioning, which can influence the development of complex social and cognitive abnormalities (Breedlove & Watson, 2018). The size of the amygdala influences the behavioral and emotional effects an adolescent may experience (Friederike et al., 2017). If the amygdala is smaller, the adolescent may have decreased emotional processing and expression abilities (Friederike et al., 2017). When the amygdala is larger, this increases anxiety levels in an individual due to increased activity in this brain structure (Friederike et al., 2017). Through comparing the brain structural differences in high-functioning adolescents with autism and individuals with social anxiety, it has been concluded that the overactivity of the amygdala increases symptoms in both populations (Friederike et al., 2017).

Adolescent Development

Adolescence is known as a developmental period which marks the transition into adulthood. Adolescence begins at age 13 and generally ends at age 19. Still, it is not uncommon for the adolescent period to continue into an individual's early 20s if the individual exhibits that they lack the skills to sustain their livelihood independently

(Jaworska & MacQueen, 2015). Adolescence is marked by the tendency to take risks, seeking thrilling and novel experiences, and increased susceptibility to poor regulation and lower ability to exercise self-control as decision-making skills are not fully developed (Pokhrel et al., 2013).

The period of adolescence is influenced by social contexts related to peers as this is a period where an individual is seeking to understand themselves and those around them. Adolescent brain development includes circuits that influence social contexts, typical markers for risk, resilience, and positive outcomes (Pokhrel et al., 2013). Research has concluded that morphometric changes involve increased brain volume, expansion of the cortical surface area, and reduction in cortical thickness (Modabbernia et al., 2021). Intracortical myelination within the prefrontal cortex, the center for executive processes, affects cognitive symptoms in adolescence and early adulthood (Modabbernia et al., 2021). Research has also concluded that gray matter volume decreases in the mid-dorsolateral frontal prefrontal cortex from childhood to adolescence as it aids in the function of the nervous system (Jaworska & MacQueen, 2015).

As social contexts are a primary concern in adolescent development, this is best described by the social re-orientation framework (Schriber & Guyer, 2016). The social re-orientation framework describes that social behavior is rooted in developing brain regions nested across social information processing network (SIPN) nodes (Schriber & Guyer, 2016). In the adolescent period, the social contexts most concerning are family/caregiver contexts, peer contexts, peer pressure, peer evaluation, social exclusion, timing, and the convergence of parent/caregiver and peer influences (Schriber & Guyer,

2016). Adolescent relationships with friends and peers play a critical role in developing social skills and feelings of personal competence (Jaworska & MacQueen, 2015). All social contexts influence how adolescents behave and operate in our world.

Applied Behavior Analysis as Treatment for Autism

The gold-standard treatment for individuals with ASD is ABA therapy. ABA therapy is a behavior modification therapeutic treatment used for children and adults with ASD (Links, 2018). ABA is based on the behaviorist approach of modifying behaviors through systemic, extrinsically reinforced behavior modification and training (Links, 2018). Additionally, ABA uses procedures that are systematically applied to identify environmental variables that influence socially significant behavior (Yu et al., 2020). This treatment teaches basic communication, social, daily living, and self-help skills (Yu et al., 2020). ABA was developed in the 1970s by psychologists Lovaas and Koegel at UCLA when it was thought that individuals with autism were not eligible for treatments (Yu et al., 2020). Lovaas began using behavior analysis experimentally in the 1960s and its plausible effectiveness for children with autism (Slocum et al., 2014). He concluded that the principles of behavior analysis benefit this population's treatment.

Basic methods of ABA include discrete trial teaching, a technique used to obtain the child's attention, presenting them with the distinctive stimulus, noting the child's response to the distinctive stimulus, and providing the child with positive reinforcement or corrective feedback (Callahan et al., 2020). Skills in ABA are broken down into their simplest components and taught to its user through a positive reinforcement system (Slocum et al., 2014). Additional methods include shaping, token economies, and pivotal

response teaching, which aids in the child's development in learning communication skills, social skills, daily living skills, and self-help skills (Yu et al., 2020). Though ABA has been proven effective in enhancing functioning and learning abilities for those with autism in our typical world, its methods do not teach its users how to cope with their anxieties or other comorbid conditions a user may experience. These findings have influenced the field of CBT to identify modified approaches to reduce anxiety symptoms in individuals with autism.

Anxiety Disorders

The most common class of mental health disorders affects 30 million Americans and is known as an anxiety disorder (Brahmbhatt et al., 2021). Anxiety is defined as the anticipation of a future, unidentifiable, and obscure threat, compared to fear which is the emotional response to a real harmful stimulus (Brahmbhatt et al., 2021). Anxiety disorders are a class of disorders that share the commonality of experiencing excessive fear or worry (American Psychiatric Association, 2013). Anxiety disorders differ from developmentally normative anxiety in that symptoms are excessive and persist beyond situational or developmentally appropriate periods (American Psychiatric Association, 2013). Common symptoms of an anxiety disorder include panic, excessive fear, sleep disturbance, avoidance, and persistent worry (Strohle et al., 2018). Anxiety disorders often present in children but are not exempt from onsetting during adulthood (American Psychiatric Association, 2013). Anxiety disorders are complex and may have genetic and environmental components to their manifestation. Individuals with an anxiety disorder are at a higher risk of developing sequential comorbidity to developing other anxiety

disorders in their lifetime (Strohle et al., 2018). Common anxiety disorders outlined by the American Psychiatric Association *DSM-5* (2013) include (a) separation anxiety disorder, (b) selective mutism, (c) specific phobia, (d) social anxiety disorder, (e) panic disorder, and (f) generalized anxiety disorder.

High anxiety levels can affect cognition, executive functioning, and attention/concentration (Brahmbhatt et al., 2021). Neuronal structures that influence the development of anxiety include the amygdala, hypothalamus, locus ceruleus, and prefrontal cortex (Breedlove & Watson, 2018). Anxiety disorders negatively affect an individual's musculoskeletal, cardiac, respiratory, gastrointestinal, and neurologic systems (Brahmbhatt et al., 2021). These factors affect the development and prognosis of somatic diseases across the lifespan in typical and atypical individuals (Strohle et al., 2018). Anxiety disorders occur 85% of the time in a clinical and medical setting (Brahmbhatt et al., 2021). Anxiety disorders can also heighten the development of other anxiety-related disorders, mood disorders, and substance use disorders (American Psychiatric Association, 2013).

Social Anxiety

Social anxiety disorder is a common disorder that affects 7% of Americans (American Psychiatric Association, 2013). The American Psychiatric Association (2013) defines social anxiety disorder as the fear and anxiety a person experiences when perceived as being judged or scrutinized by others. There are four subtypes of social anxiety: performance anxiety, performance-avoidance, social anxiety, and social performance (American Psychiatric Association, 2013). Performance anxiety and

avoidance is considered when the fear is restricted to speaking or performing in public (American Psychiatric Association, 2013).

Individuals with social anxiety exhibit distortions in processing social/evaluative information, which increases their anxiety levels (Kaczkurkin & Foa, 2015). The age of onset of social anxiety ranges from 8-15, with symptoms generally present in adulthood when they are left untreated (Kuusiko et al., 2009). Social anxiety presents higher in females than males in the general population and is more prevalent in American Indians and non-Hispanic Whites (American Psychiatric Association, 2013). The degree of anxiety and fear of judgment an individual experiences due to their social anxiety influences their ability to function in their daily activities such as school, work, interviews, and situational social experiences (National Institute of Mental Health, 2016). These impairments can result in low self-esteem, negative self-talk, hypersensitivity to criticism, low academic achievement, substance use, and suicidality (National Institute of Mental Health, 2016). These individuals' experience is reinforced through fear of being judged, humiliated, or rejected (Leigh & Clark, 2018). The American Psychiatric Association (2013) explains that symptoms of social anxiety include: (a) fear of being judged by others, (b) blushing, (c) sweating, (d) avoidance, (e) nausea, (f) trembling/shaking, (g) self-consciousness, (h) worry, and (i) shortness of breath.

Scaini, et al. (2019) mentioned that triggers to social anxiety include but are not limited to meeting new people, dating, interaction with an authoritative figure, large gatherings, unexpected social interactions, public speaking, talking on the phone, being teased by others or when being watched by others (Leigh & Clark, 2018). Additionally,

there is evidence that concluded that social anxiety is manifested through environmental or genetic predispositions (Scaini et al., 2019). Environmental causes to the development of social anxiety include abuse, bullying, family conflict, domestic violence, death, and maternal stress during pregnancy or infancy, typically through lack of attention, over-concern, and high expectations being placed on the child at a young age (Leigh & Clark, 2018). Researchers have been unable to conclude a definitive genetic cause of social anxiety (Leigh & Clark, 2018). However, it is understood that a child has a 30% chance of developing social anxiety if a first-degree relative has mental health difficulties (Leigh & Clark, 2018).

