Acceptability and Feasibility of a Multicultural Orientation-Informed Focused Acceptance and Commitment Therapy for Caregivers of Adolescent Bariatric Surgery Candidates

Jessica L. Cook

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ACCEPTABILITY AND FEASIBILITY OF MULTICULTURAL ORIENTATION-INFORMED FOCUSED ACCEPTANCE AND COMMITMENT THERAPY FOR CAREGIVERS OF ADOLESCENT BARIATRIC SURGERY CANDIDATES

by

Jessica Lynne Cook, M.Ed.

A Dissertation

Submitted in Partial Fulfillment of the

Requirements for the Degree of

Doctor of Philosophy

Major: Clinical Psychology

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Acknowledgments

There are a number of people I would like to acknowledge express my absolute gratitude. I would not have made it to this point in my doctoral journey without their support.

First, I would like to thank my dissertation committee for their guidance, constructive feedback, and continued support. You have helped make this dissertation process an enjoyable and intellectual experience. I am so grateful for your time and effort.

Secondly, thank you Dr. Berlin for your consistent encouragement, thoughtful feedback, and dedication to values of social justice. It is clear that you value your role as a mentor, and I am confident your efforts to support me throughout my training will propel me to succeed as I pursue my career as a pediatric psychologist.

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Finally, I would like to thank my family, friends, and Ducky. Thank you for keeping me motivated and positive throughout this process. I appreciate your unending love and your reassuring enthusiasm for my educational and professional goals.
Positionality Statement

As I present this manuscript, and in the spirit of MCO and practice of cultural humility, I recognize my positionality as a white, educated, able-bodied, middle-class woman of smaller body size. I acknowledge that my positionality has impacted my work, including the current study and manuscript, and that my privilege has inherently contributed to my ability to conduct this research project. It is important to reflect and acknowledge that while the aim of this study is to contribute to more equitable psychological and medical care for all adolescents and caregivers, I have not endured systemic oppression or experienced resulting health disparities related to my cultural background or identities. I have worked closely with families of marginalized backgrounds from the Memphis community and, while I have strived to provide a platform for their voices within my clinical and research activities in a way that is responsive to their specific identities, experiences, strengths, and needs, I acknowledge this is a lifelong process of learning and growth.
Abstract

Objective: The current study developed and assessed caregiver perspectives of acceptability and feasibility of a family-based multicultural-orientation Focused Acceptance and Commitment Therapy (FACT) intervention for use with adolescents with obesity pursuing bariatric surgery and their caregivers. The intervention aimed to increase adolescent and caregiver psychological flexibility specific to adolescent implementation and caregiver support of health and related values-consistent behaviors. The intervention was iteratively refined to enhance acceptability among families of diverse sociocultural identities while ensuring feasibility of its implementation during routine interdisciplinary pediatric weight-management clinic visits. Method: Adolescent-caregiver dyads were recruited to participate in two intervention sessions during routine pre-operative visits. They completed demographic, psychosocial functioning, and prospective acceptability surveys prior to the first session. Psychosocial and retrospective surveys were completed following both sessions. Therapist acceptability and FACT fidelity were assessed by interventionists during post-session audio-recoded conversations. Descriptive statistics were used to determine if a priori thresholds of acceptability and feasibility related to caregivers were met, and were calculated for all measures at each timepoint. Results: Using caregiver, clinic, and therapist perspectives of acceptability and feasibility, a family-based multicultural-orientation FACT intervention was developed for use with adolescents undergoing bariatric surgery and their caregivers. All families who arrived in clinic participated in the intervention, however completion of research surveys demonstrated some feasibility difficulties. Conclusion: Increased involvement of caregivers in interventions supporting adolescent bariatric surgery candidates is indicated. The current intervention can acceptably be used to fulfill this need. Future studies
should assess further acceptability and efficacy of the BRAVO intervention in bariatric and other pediatric populations.
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**Pediatric Obesity and Weight Management Interventions**

Obesity, defined as maintenance of Body Mass Index (BMI) above the 95th percentile for age and sex, affects approximately 21% of adolescents across the United States (Hales et al., 2017). Both prevalence rates and severity of obesity (class II obesity is defined as BMI ≥ 120th percentile and class III obesity is BMI ≥ 140th percentile) have dramatically increased over the last several years, causing great concern given the long-term adverse health effects associated with the condition (Pulgarón, 2013; Reilly & Kelly, 2011; Skinner et al., 2016; Skinner et al., 2018). Comorbidities can include immediate and long-term medical conditions, including asthma, obstructive sleep apnea, orthopedic issues, cardiovascular complications such as high blood pressure and high cholesterol, insulin-resistance and diabetes (Pulgarón, 2013). Given societal stigma of individuals with overweight and obesity and resulting systemic oppression, obesity is also linked to impaired psychosocial well-being. Evidence suggests higher rates of depression, anxiety, low self-esteem, experiences of bullying/teasing, impulsivity, and disordered eating in adolescents with obesity, particularly in adolescents holding intersecting marginalized identities (Burton et al., 2020; Harrist et al., 2016; Puhl & Latner, 2007; Pulgarón, 2013; Small & Aplasca, 2016). Furthermore, obesity in adolescence predicts obesity into adulthood, and is associated with premature mortality (May et al., 2012; Suchindran et al., 2010).

The American Academy of Pediatrics (AAP) recommends a staged approach to obesity treatment, with Tiers 1 and 2 relying first on lifestyle changes and behavioral intervention, Tier 3 consisting of referral to an interdisciplinary weight management clinic, and Tier 4 consisting of tertiary care intervention options including medications, meal replacement, and bariatric surgery
In contrast to modest outcomes and likelihood of weight regain associated with treatments such as lifestyle changes, medication, and meal replacements, bariatric surgery has demonstrated strong evidence of efficacy in the management of severe obesity in adolescents (Bolling et al., 2019; Inge, Boyce, et al., 2014; Inge, Zeller, et al., 2014). Not only has bariatric surgery resulted in improved long-term weight-loss, but it is also associated with improvements in adolescents’ medical and psychological comorbidities (Griggs et al., 2018; Inge et al., 2019; Zeller et al., 2009). Alternatively, limited efficacy of initial lifestyle modifications and disadvantages of other higher tier interventions for severe obesity, such as safety and efficacy concerns for medications and long-term sustainability and high cost of meal replacement bars and shakes, often preclude long-term weight loss maintenance (Berkowitz et al., 2011; Srivastava et al., 2019). Bariatric surgery has been recognized as the most efficacious treatment for adolescents’ significant weight loss, resolution of medical comorbidities, and improvements in health-related quality of life (HRQoL; Armstrong et al., 2019; McGinty et al., 2015; Paulus et al., 2015).

**Contextual Considerations in Obesity and Weight-Loss Intervention**

Obesity in adolescents has been recognized as a complex system, influenced by numerous factors among adolescents’ various social and physical contexts, rather than solely focusing on the individual (Burton et al., 2018; Huang et al., 2009; Larson et al., 2013). Integrated models of health that encompass a wide range of interacting factors including biological, interpersonal, social, cultural, and physical environment are crucial in understanding health and health behavior change in children and adolescents (Bronfenbrenner, 1979; Bronfenbrenner & Morris, 2007). The current manuscript specifically highlights the role of the family-level system given robust evidence exists to suggest that caregiver and caregiver-child
relationship factors significantly impact adolescent obesity, health behaviors, and related treatment (Chai et al., 2019; Lawman & Wilson, 2012; Zhang et al., 2020). Further, given known health disparities within obesity rates and treatments, as well as differences in definitions and perceptions of health and cultural differences in diet and activity levels, broader systems-level factors are also considered (Caprio et al., 2008; Michie et al., 2011; Spencer & Swanson, 2013).

**Caregiver Influence**

Within the familial context, caregivers play a significant role in their children’s weight management as models of health behaviors and providers of nutritious food choices in the household. Caregivers’ own health behaviors, as well parenting practices, significantly contribute to adolescents’ health behaviors, including dietary choices, screen time, and physical activity which all serve as important indicators of obesity risk (Sleddens et al., 2011; Zhang et al., 2020). Adolescence is a developmental period associated with increased autonomy, identity development, and risky decision making (Leather, 2009; Pfeifer & Berkman, 2018). Families’ ability to balance ongoing caregiver support with the transition of responsibilities and growing independence during adolescence can influence adolescents’ health choices, completing treatment cares for obesity/overweight and comorbid health conditions, and family relationship processes (Hassink, 2020; Shrewsbury et al., 2011). Additionally, a genetic component is posited given the high rate of intergenerational transmission of obesity (Grossman et al., 2017). One study found that approximately 66% of mothers seeking weight-management treatment for their child met criteria for obesity themselves (Modi et al., 2009).

While empirical data related specifically to surgical intervention are scarce, meta-analytic evidence suggests that caregiver involvement in weight-loss treatment more broadly accounts for approximately 20% of the variance in child weight (Chai et al., 2019). Furthermore, family-
based weight-management interventions that targeted caregivers, with or without adolescents’ involvement, were effective in facilitating adolescents weight loss, above and beyond interventions that solely involved the child (Chai et al., 2019). In fact, greater caregiver involvement in behavioral interventions was associated with greater weight change. As such, most recent guidelines released by the American Psychological Association for treatment of obesity in adolescents continue to highlight the importance of parental/caregiver involvement (Llabre et al., 2018).

Given the important role that caregivers play in their child’s weight management and health behaviors, it is crucial to consider caregiver mental health and wellbeing. Consistent with broader pediatric literature that has evidenced increased distress in caregivers of adolescents living with a chronic medical condition, caregivers of adolescents with obesity report impaired psychosocial functioning. Specifically, caregivers report higher parenting stress, increased anxiety and depressive symptoms, and impaired health-related quality of life (Guilfoyle et al., 2010; Modi et al., 2009; Zeller et al., 2007). In the context of weight-management surgery, extensive resources and behavior changes are required of the caregiver in order to facilitate weight-management treatment in adolescents. Frequent clinic visits require substantial time commitment which may require missing school and work and arranging transportation that sometimes requires families to travel multiple hours per visit. Expenses related to behavioral changes associated with treatment may cause financial stress, including purchase of meal-replacement protein shakes, dietary supplements, gym memberships, etc. Caregivers must manage and find adequate resources to fulfill these responsibilities, monitor adolescent implementation of recommended health behaviors, cope with their own emotional reactions to potential comorbidities and/or complications associated with their child’s condition. Thus, it is
unsurprising that, in addition to general parenting stress, caregivers of adolescents with obesity experience psychosocial difficulties.

