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Case Report

A Case Series Evaluation of Group Cognitive Behavior Therapy for Children with Intellectual Disabilities

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Abstract: *Background*: Mental illnesses are pervasive amongst children and adolescents with intellectual disabilities (ID), particularly anxiety disorders. To date, there has been limited research on the use of cognitive behavior therapy (CBT) as a potential treatment for this population. *Fearless Me!* © is an adapted CBT program specifically designed to treat anxiety in children and adolescents with mild to moderate ID. *Method:* Three children, aged between ten and sixteen, participated in group delivery of the *Fearless Me!* © program. Measures of anxiety were completed pre- and post-treatment by both the children and the parents. *Results:* For one child, a significant reduction in anxiety was observed, whilst another child showed significant improvement in emotional competence. *Conclusions:* This case series highlights the need for additional research into the utility of the adapted CBT program, *Fearless Me!* © to reduce anxiety in children and adolescents with ID.

Keywords: intellectual disability; cognitive behavioral therapy; anxiety; children; group therapy

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1. Introduction

An intellectual disability (ID) is defined as a neurodevelopmental disorder with onset in in the developmental period, whereby individuals experience significant deficits in both intellectual and adaptive functioning [1]. Historically, individuals with ID were considered incapable of experiencing mental illness due to limitations in their cognitive functioning [2]. However, contemporary research has revealed that individuals with ID experience the same types of mental health concerns as those without [3,4], and are at even greater risk of suffering from a mental illness [5–7].

Nevertheless, there is a paucity of research into the treatment of co-occurring mental illness for individuals with ID [8]. Generally, the consideration of care for this population's mental health has been given inappropriate weight. Notably, there are a number of barriers that have prevented them from receiving appropriate psychological treatment. These include the possible presence of a diagnostic overshadowing bias, difficulties communicating symptoms and concerns to health professionals, low socioeconomic status, stigma, and/or limited availability of treatment options, making treatment broadly inaccessible [9,10]. Additionally, research suggests many clinicians are not confident in treating this population [11]. Consequently, comorbidities have often remained undiagnosed or untreated [10,12].

1.1. CBT for Adults with ID

It was initially believed individuals with ID lacked the intellectual capacity to engage in cognitive-based treatments [8]. Therefore, treatments for this population have been predominantly behavioral or pharmacological in nature [13], with cognitive behavioral therapy (CBT) debarred. CBT is a widely used, empirically supported treatment approach and the "gold standard" for treating various mental health disorders in neurotypical children, adolescents, and adults, utilizing both cognitive and behavioral strategies [14,15]. However, research has shown that adults with mild to moderate ID can identify emotions, link them to situations [16], and understand the relationship between their feelings, thoughts, and behaviors [17]—the framework underpinning CBT. Research also suggests that if individuals with ID do not possess the abilities to engage in CBT, these skills can be learned [18,19]. As individuals with severe to profound ID typically have limited communication skills, research suggests only individuals with mild to moderate ID can access the benefits of CBT [1,16].

CBT is efficacious in reducing symptoms of mental illness in adults with mild to moderate ID, particularly regarding anger issues, depression, and anxiety [13,20–24]. However, across these studies, estimates of effect sizes for anger, depression, and anxiety differ. The authors noted these estimates were likely unreliable due to significant methodological weaknesses in the studies involved, including small sample sizes and poor study design, highlighting the need for larger, better-quality research [20,24]. Notwithstanding the limited research, it has been repeatedly concluded that CBT is effective in reducing symptoms of comorbid mental illness in adults with mild to moderate ID, providing preliminary yet promising evidence for the use of CBT with this population.

