Medical Research Archives

ESMED
European Society of Medicine

OPEN ACCESS

Published: June 30, 2023

Citation: NE Mahrer, VS Sommer, et al., 2023. Virtual Acceptance and Commitment Therapy (Vact) For Youth with Chronic Illnesses: A Case Report, Medical Research Archives, [online] 11(6). https://doi.org/10.18103/mra.v11i6.3897

DOI
https://doi.org/10.18103/mra.v11i6.3897

ISSN: 2375-1924

RESEARCH ARTICLE

Virtual Acceptance and Commitment Therapy (vACT) For Youth with Chronic Illnesses: A Case Report

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ABSTRACT

Youth with chronic medical conditions need accessible and effective mental health interventions to address high levels of disruption in their psychological, social, and emotional development. Acceptance and Commitment Therapy is an empirically supported psychotherapy based on behavioral interventions that combines the principles of Relational Frame Theory and Mindfulness. Acceptance and Commitment Therapy has been shown to be effective in populations of youth with various chronic conditions. As telehealth use has increased, Acceptance and Commitment Therapy has been administered virtually on an individual level to adults and adolescents with chronic conditions, including chronic pain and Type II diabetes. However, few studies have incorporated a group-based element to the virtual delivery of Acceptance and Commitment Therapy, which may be more accessible, cost-effective and may have additional therapeutic value in the form of peer connection and cohesion. To investigate the potential benefits of a virtual group model, we developed a web-based virtual Acceptance and Commitment Therapy (vACT™) group intervention for youth with chronic illness aged 14-21. The 6-week virtual group consisted of 1.5-hour sessions that each focused on a unique Acceptance and Commitment Therapy concept: acceptance, values, mindfulness, cognitive defusion, experiential avoidance, and willingness/commitment. Additionally, the sessions included exercises to engage group members and teach skills. Baseline, post-, and follow-up data were collected on stress, mental health, functional outcomes, and satisfaction from one participant, "Kasey", a 14-year-old Latina adolescent with comorbid Type I diabetes, depression, and anxiety. This case report details the procedures for the vACT group, discusses the barriers, and provides examples and recommendations for future administration of the group model. The report also describes Kasey's experience during the group and presents quantitative/qualitative data supporting her improvement. Kasey's perceived stress declined across sessions, while her anxiety sensitivity and depressive symptoms improved from the moderate range to the mild range, with sustained improvements at follow-up. Additionally, Kasey reported improvements in her peer relationships with sustained improvements at follow-up, which were initially a significant concern. This case report provides promising preliminary data for the virtual administration of a group-based Acceptance and Commitment Therapy intervention. We hope that clinicians can use this approach to provide evidence-based services that can reach a wider range of youth with chronic illnesses who may not otherwise have access to care and/or are estranged from their peers.

INTRODUCTION

Children and adolescents with chronic medical conditions face significant challenges, including pain, hospitalization, stringent pharmacological regimens, and limits to regular activities[1]. Broadly defined, a chronic condition is one that persists for an anticipated period of twelve months and requires continued medical attention and/or affects daily activities[2]. Millions of youths suffer from chronic medical conditions, including but not limited to asthma, diabetes, cancer, epilepsy, and recurrent pain conditions[3]. These illnesses can lead to stress, diminished quality of life, and maladaptive behavioral and socioemotional functioning[4,5].

Chronic illnesses can be a source of prolonged stress for children and their families. A study by Rodriguez et al.[6] demonstrated the diverse set of stressors chronically ill children must endure, including: 1) daily role functioning (e.g., missing school); 2) physical effects of treatment (e.g., feeling nauseous or ill); 3) uncertainty about their illness (e.g., concerns about the future). In addition, the prevalence of mental health disorders, including depression and anxiety, is higher amongst children with chronic health conditions than their healthy counterparts[7,8]. Children in this group may be at particular risk for anxiety due to the traumatic nature of chronic illness, which often includes exposure to frightening stimuli, including severe symptoms, invasive treatment, and recurrent medical procedures. Patients may experience fear of death and a reduced sense of control over their environment[8]. Furthermore, youth with chronic illness can also face increased social anxiety due to fear of rejection by peers because of their condition[4]. Finally, adolescents, in particular, may experience elevated psychological stressors with the continued management of their conditions as they transition to independence[9].