Evidence directly links family and/or caregiver functioning with psychosocial outcomes of adolescents with obesity. Greater caregiver distress and impairment in HRQoL has been associated with impaired HRQoL and increased levels of psychopathology in adolescents with obesity (Modi et al., 2009; Ohleyer et al., 2007). Furthermore, adolescents with severe obesity who experience adversity (e.g., divorce, parental death) and higher conflict within the home are at increased risk of experiencing psychosocial dysfunction (Zeller et al., 2015). Caregiver reported stress impacts dietary choices, specifically increased fast-food consumption (Parks et al., 2012). Thus, a strong argument can be made for the importance of acknowledging the role of caregivers and caregiver-child interactions, in addition to adolescent characteristics, on psychosocial outcomes in this population. Despite significant plausible benefits, few studies provide details related to caregiver involvement in weight loss interventions, particularly surgical intervention, and even fewer provide insight to these processes in understudied populations (e.g., those considered to have low income, non-white populations).

**Cultural Identity**

Related to, but extending beyond adolescents’ family environment, cultural context should be highly considered in the treatment of adolescents undergoing bariatric surgery. Distinct cultures maintain unique traditions, perspectives, and lifestyles that play a role in aspects of health and weight-management interventions, including eating behaviors and leisure activities (Caprio et al., 2008). For example, for some, food serves as an expression of cultural identity and a means of preserving family and community. Cultural values likely impact understanding, importance, and value of overall health and distinct aspects of health that contribute to weight.
Further, given the known importance of caregiver involvement in weight-loss interventions, in addition to known cultural differences in parenting practices, it is likely that culture and family contexts intersect to differentially impact adolescents’ health outcomes following bariatric surgery. One case study of an adolescent who underwent bariatric surgery identified family-based interventions that take into account culturally influenced factors such as family perceptions and dynamics (e.g., living in multigenerational home, family values) as a crucial component to effective intervention (Romirowsky et al., 2015). Interventions for adolescent bariatric surgery would benefit from incorporation of theoretical frameworks that allow for flexibility and consideration of adolescents’ broader contexts, in addition to individual characteristics, to address the multifactorial causes and facets of obesity.

**Systemic Health Disparities**

Rates of obesity and related comorbidities are disproportionately higher in adolescents with diverse intersecting identities (e.g., race, income, gender) who simultaneously endure stress and challenges stemming from racism, sexism, classism, and sizeism in addition to the socioemotional and financial burden of living with a chronic illness (Spencer et al., 2015; Spencer & Swanson, 2013). The synergistic and interactive effects of these systems of oppression (Acker, 2006; David & Derthick; Feagin, 2006; Pratto & Stewart, 2011; Velez & Spencer, 2018) differentially allocate resources/restrictions resulting in and maintaining health disparities in youth with obesity and their families. Specifically, systemic oppression causes both imbalances in developmental challenges and supports (e.g. by adding additional negative experiences of discrimination and stress) relative to more privileged individuals/families (Ogden et al., 2018; Skinner et al., 2016; Skinner et al., 2018; Spencer et al., 2015; Spencer & Swanson, 2013), as well as higher rates and more severe obesity and related comorbidities in Black,
Hispanic, and/or economically marginalized adolescents. Further, caregivers and families with intersecting identities are made vulnerable to identity-related health disparities by systemic-induced discrimination and inequity in access to resources and supports (Spencer & Swanson, 2013; Velez & Spencer, 2018). Notably, the construct of race has no biological basis, but was created for and continues to be used for a sociopolitical agenda to perpetuate oppression and maintain white hegemony (Velez & Spencer, 2018). Given the prevalence, severity, and significant health burden of obesity in adolescents, psychological interventions infused with cultural humility are crucial to effective and comprehensive treatment for adolescents with obesity and their families.

Despite evidence that bariatric surgery is an effective treatment for weight loss that can promote physical and mental health in diverse adolescents, interlocking systems of oppression and privilege contribute to disparities in access and implementation of bariatric surgery across race and socioeconomic status (Steinberger et al., 2021). For example, though obesity rates, severity, and related comorbidities are higher in Black, Hispanic, and/or adolescents in families considered to earn low-income, national data consistently indicate that White, female adolescents receive bariatric surgery more often than any other adolescent group (Lopez et al., 2017; Messiah et al., 2020). Additionally, Black adolescents typically have higher pre-operative BMI compared to other racial groups, possibly indicating delays in appropriate treatment of Black adolescents (Lopez et al., 2017). These inequities in access and resources perpetuate disproportionate trends of obesity, health comorbidities, and mortality among systemically-oppressed communities (Ogden et al., 2018). Short term weight-loss outcomes and rates of complications suggest no differences across race, suggesting that bariatric surgery is an acceptable and effective intervention for all adolescents (Steinberger et al., 2021). Greater consideration of factors
contribute to these disparities in bariatric surgery access is imperative to interrupt perpetual systems of inequity and provide equitable care for all adolescents.

**Psychological Intervention for Pediatric Weight Management**

Despite substantial support in medical and psychology literature for the critical role of psychologists in the preparation and follow-up care to optimize outcomes in adolescents undergoing bariatric surgery (Inge et al., 2004; Michalsky et al., 2012; Whitlock et al., 2008), little empirical evidence exists to suggest best psychological assessment and intervention practices associated with adolescent bariatric surgery. While The American Psychological Association’s Clinical Practice Guideline for Multicomponent Treatment of Obesity and Overweight in Children and Adolescents recommends the use of family-based multicomponent behavioral interventions to address behavior change, diet, and physical activity, there is little to no extant research to support efficacy of distinct interventions within adolescents undergoing bariatric surgery (Llabre et al., 2018). As surgical intervention for adolescent obesity continues to become more accessible and commonly implemented (Zwintscher et al., 2013), identification of concurrent psychological/behavioral health interventions that best support adolescent weight, health, and psychosocial outcomes will be critical.

**Focused Acceptance and Commitment Therapy and the Multicultural Orientation; Promising Frameworks for Pediatric Weight Management Intervention**

Focused Acceptance and Commitment Therapy (FACT), a brief intervention that allows for flexible consideration of family and cultural values, displays significant promise in addressing individualized, yet comprehensive, needs to provide effective treatment promoting medical and psychosocial outcomes in adolescents pursuing bariatric surgery and their caregivers. FACT is a brief adaptation of a longer-duration Acceptance and Commitment
Therapy (ACT), an intervention which aims to enhance individuals’ ability to engage in values-related actions in the context of variety of stressors by way of increased psychological flexibility (Fuchs et al., 2013a; Hayes et al., 2011). FACT consolidates six major facets of psychological flexibility into three treatment “pillars”: open, aware, and engaged (Kashdan & Rottenberg, 2010; Strosahl et al., 2012). Effective intervention strengthens these pillars to improve individuals’ ability to live mindfully and non-judgmentally aware of the present moment, to recognize and separate thoughts from the self, choosing what thoughts dictate behavior and remaining open to sometimes difficult experiences, and engage in action based on personal values to enhance meaning and fulfillment in life (Hayes et al., 2011). Notably, therapists implementing FACT are encouraged to enact these principles while delivering therapy as well. FACT takes a collaborative approach which may enhance the effectiveness within individuals of various cultural identities, including and especially those oppressed and/or underrepresented groups. Further, the practice in FACT to consider the workability of an individual’s behaviors within the context of their environment and self-identified values aligns itself well with a multicultural orientation.

Owen and colleagues’ multicultural orientation (MCO) framework is a promising therapeutic approach to use in adolescents pursuing bariatric surgery and their caregivers (2018). This framework, meant to serve as the foundation from which to implement a specific intervention protocol or approach, consists of three main elements, or pillars: cultural humility, a “way of being” in session for therapists; cultural opportunities, a way of identifying and responding to therapeutic cultural markers in session; and cultural comfort, a way of understanding the self during those moments (Owen et al., 2011). Cultural humility requires critical self-examination by therapists of their own cultural biases and identity, remaining other-
oriented, and maintaining a curious, nonjudgmental, and open stance towards another’s cultural background, lived experience, and values (Mosher et al., 2017). Cultural opportunities are moments that arise in therapy when the client’s cultural beliefs, values, or other aspects of identity could be explored (Davis et al., 2018). MCO assists therapists in recognizing and capitalizing on these opportunities when clients bring up facets of their cultural backgrounds that can be explored. Cultural comfort, therapists’ feelings of openness, relaxation, and calmness before, during, and after culturally-focused content and general feelings of comfort working with diverse clients, is highly relevant in these moments (Davis et al., 2018). Therapists should remain aware of feelings of comfort and acknowledge any feelings of discomfort that arise, while continuing to practice cultural humility.

The MCO framework appears to fit exceedingly well with both FACT principles and to the needs of the diverse cultural backgrounds, values, and identities of pediatric patients and families. Like with FACT, MCO is process-oriented. Thus, any attempts to incorporate strict competencies would conflict with the fundamental essence of the framework (Davis et al., 2018). Complementing FACT’s flexibility and incorporation of individual needs and values, MCO strives to understand how cultural dynamics can influence the therapeutic process, from case conceptualization to treatment planning and intervention. Possibly the most significant overlap between the two approaches is seen among the MCO and FACT pillars, illustrated in Figure 1.

For example, when a therapist is listening intently and remaining aware of the present moment, they are better able to identify cultural opportunities which may further the intervention, and/or may identify thoughts and feelings that arise which, unnoticed, may have otherwise impacted therapy implementation. A therapist engages in valued action when exploring cultural opportunities and tailoring intervention to clients’ lived experiences and
**Focused Acceptance and Commitment Therapy**

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<td>Cultural Comfort</td>
<td>Cultural Opportunities</td>
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<tr>
<td>A “way of being” with the client</td>
<td>Awareness of the self, inner experiences during cultural discussions</td>
<td>Identifying and responding to therapeutic cultural markers in session</td>
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<tr>
<td>Other-oriented, nonjudgmental and curious of client’s cultural identity/values</td>
<td>Reflect and understand uncomfortable experiences, continue practicing cultural humility</td>
<td>Engaging in opportunities when aspects of cultural identity could be explored</td>
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**Multicultural Orientation Framework**
Though evidence to support FACT more generally is steadily increasing, it is helpful to look to literature supporting ACT and FACT interventions for evidence that FACT interventions successfully target various dimensions of psychological flexibility. In turn, a plethora of research suggests adolescents and caregiver psychological flexibility is associated with a variety of individual, dyadic, and family well-being outcomes in healthy and chronic illness populations (A-tjak et al., 2015; Gloster et al., 2020; Hayes et al., 2012; Swain et al., 2015). Recent reviews have emphasized the importance of caregiver psychological flexibility. Daks and Rogge reviewed 93 studies and found that several facets of caregivers’ psychological flexibility displayed small to moderate correlational effects with decreased parenting stress, maladaptive parenting behaviors, family conflict, and adolescents internalizing and externalizing behaviors, as well as increased family cohesion and adaptive parenting style (Daks & Rogge, 2020). Additionally, two additional meta-analyses looked specifically at the impact of ACT interventions aiming to support caregivers of children with chronic health conditions (Byrne et al., 2021; Jin et al., 2021). Across 27 samples of caregivers of adolescents with health adversities, ACT-based interventions produced significant improvement on a variety of caregiver outcomes, including psychological flexibility, psychological distress, and parenting behaviors. Together, these reviews argue that ACT interventions supporting adolescents with chronic health conditions and caregivers are effective in the treatment of a range of difficulties presenting in childhood and adolescence.