1.2. CBT for Children and Adolescents with Neurodevelopmental Disabilities

Compared to adults, the literature on the effectiveness of cognitive-based therapies in reducing symptoms of mental illness for children and adolescents with ID is significantly sparser [25,26]. However, extensive research has investigated the use of CBT for children with other neurodevelopmental disabilities, such as autism spectrum disorder (ASD) [27–29]. Given individuals with ASD have distinctive social and emotional deficits, it is likely that modification to traditional CBT is required. Research has highlighted the necessity of various therapeutic adaptations, and concluded that adapted CBT is effective in treating comorbid mental illness in children with ASD [28–30]. Therefore, by identifying the specific characteristics of a disorder that may adversely affect therapy, and determining the most suitable adjustments for their needs, modifications to traditional CBT can be made to meet the unique requirements of children and adolescents with neurodevelopmental disabilities [8].

1.3. CBT for Children and Adolescents with ID

As it stands, treatment approaches for children and adolescents with mild to moderate ID and comorbid mental illness are limited. Interventions are commonly parent-based, targeting social competency and/or addressing externalizing rather than internalizing behaviors [31,32]. Specifically, existing research on the usefulness of CBT for children with ID is minimal, and given these individuals have distinct cognitive deficits, CBT requires adaptations to be entirely beneficial [33]. Hronis and colleagues [33] conducted a comprehensive narrative review and determined that children and adolescents with ID experience cognitive deficits in the areas of attention, memory, learning, language, and executive functioning. The authors also aimed to understand the subsequent impact these impairments have on their ability to engage in CBT, and uncovered ways in which CBT could be modified to cater to the needs of this population.

1.4. An Adapted CBT Program for Children and Adolescents with ID

Hronis and colleagues proposed various adaptations to traditional CBT, and developed an intervention aimed at reducing anxiety in children and adolescents with mild to moderate ID. This 10-session program, *Fearless Me!* ©, is the first treatment intervention grounded in principles of CBT that addresses anxiety in this population [25]. *Fearless Me!* © is a multimodal program aiming to simplify the key components of CBT and is designed to be delivered either in an individual or group setting. To date, literature supporting the efficacy of this program is present but limited.

To assess the viability of this program, a case series was conducted [25]. Group therapy was run with 21 adolescent females aged 12 to 18, with mild to moderate ID, revealing an overall trend of decreased anxiety from baseline to the final session of the program, across both self-reports and teacher reports, thereby supporting the usefulness of the *Fearless Me!* © program. Being a feasibility trial, participants were not selected based on anxiety levels. Thus, not all participants had clinical levels of anxiety, limiting conclusions that can be drawn about the programs' efficacy [25]. To further evaluate the effectiveness of *Fearless Me!* ©, Hronis and colleagues [26] conducted a case series including 11 male and female participants, aged between 8 and 17, with mild to moderate ID or intellectual functioning in the borderline range. Unlike the feasibility trial, participants were selected based on their sub-clinical or clinical levels of anxiety and received one-to-one therapy. Measures of anxiety were completed by children and parents, pre- and post-treatment, as well as at 3- and 12-month follow-ups [26]. A significant reduction in at least one measure of anxiety was witnessed for all participants, providing further support for the efficacy of the program. Additionally, Panditaratne et al. [34] conducted a qualitative evaluation to gather feedback on participant experiences from both carers and children of *Fearless Me!* ©, concluding that overall, parents and carers found the program beneficial.

Although *Fearless Me!* © appears to be feasible and shown to reduce anxiety symptoms in children with mild to moderate ID [26,34], but the evidence base is limited. There has not yet been a study utilizing both participants with clinical levels of anxiety and a group therapy format. The present case series aims to address this gap in the literature. It is hypothesized that *Fearless Me!* © will reduce levels of anxiety in a clinical sample of children and adolescents with ID, using a group therapy format.

2. Method

As little research has been conducted examining group CBT for children with disabilities and anxiety, a case series design was deemed appropriate rather than a larger-scale trial. Given the small sample size within the group, and the heterogeneity in presentations relating to disabilities, neurocognitive profiles, and anxiety, a case series design was used.

2.1. Participants

Participants were three children, aged between ten and sixteen. All participants had a pre-existing diagnosis of mild or moderate ID. Eligibility criteria included: (1) a mild/moderate/borderline ID diagnosis; (2) aged between 8 and 18; (3) an elevated score on the Spence Children's Anxiety Scale (SCAS) [35]; (4) had verbal abilities; (5) not actively suicidal or engaging in self-harm; (6) had access at home to a computer or tablet; and (7) had a parent/carer able to attend all sessions, if necessary.