The recognition that children and adolescents with chronic conditions experience disruption in their psychological, social, and emotional development heightens the need to address these challenges. One feasible intervention may be the virtual administration of Acceptance and Commitment Therapy (ACT). ACT is a behavioral intervention that combines the principles of Relational Frame Theory and Mindfulness. The goal of ACT is to increase "psychological flexibility"[10]. ACT uses linguistic tools that incorporate non-literal language to disrupt problematic coping mechanisms[11]. The ACT model relies on the following six components: acceptance, defusion, self as context, committed action, values, and contact with the present moment (Mindfulness)[12]. It operates with the aim of maximizing psychological flexibility by recognizing the distinction between thought and experience, reducing the inclination to rationalize dysfunctional behavior, embracing the experience of private events, recognizing values, and developing pathways for committed action toward value-aligned goals.

Acceptance and Commitment Therapy has been shown to be effective in various pediatric chronic disease populations. Several studies indicate that ACT can improve self-reported functioning and health-related quality of life among children with chronic pain[13,14]. Multiple studies amongst children with diabetes indicate that ACT is an effective intervention to reduce perceived stress, depression, and guilt as well as increase health self-efficacy and psychological well-being[15,16]. Preliminary studies also demonstrate improvement in psychological well-being among children with PTSD[17].

There is a need for psychotherapy interventions to model the trend of increased telehealth and transition from in-person to virtual sessions[18]. Support for the virtual administration of ACT is present in the literature. Web-based virtual ACT has been effectively administered to adults experiencing symptoms of depression, chronic pain, general anxiety, and health anxiety[19-23] as well as to adults with Type II diabetes and diabetic neuropathy[24,25]. The administration of virtual ACT, which we term vACT™, has ranged from daily text messages, assigned videos, virtual exercises, and face-to-face sessions administered via digital platforms[26-28].

The evidence for the efficacy of vACT in pediatric populations is more limited. Only a few studies have examined the feasibility of vACT administration among children and adolescents with a smaller spectrum of chronic conditions, namely chronic pain and sickle cell disease. In these studies, vACT was delivered via asynchronous web-based modules, with concurrent parent modules, and daily text messages. Promising results showed that ACT had significant effects in reducing clients' pain interference, depression, and other comorbid symptoms[29,30]. Like with adults, vACT has been administered on an individual basis for pediatric clients and is largely self-initiated with minimal therapist contact.

A vACT group intervention may be a promising solution to address the psychological and emotional needs of children with chronic illnesses in the new era of telehealth. A group format may increase

accessibility, be more cost-effective, and have additional therapeutic benefit in the form of peer connection and support. The current case report presents a vACT group intervention for youth with chronic illness. It details the sessions and discusses considerations for delivering ACT in a web-based format. In addition, we present baseline, post, and follow-up data on stress, mental health, functional outcomes, and satisfaction from one participant to highlight the possible benefits that youth with chronic illness may gain from the group. We hope that other clinicians can use this approach to provide evidence-based services that reach a wider range of youth with chronic illnesses who may not have access to care and/or are estranged from their peers.