As social anxiety generally presents during adolescent years, neuroscience may likely describe this phenomenon. Child and adolescent social anxiety have a differing clinical presentation aside from general social anxiety you will find in an adult (Olmez & Ataoolu, 2019). Children with social anxiety struggle with their self-esteem, worry about being judged, avoid anxiety-producing situations, and their anxieties interfere with their daily functioning (Kuusikko et al., 2008). There are two types of social anxiety in children: worrying about public events and avoiding social situations (Olmez & Ataoolu, 2019). Common symptoms of childhood social anxiety include shaking, sweating, flushing, shortness of breath, verbal expression of worry, excessive tantrums, crying, and underreporting their anxieties due to the fear of being judged (Sciani et al., 2017). Compared to adult presentations of social anxiety, which include anxiety in anticipation of a feared activity, fear of interaction with strangers, worry about public humiliation, avoidance of social interactions (Sciani et al., 2017).

Social Anxiety Neuroscience

The etiology of social anxiety disorder is not fully understood. However, multiple contributing factors are associated with the disorder, starting with the neurological system. Neuroscience is defined as the study of the nervous system (Breedlove & Watson, 2018). Social anxiety is manifested in the brain through hyperactivity of the amygdala, which is a part of the limbic system and manages our emotions and behavior. Hyperactivity of the amygdala leads to an overcorrection of perceived threats, therefore, intensifying the fight or flight response we all have (Frick & Mansson, 2018). Hyperactivity of the amygdala triggers intense anxiety, rapid heartbeat, sweaty palms, respiratory excitement, muscle tightening, increased blood sugar, and freezing (Breedlove & Watson, 2018).

Social anxiety in the brain is also affected by gene SLCGA4 (Frick & Mansson, 2018). Gene SLCGA4 is responsible for transporting serotonin to stabilize mood (Breedlove & Watson, 2018). In an individual with social anxiety, gene SLCGA4 is damaged, and there is an excess of serotonin, which leads to the heightened fear and anxiety one experiences regarding social situations (Frick & Mansson, 2018). Additional morphological changes have appeared in the globus pallidus, cortical thickness in the frontal and temporal regions, and cortical surface area of the fusiform gyrus (Wang et al., 2018). Neuroscience has paved the path for therapeutic regimens to treat and prevent social anxiety, forming new brain circuits in the prefrontal cortex to activate the parasympathetic nervous system (Wang et al., 2018). This is achieved through CBT and psychotropic medications. Additionally, an individual may exhibit a genetic

predisposition for social anxiety when they have a first-degree relative with the disorder, along with environmental difficulties, behavioral inhibition, having a negative evaluation of oneself, and a high prevalence of substance use (Martin et al., 2009).

There are brain and structural changes found in high-functioning adolescents with autism, which differs from mild to moderate cases of autism (Cooper et al., 2017). Children with HFA are known to have a more prevalent impairment of social awareness and communication compared to same-aged typical peers as a manifestation of their brain composition (Faridi & Khosrowabadi, 2017). Affected brain structures for high functioning adolescents with autism include the cerebellum, amygdala, hippocampus, and prefrontal cortex (Friederike et al., 2017). They also commonly have abnormalities in the serotonin and dopamine transporter binding (Friederike et al., 2017). The hippocampus in this population is more significant, with episodic memory retrieval affected and learning and situational interpretation difficulties (Grainger et al., 2016). The prefrontal cortex is thickened, affecting executive functioning and leading to complex social and cognitive abnormalities (Breedlove & Watson, 2018).

Amygdala maturity differs in adolescence compared to adults. As the amygdala matures in adolescence, its overactivity increases emotional reactivity and stress levels (Breedlove & Watson, 2018). In addition to its maturity, the amygdala also decreases in size compared to an adult amygdala (Friederike et al., 2017). Its decreased size brings decreased emotional processing and expression (Friederike et al., 2017). If the amygdala is larger, the adolescent may have more maladaptive and aggressive behaviors (Friederike

et al., 2017). Furthermore, the size and maturity of the amygdala and prefrontal cortex influence the development and symptomology of social anxiety and HFA.

Social Anxiety and Autism Comorbidity

The prevalence of co-occurring psychiatric conditions in individuals with autism is around 70%, with 49% of adolescents with HFA having comorbid social anxiety (Briot et al., 2020). Regarding the comorbidity between social anxiety and HFA, it is essential to look at the overlapping characteristics of the two disorders. Comorbidity is defined as the presence of two or more disorders in an individual (American Psychiatric Association, 2013). Between social anxiety and HFA, researchers have sought to understand how the overlapping conditions affect one another and their presentation of symptoms.

Historically, social anxiety has been difficult to diagnose in individuals with autism due to the commonly shared symptoms of limited social communication, nervousness, difficulty adapting to changing plans, and lack of eye contact (Spain et al., 2018). Anxious individuals may create stereotyped routines and rituals to ease anxiety symptoms, as do individuals with autism (Kuusikko et al., 2008). Research has concluded that individuals with ASD and social anxiety have poorer social skills and reduced social motivation for social behaviors compared to neurotypical peers (Spain et al., 2018). Though inherent socio-communication impairments are present in this population, this impacts social experiences and contributes to the development of social anxiety (Spain et al., 2018). Additionally, socially anxious individuals may appear socially awkward, as do individuals with autism (Kuusikko et al., 2008). The anxiety that individuals with autism

face leading to social anxiety disorder are social skill impairment which may lead to a fear of an adverse reaction from others (Briot et al., 2020). This can promote negative beliefs and avoidant behaviors (Briot et al., 2020). The differential diagnosis between social anxiety and HFA is the presence of social skill deficits (Kuusikko et al., 2008). Individuals with HFA are known to have decreased social skills than individuals with social anxiety who avoid social situations due to the fear of judgment and may appear to have decreased social skills (American Psychiatric Association, 2013). If individuals had decreased social skills due to their cognitive abilities, they do not qualify for a primary diagnosis of a social anxiety disorder (Kuusikko et al., 2008).

Social Anxiety Assessment Measures

A licensed clinician conventionally administers two common psychometric properties to assess and diagnose pediatric social anxiety. The first assessment to be administered to children to assess social anxiety is the Social Anxiety Scale for Children Revised (SASC-R). The SASC-R determines social anxiety's effects on a child's social and emotional functioning (La Greca & Stone, 2018). Created by La Greca and Stone in 1993, it has been used to assess social anxiety in children for almost 30 years (La Greca & Stone, 2018). The SASC-R is a 22-item self-report measure that yields negative evaluation from peers, social avoidance, distress to new situations, and generalized avoidance and distress (La Greca & Stone, 2018). Results from the SASC-R will indicate the level of impairment the child may be experiencing in social situations and indicate the level of care a child may need to treat their symptoms.

Another psychometric assessment used to assess social anxiety in typical and atypical children is the Liebowitz Social Anxiety Scale for Children and Adolescents (LSAS-CA). The LSAS-CA is a clinician rating scale created to assess social phobia (Shachar et al., 2014). It is a 24-item test with two subscales of performance and avoidance (Shachar et al., 2014). The LSAS-CA yields performance anxiety, performance-avoidance, social anxiety, and social avoidance (Shachar et al., 2014). Results of the LSAS-CA indicate if the child or adolescent has moderate social phobia, marked social phobia, severe social phobia, or very severe social phobia (Shachar et al., 2014).

Treatments for Anxiety Disorders

Cognitive Behavioral Therapy

Treatment of anxiety disorders is typically accomplished through cognitive-behavioral therapies. CBT is conceptualized as a short-term, skills-focused treatment to alter maladaptive emotional responses by changing an individual's thoughts, behaviors, and emotions (Kaczkurkin & Foa, 2015). CBT teaches that once a person evaluates their thinking in a more realistic and adaptable way, they experience improvement in their emotional state and behavior (Beck, 2011). American psychiatrist Aaron T. Beck developed CBT after he concluded that cognition is the phenomenon of a person's perception and interpretation of their world influences, thought patterns, emotions, and behaviors (Beck, 2011). CBT has been proven effective for various mental health disorders but is commonly used for individuals with anxiety disorders, depressive disorders, post-traumatic stress disorders, and eating disorders (Kackurkin & Foa, 2015).

CBT aims to teach an individual a new way of thinking by consciously and systematically changing the emotional response to stimuli in their environment (Beck, 2011).

Regarding the utilization of CBT for high functioning adolescents with autism, the effectiveness of the therapy is dependent on an individual's level of insight into their symptoms (Wood et al., 2009). Once insight is established, CBT can effectively challenge the negative thoughts, behaviors, emotional responses an individual may have to stimuli in their environment (Wood et al., 2009). In acknowledgment of the high comorbidity of anxiety with autism, the use of CBT for this population has increased (Kose et al., 2018). Research has concluded that there is a high need to identify an evidence-based practice for this dual psychopathology (Kose et al., 2018). Significant research has been established supporting CBT and its effectiveness in reducing anxiety symptoms in individuals with autism (Kose et al., 2018). In addition, an effective cognitive-behavioral therapy found effective for the autism population is ERP.