Though studies assessing the MCO approach to therapy is scarce, and perhaps absent altogether within pediatric populations, the literature in pediatric weight management and bariatric interventions has continued to acknowledge the importance of multisystemic factors on adolescents’ treatment and well-being. However, there is also an ongoing need to better
understand how cultural factors, including systemic and familial characteristics, impact the therapeutic process. Furthermore, greater acknowledgement has been given to intersectionality research which argues that all identities held by an individual, “as well as their affiliated privileges and oppressions, are interlocking, coexisting, and fluid”, and no singular identity or related experiences can exist in isolation (Cole, 2009; Davis et al., 2018). Any given pediatric patient and/or caregiver, then, holds multiple identities at once, and must balance each and all related privileges and oppressions. The MCO framework allows for this, and for the therapist to openly acknowledge, explore, and support patients of various, simultaneous identities, including but not limited to those related to a patient’s family and/or cultural background.

In summary, a multiculturally-oriented FACT intervention is promising for the current context for several reasons. First, this intervention was designed for delivery in primary care settings, consisting of brief (15-40 minute) sessions that may or may not require follow-up. Therefore, it could be piloted in most multidisciplinary bariatric clinics with minimal (or no) clinic disruption. Furthermore, the flexibility and adaptability of FACT falls in line with APA recommendations for implementing treatment with adolescents with obesity (Llabre et al., 2018). This type of intervention is intended to enhance psychological flexibility and requires a client-centered approach to focus on and support individuals’ self-identified values. Such approaches inherently utilize cultural humility, the organizing principle of MCO, to better incorporate individuals’ socioecological context and unique resources and stressors (Fuchs et al., 2013b; Sue & Sue, 2003). Thus, MCO-informed FACT could be used to address psychologists’ wide range of functions within bariatric clinics, as well as incorporate cultural and familial values into fundamental aspects of treatment. However, the use of these interventions has not been studied in
adolescents with obesity and their caregivers and families, and the effects of MCO, FACT, and psychological flexibility remain unknown.

Current Study

The purpose of the current study was to assess the acceptability and feasibility of a family-based MCO-informed FACT intervention delivered to adolescents pursuing bariatric surgery and their caregivers in an interdisciplinary pediatric weight-management clinic. Acceptability and feasibility are necessary for intervention effectiveness, and must be established prior to analysis of intervention efficacy and implementation of an intervention via randomized control trial (Hilliard et al., 2021). The more acceptable an intervention, the more likely a patient is to follow treatment recommendations and experience benefits related to improved clinical outcomes (Sekhon et al., 2017).

A recent call was made by experts in the field of pediatric psychology for more rigorous and focused feasibility and/or pilot trials to prevent premature assessment of intervention efficacy (Hilliard et al., 2021). The Obesity Related Behavioral Intervention Trials (ORBIT) model outlines standardized treatment development and assessment phases deemed appropriate for advancement of care for pediatric populations (Czajkowski et al., 2015). The current intervention fell within Phase II of the model, “Preliminary Testing”. The study simultaneously met goals of Phase IIa, “Proof-of-Concept”, and Phase IIb, “Pilot Testing” as it involved testing the proposed intervention in a small sample to efficiently evaluate clinical, not significant, benefit (proof-of-concept) and determined feasibility of implementation and acceptance by participants and staff within its intended context (pilot testing; Czajkowski et al., 2015).

Acceptability for healthcare interventions was used to evaluate acceptability and refine the intervention in response to the needs of patients and their caregivers (Sekhon et al., 2017).
This acceptability framework, developed using inductive and deductive methods to conceptualize a comprehensive definition of acceptability, consists of seven constructs (affective attitude, burden, perceived effectiveness, ethicality, intervention coherence, opportunity costs, and self-efficacy; see Figure 2) that assess prospective and retrospective acceptability of healthcare interventions (Sekhon et al., 2017).

Figure 2

The Seven Component Constructs of the Theoretical Framework of Acceptability

Acceptability
A multi-faceted construct that reflects the extent to which people delivering or receiving a healthcare intervention consider it to be appropriate, based on anticipated or experiential cognitive and emotional responses to the intervention.

- Affective Attitude: how an individual feels about the intervention
- Burden: The perceived amount of effort that is required to participate in the intervention
- Ethicality: The extent to which the intervention is consistent with the participant's values
- Intervention Coherence: The extent to which the intervention is consistent with the intervention and how it works
- Opportunity Costs: The extent to which the intervention is perceived as likely to achieve its purpose
- Perceived Effectiveness: The participant's confidence that they can perform the behavior (required to participate in the intervention)
- Self-efficacy: The participant's confidence that they can perform the behavior

Together, all feedback was comprised into a final MCO-informed FACT intervention, and that included essential components that we believed would have plausible acceptability and clinically significant benefits on patient and caregiver health and well-being. The study also represented a pragmatic trial given its aim to evaluate the effectiveness of the BRAVO intervention in real-world practice conditions (Patsopoulos, 2022). The implementation of this intervention in a working clinic allowed for results that are generalizable and applicable in the current, and possibly future, routine clinical settings.
In the broader study design, adolescent patients pursuing bariatric surgery and their caregivers were asked to complete a protocol that involves attending two FACT sessions as part of a multidisciplinary clinic visit as well as to complete brief online questionnaires in their home at three separate timepoints. However, the current manuscript and analyses includes acceptability, feasibility, and preliminary outcomes data specific to the caregiver. The primary aim of this study was the development of a feasibly-implemented and acceptable MCO-informed FACT intervention, iteratively refined in response to caregiver feedback related to the intervention’s helpfulness and acceptability. It was hypothesized that the intervention would be feasible and considered acceptable by caregivers. A secondary, exploratory aim was to descriptively explore psychosocial outcomes pre- to post- intervention, as well as trends toward associations with demographic, medical, and psychological measures as sample size allows. No hypotheses were made given the exploratory nature of this aim.

Method

The development of the BRAVO intervention is described in this paper using the TIDieR (Template for Intervention Description and Replication) checklist to help provide clear structure and promote successful implementation and replication of the ultimate intervention in future studies. The TIDieR checklist was developed to resolve previous concerns related to quality and consistency of descriptions of interventions in publications. The TIDieR checklist was developed in response to an overall absence of guidance across journals for how to describe and report intervention implementation. Authors of the checklist used information gathered from a review of relevant checklists and literature, a Delphi survey of an expert panel, and the 2010 Consolidated Standards for Reporting Trials (CONSORT) and 2013 Standard Protocol Items: Recommendations for Interventional Trials (SPIRIT) statements. The checklist consists of 12
items which can be found in Table 1. Some or all of the checklist items may be included in the
description of an intervention and, for purposes of the current write-up, are incorporated
throughout the methods and results section.

**Brief Name: Provide the name or phrase that describes the intervention**

The broader Bariatric Resilience: Awareness, Valued Living, Openness (BRAVO) study
was an acceptability and feasibility pilot trial of a family-based MCO-informed FACT
intervention for adolescents pursuing bariatric surgery and their caregiver.

**Why: Describe any rationale, theory, or goal of the elements essential to the intervention**

Given the lack of research on psychological interventions for bariatric surgery in
adolescents, and thus lack of understanding of the impact of multiculturally oriented and/or
FACT interventions with these adolescents and their caregivers, a feasibility and acceptability
study is warranted (Bowen et al., 2009; Hilliard et al., 2021).

**Participants and Procedure**

This trial was implemented in the Healthy Lifestyle Clinic (HLC) an interdisciplinary weight
management clinic in the Mid-South region of the United States that offers Stage 3 and 4 weight
management treatments for adolescent and young adult patients with obesity, including bariatric
surgery. Notably, while bariatric surgery refers to a variety of weight-loss surgical procedures,
youth treated at the HLC undergo a vertical sleeve gastrectomy, a minimally invasive procedure
that supports weight loss through impacts on appetite, satiety, and energy balance. The clinic
serves a wide range of adolescents residing in urban, suburban, and rural areas of West
Tennessee, Northern Mississippi and Eastern and central Arkansas. Notably, rates of obesity in
adolescents in these states range between 18% and 19%, well above the 13.3% national median,
with more pronounced disparities in Black and/or Hispanic adolescents (Kann et al., 2014).
Table 1

TIDieR Checklist

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1. Brief Name:</td>
<td>Provide the name or phrase that describes the intervention.</td>
</tr>
<tr>
<td>2. Why:</td>
<td>Describe any rationale, theory, or goal of the elements essential to the intervention.</td>
</tr>
<tr>
<td>3. What: Materials.</td>
<td>Describe any physical or informational materials used in the intervention, including those provided to participants or used in intervention delivery or in training of intervention providers.</td>
</tr>
<tr>
<td>4. What: Procedures.</td>
<td>Describe each of the procedures, activities, and/or processes used in the intervention, including any enabling or support activities.</td>
</tr>
<tr>
<td>5. Who provided:</td>
<td>For each category of intervention provider (for example, psychologist, nursing assistant), describe their expertise, background and any specific training given.</td>
</tr>
<tr>
<td>6. How:</td>
<td>Describe the modes of delivery (such as face to face or by some other mechanism, such as internet or telephone) of the intervention and whether it was provided individually or in a group.</td>
</tr>
<tr>
<td>7. Where:</td>
<td>Describe the type(s) of location(s) where the intervention occurred, including any necessary infrastructure or relevant features.</td>
</tr>
<tr>
<td>8. When and how much:</td>
<td>Describe the number of times the intervention was delivered and over what period of time including the number of sessions, their schedule, and their duration, intensity or dose.</td>
</tr>
<tr>
<td>9. Tailoring:</td>
<td>If the intervention was planned to be personalized, titrated or adapted, then describe what, why, when, and how.</td>
</tr>
<tr>
<td>10. Modifications:</td>
<td>If the intervention was modified during the course of the study, describe.</td>
</tr>
<tr>
<td>11. How well (planned):</td>
<td>If intervention adherence or fidelity was assessed, describe how and by whom, and if any strategies were used to maintain or improve fidelity, describe them.</td>
</tr>
<tr>
<td>12: How well (actual):</td>
<td>If intervention adherence or fidelity was assessed, describe the extent to which the intervention was delivered as planned.</td>
</tr>
</tbody>
</table>

These disparities exist in the context of the South’s longstanding systems supporting white supremacy and historical oppression of communities of color. The region’s practices of racial segregation and legal policies that deprived Black individuals of economic and educational opportunities, has perpetuated racial inequity that is evident in intergenerational economic and health disparities. Unsurprisingly, this region displays significantly higher rates of chronic health
conditions (e.g., obesity, hypertension, asthma, depression, arthritis) than in other regions of the United States, with the highest rates observed in Black and economically marginalized individuals (Oates et al., 2017).