METHOD

Procedure. This case report presents quantitative and qualitative data from one participant who participated in a vACT group at a children's hospital in the greater Los Angeles area. Participants were recruited through clinics and clinicians working at the children's hospital. They were eligible to participate if they were between the ages of 14 and 21 years old, were English-speaking, had a diagnosis of a chronic illness, had a device with internet and a webcam, and had access to a private setting to participate in the intervention. Participants were excluded if they had a known developmental delay that would interfere with their ability to complete questionnaires or participate in the group therapy. Prior to the group, participants completed measures assessing current mental health and functioning, and ACT-related skills. They then participated in a 6-week group and completed a brief stress measure each week. After the group ended, participants again completed measures of mental health and functioning, questionnaires related to ACT-related skills, as well as satisfaction measures reporting about their group experience. Participant's mental health and functioning were assessed again at a 1-month follow-up. All study procedures and research activities were approved by the local Institutional Review Board (IRB) at Children's Hospital Los Angeles.

Participant. Kasey (pseudonym) is a 14-year-old Latina female with diagnoses of Type I diabetes, high blood pressure, childhood obesity, and comorbid depression and anxiety. She was diagnosed with Type I diabetes at age 4 and was taking insulin and high blood pressure medication at the time of participation. Her family was receiving MediCal insurance, which is the State-Sponsored insurance for low-income families in California. Kasey was in the eighth grade when she participated in the group and had been working with a primary therapist for over a year. Individual therapy had been focusing on reducing her anxiety and social isolation. Her mother reported that Kasey had missed about a month of school due to her medical condition and that she had stopped working because of her daughter's medical condition. The group included three other teens, all female, who attended most sessions. Kasey attended all sessions which is why she is the focus of this case report.

Virtual ACT Intervention

For a period of six continuous weeks, participants met for weekly vACT group sessions co-facilitated by a licensed psychologist and postdoctoral trainee. The virtual group was adapted from the Dahl and Lundgren's[31] *Living beyond your pain: acceptance and commitment therapy for chronic pain program*. The web-based group was hosted on a secure, HIPAA compliant Zoom account. Each session lasted 1.5 hours. Details about the structure, focus, and activities of each session are listed in Table 1. The first session served as an introduction to the group and to ACT as a therapeutic practice. It introduced the concept of Acceptance and participants worked on related exercises. The second session focused on "Values" and participants were asked to distinguish between values and goals and explore/develop their values. The third session focused on "Mindfulness" and participants were guided in mindfulness practice and meditation. The fourth session focused on "Cognitive Defusion" and participants were taught various strategies to reduce the power of their thoughts. The fifth session addressed "Experiential Avoidance" and introduced several activities and metaphors to induce healthy coping mechanisms. The sixth and final session encompassed "Willingness and Committed Action". This session taught participants to identify barriers and develop a support team. Group participants were given the opportunity to share their thoughts and their responses to the exercises at various points throughout the sessions.

Table 1: Virtual Acceptance and Commitment Therapy Group (vACT™) Session Details

Session	Focus	Didactics	Activities	Homework

1	Acceptance	• Introduction to ACT
		  ○ Accept, Choose, Take action
		• Definition of Acceptance
			• Introduction to the group (structure, rules, other group members)
			• Ice breaker activity
			• *Giving Shape to Your Pain* worksheet/ drawing activity
			  ○ Externalizing, shaping, and accepting diagnoses
				• N/A

2	Values	• Values psychoeducation
		• Difference between values and goals
			• *Values Card Sort* activity
			  ○ Exploring values
			• *Building Values Compass* worksheet
			  ○ Creating values statements and viewing discrepancy between importance and how currently living
			• *5 &10 Year Reunion* activity
			  ○ Setting goals by imagining future
				• Set a specific and realistic goal in line with one value

3	Mindfulness	• Mindfulness psychoeducation
		  ○ When and where to practice mindfulness
		  ○ How to practice mindfulness
		  ○ Sharing of other mindfulness practices
			• Mindful practice
			  ○ *Leaves on a Stream* exercise
			  ○ *Mindful eating* exercise
			  ○ Mindful meditation (e.g., *Headspace*)
				• Practice mindfulness 1-2 times in the next week
				• Set another goal in line with selected value