Exposure and Response Prevention

ERP is a related CBT-based treatment for anxiety disorders. Traditionally, ERP is the gold-standard treatment for OCD; however, it has been proven effective in treating anxiety disorders such as social anxiety in individuals with autism (Hamatani et al., 2020). ERP is the most effective treatment for social anxiety disorder in neurotypical and atypical individuals (Zaboski et al., 2018). Law and Boisseau (2019) define ERP as a CBT therapy which helps individuals confront their fears related to their obsessional thoughts (exposure), and practice resisting performing compulsive behaviors to reduce

anxiety (compulsion). ERP is best explained as a therapy which helps an individual confront their fears through exposing them to their obsessional thoughts while practicing response prevention to assist them to resist performing safety behaviors commonly used to alleviate their anxiety (Law & Boisseau, 2019). The goal of ERP is to develop healthier belief patterns, increase tolerance, and reduce the anxieties of its users (Law & Boisseau, 2019). In its simplest form, exposure-based CBT for clinical anxiety includes guided, systemic, and repeated confrontation with the fear stimulus (Bolton & Perrin, 2008).

When we think of anxiety, we think of fear surrounding a future-oriented event, which causes individuals to perform safety behaviors, known as overt actions, to prevent, escape, or minimize anxiety (Blakey & Abramowitz, 2019). Stanley Rachman developed ERP in the 1970s, influenced by the idea of classical conditioning and operant conditioning (Reid et al., 2021). Findings of classical conditional and operant conditioning in modifying human behavior have influenced the development of CBT-based therapies such as ERP (Reid et al., 2021). ERP is achieved in two parts: ERP. Exposure is known as the idea of exposing oneself to thoughts, images, or objects that increase anxiety levels (Law & Boisseau, 2019). Response prevention is known as the idea of resisting to engage in safety behaviors that assist in alleviating anxiety (Law & Boisseau, 2019). Safety behaviors have been known to decrease anxiety in the short term, whereas resisting and sitting with the anxiety provides a patient with long-term effects (Law & Boisseau, 2019). Common safety behaviors individuals with anxiety exhibit include avoidance, rumination, and repeating themselves (Blakey & Abramowitz, 2019).

Dr. Victor Meyer concluded that anxiety naturally reduces in the body in the absence of safety behaviors and found that safety behaviors heighten and increase anxiety and avoidance behaviors in the long term (Reid et al., 2021).

ERP is used through procedures that prompt the extinction of behaviors through habituation (Blakey & Abramowitz, 2019). Habituation is the natural decrease of fear elicited by a stimulus through repeated exposure (Blakey & Abramowitz, 2019). ERP's efficiency depends on patient participation, ERP administration, and therapist efficiency (Law & Boisseau, 2019). The field of psychology has sought to fill the gap in the treatment of comorbid anxiety disorders in individuals with neurodevelopmental disabilities (Hamatani et al., 2020). Research reports that 50% of ERP users experience a reduction in anxiety to their feared stimuli by the end of the suggested 8-week treatment duration (Law & Boisseau, 2019). For individuals with autism, ERP is utilized through a modified approach emphasizing behavior reduction (Hamatani et al., 2020). Modified ERP is used as individuals with autism have decreased cognitive abilities to challenge negative thoughts surrounding their anxieties. The amygdala in neurotypical individuals' functions similarly to neurotypical individuals' brains as brain composition remains consistent for each population (Boyd et al., 2011). This is best explained by in terms of behavior, there are no functional differences between a neurotypical and atypical individual (Boyd et al., 2011). Research has shown that individuals with autism experience the same results of symptom reduction as neurotypical individuals if treatment is administered by a trained clinician who demonstrates an understanding of behavior reduction of anxiety symptoms in individuals with autism (Boyd et al., 2011).

Summary

Social anxiety is a common co-occurring diagnosis for high functioning adolescents with ASD. Given that anxiety, specifically social anxiety is a common co-occurring disorder with autism, research has been focused on treating anxiety disorders in the autism population. Neurologically, social anxiety affects neurotypical and atypical individuals alike. However, treatment for anxiety disorders is generally practiced through a modified behavioral approach given the cognitive impairments an individual with autism may exhibit. Research has shown that therapies such as ERP through a modified approach can reduce symptoms of social anxiety for adolescents with HFA. Awareness of clinicians for this therapy modality for this population has been increasing. The following section discusses the research methodology for my study.

Chapter 3: Research Method

Introduction

Researchers have sought to explore effective anxiety treatment modalities for the autism population; 49% of individuals with autism experience comorbid anxiety (Briot et al., 2020). Recent research has concluded that individuals with autism and anxiety disorders will receive clinically significant improvement of symptoms using a modified ERP approach (Hamatani et al., 2020). As previously mentioned, modified ERP is used for individuals with neurodevelopmental disorders who have decreased cognitive abilities but exhibit overt behaviors of anxiety (Boyd et al., 2011). Having gained a better understanding of clinicians who are trained in the administration of ERP for the autism population aided in the studies understanding of the effectiveness of the therapy delivery.

In this study, I investigated the use of modified ERP for high-functioning adolescents with autism and social anxiety from a clinician's perspective. The purpose of this study was to explore the delivery effectiveness of ERP for high-functioning adolescents with autism and social anxiety. I collected data through semi-structured interviews with clinicians regarding their experiences treating adolescents with HFA and comorbid social anxiety and then conducted thematic analysis of the data.

Research Design and Rationale

There is a lack of description for how ERP adaptation is experienced by trained clinicians. In this study, I examined clinicians' perspectives regarding the delivery and application of ERP for high-functioning adolescents with autism and social anxiety through semi structured interviews. I used a qualitative method to articulate and interpret

the phenomenon as opposed to a quantitative study. A thematic analysis research design was chosen to categorize and identify themes of the clinicians' perspective in the delivery and effectiveness of ERP for the target population. A thematic analysis allowed me to explore and identify themes described by clinicians (Nowell et al., 2017). I chose a semi-structured interview style to gain insight into the therapeutic process of the delivery of ERP for adolescents with HFA and social anxiety. This approach also allowed clinicians to provide additional information to discuss their clinical experience with the population (DeJonckheere & Vaughn, 2019). All other research design methods would not have been appropriate for this study as I would not have been able to explore clinicians' experiences and obtain themes regarding the effectiveness of ERP for adolescents with HFA and social anxiety.

Role of the Researcher

I served as the sole researcher in this study. My background includes being a predoctoral intern at a community mental health agency. At my site, I provided school-based prevention and early intervention services and individual therapy in the outpatient program. In the school-based program, I provided prevention and early intervention to children ages 5–17 with varying psychiatric presentations. In the outpatient program, I treated children ages 0–7 with moderate psychiatric disorders with services ranging from assessing, diagnosing, and providing appropriate interventions using a strength-based and integrative approach. Additionally, I have experience training in and using CBT, dialectical behavior therapy, and ERP therapeutic models for neurotypical and atypical children and adolescents.

My role and responsibilities for this research included creating interview protocols and recruitment protocols, developing interview questions, recruiting participants, conducting participant interviews, and performing data analysis (Jamshed, 2014). In this study, I did not have an established relationship with participants before recruitment or conducting interviews. Additionally, I was not employed at the sites where participants were recruited from. I managed bias by excluding participants I have worked with in a professional setting or with whom I have a personal relationship (Jamshed, 2014). Also, I did not obtain data from clinicians of clients I previously treated.

Methodology

Participant Selection Logic

Participants of this study included ERP clinicians who have experience in administering the therapy for high-functioning individuals with autism and social anxiety. Clinicians included licensed clinical psychologists, licensed clinical social workers, licensed marriage and family therapists, and licensed professional clinical counselors. Participants' professional practices ranged from private practice to outpatient programs. Clinicians who had training in the administration of ERP for high-functioning adolescents with autism and social anxiety were able to provide input on their methods of treatment. Additionally, participants were able to provide input on obtaining clinically significant improvement in clients and areas of improvement with the modified ERP approach. Within this population, I recruited participants from local ERP agencies in my area and Facebook groups for ERP providers. I recruited six providers to discuss their input on the application of modified ERP for the target population. The sample size was

chosen to support the studies depth case-oriented analysis and to provide textured information that supports the research question (Visileiou et al., 2018). Recruited participants were provided with and signed an informed consent form outlining their rights to participation in the study.

I obtained permission from the Walden University Institutional Review Board (IRB) with the approval number of 05-27-22-0951137 before recruiting participants. Participant recruitment occurred upon permissions being obtained. Upon receiving permission to recruit participants, I provided a letter to potential participants discussing the nature of the study, research questions, and participation requirements. Participation was voluntary, and only credentialed clinicians were eligible to participate in the study. Upon receiving participants' acceptance to participate in the study, they were contacted to schedule an interview at their convenience.