Participants in the study met criteria widely accepted across pediatric bariatric clinics for bariatric surgery recommendation, including BMI $\geq 35$ kg/m$^2$ with one or more medical comorbidities (e.g., type 2 diabetes, obstructive sleep apnea) or a BMI of $\geq 40$ kg/m$^2$ with less severe comorbidities (e.g., hypertension, impairment in physical functioning) (Pratt et al., 2018). Additional developmental factors that are considered include skeletal age, Tanner stage (with evidence suggesting stage IV or V to be appropriate), and biological age, as well as adolescents’ understanding of responsibilities, risks, and benefits associated with surgery (Inge et al., 2004; Michalsky et al., 2012; Shoar et al., 2017).

Participants in the current study included eleven dyads consisting of adolescents pursuing bariatric surgery at the HLC at Le Bonheur Children’s Hospital in Memphis, Tennessee and their caregivers. All participants met eligibility for consideration for bariatric surgery at the HLC (listed in the previous Pediatric Obesity and Weight Management Intervention section). Exclusion criteria for the current study included the lack of availability and willingness of a caregiver over the age of 18 to accompany the patient to HLC visits and participate in the proposed intervention, as well as the inability to speak and write English. Demographics for the current sample are reported in Table 3.

Protocols at the HLC for patients interested in undergoing bariatric surgery include attendance to approximately six visits prior to receiving bariatric surgery during which the adolescent and their caregiver meet with the clinic’s pediatric surgeon, nurse practitioner, registered dietitian, exercise physiologist, and behavioral health clinician for approximately 30
minutes per provider. Behavioral health providers (i.e., a pediatric psychologist and/or graduate student clinicians) serve in a variety of roles to facilitate optimal outcomes for patients and families, including support of engagement and adherence to treatment plans and communication and cooperation between patients, families, and providers (Burton et al., 2020; Cadieux et al., 2016). Additionally, given the detrimental effects that psychopathology and related symptoms can have on implementation of treatment plans, it is important that psychologists provide intervention for existing or concurrent psychological issues unrelated to surgery (Taner et al., 2009; Zeller et al., 2004). Over the course of patients’ visits prior to and following surgery, a psychologist assesses the patient’s and caregivers’ understanding of responsibilities and possible consequences of surgery, and uses motivational interviewing techniques to assess motivations for surgery and address adherence issues and modifiable barriers to health behavior change (Naar-King & Suarez, 2011; Shoar et al., 2017). Such approaches that integrate cognitive and behavioral approaches have been found to effectively facilitate diet and exercise change in adolescents with obesity (Whitlock et al., 2008).

**What: Materials. Describe any physical or informational materials used in the intervention, including those provided to participants or used in intervention delivery or in training of intervention providers**

Together a guiding outline was developed for the basis of each FACT session (see appendix A). A primary aspect of care as usual in the HLC bariatric clinic is responsivity, allowing clinicians to address current problems that are communicated during session, rather than defining a set goal or issue to cover at each visit. Additionally, FACT is flexible in nature, and encourages creative development of protocols for specific populations with more or less emphasis on specific ACT processes given the needs and resources of a unique population. This
information, taken together, supported the decision to forego a strict session guide, but identify guiding questions and assess inclusion of main ACT principles within the session discussion.

**What: Procedures. Describe each of the procedures, activities, and/or processes used in the intervention, including any enabling or support activities**

Pediatric patients in the bariatric surgery track of the HLC who met eligibility criteria were identified via medical record review. Potential participants were then contacted via phone for recruitment. After providing relevant study information, answering potential questions, and completing a screener to confirm eligibility (“Do you/Does your child plan to pursue bariatric surgery through the HLC?” and “Does your child have a caregiver that plans to attend the next two bariatric appointments at the Healthy Lifestyle Clinic at Le Bonheur with them?”), adolescents and their caregiver were sent an email with links to consent/assent forms and online assessment measures. A summary of collected measures is shown in Table 2; note that while all measures are listed, analyses in the current study will only include caregiver-reported data.

**Participant Compensation**

Adolescents and caregivers were compensated for completion of assessment measures at each timepoint with a $5 Walmart gift card. Thus, adolescents and caregivers had the potential to earn $5, $10, or $15 each, dependent on number of times each individual completes measures. Institutional Review Board approval was obtained from the University of Tennessee Health Science Center and the University of Memphis for study procedures.

**Who provided: For each category of intervention provider (for example, psychologist, nursing assistant), describe their expertise, background and any specific training given**
Two psychology graduate students served as interventionists throughout the current study. Both students received training in ACT and FACT procedures, and have professional experience providing behavior health care for adolescents pursuing bariatric surgery at the HLC. These students were supervised by two pediatric psychologists whose work is grounded in cultural humility, one with expertise in ACT and the other in working with bariatric populations.

**How:** Describe the modes of delivery (such as face to face or by some other mechanism, such as internet or telephone) of the intervention and whether it was provided individually or in a group

Potential participants were contacted via phone for recruitment. If determined eligible, adolescents and caregivers completed consent forms and assessment measures at each timepoint online via Qualtrics®, a secure, web-based research survey software. Compensation was also provided via email. Both FACT intervention sessions were provided face-to-face during patients’ Behavioral Health visit as part of routine care in the HLC. Both patient and caregiver were asked to be present at both sessions.

**Where:** Describe the type(s) of location(s) where the intervention occurred, including any necessary infrastructure or relevant features

See the above Healthy Lifestyle Clinic section for more information. This intervention can be conducted in any private area where there is appropriate seating.

**When and how much:** Describe the number of times the intervention was delivered and over what period of time including the number of sessions, their schedule, and their duration, intensity or dose

All adolescents seeking bariatric surgery at the HLC attend approximately six visits prior to their surgery date. The current 2-session FACT intervention took place during the adolescent’s
second and third, or third and fourth, visits. The FACT intervention was conducted during two consecutive sessions, first individually focused on the pediatric patient, and the second session focused on the patient’s caregiver. Sessions aimed to last approximately 30 to 40 minutes. Both members of the adolescents-caregiver dyad completed pre-intervention assessment measures within the 2-week window before the first FACT, patient-focused session (T1), post-patient intervention assessment measures within the 2-week window before the second FACT caregiver-focused session at the subsequent HLC visit (T2), and post-caregiver intervention assessment measures during the 2-week window after the second FACT caregiver-focused intervention (T3).

**Tailoring: If the intervention was planned to be personalized, titrated or adapted, then describe what, why, when, and how**

While one clinician primarily led the session, the other served in a supporting role, taking notes regarding case conceptualization as well as fidelity with ACT principles and contributing to the facilitation of the intervention as needed. Following each session, both clinicians discussed fidelity, perceived patient/caregiver-reported acceptability and feasibility, therapist perceptions of acceptability related to administration of the intervention, with particular focus on cultural comfort and opportunities, and any additional relevant feedback for qualitative analysis. This allowed for iterative development of sessions, and refinement to incorporate feedback provided by families as well as intervention developers in order to increase acceptability of the intervention, as defined by Sekhon and colleagues’ TFA (Sekhon et al., 2017).

It is important to note that throughout the BRAVO study, the intervention was ever-evolving, rather than a set, rigid protocol. If modifications were identified and agreed upon by both student clinicians as having the potential to positively change the intervention in any way, they were recorded on the session guide sheet and incorporated into future sessions. One
foundational purpose of the current study was to identify an acceptable and feasible intervention that best supports adolescents pursuing bariatric surgery and their families. In order to do so, recognizing feedback given by the families and implementing changes to address feedback was imperative to the development of such an intervention for the participating families.

**How well (planned): If intervention adherence or fidelity was assessed, describe how and by whom, and if any strategies were used to maintain or improve fidelity, describe them**

Both clinicians were present at each intervention session. One clinician led the session, while the other assessed fidelity of the specific intervention session to ACT/FACT principles. To facilitate this assessment, the ACT Fidelity Measure (O’Neill et al., 2019) was used to rate interventionist behaviors inconsistent with FACT/ACT principles, as well as provide descriptive information about the facets covered within session. Specific facets rated by the measure include Open, Aware, and Engaged response styles, as well as Therapist Stance. Additionally, the researchers audio-recorded discussions after each intervention session in order to resolve discrepancies in fidelity that were identified, discuss perceived and patient/caregiver-rated acceptability and feasibility, identify strengths and weaknesses of the clinician portrayed throughout the session, and to identify possible modifications of the intervention that may increase acceptability, feasibility, and/or efficacy in future sessions from family and interventionist feedback.

**Measures**

**Feasibility and Acceptability**

Data regarding the number of participant dyads who were recruited and who completed all three timepoints of the study were collected. Following CONSORT guidelines for feasibility trials, information related to feasibility including attrition frequency and motivations was gathered (Eldridge et al., 2016). Notably, given the small number of participants included in this
feasibility study, randomization of participants into distinct interventions did not occur and all families received two MCO-informed FACT intervention sessions. For the purposes of this study, feasibility was defined as the percentage of individuals who consented to the intervention who successfully completed both sessions.

A measure developed using the Theoretical Framework of Acceptability was completed by caregivers to assess acceptability prospectively at T1 (pre-intervention), concurrently in session, and retroactively at T2 (post-adolescents session) and T3 (post-caregiver session) (Sekhon et al., 2017). Sekhon and colleagues developed a series of questions to assess acceptability of healthcare interventions qualitatively. In order to reduce questionnaire burden for families in the HLC, the current study adapted these questions such that all facets of acceptability proposed as fundamental in the TFA would be represented, though quantitative response options were provided. Items 3, 5, and 7 were reverse-coded and items above 70% indicated acceptability. See Appendix B for the included acceptability measures.

**Sociodemographic Data**

Caregivers completed sociodemographic surveys to provide information related to sociodemographic identities including age, race, ethnicity, sex assigned at birth, gender, and education. Caregivers also provided data regarding current address, household annual income, relationship to patient, and family structure.

