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Social anxiety and self-concept in children with epilepsy: A pilot intervention study

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ABSTRACT

Purpose: The purpose of this study was to assess the impact of a cognitive behavioral therapy (CBT) anxiety intervention on social phobia, social skill development, and self-concept.
Method: Fifteen children with epilepsy and a primary anxiety disorder participated in a CBT intervention for 12 weeks plus a 3-month follow-up visit. Children were assessed at baseline, week 7, week 12, and 3 months post treatment to measure changes in social phobia using the Screen for Child Anxiety Related Emotional Disorders (SCARED). Self-concept was also assessed by using the Piers-Harris Children's Self-Concept Scale II (Piers-Harris 2).
Results: There was a significant reduction in symptoms of social phobia and improved self-concept at the end of the 12-week intervention and at the 3 month follow-up. Repeated measures ANOVA's of child ratings revealed significant change over time on the SCARED-Social Phobia/Social Anxiety subscale score ($p = 0.024$). In terms of self-concept, significant change over time was detected on the Piers-Harris 2-Total score ($p = 0.015$) and several subscale scores of Piers-Harris 2, including: Physical Appearance and Attributes ($p = 0.016$), Freedom from Anxiety ($p = 0.005$), and Popularity ($p = 0.003$).
Conclusion: This pilot investigation utilized an evidenced based CBT intervention to reduce symptoms of social phobia, which in turn provided a vehicle to address specific social skills improving self-concept in children with epilepsy.

1. Introduction

Research has demonstrated that children with epilepsy have more emotional, social, behavioral, and academic problems than their healthy peers.[1–5] Additionally, adults whose seizures began in childhood have poor long-term social outcomes.[6–8] There are a number of studies that have reported social skills deficits, peer difficulties, and decreased social competence among children with epilepsy (for a review see 9). Researchers have begun to examine factors related to social skills problems among children who have chronic seizures. Tse et al.[10] examined social skills deficits of children with epilepsy and their healthy siblings. The children with epilepsy had poorer social skills and were less assertive; however, clinically significant social skills impairments did not differ between the two groups. There were similar rates of externalizing behavior problems in the two groups. Internalizing behavior problems were more common in children with epilepsy and social skills impairment (73%) versus sibling controls (33%). Importantly, children with epilepsy who were rated as having better social skills also reported higher ratings on a quality of life scale.

Additionally, Hamiwka and colleagues[11] examined social skills in children with epilepsy, children with chronic kidney disease, and healthy peers to examine the impact of chronic disease on social function. Compared to healthy controls, children with epilepsy and children with chronic kidney disease had similarly

Abbreviations: ADHD, attention deficit hyperactivity disorder; CBT, cognitive behavioral therapy; SCARED, Screen for Child Anxiety Related Emotional Disorders; Piers-Harris 2, Piers-Harris Children's Self-Concept Scale II; WRAT-4, Wide Range Achievement Test 4; K-SADS-PL, Kiddie-Schedule for Affective Disorders and Schizophrenia – Present and Lifetime Version; CCAL, Camp Cope-A-Lot.

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poor social skills. In this context of poor social skills, children with epilepsy were again found to have more internalizing behaviors including anxiety, sadness, and poor self-esteem.

Mental health problems are common in children with epilepsy, and anxiety disorders are particularly prevalent. Some studies have reported anxiety rates as high as 48.5%.[12–16] Additionally, in the pediatric epilepsy literature some studies indicated that mental health issues remained chronic and stable over time[17] and other studies reported improvement in behavioral issues.[18,19] However, untreated anxiety disorders have been linked to academic problems, low self-esteem, and peer relationship problems.[20,21] Drewel et al.[22] examined variables related to peer difficulties in children with epilepsy compared to healthy peers. The authors reported that anxiety and inattention negatively impacted peer relationships in children with epilepsy. A recommendation was made by the authors to use social-cognitive skills training to improve social skills and peer relationships in this population.

Self-concept is often defined as a persons' internal interpretation of social acceptance, athletic and academic abilities, behavior and physical appearance.[23] It is an important aspect of a child or adolescents psychological functioning and well-being. Poor self-concept has been linked to depression, anxiety, lower quality of life, and trouble with friendships[24] while improved self-concept is linked to lower levels of distress and higher levels of coping.[25] These connections between poor self-concept and poor life outcomes provide support for the development of intervention studies for youth with epilepsy in order to improve self-concept and ultimately improve social and life outcomes; however, there have been very few studies reported in the literature. Conant et al.[26] developed a 10-week karate program for children with epilepsy and found a nonsignificant improvement in self-concept ratings on the Piers-Harris Self-Concept Scale.[27] Ferro et al.[28] conducted a review of self-concept in adolescents with epilepsy and found that while youth with epilepsy do not have lower rates of rates of self-concept compared to controls (healthy controls and controls with medical conditions), there were associations between self-concept, mental health problems, and poor coping. Ferro et al.[28] also suggested examining outcomes that may be influenced by self-concept, including depression, anxiety, stress management, coping, and resilience.