Instrumentation

Participants were interviewed using individual semi-structured interviews with researcher-developed questions. Interview questions for the study were designed based on qualitative data and literature related to the nature of the study. Before the interviews were conducted, participants were provided with formal information regarding the study, including its purpose, nature, research question, significance, identified gap in the literature, and goals (DeJonckheere & Vaughn, 2020). Additionally, participants were provided information regarding the researcher's role, the structure of the meeting, and the time allotted for interview completion. Upon confirmation of participants' understanding of the interview protocol, the interview portion of the meeting began. Interview questions

served the purpose of obtaining a better understanding of a clinician's perspective regarding the application of ERP for adolescents with HFA and social anxiety. The interviews questions used to gather data for this study are included in Appendix E.

Procedures For Recruitment, Participation, and Data Collection

To recruit participants for the study, I emailed my recruitment flyer to local ERP agencies that have licensed ERP clinicians who have experience in its administration for the target population. Additionally, I posted my recruitment flyer to an ERP Facebook group to attract ERP clinicians who have experience in its administration for the target population. All clinicians who wished to participate in the study were provided with my recruitment flyer, contact information, and informed consent document prior to their participation in the study.

Participants were guided through individual semi structured interviews with research questions that were approved by my committee. The researcher collected all data for data analysis. Individual semi structured interviews allowed me to have a general guide for how interviews would be conducted and provided space for the participants to openly discuss their experiences with each interview question (DeJonckheere & Vaughn, 2020). At the beginning of the interview, I collected demographic information about each participant, such as their name, credentials, and years of experience administering ERP for the target population. The meeting was digitally recorded for participants who agreed to participate in a Zoom interview. Zoom meetings were between 10 to 15 minutes in length, which provided clinicians with enough time to provide input to each interview question. Once the interviews were complete, participants were provided the opportunity

to debrief with the researcher about their experience in participating in the study. Once data were collected from Zoom meetings, data were transferred to an encrypted Microsoft Word document to ensure privacy and participant confidentiality. One month after data collection was complete, I followed up with all participants to discuss additional comments, questions, or concerns they had.

Data Analysis Plan

Data analysis began once all data were collected from participants. All data were stored in an encrypted Microsoft Word document upon data collection completion. Prior to beginning analyzing all data, participants' data were transferred to a qualitative data analysis software, Otter.ai. Audio recordings were transcribed using a transcription service, Otter.ai. General inductive thematic analysis procedures guided the data analysis process. The following six steps were followed to complete my thematic analysis: familiarization, coding, generating themes, reviewing themes, defining and naming themes, formal write-up (Nowell et al., 2017). In familiarization, I reviewed all video recordings and short answers submitted by participants to understand their responses clearly. With coding, I identified codes to describe the content of participants' responses. Next, I generated themes, patterns, and similarities of participants' responses to aid in my study's conclusion. Following identifying themes, I reviewed all themes to determine their accuracy. Once I determined that the themes were accurate, I named the themes reflecting an accurate representation of participants' experience with each interview question. I then wrote up a thematic analysis following the first five steps, including the research question, themes, and results.

Issues of Trustworthiness

This study implemented methods to increase trustworthiness. Reflexivity was accomplished by documenting methodological decisions and reflecting on participants' values and interests (Korstjens & Moser, 2018). I ensured credibility in my study through triangulation as I identified patterns in participants' responses (Korstjens & Moser, 2018). Dependability was established by identifying an outside person to review my research process and results (Korstjens & Moser, 2018). Confirmability was established by documenting each step of the data analysis process and checking in with my chair and second committee member (Korstjens & Moser, 2018).

Ethical Procedures

Ethical procedures included obtaining IRB permission, informed consent from all participants, and protecting participants' identities. Before, facilitating individual semi-structured interviews, I obtained IRB permission for my study. Ethical procedures additionally included obtaining informed consent for each participant. All participants were treated as human subject who had the right to confidentiality and the right to decline from participating in the study at any time. When analyzing my data, each participant was assigned a code identifier to protect their identity. Data that were obtained from the study was kept in an encrypted Microsoft Word document that only I will have access to.

Summary

In correlation with the purpose of the study, I used a qualitative thematical analysis to analyze the themes of clinicians' experience who administered ERP for high functioning adolescents with autism and social anxiety. I recruited six licensed clinicians

to participate in the study. All participates were respected ethically and provided consent prior to participating in the study. I created interview questions that explored clinicians' experiences with the target population. The following chapter discusses results obtained from individual semi structured interviews.

Chapter 4: Results

Introduction

In this thematic analysis, I aimed to explore the use of ERP for high-functioning adolescents with ASD and comorbid social anxiety. Additionally, I completed virtual semi-structured interviews with clinicians who have experience using ERP for adolescents with HFA and comorbid social anxiety. I sought to understand clinicians' experiences using a modified ERP approach focusing on behavioral manifestations of social anxiety for the target population. I explored the gap in ERP application modified for those with HFA from clinicians' perspectives, as it is known that 49% of adolescents with HFA have comorbid social anxiety (Briot et al., 2020). The findings of this study may contribute to increasing clinicians' awareness of comorbid anxiety conditions in the autism population. Findings of this study may additionally inform clinicians of behaviorally focused ERP for the target population while also informing on resources available to children with autism and social anxiety.

To address the research question, I completed thematic analysis of data collected from individual virtual semi-structured interviews with six clinicians who had experience using ERP for the target population. In this chapter, I discuss the data collection process, which includes the setting, research participant demographics, and how data were collected. I present the methodology used to analyze the collected data and identify themes. I also discuss evidence of trustworthiness and how it supports the thematic analysis. Lastly, I discuss the identified themes that address the research question.

Setting

The final participant sample size included six U.S.-licensed mental health clinicians. The six clinicians covered areas in two states, California, and Georgia. Clinicians included one licensed professional clinical counselor in California, two licensed marriage and family therapists in California, two licensed clinical social workers in California, and one licensed clinical social worker in Georgia. All clinicians were employed at various mental health organizations and locations and varied in years of experience in the field. Four clinicians worked at a nonprofit organization nationally known to treat OCD, anxiety disorders, and mood disorders. Two clinicians were employed at a private practice treating the target population. One participant was a member of an ERP Facebook group where the recruitment flyer was posted.

Demographics

Participants were identified by the order in which their interviews occurred: Participant 1 (P1), Participant 2 (P2), Participant 3 (P3), Participant 4 (P4), Participant 5 (P5), and Participant 6 (P6). All participants were female, and all held master of science degrees. Participants' ages ranged from 25–46 and they were currently working at an organization that delivered ERP for the target population. Clinicians ranged in number of years of experience using ERP compared to their years working in the field post-licensure. See Table 1 detailing the demographic information of all participants.

Table 1

Participant Demographics

	Age	Years administering ERP	Years' experience with adolescents	Years' experience working with children with autism
P1	27	4	3	3
P2	24	2.3	1.6	1
P3	28	2	3.5	3.5
P4	31	2.5	7	3
P5	46	16	20	15
P6	44	19	17	17

Note. All participants were female, all participants held master of science degrees, and all participants expressed a theoretical orientation of CBT.

Data Collection

In the beginning stages of the recruitment process, I intended to recruit 10 ERP clinicians who work with the target population; however, I was only able to recruit six ERP clinicians who work with the target population. Many clinicians expressed interest in participating in the study, but their experience was limited to working with the adult population. As a result, those potential participants did not meet criteria to participate in the study.

After six clinicians agreed to participate in the study, I emailed them an informed consent form with instructions to read, sign, and return via email. Clinicians agreed to complete individual semi-structured interviews virtually via Zoom. I followed the interview protocol outlined in Appendix D. During individual semi-structured interviews, I questioned clinicians in their understanding and perspectives on ERP use for adolescents with HFA and social anxiety. The duration of individual semi structured interviews ranged from 10 minutes to 15 minutes. Each semi-structured interview was

recorded via Zoom's recording software. Once all semi-structured interviews were recorded, I used a qualitative data analysis software to transcribe each interview. The transcription software used was Otter.ai. Once I completed the transcription of each semi-structured interview, the transcripts were saved to an encrypted Microsoft Word document prior to data analysis. Finally, I identified themes of clinicians' responses recorded in semi-structured interviews. Data analysis is described in the following section.

Data Analysis

Semi-structured interview data were analyzed using the thematic analysis process (Nowell et al., 2017). The interviews consisted of 11 questions (see Appendix E) created to address the research question. Once semi-structured interviews were transcribed using Otter.ai, themes were identified and organized from the qualitative data collected from the interviews. To analyze the data, I followed steps of completing a thematic analysis. First, I familiarized myself with the data and checked for accuracy of transcription by listening to each individual semi-structured interview before and after transcription by Otter.ai (Sundler et al 2019). Next, I identified codes in each interview that were relevant to each interview question (Sundler et al., 2019). While listening to the interviews, I noted a statement that was relevant to the interview question and generated a code (Sundler et al., 2019). Next, I took all codes from responses to each interview question and identified patterns and themes based on clinicians' responses (Sundler et al., 2019). Once this was completed, I reviewed the initial themes to ensure they were an accurate representation of the data (Sundler et al., 2019). Next, I defined and named each theme

(Sundler et al., 2019). Each theme was defined by its ability to tell the story in relation to the interview question. Finally, I wrote up the results of each interview question and how they connected to the research problem (Sundler et al., 2019). Using Otter.ai, I transcribed each interview individually and assigned a unique identifier to ensure the privacy and confidentiality of participants.