4	Cognitive Defusion	• Cognitive fusion psychoeducation • Cognitive defusion strategies ○ Take away from the power of the thought	• Passengers on a Bus metaphor • Cognitive Defusion practice (e.g., observing thought, repeating thought, thanking mind, identifying cognitive trap, letting thoughts come and go)	• Choose a mindfulness, and/or cognitive defusion practice • Set a new values-based goal • Optional *cognitive defusion log*

5	Experiential Avoidance	• Experiential avoidance psychoeducation
		• Ways to address experiential avoidance
		  ○ Acceptance, mindfulness, cognitive defusion
			• *Costs of Avoidance* worksheet
			  ○ Identifying ways in which unpleasant thoughts or feelings have been avoided
			• Unwelcome Party Guest metaphor
			• Optional sharing of personal experiences with experiential avoidance
				• Continue mindfulness and cognitive defusion practice
				• Set a new values-based goal

6	Willingness and Committed Action	• Psychoeducation about willingness
		• Committed action explanation
			• *Overcoming F.E.A.R.* worksheet
			  ○ Applying defusion, acceptance, realistic goals, and embracing values to address fusion, excessive goals, avoidance of discomfort, and remoteness from values
			• *Build a Support Team* worksheet
			  ○ Planning committed action	

			• Conclusion: Sharing personal progress and commenting on each group member's progress	

Measures

Stress. The Perceived Stress Scale (PSS) measured subjective stress at baseline, weekly, post, and at the 1-month follow-up. The measure has 10 items and was developed for individuals 12 –years-old and above[32]. Items include questions such as "In the last month, how often have you felt nervous and stressed?" Each item is assessed on a 5-point Likert scale with answers ranging from (0) "never" to (4) "very often". A higher score indicates higher amounts of perceived stress. The PSS-10 has been shown to have good reliability and validity across diverse populations and specifically Hispanic Americans[33].

Mental Health and Functioning. The Patient-Reported Outcomes Measurement Information System, 25 item (PROMIS-25) measured mental health and functioning at baseline, post, and 1-month follow-up[34]. The 25-item measure includes six 4-item domains: depressive symptoms, anxiety, physical function-mobility, pain interference, fatigue, and peer relationships. There is a single item for pain intensity. Most items are assessed on a 5-point scale from "never" to "almost always". Mobility is assessed on a 5-point Likert scale from "with no trouble" to "not at all". Pain is assessed on a Likert scale from (0) "no pain" to (10) "worst possible pain". The score interpretation ranges for the PROMIS-25 can be seen in Table 2. The PROMIS-25 scale has been shown to be reliable and valid across traits and has been assessed across diverse populations, including many pediatric populations[35].

ACT-related Skills. The Child Anxiety Sensitivity Index (CASI) measured sensitivity to internal stimuli at baseline, post, and 1-month follow-up[36]. The measure has 18 items and examines how much a child views internal stimuli of anxiety as negative[37]. Items include statements such as "It scares me when my heart beats fast." Each item is assessed on a 3-point Likert scale where 1 = none, 2 = some, and 3 = a lot. Higher scores indicate higher levels of anxiety sensitivity. The CASI has shown satisfactory reliability and validity and has been assessed across diverse pediatric populations.

The Acceptance and Fusion Questionnaire for Youth (AFQ-Y8) measured psychological flexibility at baseline and post[38]. The measure is a condensed version of the AFQ-Y and has eight items scored on a 5-point Likert scale from (0) "not at all true" to (4) "very true"[38]. Items include statements such as, "My thoughts and feelings mess up my life". Higher scores indicate higher levels of thought fusion and lower levels of psychological flexibility. The AFQ-Y8 is found to be reliable and valid across a diverse population of youth.

The Child and Adolescent Mindfulness Measure (CAMM) measured mindfulness skills at baseline and post[39]. The 10-item measure includes statements such as, "I keep myself busy so I don't notice my thoughts or feelings" that are scored on a 6-point Likert scale from (0) "never true" to (5) "always true". Scores are reversed before final scoring such that higher final scores indicate higher levels of mindfulness. The measure has been found to have good reliability and validity and has been sufficiently assessed across diverse populations.