2.2. Outcome Measures

2.2.1. Child-Report Measures

Subjective Units of Distress Scale (SUDS). Kendall et al. [36] altered the original SUDS scale [37] and developed a smaller, more simplified scale for children [36]. The present study asked children to use a 4-point rating scale to answer the query, "How worried do you feel today?" The different anxiety ratings were shown alongside an image of a thermometer, as suggested by Kendall et al. [36].

Spence Children's Anxiety Scale—Child Report (SCAS-C) [38]**.** The SCAS-C is a self-report measure of anxiety symptoms. The children rated their agreement with 44 anxiety-related items on a 4-point scale, ranging from "never" to "always". The word "often" was substituted with "a lot" to facilitate understanding. This measure produced scores across six subscales, and each subscale reflects a different DSM-5 childhood anxiety disorder. An overall anxiety score was also produced, with a maximum total score of 114. Higher scores reflect greater levels of anxiety. To encapsulate children with clinical levels of anxiety, this study only involved participants who scored above the cut-off for elevated anxiety. Spence [38] confirmed the factor structure, and concluded that the SCAS-C has acceptable test–retest reliability, good internal reliability, and good construct validity (α = 0.87–0.94).

Strengths and Difficulties Questionnaire—Child Report (SDQ-C) [39,40]**.** The SDQ-C is a 25-item measure of emotional and behavioral functioning, with participants rating each item on a three-point Likert scale ranging from "not true" to "certainly true". Scores across five subscales are produced: emotional problems, conduct problems, hyperactivity or inattention, peer relationship problems, and prosocial behavior. Considering both the length of the task and cognitive burden, only the emotional and peer relationship subscales were administered in the present study as they were judged to be most pertinent to anxiety. Scores fall within four categories; "close to average", "slightly raised", "high", and "very high". The SDQ is a psychometrically valid measure for learning disability populations [40].

2.2.2. Parent-Report Measures

Demographic Questionnaire. Parents completed a demographic questionnaire on behalf of their child, and provided information such as their child's date of birth, sex, school grade, cultural background, and treatment history. Parents also reported on their child's fears, anxieties, and potential goals.

Spence Children's Anxiety Scale—Parent Report (SCAS-P) [35]**.** The SCAS-P is a 38-item measure of anxiety, and it requires parents to indicate how applicable each statement is to their child. Scores across six subscales are produced, with each scale reflecting a different DSM-5 childhood anxiety disorder, as well as an overall anxiety score. Higher scores reflect greater levels of anxiety, with a maximum overall score of 114. To encapsulate children with clinical levels of anxiety, this study only involved participants who scored above the cut-off for elevated anxiety. The SCAS-P is known to have good internal reliability, ranging from $\alpha = 0.86$–0.93 for the overall score [34].

Strengths and Difficulties Questionnaire—Parent Report (SDQ-P) [39]**.** The SDQ-P is a 25-item measure of emotional and behavioral functioning, with each item rated on a three-point Likert scale ranging from "not true" to "certainly true". Scores across five subscales are produced; emotional problems, conduct problems, hyperactivity or inattention, peer relationship problems, and prosocial behavior. Scores of four of the five subscales (excluding prosocial behavior) were totaled to generate an overall score. The SDQ has good test–retest and inter-rater reliability, and has been validated for individuals with a learning disability [40].

Children's Anxiety Life Interference Scale—Parent Report (CALIS) [41]**.** The CALIS is a 16-item, parent-reported measure of interference and impairment linked to childhood anxiety. Each item is rated on a five-point Likert scale ranging from "not at all" to "a great deal", and all items are summed together to generate an overall score. The CALIS has been found to have sound psychometric properties. Specifically, Lyneham et al. [41] concluded that, among typically developing children, the CALIS has good internal consistency ($\alpha = 0.90$ for mother reports), good convergent and divergent validity, moderate to high test–retest reliability, and is sensitive to change.