**Psychological Flexibility.**

*Acceptance and Action Questionnaire (AAQ2).* The AAQ2 is a 7-item measure of general psychological inflexibility, acceptance, and experiential avoidance that was completed by caregivers in the current study (Bond et al., 2011). The measure asks individuals to rate how
Table 2

Proposed BRAVO Study Design Flow

<table>
<thead>
<tr>
<th>Timepoint</th>
<th>Description</th>
<th>Measures</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identification, recruitment, and screening</td>
<td>Adolescent patients in the HLC who met eligibility criteria were identified via medical record review and recruited following their first bariatric appointment. Families were provided study information and received the opportunity to ask questions.</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>
| Time 1: Baseline assessment | Consent and assent were obtained from adolescents and their caregiver. Dyads completed surveys within two weeks of their next HLC appointment (FACT session A). Caregivers and adolescents were compensated once surveys were completed. | - Demographic information  
- Prospective acceptability  
- Psychological flexibility (AAQ2, HAAS-9, VLQ)  
- Adolescent Well-being (PedsQL) | |
| Session A: Patient-focused FACT Session | FACT session A aimed to clarify patient’s values, assess barriers to engagement in valued action, and collaboratively identify a skill/action to practice outside of the session to increase psychological flexibility. Confidence in completing the practice and helpfulness of the session were rated. Interventionists engaged in post-session discussion. | - Adolescent In-Session Ratings:  
  - Problem Severity (1-10 scale)  
  - Confidence (1-10 scale)  
  - Helpfulness (1-10 scale)  
- Interventionist post-session discussion | |
| Time 2: Post-patient session assessment | Dyads completed surveys within the two weeks following FACT session A. Caregivers and adolescents were compensated once surveys were completed. | - Retrospective acceptability  
- Psychological flexibility (AAQ2, HAAS-9, VLQ)  
- Adolescent Well-being (PedsQL) | |
| Caregiver-focused FACT session 2 | FACT session B was completed with goals of identifying caregiver’s values, assessing barriers to engagement in valued action related health and/or support of their child through bariatric surgery, and collaboratively identifying a skill/action to practice outside of the session to increase psychological flexibility. Confidence in completing the proposed practice and helpfulness of the session were assessed. Interventionists met post-session to discuss treatment fidelity & acceptability. | - Adolescent In-Session Ratings:  
  - Problem Severity (1-10 scale)  
  - Confidence (1-10 scale)  
  - Helpfulness (1-10 scale)  
- Interventionist post-session discussion | |
| Time 3: Post-caregiver session assessment | Dyads completed surveys within the two weeks following FACT session A. Caregivers and adolescents were compensated once surveys were completed. | - Prospective acceptability  
- Psychological flexibility (AAQ2, HAAS-9, VLQ)  
- Adolescent Well-being (PedsQL) | |

Note. BMI was collected at Session A from patient medical records; *adolescent-completed measures are discussed and reported in Keenan et al. (2022)
Table 3

Sample Descriptive Statistics for Caregivers who Completed Baseline Surveys (n = 11)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Statistic</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relation to Patient</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biological Mother</td>
<td>90%</td>
<td>9</td>
</tr>
<tr>
<td>Biological Grandmother</td>
<td>10%</td>
<td>1</td>
</tr>
<tr>
<td>Primary Caregiver</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>100%</td>
<td>10</td>
</tr>
<tr>
<td>Age (years), M (SD), Range</td>
<td>44 (6.7), 37-57</td>
<td>7</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Black/African American</td>
<td>90%</td>
<td>9</td>
</tr>
<tr>
<td>White</td>
<td>10%</td>
<td>1</td>
</tr>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic/Latino</td>
<td>100%</td>
<td>9</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>100%</td>
<td>10</td>
</tr>
<tr>
<td>Household Income Range, Mdn, Range</td>
<td>$14,000-$15,999</td>
<td>9</td>
</tr>
<tr>
<td>Education Completed</td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School Degree or Equivalent (GED)</td>
<td>20%</td>
<td>2</td>
</tr>
<tr>
<td>Some College, No Degree</td>
<td>30%</td>
<td>3</td>
</tr>
<tr>
<td>College Degree (Associate’s or Bachelor’s)</td>
<td>40%</td>
<td>4</td>
</tr>
<tr>
<td>Advanced Degree (Master’s, PhD, MD, etc.)</td>
<td>10%</td>
<td>1</td>
</tr>
<tr>
<td>Members in Household</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>40%</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>20%</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>10%</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>20%</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>10%</td>
<td>1</td>
</tr>
</tbody>
</table>

Note. Two caregivers listed in the Consort Flow Diagram are not captured in this data. This is because one participant opted out of the research portion of this study, and another caregiver only participated in Session B and completion of T2 measures. Thus we do not have demographic data for these caregivers. Percentages were calculated out of the number of participants who completed demographic surveys, (n = 10).

true each item is for them using a 7-point Likert scale (1 = Never True to 7 = Always True). The questionnaire has evidenced good reliability (α = .88), as well as strong convergent, discriminant, concurrent, predictive, and discriminant validity (Bond et al., 2011). The AAQ’s calculated minimal clinically important difference (MCID) was 2.82.

**Health-Related Action and Acceptance Scale- Caregiver 9-item Report (HAAS-C9).**

The HAAS-C9 is a measure developed for this study consisting of 9 items measuring caregiver’s
psychological flexibility in relation specifically to their child’s health. The measure instructs caregivers of adolescents living with various health concerns to use a 5-point ordinal scale (0 = *Never True* to 4 = *Always True*) to report the extent to which statements related to facets of health-specific psychological flexibility (i.e., health-related values engagement, health-related cognitive defusion, and health-related acceptance) are true. This measure was developed by adapting the 9-item short form of the Diabetes Acceptance and Action Scale- Caregiver Report (DAAS-C9) which was recently determined to have strong psychometric properties (reliability, construct and convergent validity, and measurement invariance across race, marital status, annual income, adolescents HbA1c, and illness duration; Cook et al., In Preparation). Items from the DAAS-C9 items were simply modified to refer to caregiver experiences related to their child’s health concerns, rather than diabetes. For example, the DAAS-C9 item “My child’s diabetes stops me from doing what I want to do” was modified to “My child’s health concerns stop me from doing what I want to do”. Of note, all items capture inflexibility and are summed and reversed to create subscale and total scores. Higher scores on the HAAS-C9 reflect higher levels of caregivers’ acceptance and action, and thus greater psychological flexibility, related to adolescents’ health concerns. See Appendix C for the complete measure. The MCID of the HAAS-9 total score, calculated using reliability estimates and standard deviation of the DAAS-C9 from which it was adapted, was 1.62. MCIDs calculated for the health-related values engagement, health-related cognitive defusion, and health-related acceptance subscales were 0.52, 0.81, and 0.87, respectively.

*Valuing Living Questionnaire (VLQ)*. The VLQ is a 10-item measure of valued living, using an ACT framework. Five items focus on living consistently with one’s self-determined values and are summed to create a Progress subscale, with the other five focused on barriers to
valued living which are summed to create an Obstruction subscale. The measure is comprised of a Progress subscale which includes five statements related to engagement in values-guided living (e.g., “I was proud about how I lived my life”) and an Obstruction subscale consisting of five statement assessing barriers to engagement in values-guided living. The MCIDs for the Progress subscale and the Obstruction subscale were 2.32 and 2.48, respectively. Participants rate how true each statement has been for them over the past week using a 7-point ordinal scale (0 = Not True at All to 6 = Completely True). Previous research has indicated adequate internal consistency (α’s = .77-.83) and adequate test–retest reliability with 1- to 3-week periods between administrations (α = .75; Wilson et al., 2010). The measure has also evidenced construct, convergent, and discriminant validity (VanBuskirk et al., 2012; Wilson et al., 2010). Adolescents and caregivers completed this questionnaire at each of the three study timepoints.

**Adolescents’ well-being.** The Pediatric Quality of Life Inventory-General Well-Being Scale (PedsQL) is a brief, 7-item caregiver report measure of adolescents’ general health and well-being that is applicable in healthy and patient populations with acute and chronic health conditions. Caregivers were asked to rate how much six statements sound like the child on a 5-point ordinal scale (0 = Never to 5 = Almost Always) and rate the adolescents’ overall health on a 5-point ordinal scale (0 = Bad to 5 = Excellent). Higher scores indicate greater wellbeing and health related quality of life. The PedsQL’s calculated minimal clinically important difference (MCID) was 5.29.

**Analytical Plan**

All statistical analyses were completed using SPSS version 25.0. Acceptability and feasibility aims, as well as interventionist fidelity to FACT principles, were explored using descriptive statistics, including frequencies, means, and standard deviations. As described above,
feasibility was calculated as the percentage of caregivers that completed Session A who also participated in Session B. Regarding acceptability, a group mean was calculated using the total score of the acceptability measure at each time point, as well as each of the seven acceptability constructs assessed. In accordance with recent recommendations by the Journal for Pediatric Psychology providing guidance for pilot and feasibility trials, data related to caregiver scores on psychosocial measures at all three timepoints were reported using descriptive statistics, and efficacy/hypothesis testing were not conducted (Hilliard et al., 2021). Modified Brinley plots provide a visual representation of changes in caregivers’ scores on all measures/subscales between timepoints 1 and 2 (Blampied, 2017). Minimal clinically important differences (MCID) were calculated using standardized error measurements (SEM; \( SEM = SD\sqrt{1−\alpha} \)), using published reliability and standard deviation values. Changes in scores between two timepoints that are greater than or equal to the value of the SEM are thought to be due to meaningful change over time in the outcomes measured, rather than due to measurement error.

**Results**

**Feasibility: Research/Surveys**

Participant enrollment, as well as completion of the intervention and research portions of the BRAVO study, are comprehensively outlined in the CONSORT flow diagram displayed in Figure 3. Of those 12 dyads who consented to the research portion of the study, eleven caregivers completed T1 surveys (including one partial completion), seven caregivers at least partially completed T2 surveys, and five caregivers completed T3 surveys. Reasons for partial completion of surveys are unknown. Notably, completion of surveys online did not appear feasible as only 18% (\( n = 2 \) of 11) of caregivers completed T1 surveys online at home prior to arriving to clinic for Session A, 43% (\( n = 3 \) of 7) completed T2 surveys at home following Session A, and only
20% (n = 1 of 5) of caregivers completed T3 surveys online at home following Session B. Allowing surveys to be completed in clinic proved to be much more feasible. This strategy was not without complications itself, however. First, this required that participants return to clinic for their bariatric appointments which was not always the case. Four of the twelve dyads initially recruited for the study were lost to follow-up by the time of the caregiver-focused session. Second, the research team was informed by members of the interdisciplinary team that some participants completed surveys during visits with other specialties. Further, surveys were completed on iPads connected to hospital Wi-Fi networks. Weak internet connection and length of time needed to charge all four iPads appropriately at times briefly delayed research/clinic flow. Additionally, the research team had access to four iPads and it was sometimes difficult to coordinate timing of visits in a way that would allow surveys to be completed on days during which there were multiple participant visits.