The Brief Experiential Avoidance Questionnaire (BEAQ) was given at baseline and post. The 15-item measure assessed experiential avoidance or the avoidance of uncomfortable or distressing emotions[40]. Items include statements such as, "The key to a good life is never feeling pain" and are scored on a 6-point Likert scale from (1) "strongly disagree" to (6) "strongly agree". Higher scores indicate higher levels of experiential avoidance. The BEAQ has been shown to have good reliability and validity across multiple populations.

Satisfaction. An investigator-developed Satisfaction Questionnaire was completed at post to assess feasibility of the virtual format and gather qualitative data about participant experience.

The Satisfaction with Therapy and Therapist Scale - Revised (STTS-R) was also given at post. The 12-item measure gathers information about a patient's satisfaction with group psychotherapy[41]. Statements such as, "I am satisfied with the quality of the therapy I received" are rated from (1) "strongly disagree" to (5) "strongly agree". Higher scores indicate higher levels of patient satisfaction. The scale has been shown to have good reliability and validity and has been validated on samples inclusive of both genders and of a wide age range.

Finally, the Cohesion subscale of the Curative Climate Instrument (CCI) was completed at post. The 5-item scale assesses how helpful participants find certain factors of group therapy to be[42]. Each item is scored on a 5-point Likert scale from (1) "not

helpful" to (5) "extremely helpful" with higher overall scores indicating a sense of higher group cohesion. The scale has moderately high internal reliability and has been shown to be valid.

RESULTS

Quantitative Results

Kasey's Perceived Stress declined across all sessions (Figure 1). She began in the moderate to high range and was in the low to moderate range at post. Her stress continued to improve and was low at the 1-month follow-up. In terms of her mental health and functioning (Table 2), Kasey showed improvements in her Depression, declining from moderate at baseline to acceptable at post- and 1-month follow-up. Similarly, her Peer Relations improved from significant concern at baseline to acceptable at post- and 1-month follow-up. Her reported anxiety symptoms remained stable, at the mild to moderate level. There were no changes in her Mobility, Fatigue, or Pain Interference which were not areas of concern. In terms of the ACT-related skills, Kasey did not report changes in her Psychological Flexibility (AFQ baseline – 10, post – 9), Mindfulness (CAMM baseline - 14, post – 14), or Experiential Avoidance (BEAQ baseline – 62, post – 64). However, she did show reduction in her anxiety sensitivity, which was maintained at the 1-month follow-up (CASI baseline – 13, post – 9, 1-mo – 8).

Table 2: Study Measures at Baseline, Post, and 1-month Follow-up

				Score interpretation ranges		
PROMIS subscale	**Baseline-**	**Post-**	**1-month**	**Acceptable/mild**	**Moderate concern**	**Significant concern**
Mobility	19	20	20	16-20	9-15	4-8
Anxiety	13	12	10	4-12	13-16	17-20
Depression	12	4	6	4-11	12-16	17-20
Fatigue	6	6	4	4-12	13-17	18-20
Peer Relations	4	17	16	13-20	8-12	4-7
Pain Interference	4	4	4	4-13	14-18	19-20