Emotions Development Questionnaire—Parent Form (EDQ-P) [42]**.** The EDQ-P is a 40-item questionnaire that assesses emotional competence, emotional understanding, theory of mind, emotion regulation, and emotion-coaching skills in children with ASD, with or without ID. Parents indicate how applicable the statements are to their child, using a five-point rating scale ranging from "never" to "always" with a sixth option "don't know". Ratings are summed to generate an overall score, with "don't know" responses eliminated. Higher scores suggest increased emotional resources, with a maximum score of 200. The EDQ-P has been found to have excellent internal consistency ($\alpha = 0.91$) [43].

2.3. Procedure

The present study was approved by the University Human Research Ethics Committee. Participants were recruited using advertisements circulated through social media, disability organizations, and schools. Each participant and their parent attended an initial assessment session. Parents independently completed the SCAS-P, CALIS, SDQ-P, and EDQ-P, whilst the child/adolescent completed the SCAS-C and SDQ facilitated by the clinician (CH) reading the questions and responses aloud. The child either verbally responded, or pointed to the answer on a printed sheet and the clinician recorded the child's responses. The group therapy program was 10 sessions, where they were guided through *Fearless Me!* ©. The number of sessions attended varied due to illness and other unforeseen circumstances. Following the final assessment session, both the parents and children re-completed the initial assessment measures.

2.4. Treatment

Fearless Me! © [44] consists of ten face-to-face sessions (see Table 1), supplemented by an online component that accompanies the program (see Figure 1). The *Fearless Me!* © website was designed to simplify the elements of CBT and engage children with ID through various activities.

Table 1. Overview of *Fearless Me!* © sessions.

Session	Content of Session *
Session 1	Psychoeducation on anxiety, introduction to SUDS (Subjective Units of Distress Scale) thermometer measure and identification of fears
Session 2	Relaxation strategies taught, i.e., deep breathing ("Balloon Breathing") and imagery (construction of a "Safe Place")
Session 3	Additional relaxation strategies taught, i.e., progressive muscle relaxation ("Squeeze and Relax"); all relaxation strategies reviewed
Session 4	Identification of goals, rationale for exposure therapy utilising "Brave Ben" video and exposure hierarchy developed
Session 5	Differentiating between thoughts, feelings and behaviors ("Think, Feel, Do")
Session 6	Recognising unhelpful/worry thoughts ("Thought Catching")
Session 7	Challenging worry thoughts ("Detective Thinking")
Session 8	Continue challenging worry thoughts ("Detective Thinking")
Session 9	Review cognitive challenging skills
Session 10	Review all skills

* Note: Each session begun with a review of the previous sessions' content.