One factor that specifically affected caregiver data collection in clinic was interactions with medical providers in the past and/or clinic that resulted in negative feelings toward the clinic/staff. At least two caregivers preferred to forego completing surveys altogether following separate interactions with medical professionals (Le Bonheur staff members who were not members of the research team) that resulted in negative caregiver experiences. One caregiver stated that she knew that her feelings at that moment would bias her survey responses, while the other caregiver did not provide such rationale. These concerns were acknowledged by researchers and discussed with caregivers during intervention sessions.

**Feasibility: Clinical Intervention**

Eleven caregiver-adolescent dyads completed the adolescent-focused Session A, while eight dyads completed the caregiver-focused Session B. Of those dyads that did not complete
Note. Both caregiver in one dyad completed Time 2 and Time 3 measures due to mother’s attendance at Session A and father’s at Session B.
session B (n = 3, 27%), none have returned to clinic for a follow-up visit as of the writing of this manuscript and thus were lost to follow-up. Importantly, all caregiver-adolescent dyads who arrived to their multidisciplinary clinic visit were willing and able to participate in the caregiver intervention session (Session B). Of note, while the goal of the intervention was to have the same caregiver at both sessions, this was not always feasible. The team was flexible in that one caregiver who could not present to clinic with their child for Session A attended this session via phone. Additionally, there was one instance in which a mother participated in Session A while the same adolescent’s father attended Session B. While this prevented some consistency in caregiver exposure to FACT concepts for two sessions, this allowed for more teenagers and families to receive some intervention and participate in the study.

Overall, the implementation of the BRAVO intervention was feasible in this clinic setting. If families presented for their bariatric visits, they were seen by the BRAVO team to complete the intervention sessions. There were no added responsibilities or tasks required of clinic staff in order to accommodate these visits. One factor that did affect other clinic providers and flow, however, was the length of some BRAVO caregiver sessions. While the team aimed to limit sessions to approximately 30 minutes, this was, at times, not feasible given some session content. Particularly during caregiver sessions in which content focused predominantly on caregiver-child relationships, a great deal of emotion was uncovered and the interventionists felt as though it was important to hold appropriate space for these emotions, even if that meant sessions were longer in duration. Notably, three of the first four sessions ran over in length and were discussed during after-visit debriefing. However exact session length was not recorded and interventionists remained cognizant of session length moving forward with study visits.
Acceptability of Intervention

As noted previously, retrospective acceptability (T1) and prospective acceptability (T2 and T3) data for both sessions were gathered using a 7-item survey adapted from the Theoretical Framework of Acceptability. Prior to the first session of the intervention, caregivers reported overall ratings of prospective acceptability as 93.2/100. Retrospective acceptability following Session A (T2) was rated 97.1 by caregivers. Finally, caregiver reported indicated retrospective acceptability following Session B (T3) was rated 98.5. Scores are displayed in Table 4.

Modifications: If the intervention was modified during the course of the study, describe

The primary aim of the current study was to iteratively modify and develop an intervention deemed acceptable by caregivers and adolescents. Several modifications were made to the original FACT session guide during the course of the study in order to infuse MCO throughout the intervention and best meet the needs of individual families and the bariatric population. The final adapted BRAVO session guide is presented in Appendix D.

Contextual Modifications. First, the addition of the second FACT session to focus on caregiver psychological flexibility served as a major modification to the format of the original individually focused session in which FACT was designed to be delivered. Additionally, delivering FACT with bariatric surgery candidates and caregivers in a weight-management clinic constituted modifications to the original population and setting for which FACT was originally developed.

Further, two adaptations were made for the purposes of the research study and are not necessarily intended to be permanent modifications to the resulting intervention. First, in the BRAVO study, the FACT sessions were delivered by two interventionists in session simultaneously rather than having one-on-one sessions as originally designed. Second, the
interventionists recorded debriefing sessions to discuss adaptations that would be made to the study protocol for research purposes. Notably, these conversations proved to be very helpful in providing time to reflect on cultural identities of the interventionists and cultural aspects of the families that were discussed during visits, as well as to identify cultural opportunities presented in sessions and reasons why they were or were not capitalized on during the session.

**Content Modifications.** Several modifications were made to the FACT protocol in order to best accommodate the current clinical population, adolescent bariatric surgery candidates and their caregivers. Possibly the most significant modification to the current intervention was the explicit incorporation of the MCO framework into FACT implementation. Consistent with MCO, interventionists remained open and nonjudgmental when asking questions to assess caregivers’ beliefs about health and gather information about their life experiences and cultural values to better understand those beliefs. Specifically, it was important to assess caregivers’ perspectives of health as a family and individual value in order to understand how supporting their child’s health in general, and specifically through bariatric surgery, may or may not be a value for caregivers. This, in turn, allowed interventionists to better adapt recommended interventions to the individual needs and preferences of patient families. Study developers acknowledge the paternalism inherent in medical clinics and systems as a whole that often fails to consider patient nuances resulting from cultural identities, beliefs, and backgrounds and hoped to gather this information to better capitalize on cultural opportunities to provide more responsive interventions for families in the HLC.

An additional fundamental content modification to the FACT protocol was the consistent incorporation of and salient focus on health, one, as a value, and two, as playing a fundamental role in engaging in valued action broadly. While FACT can focus on health as a value when used
in any population and setting, the current protocol highlighted health in every session given the aim of the overall medical visit is to prepare adolescents and families for bariatric surgery. The session guide was adapted in several ways to reflect these modifications and guide caregivers to provide information specific to the goals of the visit of assessing values related to parenting, health, and caregiver support of adolescent patients’ health and bariatric journey. First, the introduction was adapted to orient caregivers to the session’s focus on the caregiver and their support of the adolescent through their bariatric journey in line with guidance from the creators of FACT to help prepare clients for what to expect during the session. See Appendix D for the session guide and example vignettes that display these changes.

Additionally, changes were made to the clinical interview portion of the visit such that the focus of questions was narrowed to assess health and parenting specifically in the context of supporting their child through bariatric surgery. This was done for a number of reasons including avoidance of gathering unnecessary or redundant information and attempts to keep sessions within the typical 30–40 minute HLC session length. Further, families pursuing bariatric surgery attended at least two, though commonly many more, sessions at the HLC (which may or may not be initially focused on surgery) by the time they entered the BRAVO study meaning providers have information about the patients’ family, school, etc. already. Further, it was important that the intervention support clinic aims of preparing and assessing readiness of adolescents for bariatric surgery, while following FACT guidelines to increase psychological flexibility and implementing a MCO framework to incorporate family cultural factors specifically within that context. While this session was meant to focus on caregivers and their own psychological flexibility, ultimately the adolescent is the patient within the weight management clinic, and the
ultimate goal of this specific session is to improve caregiver psychological flexibility in order to best support the adolescent through their bariatric journey.

In addition to health, the interview was modified to focus on gathering information related to caregivers’ values of parenting and beliefs about supporting their child through their weight management journey. It was important to understand caregiver conceptualizations of what it means to be a good parent, to support their child, and the values, both related to health and generally, that caregivers felt important to instill in their children. Differences in responses to these questions were distinct among each family who participated in the intervention and highly determined what types of interventions may be most helpful for each caregiver.

Over the course of the study, the BRAVO intervention heavily leaned into the flexibility FACT offers in order to fulfill the spirit of MCO and best accommodate the variety of themes and structures that the caregiver session took. For example, FACT was designed to gather specific information related to the timing, triggers, and trajectory of a problem. However, during BRAVO caregiver sessions, the structured assessment of the “3 T’s” (time, triggers, and trajectory of the problem) was essentially eliminated. Instead, the BRAVO intervention focused on the current/recent concerns identified by the caregiver versus details of the evolution of the problem over time, as well as effective or ineffective current and past coping strategies families have tried to overcome the problem.

Another change that was made over time through the BRAVO study was flexibility in offering two intervention or behavioral experiment options at the end of a FACT session as originally designed. This modification was made in the moment during sessions for two separate reasons, dependent on the two major themes discussed by caregivers: health and specific healthy lifestyle goals, or the caregiver-adolescent relationship. First, some caregivers identified specific
health behavior goals within session that lent well to development of a SMART goal. Consistent with MCO, interventionists capitalized on concerns expressed by caregivers themselves to collaboratively develop an intervention that considered the caregivers’ lived experiences and deeply held cultural values. Additionally, previous experiences and barriers, such as financial difficulties and caregiver health difficulties were considered when finding solutions to problems and goal-setting in hopes of supporting caregivers’ ability to engage in values-consistent actions. This modification allowed for interventionists and families to develop a collaborative goal to specifically target a caregiver-identified problem or goal rather than identify an unrelated behavioral experiment or goal for the sake of following the original FACT protocol.

Alternatively, some sessions focused on specific aspects of the caregiver-adolescent relationship which often brought up significantly difficult emotional content for caregivers and sometimes adolescents. Often during these sessions, caregivers were prompted to sit and fully experience their distress in the moment, which for some was a novel approach to emotions for these caregivers. A common theme of after-visit discussions, the interventionists agreed that the practice of guiding caregivers through this present-moment awareness (i.e., the aware pillar) during difficult thoughts and emotions would serve to normalize experiencing these emotions and would reinforce future practice of this present-moment awareness. Further, acknowledging the caregivers’ past experiences, or lack thereof, sharing such feelings and experiences with their adolescent, it felt MCO consistent to support what was naturally occurring in the session versus forcing a separate, clinician-led intervention following such important, emotional moments in the caregiver-child relationship. For example, in one early session, a caregiver discussed grief, resiliency, and became very tearful and emotional. She then disclosed this session was the first time her daughter had ever seen her cry. Rather than discussing options of FACT strategies or
behavioral experiments to practice at home, what felt most helpful in the moment was to allow space for this caregiver’s emotions within session. This caregiver was guided through current-moment mindfulness and openness to distress in the moment, and modeled for her daughter that experiences of negative emotions were acceptable. She was encouraged to continue making space for difficult emotions and engage in discussion with her daughter about distressing feelings and experiences after the visit as well. The caregiver expressed willingness to do so and acknowledged this practice during session was helpful, however it felt forced to assign “homework” after such an emotional and meaningful moment. While two intervention options were not provided and discussed explicitly as was done in other sessions, this felt like a more powerful intervention than any that could be assigned.

For similar reasons, an additional modification was made in some sessions to forego gathering in-session helpfulness ratings to better stay in the moment with caregivers. Interventionists discussed the possibility that personal discomfort resulted in this decision, however it was ultimately determined to be more helpful for the client to forego these questions, as asking about helpfulness would center attention on the interventionists and serve the study rather than facilitate the intervention and development of psychological flexibility. Further, it felt like a disservice to center the needs of the study in this moment when the caregivers were theoretically going to provide similar information via the acceptability measures they were asked to complete after sessions. Ultimately, four of the seven caregivers who completed the caregiver-focused session were asked to rate the intervention’s helpfulness and provided a 10/10 rating. Two additional caregivers expressed positive statements about the intervention during sessions.