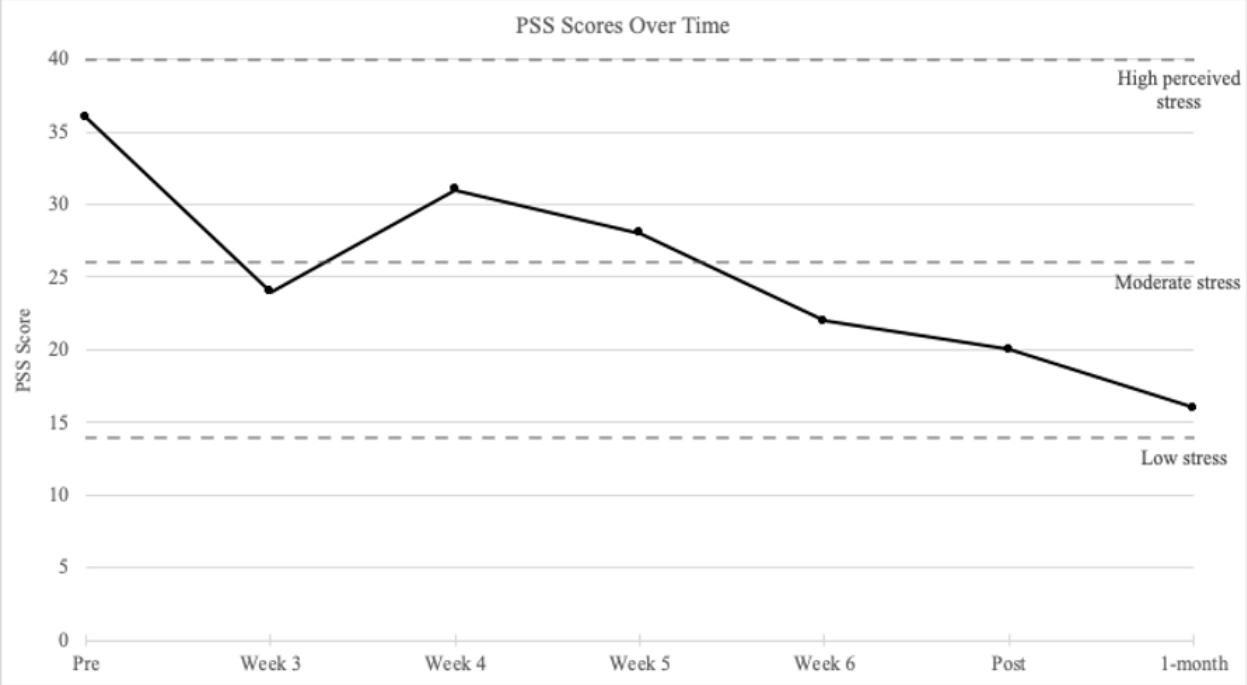
Kasey marked the highest scores on the Satisfaction questionnaire, indicating that the virtual format of the group was easy to use and that she felt comfortable engaging with the group leaders and other group members. She reported equally high Satisfaction with Therapy and Satisfaction with the Therapists, both with maximum scores of 30. When asked what she liked best about the vACT group, she stated that she liked "how there were other teens with other diagnoses." She also reported that the group helped her most with her anxiety. Kasey's mean score on the Cohesion subscale was 4.2, indicating that she found the group aspect of the intervention (e.g., belonging to and feeling understood by the group) to be "definitely helpful".

Qualitative Results

Session 1: Acceptance – During this first session, Kasey shared that she is used to her medical condition "getting in the way". She responded well to the *Giving Shape to Pain* activity likely related to her love of drawing. Although Kasey was uncomfortable showing her face on camera during this initial session (she only showed the top of her head), she was open to showing her drawing that represented both her anxiety and her diabetes to the other group members. She received praise from the group leaders and her fellow group members.

Session 2: Values – Kasey engaged in the *Values* Card Sort activity and identified her most important values as: being good to parents/siblings (which she defined as not fighting, being nice), being strong (which she defined as being emotionally strong, not giving up), and being kind (which she defined as having a filter, being helpful, comforting). She set a goal for the week to find a balance between being alone and spending time with her sister. Kasey came up with the idea to play Minecraft with her sister for 20 minutes once during the upcoming week. She lowered her camera to show her forehead during this group.