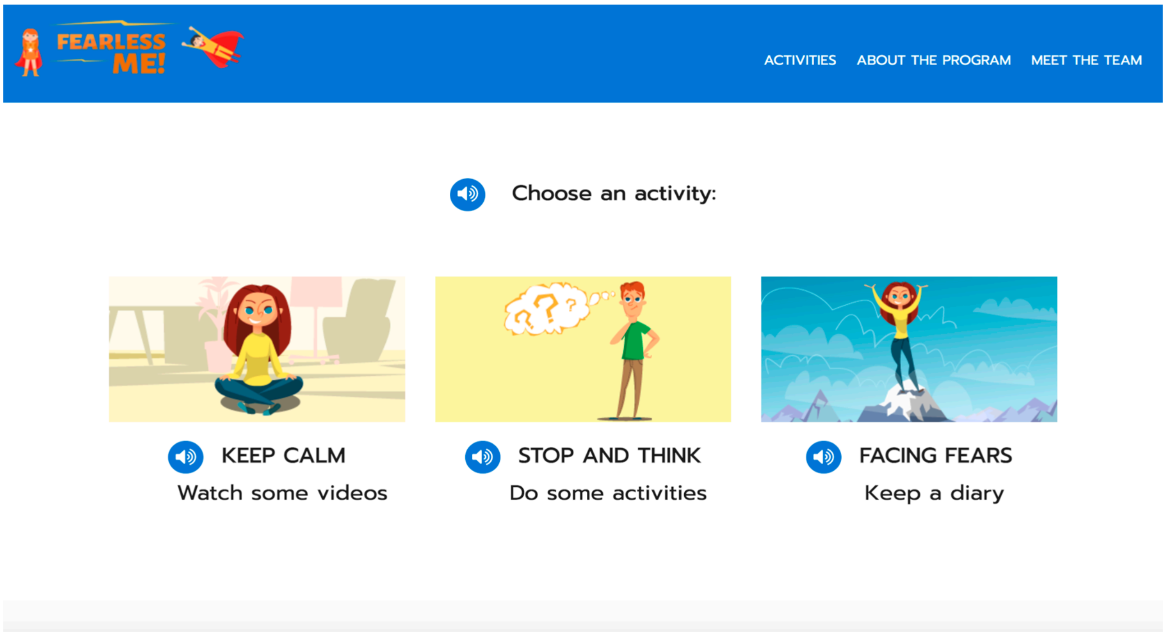

Figure 1. Screenshot from *Fearless Me!* © website.

2.5. Data Analyses

For all measures administered at baseline and at the end of treatment, reliable change index (RCI) scores [45] were calculated to determine clinically significant change. Participants' scores at baseline and end of treatment were compared to means reported by normative and clinical populations. The difference between baseline and end-of-treatment scores was then divided by the standard error of measurement to produce the RCI. An RCI greater than +/−1.96 represents a change that is statistically significant ($p < 0.05$).

3. Results

Results for each participant on measures of anxiety, anxiety interference, and emotional and behavioral functioning are detailed below. SUD scores across sessions have not been reported as each participant consistently reported the lowest levels of anxiety, thus no meaningful change was observed. Results are summarized in Table 2. Names and identifying details (for example, rare genetic conditions) have been changed to protect client anonymity.

Table 2. RCIs and changes on outcome measures.

Participant	**Measure**	**RCIs from Pre- to Post-Treatment**
P1 (Cleo)	SCAS-C	−1.27
	SCAS-P	−0.3
	CALIS	−0.19
	SDQ-P	0.7
	EDQ-P	−2.16
P2 (Eliza)	SCAS-C	−0.85
	SCAS-P	−1.06
	CALIS	1.52
	SDQ-P	−1.22
	EDQ-P	−0.84
P3 (Hudson)	SCAS-C	Missing
	SCAS-P	0.45
	CALIS	2.65
	SDQ-P	1.39
	EDQ-P	−0.12

Note: Green = significant positive change, yellow = no change on reliable change index.

3.1. Participant 1 (Cleo)

Cleo was a 15-year-old female with pre-existing diagnoses of moderate ID, social anxiety, and depression. Cleo experienced anxiety around communicating with adults, completing schoolwork, and being in crowded and noisy environments. She previously saw a psychologist fortnightly, although her mother did not stipulate for how long, and was attending three-monthly check-ups with a psychiatrist. During the *Fearless Me!* © sessions, Cleo was quiet and required a lot of prompting to answer questions.

Cleo completed 10 of 10 group treatment sessions. Results indicate a significant improvement in Cleo's emotional competence on the EDQ-P (RCI = −2.16, $p < 0.05$). There was no significant reduction in anxiety on the SCAS-P (RCI = −0.3) and SCAS-C total scores (RCI = −1.27), nor was there a significant reduction in anxiety interference on the CALIS (RCI = −0.19). On the SDQ-P total score, there was a reduction in Cleo's emotional and behavioral difficulties but this change was not significant (RCI = 0.7). On the child-reported SDQ emotional problems subscale, Cleo initially scored in the "high" range, and this reduced to the "close to average" range at the end of treatment. Cleo's initial score on the peer problems subscale of the SDQ was in the "high" range and this increased to the "very high" range at the end of treatment.