*How well (actual): If intervention adherence or fidelity was assessed, describe the extent to which the intervention was delivered as planned*
ACT fidelity was assessed by both interventionists after each intervention session using the ACT Fidelity Measure (O’Neill et al., 2019). Interventionists rated fidelity as 0 following each caregiver session, indicating that interventionists did not engage in behaviors or discussion inconsistent with ACT principles at any caregiver session.

**Research Survey Data**

Descriptive statistics and average scores of psychosocial surveys were calculated using SPSS version 25.5. Caregivers’ average ratings of their own psychological flexibility, general and specific to their child’s health, valued living, their adolescent’s wellbeing and quality of life, and family functioning at each timepoint are reported in Table 4. Modified Brinley plots provide a visual representation of changes in caregivers’ scores on all measures/subscales between timepoints 1 and 2 (Figure 4a) and timepoints 2 and 3 (Figure 4b).

**Discussion**

The BRAVO study aimed to develop an acceptable, feasible, and culturally responsive intervention to meet the needs of diverse adolescents pursuing bariatric surgery and their caregivers. The intervention was novel in that it 1) infused a Multicultural Orientation throughout the intervention and study implementation to consider and address individual families’ cultural identities, needs, and experiences; 2) explicitly involved caregivers in an attempt to address caregiver psychological flexibility and the adolescents’ family system; and 3) utilized focused Acceptance and Commitment Therapy in an adolescent bariatric sample for the first time. Overall, the BRAVO clinical intervention was feasible to implement during routine visits to a multidisciplinary weight-management clinic. The intervention was provided to all
Table 4

Mean Caregiver Scores on Acceptability and Psychosocial Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>T1 (N= 11)</th>
<th>T2 (N = 7)</th>
<th>T3 (N = 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAAS Total</td>
<td>31.91 (4.16)</td>
<td>31.86 (3.58)</td>
<td>32.60 (4.72)</td>
</tr>
<tr>
<td>Acceptance</td>
<td>10.73(2.00)</td>
<td>10.14 (1.95)</td>
<td>10.80 (1.64)</td>
</tr>
<tr>
<td>Defusion</td>
<td>10.09 (1.92)</td>
<td>10.29 (2.06)</td>
<td>10.40 (2.07)</td>
</tr>
<tr>
<td>Values</td>
<td>11.09 (1.22)</td>
<td>11.43 (0.79)</td>
<td>11.4 (1.34)</td>
</tr>
<tr>
<td>PedsQL Well-being</td>
<td>72.58 (8.54)</td>
<td>72.92 (8.64)</td>
<td>74.17 (9.03)</td>
</tr>
<tr>
<td>AAQ</td>
<td>14.00 (9.14)</td>
<td>12.14 (5.96)</td>
<td>15.40 (7.92)</td>
</tr>
<tr>
<td>VQ Progress</td>
<td>23.73 (4.71)</td>
<td>23.43 (6.43)</td>
<td>25.4 (4.28)</td>
</tr>
<tr>
<td>VQ Obstruction</td>
<td>5.09 (5.21)</td>
<td>3.86 (4.78)</td>
<td>3.80 (4.82)</td>
</tr>
<tr>
<td>Acceptability Total</td>
<td>92.76 (5.58)</td>
<td>97.32 (4.70)</td>
<td>99.09 (1.22)</td>
</tr>
<tr>
<td>Ethicality</td>
<td>96.10 (9.36)</td>
<td>98.17 (4.49)</td>
<td>97.6 (4.28)</td>
</tr>
<tr>
<td>Affective 1</td>
<td>96.70 (4.37)</td>
<td>98 (4.43)</td>
<td>98 (4.47)</td>
</tr>
<tr>
<td>Affective 2</td>
<td>98.30 (3.27)</td>
<td>98.83 (1.60)</td>
<td>99.4 (4.47)</td>
</tr>
<tr>
<td>Affective Average</td>
<td>97.50 (3.37)</td>
<td>98.42 (2.29)</td>
<td>98.7 (2.91)</td>
</tr>
<tr>
<td>Burden 1</td>
<td>94.70 (8.78)</td>
<td>100 (0)</td>
<td>100 (0)</td>
</tr>
<tr>
<td>Burden 2</td>
<td>92.70 (23.09)</td>
<td>99.50 (0.84)</td>
<td>100 (0)</td>
</tr>
<tr>
<td>Burden Average</td>
<td>93.70 (15.64)</td>
<td>99.75 (0.42)</td>
<td>100 (0)</td>
</tr>
<tr>
<td>Coherence</td>
<td>97.80 (3.97)</td>
<td>97 (6.87)</td>
<td>99.2 (1.79)</td>
</tr>
<tr>
<td>Opportunity Cost</td>
<td>61.10 (47.42)</td>
<td>85.33 (32.56)</td>
<td>100 (0)</td>
</tr>
<tr>
<td>Effectiveness</td>
<td>98.70 (2.75)</td>
<td>99.5 (1.23)</td>
<td>98.8 (2.68)</td>
</tr>
<tr>
<td>Self-Efficacy</td>
<td>98.70 (2.75)</td>
<td>99.5 (1.23)</td>
<td>98.8 (2.68)</td>
</tr>
</tbody>
</table>

Note. Descriptive statistics provided are M (SD) for each measure. HAAS Total = Health-Related Action and Acceptance Scale total score. PedsQL Well-being = The Pediatric Quality of Life Inventory-General Well-Being Scale. PROMIS = The Pediatric Family Relationships measure. AAQ = Acceptance and Action Questionnaire. VQ Progress = Valuing Questionnaire, Progress subscale. VQ Obstruction = Valuing Questionnaire, Obstruction subscale.
Figure 4a

*Brinley Plots Displaying Minimal Clinically Important Changes in Caregiver Outcome Variables between T1 and T2*

*Note.* Data points lying on the x-axis that do not include Δ within the label (e.g., C_1) indicate missing data at follow-up timepoints.
Figure 4a Continued. *Brinley Plots Displaying Minimal Clinically Important Changes in Caregiver Outcome Variables between T1 and T2*

Note. Data points lying on the x-axis that do not include Δ within the label (e.g., C_1) indicate missing data at follow-up timepoints.

**Figure 4b**

*Brinley Plots Displaying Minimal Clinically Important Changes in Caregiver Outcome Variables between T2 and T3*

Note. Data points lying on the x-axis that do not include Δ within the label (e.g., C_1) indicate missing data at follow-up timepoints.
Figure 4b Continued

Brinley Plots Displaying Minimal Clinically Important Changes in Caregiver Outcome Variables between T2 and T3

Note. Data points lying on the x-axis that do not include Δ within the label (e.g., C_1) indicate missing data at follow-up timepoints.
families who presented to the bariatric clinic during the recruitment/study duration and did not significantly disrupt clinic flow. Notably, feasibility of research tasks, specifically completing online surveys at home, was significantly lower than intervention feasibility, thus resulting in incomplete acceptability and outcome data for caregivers at all three timepoints. However, data that were gathered provides initial evidence that the intervention was deemed acceptable by caregivers. Finally, interventionists found intervention implementation to be acceptable, and were able to show fidelity to basic FACT principles throughout sessions. Overall, this study demonstrated that 1) FACT can be appropriately adapted to include MCO and to meet bariatric patients’ needs, and 2) can be implemented and accepted by caregivers and families.

The current intervention was designed to fall within Phase II of the ORBIT model, “Preliminary Testing”, in order to evaluate its feasibility of implementation within a pediatric weight management clinic, and acceptance by clinic patients, caregivers, and staff. The BRAVO intervention met these goals within the current study. First, helpfulness and acceptability ratings by caregivers during and after intervention sessions were consistently high indicating that the session content was supportive of patient goals and needs, and well-received by families who presented to clinic. While completion of surveys specific to the research elements of the study did not appear feasible given lack of completion for various reasons, all caregivers who presented to the clinic were open and able to participate in the intervention sessions. Thus, no difficulties or challenges arose that indicated this intervention would not be feasible in a pediatric weight management setting. This initial information suggests that the BRAVO intervention is ready for expansion and assessment within the next phase of the ORBIT model.

The design of BRAVO integrated caregivers because adolescent is part of an immediate family system in which caregiver splay a crucial role, recognized by intervention guidelines but
not implemented often. Pediatric weight management interventions that incorporate caregivers and provide support for their own well-being are uncommon despite expert recommendations calling for significant caregiver involvement in interventions (Llabre et al., 2018). These recommendations are supported by a wealth of research suggesting that higher rates of caregiver psychosocial concerns relate to impaired psychological and health outcomes of adolescents with overweight and (Modi et al., 2009; Zeller et al., 2015). While the current study was not designed or powered to assess clinical outcomes such as changes in caregiver psychological flexibility, very modest increases were seen among caregiver reports over the course of the study. More importantly, richness and intensity of discussions during caregiver intervention sessions, caregiver engagement in collaborative interventions supporting their wellbeing and/or adolescents’ health journey, and high ratings of acceptability, suggested the importance and necessity of involving caregivers in adolescents’ behavioral health visits.

The breadth of specific topics addressed throughout caregiver sessions of the BRAVO study seem to indicate that caregivers have a great deal to contribute to the conversation around pediatric behavior health interventions. Caregivers discussed a variety of topics such as specific ways in which caregivers support or encourage adolescent health behaviors, caregiver frustrations with the medical team’s communication and paternalism, caregiver values (e.g., health, emotional strength) passing values on to children, caregiver-child communication difficulties, external barriers to family health initiatives including ongoing intermittent gym closures due to COVID and financial burden many gyms cause, and caregiver difficulties adjusting to adolescent’s use of they/them pronouns. BRAVO’s underlying MCO framework and FACT focus on individuals’ values and context provided caregivers the space to present current, pressing issues affecting the adolescents’ health behaviors, the caregiver-child relationship, and
the family’s presentation during bariatric visits overall. Caregiver input and consideration of these factors is crucial rather than providing standard one-size-fits-all medical care.

Notably, though exact session times were not recorded, caregiver sessions often were longer in duration than the typical 30 to 40-minute behavioral health sessions focused on adolescents. Further, it was common for caregivers, and sometimes adolescents, to display frequent and intense emotions when discussing issues concerning parenting and/or caregiver-child relationships were discussed. Some caregivers noted, and it appeared to interventionists, that these caregiver sessions were often the first time that caregivers and adolescents made space for important conversations about caregivers’ impact on adolescents and involvement in their bariatric journey. This in addition to the various themes that arose within sessions indicates that, when given the opportunity, caregivers have a great deal to say and contribute to the conversation, and thus should be included in interventions within this population in the future.