Figure 1: Change in Perceived Stress Scores Over Time



Session 3: Mindfulness – Kasey reported that she spent time with her sister every day in the prior week, which was well beyond the one-day goal she set for herself. Their activities included playing games, watching videos, and talking. Kasey practiced the different *Mindfulness* activities and came up with the idea to practice mindfulness while drawing. With the help of the group leaders, she made her goal more specific and selected a day and time. Kasey hoped that mindful drawing would help her feel less stressed about school (which she had started attending again). She also expressed a goal to continue to spend more time with her sister. Kasey lowered her camera to show her eyes during this session.

Session 4: Cognitive Defusion – Kasey reported that she had met her goals for the week. During the discussion, she shared that she tends to fuse with the thoughts of "I have no friends", "I can't do what other people can do", and "I'm too much to handle". After reviewing all the *Cognitive Defusion* strategies, she stated that she preferred to identify the type of cognitive distortion (she was familiar with this technique from her individual therapy sessions) and also "thanking her mind" (she liked the sarcasm of this strategy). Kasey's goals for the week were to continue to hang out with her sister and use the defusion techniques to deal with her anger. During this session, she lowered the camera to show her nose.

Session 5: Experiential Avoidance – Kasey shared that she had spent more time with her family (two sisters and mother) during the past week. She explained that she had been using the "thanking her mind" strategy and that it was working to reduce her anger. During the group discussion, Kasey shared her personal experiences with experiential avoidance which included not going to school. She detailed the consequences which resulted in her mom yelling at her, and her hiding and pushing her family away. She also explained that skipping school made her feel weak and that it led to negative social consequences. Her goals for the week were to talk to her sisters more, thank her mind, identify the thinking trap, and be an observer self. In this session, Kasey lowered her camera to show down to her mouth.

Session 6: Willingness & Committed Action – In this final session, Kasey shared her plans for overcoming barriers that could come up after the group ended. These included letting her thoughts go and moving toward her values. She also stated that she wanted to use acceptance (instead of avoidance) and work towards realistic goals. Kasey identified her mom and friends as sources of support. The group leaders reflected on her progress over the course of the group and her unique strengths. They talked about the fact that Kasey was always real (honest) with the leaders and other group members about what she liked, what worked, and what didn't. This resulted in her selecting strategies that worked well for her. She also consistently moved towards her values throughout the group by spending time with her family. Finally, she continued to be more comfortable being visible on camera and in the last session, she participated while showing her entire face!

DISCUSSION

This case report presents promising preliminary support for a virtual Acceptance and Commitment Therapy (vACT™) group intervention for teens with a variety of chronic illnesses and comorbid depression or anxiety. There may be unique benefits to a virtual evidence-based intervention for teens in that it creates access, is cost-effective, and offers a group modality for peer cohesion as an alternative to in-person treatment. This case report showed significant improvements in Kasey's mental health and functioning after a brief 6-week online intervention that were maintained one month later. It is notable that Kasey had been participating in individual therapy for one year prior to this group with modest to little gains. This suggests that there may be unique change factors associated with the ACT and/or group component of the virtual intervention.

Kasey's improvements were primarily in her depression and peer relationships. Several mediating factors related to ACT were examined and suggest that improvements may be related to Kasey's reduced anxiety sensitivity (i.e., her reduced fear of anxiety symptoms). By the end of the group, Kasey had learned to not react negatively to her anxious sensations and, in turn, not let them dictate her actions. Rather, she was able to move toward her values, spending more time with her family and doing things she enjoyed like drawing. Although she continued to have anxiety symptoms, the fact that they weren't controlling her anymore suggests that she was moving forward with an acceptance rather than avoidance approach[43]. Previous studies have identified psychological flexibility as a significant mediator of individually delivered ACT[14]. Reduced anxiety sensitivity and increased acceptance are characteristics of psychological flexibility. Interestingly, Kasey did not show changes in her practice of mindfulness or cognitive defusion after participating in the group (though she rated both as high at the start of the group). This vACT group was designed for 14–21-year-olds and this non-significant change could be related to Kasey's younger age. It is possible that older participants would show change in these alternate mediators. However, consistent with previous studies, it is also possible that psychological flexibility/acceptance is the more powerful change agent for this virtual group intervention.