Evidence of Trustworthiness

Credibility

Credibility is a process used in qualitative research through examining data and data analysis to determine if the study is true and accurate (Patton, 1999). My primary method to determine credibility was participant selection criteria and attaining a suitable sample size of mental health clinicians who had experience using ERP for the target population. Credibility would not be ensured if participants selected did not have clinical experience using ERP for the target population. Although the sample size was smaller than expected, credibility is ensured as all participants had experience in using ERP for the target population.

Credibility was also ensured in the study by triangulation of data among the six participants with analysis of their responses (Korstjens & Moser, 2018). Triangulation in qualitative research refers to using multiple data sources to develop a clear understanding of the phenomenon (Carter et al., 2014). Lastly, member checking was used to ensure credibility and enhance trustworthiness, as participants were provided with the opportunity to review their semi-structured interviews with to ensure accuracy (Birt et al.,

2016). When participants were provided the opportunity to analyze their responses, all expressed that the transcriptions of their responses were accurate.

Transferability

Transferability in qualitative research is determined by the results of the study to be generalized to this population and others with support from the literature (Creswell, 2015). This study was designed to better understand the use of a modified ERP approach for adolescents with HFA and social anxiety from a clinician's perspective. As mentioned in Chapter 1, the assumptions of the study included that clinicians' perspectives would help begin to fill the gaps in describing and understanding best practices for effective use of ERP for anxiety in those with HFA. While the study's clinicians were not necessarily a representation of ERP clinicians who treat the target population, I provided a clear description of the phenomenon and experiences of ERP clinicians who treat the target population during the data collection phase of the study. Data collected from clinicians indicated that an adapted approach of ERP was successful for those with HFA. However, generalization cannot be supported without further research.

Dependability

Qualitative research is deemed dependable if findings are consistent and repeatable (Creswell, 2013). Researchers ensure that their study can be repeated using similar methodology and participant selection criteria and another researcher would come to the same conclusion (Creswell, 2013). In this study, I ensured dependability by having the dissertation committee complete an external audit of the study design and process (Korstjens & Moser, 2018). External audits require an outside researcher analyzing the

study design for data collection process, data analysis, and study results (Creswell, 2013). External audits are additionally completed in qualitative research to confirm the accuracy in the findings and that findings are consistent with the collected data (Creswell, 2013). The dissertation committee reviewed the participant recruitment procedures, interview questions, and study results to ensure that dependability was accomplished.

Confirmability

Confirmability is the final criterion of trustworthiness in qualitative research (Nowell et al., 2017). Confirmability ensures that a study's results are indicated through clinicians rather than by the qualitative researcher (Nowell et al., 2017). I ensured that clinicians' responses were accurately represented in the data before the data analysis process with member checking. Essentially, confirmability is related to my accuracy in reflecting the clinicians' experiences (Creswell, 2015).

Results

This study's research interview questions were designed to understand their perspectives of using a modified ERP approach for adolescents with HFA and comorbid social anxiety. Data collected from individual semi-structured interviews were based on the research problem of the lack of description existing for how ERP adaptation is experienced by trained clinicians. Appendix D shows the interview protocol, and Appendix E shows the interview questions all clinicians were asked during individual semi-structured interviews. All clinicians' responses were transcribed verbatim and coded according to the similarities described by all clinicians. Themes in the study were identified based on ERP clinicians' experiences of the effects and challenges of a

modified ERP approach for the target population. Table 2 shows the themes found based on each interview question. Interview Questions 1–4 outline descriptions of the clinicians' practice and experience while Questions 5–11 outline themes generated from the data.

Table 2

Review of Participant Information and Major Themes From the Data

Interview question	Responses/Themes (participants)
What theoretical orientation do you operate under?	Cognitive behavioral therapy (P6) Psychodynamic theory (P2)
How many years of experience do you have administering ERP?	Early career clinician (P4) Advanced clinician (P2)
How many years of experience do you have working with adolescents?	Limited experience (P3) Advanced experience (P3)
How many years of experience do you have working with individuals with autism with an identified anxiety disorder?	Moderate experience with the target population (P6)
Tell me about your viewpoint regarding the treatment of social anxiety being similar for neurotypical and atypical adolescents.	Experience similar negative thoughts (P4) Repetition required for concept sticking (P4) Symptomology similarities with neurotypical and atypical teens (P2)
Explain how ERP benefitted your client(s) with autism and social anxiety.	Increased confidence (P6) Increased social skills (P5)
In your experience, have a client(s) benefitted from a modified CBT approach such as focusing on outward behaviors of social anxiety aside from the cognitive component?	Assess cognitive abilities (P6)
What limitations did you observe in your client(s) with autism in treatment?	Need for social skills training (P3) Rapport building (P3) Rigidity (P2)
Did your client(s) experience clinically significant improvements observed by their SASC-R and LSAS_CA scores during treatment?	Mild improvement (P6)
Before your client(s) were referred to ERP, what treatment did they receive to treat their symptoms?	Applied behavioral analysis (P3) Psychotherapy (P3) School counseling (P2)
How likely are you to recommend ERP for high functioning individuals with autism and social anxiety?	Highly recommended (P6)

Participant Information Descriptors

Interview Question 1 asked: What theoretical orientation do you operate under? The first participant descriptor associated with this question included the following: (a) CBT and (b) psychodynamic theory. This is the first of many questions asked to obtain basic information about clinicians' experience working with the target population. This question provided insight into clinicians' therapeutic approaches when working with the target population. All clinicians stated that they utilize a cognitive-behavioral approach as ERP is therapy under the cognitive-behavioral model. However, P1 stated that they at times incorporate psychodynamic theories when appropriate to better understand the experience clients have with the sources of their anxiety.

Interview Question 2 asked How many years of experience do you have administering ERP? The second participant descriptor associated with this question include: (a) early career clinician and (b) advanced clinician. This question provided insight into each clinician's years of experience in administering ERP. The following themes identified from this question were "early-career clinicians" and "advanced clinicians". Early career clinicians such as P1, P2, P3, and P4 fell into this category as they earned 2-4 years' experience administering ERP. Compared to P5 and P6, who have 16-19 years' experience administering ERP. It was not specified whether ERP was administered to the target population. Instead, it intends to understand clinicians' comfort in delivering the therapy for OCD and anxiety disorders for all populations. P6 was the only clinician whose clinical experience is limited to ERP, whereas all other clinicians obtained experience utilizing other therapeutic approaches in addition to ERP.

Interview Question 3 asked: How many years of experience do you have working with adolescents? The third participant descriptor associated with this question include: (a) limited experience and (b) advanced experience. This question allowed clinicians to share their experience working with the adolescent population. Responses included but were not limited to experience working with neurotypical or atypical adolescents. Based on clinicians' responses, the "limited experience" included clinicians with 1.5 years to 3.5 years of experience working with the adolescent population. Compared to "advanced clinicians", which included working with adolescents for 7-20 years. P1 and P2 shared that they have experience working with adolescents and adults compared to all other clinicians whose clinical experience is limited to working with the adolescent population.

Interview Question 4 asked: How many years of experience do you have working with individuals with autism with an identified anxiety disorder? The final participant descriptor associated with this question include: moderate experience with the target population. This question allowed clinicians to share their clinical experience in working with individuals with autism with an identified anxiety disorder. P6 was the only clinician whose clinical experience is limited to working with individuals with autism with an identified anxiety disorder. P1 shared that though they have three years of experience, within those three years, their caseload was a mixture of autism and neurotypical clients within those three years. P3 was the only clinician who began their work with individuals with autism with an identified anxiety disorder within the past year.

All clinicians in this study operated under a CBT orientation. Clinicians ranged in their clinical experience utilizing ERP. Half of the clinicians had 2-4 years of experience

administering ERP compared to 2 clinicians who had 16-19 years of experience. The clinicians who had limited experience utilizing ERP contributed this to their recent licensure in the field compared to the other 2 clinicians who had 16+ years of postgraduate clinical experience. Half of the clinicians expressed they had 1.5 years to 3.5 years working with adolescents. One participant stated that their limited experience is contributed to clinical work with the adult population in their career. Advanced clinicians in this study had 7-20 years of experience working with the adolescent population. Early career clinicians mentioned that they had 1-3 years of experience working with individuals with autism with an identified anxiety disorder. This was compared to advanced clinicians who had 15-17 years of experience working with individuals with autism with an identified anxiety disorder.