3.2. Participant 2 (Eliza)

Eliza was a 16-year-old female with diagnoses of moderate ID, ASD, ADHD (attention-deficit/hyperactivity disorder), and anxiety. Eliza's main fears were loud noises, crowded environments, and attending school. Eliza had reportedly been seeing an educational psychologist fortnightly for the past two years to address her anxiety. During the *Fearless Me!* © sessions, Eliza was quite behaviorally disruptive and required a lot of assistance to fully participate in the group activities.

Eliza attended 7 of 10 group treatment sessions. Following treatment, there was no significant reduction in anxiety on the SCAS-P (RCI = -1.06) or SCAS-C total scores (RCI = -0.85). There was a reduction in anxiety interference on the CALIS (RCI = 1.52), however this change was not significant. Additionally, there was no significant improvement in emotional competency on the EDQ-P (RCI = -0.84). On the parent-reported SDQ total score, there was no significant change in emotional or behavioral difficulties (RCI = -1.22). On both the emotional problems subscale and peer problems subscale of the child-reported SDQ, Eliza initially scored in the "very high" range, and this remained at the end of treatment.

3.3. Participant 3 (Hudson)

Hudson was a 10-year-old male with pre-existing diagnoses of mild ID, ASD, ADHD, generalized anxiety, and a rare genetic condition (excluded for anonymity). Hudson experienced anxiety in relation to school performance, swimming, his brother's safety, elevators, loud noises, and crowded environments. Hudson's mother reported that he had received treatment from a psychologist for the past year and a half. During the *Fearless Me!* © sessions, Hudson was well-engaged, talkative, and required minimal prompting.

Hudson attended 7 of 10 treatment sessions. Following treatment, a significant reduction in anxiety interference was found on the CALIS (RCI = 2.65, $p < 0.05$). There was a reduction in Hudson's anxiety on the SCAS-P, but this change was not significant (RCI = 0.45). Similarly, there was an improvement in Hudson's emotional competency on the EDQ-P, but this change was not significant (RCI = -0.12). On the parent-reported SDQ, no statistically significant changes were observed. However, Hudson initially scored in the "very high" range, and this reduced to "slightly raised" at the end of treatment. Hudson did not re-complete the SDQ or SCAS-C at the end of treatment and thus these results cannot be reported.

4. Discussion

The current paper aimed to build upon the evidence for adapted CBT for children with ID. It was hypothesized that when utilizing a group therapy format, *Fearless Me!* © would be efficacious in reducing levels of anxiety in a clinical sample of children and adolescents with ID. However, this hypothesis was only partially supported. One child (Hudson) experienced a significant reduction in their anxiety. Although the evidence base for *Fearless Me!* © is still in its infancy, existing research has found it to be efficacious in reducing anxiety in children and adolescents with mild to moderate ID [26]. The findings of the present paper further extend the literature surrounding the utility of the program when delivered in a group therapy format to children with clinical levels of anxiety.

However, the current paper observed that two of the participants (Cleo and Eliza) did not experience significant reductions in their anxiety, contradicting the initial hypothesis and existing literature [25,26]. One possible explanation for this is the difference in ID severity between participants. Both Eliza and Cleo had a diagnosis of moderate ID whilst Hudson had a diagnosis of mild ID, indicating *Fearless Me!* © in its current form may be better suited to children with mild ID exclusively, rather than mild to moderate as previously suggested [25,26]. Notably, more severe forms of ID are often associated with reduced verbal ability [46]. Qualitatively, Eliza's verbal comprehension and expression were visibly poorer than the other participants. Given CBT is a cognitive, verbal-based therapy [47], it is possible Eliza's weaker verbal skills hindered her from participating meaningfully in the sessions and comprehending and applying the learned skills.

Moreover, Eliza only attended seven of the ten *Fearless Me!* © sessions whilst Cleo attended all ten, with neither experiencing significant reductions in their anxiety. It is possible *Fearless Me!* © is better-delivered one-on-one than in a group, particularly for individuals with moderate ID who may require a more tailored approach. Among neurodevelopmental disorders such as ID, ASD, and ADHD, there is high interindividual variability [48].