It is also likely that the group aspect of the vACT intervention was beneficial for Kasey as she had been separated from her peers both due to the COVID-19 pandemic and school avoidance related to her medical and mental health conditions. She reported feeling understood and supported by the fellow group members and this cohesion may have motivated her to try new strategies that facilitated longer-lasting change. This is consistent with the literature that shows that connections and bonds formed in group therapy are associated with patient improvement and increased hope[45]. This mediator may be especially powerful for female adolescent participants who are supported by group members of the same gender[44] (a characteristic of Kasey's group). The group vACT format presented in this case report is unique from the other virtual individual formats that have been tested with youth with chronic illness in the past. If group cohesion is a primary mechanism of change, a group format may be particularly important for this pediatric population, especially adolescent females.

Previous deliveries of vACT for pediatric populations have been individually based and asynchronous with minimal therapist contact [29,30]. While this approach has led to improvements for some, client characteristics should be considered when choosing the appropriate level of care. The group vACT intervention presented in this case report is instead synchronous with weekly therapist and group contact. Though there is greater demand on therapist expertise and time compared to asynchronous app-based interventions, it is less than the cost and time associated with individual therapy. This virtual group format may benefit clients, like Kasey, who are experiencing social isolation or who have shown minimal change with prior individual treatment.

This case report details a group intervention that warrants additional study. Though single case data is promising, conclusions cannot be made based on one participant. Larger well-designed studies are needed. Larger studies should consider offering compensation to incentivize participation in the clinical and research activities. Future research should conduct clinical trials of this vACT comparison approach with a waitlist or active control group. An active control group (e.g., in-person ACT group or virtual individual ACT) can increase understanding about what level of care is needed and help identify the mechanisms through which this intervention may be working (e.g., ACT components vs. group cohesion).

The vACT group intervention is described here in detail so that other clinicians can offer it to youth with chronic illness in the future. There are several considerations that clinicians should keep in mind when offering ACT to youth in a virtual group format. Many of concepts in ACT can be difficult for younger clients to understand[45], therefore it is important to make the lessons concrete. Strategies include showing publicly available ACT videos (e.g.,

Passenger on a Bus, Unwelcome Party Guest), twice, if necessary, to help clients understand important metaphors (e.g., cognitive diffusion, acceptance). Other concepts can become clearer with more tangible exercises like drawing your diagnosis (an acceptance exercise) or practicing mindfulness while eating. Special attention also needs to be paid to the order of group activities to maintain participant engagement and interest. Group leaders will need to provide didactics to teach the concepts in each session, but these lessons should be interspersed with interactive activities such as ice breakers and sharing of personal experiences. It may be helpful to create slides to show when teaching lessons to add a visual component to a largely verbal lesson. Finally, group leaders should take advantage of the group format of the intervention. This format provides an opportunity for teens to connect with peers who are experiencing similar conditions. For example, leaders can ask if other members have had similar experiences and/or have them brainstorm ideas for one another. At the end of the ACT group, group members can be encouraged to share positive things they have observed about each other's growth, in addition to observations that the leaders share. Though group members may be shy initially (e.g., about sharing, being on camera), seeing others actively participating and willing to be vulnerable should encourage them to do the same. It may be helpful to recruit a variety of personality types to the group, to balance more introverted and extroverted participants.

CONCLUSION

As psychological intervention continues to shift to telehealth, evidence-based, accessible, and cost-effective interventions are needed[18]. This need is particularly salient for youth with chronic illnesses who are at higher risk for comorbid mental health concerns and peer estrangement than their healthy counterparts[4-6]. vACT™ is a promising intervention that can be offered to a heterogenous population of youth, regardless of their disease, sociodemographic background, or geographic location. We hope that this case report inspires future clinicians and researchers poised to help children and adolescents affected by chronic illnesses globally.

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