Among children with epilepsy, there are no studies that have examined the reduction of symptoms of social phobia/social anxiety (note: these terms will be used throughout since social phobia was replaced by the term social anxiety in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition [*DSM-V*]),[29] by addressing social skills deficits and improving self-concept utilizing a non-pharmacological intervention.[28] Blocher et al.[30] was the first pilot cognitive behavioral therapy (CBT) intervention study to treat anxiety disorders in children with epilepsy using an intervention that has been demonstrated to reduce anxiety in children in the general population.[31,32] The purpose of the current study was to assess the impact of the anxiety intervention on social phobia/social anxiety by targeting social skills deficits. It was hypothesized that providing an intervention that focused on building social skills to address symptoms of social phobia/social anxiety, there would in turn be a decrease in social phobia/social anxiety and a secondary impact of improved self-concept.

2. Methods

2.1. Participants

Children and their parents were recruited from a comprehensive epilepsy program in a pediatric neurology clinic at a tertiary care center. Selection criteria for children included: (a) diagnosis of epilepsy for a minimum of 6 months, (b) chronological age between 8 and 13 years, (c) no MRI abnormalities other than atrophy, (d) no other developmental disabilities (e.g., intellectual disability or autism), (e) no other neurological disorders, (f) a current primary anxiety disorder, (g) no current treatment of an anxiety disorder, and (h) a minimum of a first-grade reading level according to the Wide Range Achievement Test 4 (WRAT-4).[33]

Twenty children met the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)[34] criteria for an anxiety disorder as determined by a semi-structured interview, Kiddie-Schedule for Affective Disorders and Schizophrenia – Present and Lifetime Version (K-SADS-PL).[35] Three participants qualified but declined to enroll, and two participants withdrew from the intervention due to scheduling conflicts. Fifteen children enrolled in the study and completed the 12-week intervention and 3-month follow-up visit.

2.2. Measures

2.2.1. Anxiety and self-concept

Symptoms of anxiety were measured using the Screen for Child Anxiety Related Emotional Disorders (SCARED).[36] It is a 41-item self-report questionnaire with a Total score and a five-factor structure: (1) somatic/panic, (2) generalized anxiety, (3) separation anxiety, (4) social phobia/social anxiety, and (5) school phobia. The SCARED utilizes raw score cut points to indicate clinical elevations. The cut scores for Total score is $\geq$25 and for social phobia/social anxiety is $\geq$8. The normative sample means and standard deviations reported for the Total score was 36.1 ± 17.3 and social phobia was 8 ± 4.2.

Self-concept was assessed using the Piers-Harris Children's Self-Concept Scale II (Piers-Harris 2).[27] Self-concept refers to the perceptions and knowledge that individuals have of themselves and their behavior.[27] This differs from the ideas of self-confidence and self-esteem in that it does not include how the individual feels about their self-perceptions. Ferro et al.[28] encouraged researchers to begin to examine self-concept in children with epilepsy using reliable and established measures of self-concept, like the Piers-Harris 2, in order to capture the multidimensional nature of the construct. This scale is a 60-item self-report survey, and only four of the six domain scores were included as they most directly measured social aspects of self-concept, which were the primary aspects addressed by the intervention. They are as follows: (1) Physical Appearance and Attributes Scale: an appraisal of physical appearance and attributes of leadership and an ability to express ideas; (2) Popularity Scale: perception of social functioning (making friends and inclusion in activities); (3) Freedom from Anxiety: measurement of emotions like worry, nervousness, shyness, sadness, fear, and feelings of being left out of things; (4) Total Score: a measure of general self-concept. T-scores are used to report scores. For the Total Score, T-scores ranging from $\leq$29 is very low, 30–39 is low, 40–44 are low average, 45–55 average, 56–59 is high average, 60–69 is high, and $\geq$70 is very high. For the domain scores, all low and low average scores are interpreted similarly, and scores $\geq$56 are above average. This measure has been utilized previously in several studies in pediatric epilepsy.[22,37,38]

2.3. Intervention

Camp Cope-A-Lot (CCAL) was developed as a manualized computer-assisted CBT treatment program for children (aged 7–13) with anxiety disorders.[39] The program is organized into 12 levels, one level administered per week, each lasting 50–60 min. CCAL is divided into two phases: skill building (Levels 1–6) and practice (Levels 7–12) (Table 1). At week 6, a hierarchy of fears and worries is created. Exposure tasks or specific anxiety