Major Themes From the Data

The following section will discuss major themes identified by clinicians' responses to each interview question.

Interview Question 5 asked: Tell me about your viewpoint regarding the treatment of social anxiety being similar to neurotypical and atypical adolescents. The following themes that emerged from this question include: (a) experience similar negative thoughts, (b) repetition required for concept sticking, and (c) similar symptomology. This question allowed clinicians to share the similarities and challenges in treating social anxiety in neurotypical and atypical adolescents. The theme emerged that both groups *experience similar negative thoughts* associated with core fears. All clinicians shared that their client's experienced negative thoughts associated with their social anxiety that aided in

their performance of avoidant behaviors in social settings. Clinicians' responses also identified a theme involving the challenges with the treatment of social anxiety for neurotypical and atypical adolescents as *repetition required for concept sticking*. P1, P2, P5, and P6 shared that their clients with autism commonly needed to complete the exposure multiple times compared to neurotypical clients. They needed more time to understand ERP concepts and how to perform exposures correctly. P6 mentioned that "I found myself needing to repeat concepts repeatedly." The final theme associated with similarities clinicians observed in treating social anxiety with neurotypical and atypical adolescents was *symptomology similarities with neurotypical and atypical teens*. Symptomology for this question was classified as avoidance behaviors, and core fears were similar for neurotypical and atypical adolescents. P5 shared that "it is genuinely nice to know that, though their brains operate differently, adolescents with autism share the same fears as their neurotypical peers."

Interview Question 6 asked: Explain how ERP benefitted your client(s) with autism and social anxiety. The following themes that emerged from this question include: (a) increased confidence and (b) increased use of social skills. This question allowed clinicians to share their experience of how ERP benefitted their clients with high-functioning autism and comorbid social anxiety. The first theme of *increased confidence* was identified as all clinicians shared that their clients increased their confidence in their ability to cope with their anxiety independently, advocate for themselves and engage in social outings. Clinicians additionally mentioned that their clients felt empowered to engage in social settings as they felt prepared to manage their anxiety. The second theme

identified of *increased social skills* was identified as all clinicians shared that their client's learned how to utilize their social skills in social settings related to their decreased use of avoidance behaviors previously exhibited before treatment.

Interview Question 7 asked: In your experience, have the client(s) benefitted from a modified CBT approach such as focusing on outward behaviors of social anxiety aside from the cognitive component? The theme that emerged from this question was: benefits are connected to assessment of cognitive abilities. This question provided space for clinicians' perspectives on the effectiveness of a modified CBT approach for the target population. The theme of *benefits are connected to assessment of cognitive abilities* relates to the common symptoms of autism where a person may experience decreased cognitive abilities (American Psychiatric Association, 2013). All clinicians spoke to the notion that if it is determined that a client does not possess the cognitive abilities to challenge negative thoughts, it is best to use clinical judgment to transition to a modified approach to address overt behaviors associated with social anxiety. Research has suggested that individuals with autism are subject to experience decreased cognitive abilities compared to their neurotypical peers (de Giambattista et al., 2019). The statement fills the gap identified in this study regarding using a modified ERP for high functioning adolescents with autism and comorbid social anxiety.

Interview Question 8 asked: What limitations did you observe in your client(s) with autism in treatment? The common themes that emerged from this question include: (a) need for social skills training, (b) rapport building, and (c) rigidity. This question addressed the limitations clinicians observed that their client's with autism experienced in

treatment. The theme of *need for social skills training* was identified from P1, P2, and P5's thoughts that lack of social skills training is connected to the development of social anxiety in the autism population. P1 mentioned, "the use of exposures in connection with social skills training gave my client the ability to understand better social norms which assisted in their ability to cope with their anxiety." P5 reported that "it is common for individuals with autism to lack social skills that I believe are connected to their social anxiety development." The second theme of *rapport-building* was identified by P1, P2, P4, P5, and P6, who equally expressed that it is difficult to gain the trust of individuals with autism, and treatment effectiveness is connected to the rapport that is established between the client and clinician. The last theme identified, *rigidity*, was identified by P1, P4, and P5, who equally expressed that their clients were rigid when performing exposures because it was outside of social contexts they identified with growing up. P5 stated, "I had a client who we had to remind him what the social norm was daily because he was resistant to perform the exposure because he thought we were teaching him different social norms."

Interview Question 9 asked: Did your client(s) experience clinically significant improvements observed by their SASC-R and LSAS_CA scores during treatment? The common theme associated with this question was *mild improvement*. This question examined clinically significant improvements clinicians' clients received at the end of the ERP treatment. All clinicians shared the common theme that their clients received clinically significant improvements in their social anxiety symptoms as observed by their SASC_R and LSAS_CA scores. P2 mentioned that her clients received mild reduction in

symptoms related to their enrollment in a non-autism-specific program and their ERP agency. This was related to the theme of "repetition for concept sticking" described in interview question five regarding clinicians' perspectives on their viewpoint of benefits and challenges of utilizing ERP for the target population. This question additionally provided insight into the value of utilizing outcomes data to monitor a client's progress while in treatment. Outcomes data serve to monitor the effectiveness of treatment for a target population. Clinicians' use of outcomes data to monitor how effective treatment was for their client provided them with the chance to accurately measure their clients' progress.

Interview Question 10 asked: Before your client(s) were referred to ERP, what treatment did they receive to treat their symptoms? Common themes that emerged from this question included: (a) applied behavioral analysis and (b) psychotherapy. This question allowed clinicians to discuss treatments their clients received before their admission to ERP. P2, P3, and P5 stated that most of their client's received ABA therapy before their ERP admission. P3 mentioned that "I had some clients who received talk therapy paired with ABA." P5 reported that when completing collateral calls with previous providers, it was common for providers to be unaware that ERP was an appropriate therapeutic approach for the population. A shared theme across all clinicians was they had some clients receive individual psychotherapy services to address their symptoms of autism or anxiety. P1 stated, "I observed clients who received multiple services before ERP."

Interview Question 11 asked: How likely are you to recommend ERP for high functioning individuals with autism and social anxiety? The following theme that was identified from this question was *highly recommended for the target population*. This question explored clinicians' thoughts regarding the recommendation for ERP for high functioning adolescents with autism and social anxiety. Specifically, P6 stated, "I am very likely to, although I know it is not the only trick in the book. I feel like we often depend too much on that and forget to include other modalities, especially when considering comorbidities". All clinicians additionally supported the use of ERP for the target population as they observed their clients received clinically significant improvements of their symptoms.

To answer the research question through the interview questions the researcher designed, as represented in Appendix E, major themes were identified by the six clinicians who participated in individual semi-structured interviews. Overall, the clinicians shared similar experiences in treating the target population. Additionally, all clinicians spoke on the effectiveness of ERP for adolescents with HFA and comorbid social anxiety being dependent on the client's cognitive abilities and clinicians' awareness of how to treat behavioral manifestations of social anxiety so the client can make clinically significant improvements in their level of functioning with their co-occurring diagnoses.

Core Themes

The core overarching themes were identified by themes identified by clinicians' responses to similar interview questions. Based on the thematic analysis applied to the six

interviews, four key findings were identified from the data collected: (a) professional recommendations, (b) increased confidence in social settings for clients with HFA, (c) modified ERP effectiveness incorporating repetition, and (d) treatment interfering behaviors.

Professional recommendations were the first identified core theme developed from clinicians' responses to interview questions 10 and 11. Interview question 10 was, before your client(s) were referred to ERP, what treatment did they receive to treat their symptoms? The themes generated were ABA and psychotherapy. Question 11 asked, how likely are you to recommend ERP for high functioning individuals with autism and social anxiety? All clinicians agreed that they would highly recommend ERP for the target population with a few identified stipulations. In sum, P6 suggested that clinicians need to demonstrate the ability to apply other modalities in therapy to suit the client's needs. Additionally, clinicians highlighted that it was common for previous providers of clients to be not aware of ERP as an effective treatment for anxiety disorders in the autism population. clinicians P1 and P6 shared that they wished for providers to be aware of comorbid conditions and anxiety-related treatments effective for the population outside the norm.

The second core theme identified by narratives of clinicians' responses was "increasing confidence in social settings". This theme was generated by responses to interview questions six and seven. Based on responses from interview question six, clinicians demonstrated they developed increased confidence to cope with their anxiety, disengage from their use of avoidance behaviors, and engage in social settings.

Additionally, learning social skills in connection to ERP as P1 shared that advanced clients' abilities to understand social concepts and skills, which alleviated their anxiety. Lastly, clinicians reported that clients felt a sense of empowerment from overcoming their core fears and engaging in social activities they once feared.