A secondary finding of the current paper was that Cleo experienced a significant improvement in her emotional competency, which has been corroborated by a previous study [34]. When CBT skills are taught during *Fearless Me!* ©, the aim is twofold: to help participants manage their thoughts, feelings, and behaviors more generally and to teach them to apply these strategies to reduce their anxiety. Given Cleo's improvement in emotional competency, it appears she understood some of the core components of CBT. However, as her anxiety did not improve, this suggests she was unable to apply these skills to her anxiety. Perhaps Cleo would have benefited from additional sessions to consolidate and extend her learnings.

4.1. Strengths and Limitations

The current study's strengths include its use of both child- and parent-reported measures, providing a more comprehensive view of the findings. Additionally, qualitatively participants were observed connecting with certain elements of the program (e.g., Brave Ben), and there were anecdotal reports of them applying the strategies between sessions. However, the study lacks a fidelity measure for homework completion. Additionally, the small sample size limits the generalizability of the results to the overall population, and the inconsistent program attendance of two participants restricts the conclusions that can be drawn regarding the efficacy of *Fearless Me!* ©. Further, one of the participants (Hudson) did not complete the post-program self-report measures. Given his parents' reports indicated a decrease in anxiety, this would have been interesting to analyze. It is also worth noting that while the case series design had its limitations due to no control group and reduced generalizability of the results, it also allow for data to be understood and gathered about individual profiles.

4.2. Suggestions for Future Research

Additional research is essential to build upon the limited literature base for *Fearless Me!* ©. A crucial step is conducting an appropriately powered, larger-scale randomized controlled trial. The findings of the present paper indicate it would be worthwhile to explore the differences between individuals with mild versus moderate ID in the context of *Fearless Me!* ©. Children with moderate ID may require additional adaptations to treatment, such as a longer program.

Furthermore, research shows that parents of children with ID may be at greater risk of suffering from anxiety and depression [49]. Family systems theory, which suggests interdependent family dynamics [50,51], remains largely unexplored amongst ID populations. This is recommended, as it could be a crucial point for intervention. Moreover, the use of telehealth has increased rapidly over the past decade, particularly since the onset of the 2019 coronavirus pandemic. Given research has found that psychological interventions delivered by telehealth are as effective in treating anxiety disorders when compared to face-to-face therapy [52], subsequent studies should aim to determine the feasibility and effectiveness of delivering *Fearless Me!* © remotely. Future research may also benefit further from qualitative evaluations of the program to better understand the experiences of the various treatment components.

4.3. Clinical Implications

Despite its limitations, the current paper contributed to the literature on CBT for children with ID. Given individuals with ID experience deficits in cognitive functioning, therapy must be modified to accommodate their needs, and establishing evidence-based ways of doing so is essential. *Fearless Me!* © was developed with the intention of increasing access to effective psychological treatments for young people with ID and a concurrent mental illness [53], opening up treatment options for a population that has been historically excluded from cognitive-based therapies. Importantly, *Fearless Me!* © provides a therapeutic alternative to behavioral interventions [25], and subsequent research in this field has the potential to identify additional therapies clinicians can administer when treating this population, thereby bettering their access to treatment.

5. Conclusions

There is a need for psychological treatments to be adapted and evaluated for children with ID, given such high rates of mental health concerns. The *Fearless Me!* © program warrants further investigation, to explore the ways in which cognitive therapies can be best utilized amongst children with disabilities. Individual therapy has shown great promise, though group therapy application requires further evaluation.

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Informed Consent Statement: Informed consent was obtained from all subjects involved in the study. Written consent was provided by parents on behalf of the children, and verbal consent was provided by the children. Written informed consent has been obtained from the parents of the patient(s) to publish this paper.

Data Availability Statement: The data presented in this study are available on request from the corresponding author due to the confidentiality required to be maintained for the cases.

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