The third core theme identified by narratives of clinicians' responses was, "modified ERP effectiveness incorporating repetition". This theme was identified from responses to interview questions five, seven, and nine. Interview question five stated, tell me about your viewpoint regarding social anxiety treatment being similar to neurotypical and atypical adolescents. Interview question seven stated, in your experience, have the client(s) benefitted from a modified CBT approach, focusing on outward social anxiety behaviors aside from the cognitive component? Along with interview question nine which stated, did your client(s) experience clinically significant improvements observed by their SASC-R and LSAS_CA scores during treatment. These three interview questions spoke to the gap in the literature that was identified in terms of a modified ERP approach being effective for the target population. All clinicians shared that their client's received clinically significant improvements based on their SASC_R and LSAS_CA scores during treatment.

Additionally, all clinicians observed that their client improved their ability to cope with their social anxiety using a modified ERP approach. Responses to interview question five generated a theme of "repetition required for concept sticking", identified by P1, P2, P5, and P6. However, it was determined that repetition and concept sticking

contributed to the client's achieving clinically significant improvements utilizing a modified ERP approach.

The final core theme identified from the data collected was treatment-interfering behaviors. This theme was generated from responses to interview questions seven and eight. Interview question seven stated, in your experience, have the client(s) benefitted from a modified CBT approach such as focusing on outward social anxiety behaviors aside from the cognitive component? As interview question eight stated, what limitations did you observe in your client(s) with autism in treatment? Themes generated from these responses included rigidity and assessing cognitive abilities. All clinicians discussed challenging clients who did not demonstrate the ability to challenge negative thoughts, which prompted their use to utilize a modified approach so clients could achieve the therapeutic benefit of being delivered ERP. Additionally, P1, P4, and P5 shared a final treatment interfering behavior of rigidity as it interfered with the effectiveness of the exposure, and clients were not able to see social concepts from a different point of view for the exposure. As a result, treatment was often prolonged, and there was a need for repetition required for concept sticking.

Summary

This research study was intended to gain ERP clinicians' perspective on utilizing a modified ERP approach for adolescents with HFA and comorbid social anxiety. I completed individual semi-structured interviews with six ERP clinicians who were provided the opportunity to discuss their experience treating the target population with ERP. I identified 11 questions to ask each participant to discuss the research problem

pertaining to the lack of description for how ERP adaptation is experienced by trained clinicians. A qualitative thematic approach was utilized to analyze themes described by ERP clinicians who treat the target population. Additionally, the thematic analysis provided me with the opportunity to understand clinicians' experience utilizing a modified ERP approach for the target population. The thematic analysis results found that clinicians suggest ERP is effective for adolescents with HFA and social anxiety dependent on the clinician's awareness of assessing the need and application of a modified approach for clients to achieve clinically significant improvement in symptoms and functioning. The following chapter will discuss the interpretation of the findings, limitations of the study, recommendations, and social change implications.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

In this study, I used thematic analysis to explore the use of ERP for adolescents with HFA and comorbid social anxiety. The study was conducted through a qualitative thematic analysis; the experience of adolescents with autism and social anxiety is an intrapersonal process, and the intervention process will differ for everyone. The theories that grounded this study were social motivation theory and TOM, as they speak to the cognitive and social impairments and abilities of individuals with autism. There are no developed descriptions of how to perform ERP for the target population of those with HFA, though 70% of individuals with autism have an identified anxiety disorder and 49% meet the criteria for social anxiety (Briot et al., 2020).

I completed a qualitative thematic analysis of data collected from six ERP clinicians who had experience treating the target population. A qualitative thematic analysis was chosen to explore the identified research problem of ERP application modified for those with HFA from a clinician's perspective. Data collected from individual semi-structured interviews revealed the following four core themes: (a) professional recommendations, (b) increased confidence in social settings for clients with HFA, (c) modified ERP effectiveness incorporating repetition, and (d) treatment interfering behaviors. Clinicians shared a common experience of their delivery of ERP for adolescents with HFA and comorbid social anxiety and how the therapy is effective for the target population. This chapter will provide insight into the interpretation of the findings, limitations, recommendations, and social implications of the study.

Interpretation of the Findings

The significant findings of this study are provided in respect to the research question identified in Chapter 1 and the research reviewed in Chapter 2. In my analysis of the data, I found that clinicians support the use of ERP for adolescents with HFA and social anxiety. These results address the research problem which was a lack of a description for ERP adaptation experienced by trained clinicians. Research into the use of ERP with individuals with autism supports the use of the therapy for the population (Hamatani et al., 2020). Most research supports ERP use but raises awareness that not all individuals with autism have the cognitive abilities to challenge their thoughts, which is a key competency required for ERP (de Giambattista et al., 2019). In this study, outcomes answered the research question of understanding the lack of description existing for how ERP adaptation is and experience by trained clinicians.

ERP is known as the gold-standard treatment for OCD and has also effectively treated anxiety disorders in both neurotypical and atypical individuals. Additionally, it is known that ERP is dependent on patient participation, ERP administration, and therapist efficiency (Law & Boisseau, 2019). Clinicians who participated in this study all shared that they would recommend ERP for the target population. This recommendation was related to clinicians' experiences using ERP for the target population and observing clinically significant improvements when targeting social anxiety behavioral manifestations. Using a behavioral modification approach to assign exposures to clients did not improve their ability to learn to cope with their anxieties. This relates to the knowledge that high-functioning adolescents with autism have decreased cognitive

abilities to challenge negative thoughts (de Giambattista et al., 2019). A common theme identified by clinicians' experiences was that they observed increased confidence in their clients and engagement in social activities while applying social skills they learned to use while in treatment. These findings support research indicating that 50% of ERP users achieve clinically significant results (Law & Boisseau, 2019). A modified ERP approach is especially effective for individuals with autism who have decreased cognitive abilities to challenge negative thoughts in connection to their anxieties (Hamatani et al., 2020). Results of this study fill the research gap in understanding regarding ERP modified for adolescents with HFA and social anxiety and contribute to understanding of the application of ERP for adolescents with HFA and comorbid social anxiety from a clinician perspective.

This study was grounded on the theoretical concepts of social motivation theory and TOM. Social motivation theory suggests that due to impairments in the brain's reward circuity in children with autism, there is a reduction in their motivation for social interaction (Chevallier et al., 2012). Additionally, TOM is defined as a person's mental capacity to understand others' feelings and behaviors (Conway et al., 2019). Social motivation theory and TOM connect to the research problem in that modified therapy approaches can be effective so long as a clinician is trained in their application. Current findings in the literature suggest a social–communication impairment is increased in individuals with autism compared to neurotypical individuals, which impacts their ability to engage in social experiences and contributes to the development of social anxiety (Spain et al., 2018). Impairment in the use of social skills was identified in the data;

participating clinicians observed their clients developing symptoms of anxiety related to their lack of awareness and use of social skills. The literature also suggests that individuals with ASD and social anxiety have poorer social skills and reduced social motivation for social behaviors compared to neurotypical peers (Spain et al., 2018). This study's results support research such findings.

Outcome measures are used in psychology to assess symptom improvement and other areas of improvement. Data collected from the participating clinicians suggest that their clients achieved clinically significant improvement in symptoms as observed by their SASC-R and LSAS_CA scores. The SASC-R is a 22-item self-report measure that yields negative evaluation from peers, social avoidance, distress to new situations, and generalized avoidance and distress (La Greca & Stone, 2018). The LSAS-CA is a clinician rating scale created to assess social anxiety (Shachar et al., 2014). Clinicians did not express difficulty in administering the SASC-R and LSAS_CA for their clients, which provided them with the ability to accurately measure progress in connection to the intended purpose of using these psychometric tools. Licensed clinicians trained in using these psychometric tools for the target population validated the findings that adolescents with HFA and comorbid social anxiety do achieve clinically significant improvement in symptoms during treatment.

Clinicians in this study shared their thoughts concerning the number of therapies clients had participated in before ERP services. Clinicians observed that providers in the field seem open to referring clients for ERP in the hopes the treatment can be more effective. Efforts have been made to fill the gap in the treatment of comorbid anxiety

disorders in individuals with neurodevelopmental disabilities through offering training and professional development opportunities (Hamatani et al., 2020). Clinicians in this study expressed that their clients did not achieve clinically significant improvements in their social anxiety in other therapies; thus, the results of this study support current literature findings on ERP's effectiveness for the target population.

Limitations of the Study

I used qualitative strategies proven to be trustworthy, credible, dependable, transferable, and confirmable to address the study limitations. As predicted in Chapter 1, the study's limitations included the limited number of clinicians accessed who had been trained in ERP for high-functioning adolescents with autism and comorbid social anxiety. The sample size of six clinicians may not adequately represent the larger population of clinicians who have experience delivering ERP for the target population.

Recommendations

The findings of this study provide additional data on barriers clinicians experience in delivering ERP and barriers observed in mental health clinicians' awareness of anxiety disorders present in the autism population. Based on the experiences of ERP clinicians' perspectives on ERP adaptation for the target population, as evidenced by the results of the present qualitative study, the following recommendations were identified. All recommendations are given with respect to clinicians' training and experience working with the child, adolescent, and autism community who meet the criteria for an anxiety disorder.

The first recommendation includes research on mental health organizations training on autism symptomology and common comorbidities. Clinicians of this study shared a common experience of receiving clients on their caseloads who saw two or more providers who did not identify or address their anxiety symptoms. Participants also noted that previous clinicians did not have training and experience working with individuals with autism, which led to their difficulty identifying a comorbid mental health condition.

A second recommendation includes additional research on long-term effects of using a behavioral modification approach to treating social anxiety in the target population. ASD is defined as a neurodevelopmental disorder in which a person experiences persistent deficits in social communication and social interaction across multiple contexts, restricted, repetitive patterns of behavior, interests, and social interactions (American Psychological Association, 2013). Additionally, the Centers for Disease Control and Prevention (2020) additionally stated that 1 in 51 children are diagnosed with autism. With this knowledge, clinicians who specialize in treating mental health disorders in the child and adolescent population are encouraged to advance their knowledge of ASD symptomology.

The final recommendation includes research on barriers ERP clinicians experience in working with individuals with autism who do not obtain the cognitive abilities to challenge their negative thoughts. As stated in chapter 2, high functioning individuals with autism differ in their cognitive awareness (de Giambattista et al., 2019). ERP allows individuals to confront their fears related to their obsessional thoughts (exposure) and practice resisting performing compulsive behaviors to reduce anxiety

(Law & Boisseau, 2019). However, high functioning individuals may experience difficulty challenging obsessional thoughts they may have related to their social anxiety. In this case, clinicians need to be aware of how to modify treatment to address behavioral manifestations of ERP for clients to achieve clinically significant improvements in their SASC-R and LSAS_CA scores and attain a better quality of life. Lastly, I intended for the nature of the study to contribute to a research study collecting detail to the degree that a framework could be constructed.

Implications

Social implications of this study can support adolescents with autism and social anxiety to be provided the appropriate mental health care needed to address their symptoms. The social implications of this study add to the field of autism and anxiety treatment for mental health clinicians who work with either population. This study provided mental health clinicians, specifically ERP providers, a better understanding of the effectiveness of a modified ERP approach for high functioning adolescents with autism and comorbid social anxiety. This knowledge can influence current and aspiring ERP clinicians to advance their knowledge on how to adapt treatment to treat behavioral manifestations of social anxiety for the target population. As social anxiety is present in 49% of individuals with autism, mental health providers are encouraged to be aware of symptoms that may overlap with traditional symptoms of autism (Kuusikko et al., 2008). In mental health organizations, measures are encouraged to be established to provide training on autism diagnosis and common comorbid conditions. Additionally, ERP providers are encouraged to expand their professional development for ERP to ensure

successful therapeutic outcomes for high functioning individuals with autism and identified anxiety by utilizing a modified ERP approach.

This research filled the gap in understanding the effects and benefits of ERP modified for adolescents with HFA and social anxiety. The study also provided in-depth information on the lack of description of how ERP adaptation is experienced by trained clinicians. The findings of this study and future studies related to this topic can impact positive social change by bringing awareness of comorbid anxiety disorders within in autism population. Social change can also occur through consultation of ERP providers with non-ERP providers seeking help with treating their clients. Doing so may minimize clients' transfer to multiple clinicians before they arrive at the appropriate agency and clinician to address their needs.

Conclusions

In this study, I explored the potential benefits of ERP for high functioning adolescents with autism and comorbid social anxiety. This qualitative study aimed to understand how a clinician describes the delivery of ERP for high functioning ASD and social anxiety. This was accomplished through completing individual semi-structured interviews with six ERP clinicians who have experience delivering the therapy for the target population. As current literature has suggested, ERP is utilized for individuals with anxiety disorders as it teaches them to sit with their anxiety rather than act on it. The gap that was addressed was ERP application modified for those with HFA from a clinician's perspective.

Clinicians of this study spoke about the clinically significant improvements their clients received as observed by their SASC_R and LSAS_CA scores through a modified ERP approach. This study also suggests positive social change implications for training for clinicians and resources available for individuals with autism while also shedding light on the prevalence of comorbid anxiety disorders in the population. Lastly, the researcher hopes that the implications of this study encourage current and aspiring ERP clinicians to enhance their knowledge of a modified ERP approach for individuals with autism, so they are provided with the same opportunity to achieve clinically significant improvements as their neurotypical peers.

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Appendix A: Certificate of Completion

CITI PROGRAM

Completion Date 06-Apr-2022
Expiration Date N/A
Record ID 48263591

This is to certify that:

Elisha Jones

Has completed the following CITI Program course:

Not valid for renewal of certification through CME.

Student's
(Curriculum Group)
Doctoral Student Researchers
(Course Learner Group)
1 - Basic Course
(Stage)

Under requirements set by:

Walden University

CITI
Collaborative Institutional Training Initiative

Verify at www.citiprogram.org/verify/?w9752804b-b7e4-41a1-8dfb-8e47bf6f500d-48263591

Appendix B: Recruitment Post

Are you a clinician who has experience utilizing ERP for high functioning adolescents with autism and social anxiety?

My name is Elisha Jones, and I am a doctoral candidate at Walden University in the Ph.D. in Clinical Psychology program. I am conducting my dissertation research study on ERP utilization for high functioning adolescents with autism and social anxiety from a clinician's perspective. My study aims to understand the use and benefits of modified ERP application from a clinician's perspective, as anxiety disorders are the #1 psychiatric comorbidity with autism. To participate in my study, I am seeking 5-10 clinicians who have utilized ERP for high functioning adolescents with autism and social anxiety. This study will involve completing one individual 20–30-minute semi-structured interview conducted via Zoom.

This study is approved by the Institutional Review Board (IRB) at Walden University. Please feel free to share this post if you know any clinicians who meet the criteria to participate in the study.

Thank you!

Appendix C: Recruitment Protocol

Purpose: This serves as the Recruitment Protocol to be used in the participant recruitment for the study titled: Exposure and Response Prevention for High Functioning Adolescents with Autism and Social Anxiety.

1. Comprise a list of ERP Facebook groups for ERP mental health professionals.
    a. Child Therapists Using Exposure-Based CBT for Anxiety and OCD Treatment
    b. OCD/Anxiety/BFRB Specialists
2. Email admin of the ERP Facebook groups to request permission to recruit participants for the study through their page.
3. Upon receiving admin permission, post their recruitment post outlined in Appendix C.
4. Once participants email the researcher, the researcher will respond by including more details, a consent form, and voluntary participation.
5. Request that participants complete the following tasks once they agree to participate in the study:
    a. Sign the consent form and return it via email.
    b. Provide the email they prefer to receive the interview Zoom link.
    c. Identify a day and time that works best in their schedule to complete an individual semi-structured interview.
6. Send a confirmation email that includes:
    a. Thanking them for participating in the study.

b. The time selected for the individual semi-structured interview.

c. How to contact the researcher with any questions or concerns.

7. A reminder email will be sent to the participant 24 hrs before the scheduled interview.

Appendix D: Interview Protocol

Purpose: This serves as the Interview Protocol used for the semi-structured interviews completed by participants for the study: Exposure and Response Prevention for High Functioning Adolescents with Autism and Social Anxiety.

Methodology:

1. Introduce myself.

2. Thank the participant for scheduling time to participate in my study.

3. Review the purpose of the study for the participant.

4. Review the consent form with the participant and discuss

- Confidentiality of their responses
- The voluntary nature of the study and their ability to withdraw or not respond to a question at any time.
- The elapsed time for the interview.
- Remind the participant that interviews will be audio recorded for transcription purposes

5. Once all interviews were completed, responses will be saved on a password-protected Microsoft Word document and then uploaded to.Otter.ai to transcribe each interview.

7. Redact all identifying participant information before moving on to validation through an external audit.

Appendix E: Interview Questions

This research explored the application and delivery of ERP modified for those with HFA from a clinician's perspective from the following interview questions presented in the study:

Interview Question 1: What theoretical orientation do you operate under?

Interview Question 2: How many years of experience do you have administering ERP?

Interview Question 3: How many years of experience do you have working with adolescents?

Interview Question 4: How many years of experience do you have working with individuals with autism with an identified anxiety disorder?

Interview Question 5: Tell me about your viewpoint regarding the treatment of social anxiety being similar to neurotypical and atypical adolescents.

Interview Question 6: Explain how ERP benefitted your client(s) with autism and social anxiety.

Interview Question 7: In your experience, have a client(s) benefitted from a modified CBT approach such as focusing on outward behaviors of social anxiety aside from the cognitive component?

Interview Question 8: What limitations did you observe in your client(s) with autism in treatment?

Interview Question 9: Did your client(s) experience clinically significant improvements observed by their SASC-R and LSAS_CA scores during treatment.

Interview Question 10: Before your client(s) were referred to ERP, what treatment did they receive to treat their symptoms?

Interview Question 11: How likely are you to recommend ERP for high functioning individuals with autism and social anxiety?