Interestingly, some caregivers initially voiced concerns that a session focused on their own concerns and well-being would detract from their adolescents’ care. When provided the space, most caregivers actively engaged in identification and discussion of their unique strategies and participation in aspects of care and support of their adolescents’ weight management goals and healthy lifestyle changes in their preparation for bariatric surgery. This hesitancy to engage may indicate the extent to which caregivers are accustomed to being absent from inclusion and collaboration within pediatric medical care, specifically in the context of behavioral health interventions. This is alarming given research has highlighted the positive impact of caregiver involvement in interventions on adolescent weight and health outcomes (Bean et al., 2020; Chai et al., 2019). While caregivers acknowledged their active participation in various aspects of their child’s health, their hesitancy to discuss their experience during bariatric visits may suggest that
a deeper understanding of the extent to which their support plays a role in their adolescents’ health and encouragement to participate more consistently in behavioral health interventions may be beneficial. Future research with larger samples would benefit from investigating whether these conversations and involvement results in clinically significant outcomes related to caregiver and adolescent well-being and family functioning.

Utilizing the specific frameworks of FACT and MCO, the BRAVO intervention sessions included questions that facilitated deepened understanding of how caregivers’ cultural and family identities are intertwined with health and behavioral health treatment. A family’s beliefs, experiences, and values are intertwined with members’ intersecting cultural identities over time. Relevant to the current study, culture impacts parenting values, definitions of health, health behaviors, and experiences of individuals and families as a result of systemic oppression related to intersecting identities. One way in which this was observed in BRAVO sessions was through caregivers’ expression of supporting their adolescents as a fundamental value and utmost priority in their lives, though this was conveyed, interestingly, in various, nuanced ways. For example, some caregivers focused their support in more logistical and/or instrumental ways, such as cooking healthy meals, purchasing gym memberships or exercise equipment, providing reminders to support teens’ healthy lifestyle changes. Some caregivers demonstrated a collaborative, “team” mentality amongst the family, as well as significant enthusiasm and motivation to accompany their adolescent in any potentially difficult behavior modifications required for surgery. Several caregivers suggested that a main responsibility of parenting is to teach their teen independence and to overcome adversity. In many sessions, caregivers reported putting their adolescents’ well-being above their own and made statements that they would support any intervention or goal that would support their adolescents’ health and well-being.
In the spirit of FACT as well as MCO, interventionists aimed to consider and incorporate caregivers’ intersecting identities as well as problems and barriers identified by caregivers themselves to determine the type of intervention suggested at the end of each session. This was in contrast to prescribing a rigid, planned intervention that did not consider cultural context that may impact caregivers’ willingness, openness, appropriateness, and confidence in implementing the intervention. For example, caregivers who discussed the importance of their instrumental support of their child often benefitted from interventions enhancing engagement with values-consistent actions such as SMART goal incorporating their own definitions of health, self-identified barriers, and feasibility in their context. Caregivers who expressed difficulties caring for their own needs due to the needs of their child or unrelated stress often benefitted from defusion techniques (i.e., the open pillar) to increase openness to distress given consideration of experiences within broader systems in which they have been required to “be strong” and avoid emotions.

For some of these caregivers, demonstrating this strength in the face of adversity meant substantial avoidance and unwillingness to display distress or difficult emotions in the presence of their children. In two sessions, discussions related to caregiver values of strength and resiliency for their children resulted in some powerful moments in which caregivers, for the first time, were encouraged to sit with their difficult feelings and share vulnerability with their child. Both adolescents in these sessions noted that these moments in session were the first time that they had seen their caregivers express themselves in such an emotional way. Not only did this experience, rather than avoidance, of distress serve as a meaningful moment in the caregiver-adolescent relationship and as a model of emotion regulation for the adolescent, but it also served as an intervention to increase caregivers’ present moment awareness and openness to sit with
and begin to process difficult emotions. In session, interventionists aimed to remain aware of their goals to promote experiential awareness and, while gently encouraging caregivers to sit with discomfort, listened to caregivers’ preferences related to duration of this practice given their own expertise in knowing what they can tolerate given the distress and experiences they have had in their lives.

An important theme to highlight that emerged during caregiver discussions was caregiver dissatisfaction and/or difficult experiences with medical treatment and medical team members. Three of ten caregivers expressed frustration with communication and treatment by medical providers either within the clinic or in past experiences. All three caregivers acknowledged the impact of these negative experiences on their engagement in medical visits and health behaviors. In line with MCO, interventionists acknowledged, with caregivers and during after-visit discussions, their role as providers in a system that has caused these caregivers distress and that has historically perpetuated systemic oppression of families who hold marginalized backgrounds. Within visits, caregivers were allowed space to discuss their feelings and experiences as they felt comfortable and their feelings were acknowledged. Interventionists felt it was important to gather information on how the immediate session, as well as the clinic more broadly, could better respect their life experiences and serve their individual needs. Feedback was discussed with team members within the clinic. It would be MCO inconsistent and a significant oversight if these concerns were not acknowledged in this manuscript and a call was not made to readers to intervene in systems of oppression that perpetuate discrimination and health disparities within marginalized communities. It is for this reason that treatment adaptations such as the infusion of MCO into FACT interventions is crucial to take steps towards providing culturally responsive
medical and psychological treatment and dismantle longstanding systems harming marginalized individuals and families.

Altogether, interventionists strived to incorporate the spirit of MCO throughout all elements of the BRAVO study, beginning with the implementation of the intervention itself, as well as within after-visit discussions and reflections, within the adaptations made throughout the study, within research considerations, and through our own presentation within the room. BRAVO provided space for consideration of cultural factors and families’ wants, needs, and preferences versus providing one-size fits all care and recommendations that have historically been provided in medical settings and perpetuate health disparities and systemic inequity. This, of course, was a major goal of the interventionists. However, it is important to acknowledge that cultural humility requires lifelong learning, change, and remaining open to feedback when we inevitably get this process “wrong” and could improve our work or understanding in this realm.

Considerations for future implementation and research

One consideration for future replications of this intervention is to continue to incorporate after-visit discussions to reflect on FACT and MCO fidelity, interventionist perceptions of acceptability, and content discussed during sessions. During the BRAVO study, these discussions were particularly beneficial in providing the opportunity for interventionists to reflect on the three pillars of MCO. Specifically, after-visit discussions gave space to notice and discuss times when cultural content and opportunities arose but were not fully explored within sessions. Interventionists reflected upon whether cultural opportunities may not have been taken advantage of due to interventionist discomfort or whether it was in attempts to avoid “rabbit holes” (i.e., following threads of discussion brought up during the sessions that would otherwise be beneficial topics to explore further in therapy with longer or more frequent sessions but would
distract from reaching a concrete goal/intervention in one FACT session), which is warned against by FACT developers. When this occurred, such as during a discussion in which a mother brought up her son’s experience being wrongly put into a police car due to assumptions made about his race and body size, interventionists allowed this mother space to discuss the issue and express thoughts and feelings related to the experience, validated these feelings, but did not fully seize the opportunity to explore the experience within this session. Instead, there was heavy discussion about how to balance the importance of honoring the family’s experience, fidelity to the MCO and 52 framework frameworks, and the goals of the HLC visit. These reflections were valuable for both the consistent and honest application of MCO to the BRAVO intervention, as well as for furthering acceptability and responsiveness of the intervention overall.

An additional consideration for future replication, frequently debated during after-visit discussions, is how to logistically incorporate caregivers into the intervention. A main aim of the BRAVO intervention was to better integrate caregivers into their adolescents’ psychosocial treatment and to address caregiver psychological flexibility to enhance their ability to support adolescent needs. While the current intervention chose to have one separate caregiver-focused intervention session, future studies should consider other alternatives. For example, it could be beneficial to involve caregivers more explicitly for shorter periods of time throughout each visit. Further, sessions could more commonly address family concerns versus individual caregiver or adolescent well-being. Given the number of sessions during which caregiver-child dynamics were discussed, family cohesion or communication as a value may be important to highlight in future replications. Finally, there was much discussion regarding the advantages and disadvantages of completing sessions targeting the individual caregiver with the adolescent in the room versus in a separate room. Conducting the BRAVO intervention session without the
adolescent present may provide additional space for caregivers to reflect on thoughts, feelings, and experiences that they may not be comfortable expressing in front of their children. Finally, this option could allow for simultaneous individual caregiver and adolescent sessions to more frequently address both parties’ needs in preparation for adolescents’ bariatric surgery.

While feasibility was high for the clinical intervention aspect of this broader study, it is important to note the difficulties observed related to caregivers’ completion of research surveys. Throughout the study, caregivers were provided multiple reminder emails with links to online surveys, were compensated for completion, and significant intentionality was placed on limiting length and burden of surveys by research staff. While the BRAVO team implemented the MCO framework and worked to consider cultural factors (e.g., income and/or education as it related to technology and WIFI accessibility, resources required to complete surveys like time and effort, health literacy, etc.) that could impact survey completion, it is apparent that barriers remained. Known and/or plausible reasons for incomplete surveys include caregivers opting out of surveys following negative interactions/communication by medical staff, limited time in clinic to complete surveys due to engagement in visits with other providers, and missing emails with survey links.

In an effort to reduce burden on families outside of clinic, tablets were provided for families to complete questionnaires upon arrival to the clinic for appointments. Feasibility of completing the surveys at home between clinic visits was much lower than feasibility of completing surveys in clinic prior to sessions. Even when provided tablets in clinic, however, survey completion still remained challenging at times. Some caregivers only partially completed surveys while others chose not to participate in the research portion of the study. Further, completion of surveys in clinic elongated visit duration and had the potential to disrupt typical
Additional considerations should be taken in future research that requires caregiver completion of surveys in order to accommodate caregiver needs and potential barriers to answering these questionnaires. While it will be important to gather information from caregivers directly to inform strategies that could support survey completion, possible adaptations could include employing computerized adaptive tests to shorten questionnaire batteries, researchers completing the surveys with the caregivers in clinic, or providing alternative incentives for completion.

A final difficulty worth noting that should be considered when replicating BRAVO in the future. Two of our families experienced challenges with the same caregiver presenting for both consecutive visits. While interventionists were able to call one caregiver to be present over the phone for the adolescent-focused session, another family had the patient’s mother attend the adolescent-focused visit and the patient’s father attend the caregiver-focused visit. Exposure to FACT principles in both sessions is expected to be more beneficial for caregivers than in one session alone. Therefore, it will be important, guided by MCO, to investigate and acknowledge feasibility of this given family’s unique life experiences and potential barriers, (e.g., single parenthood, working multiple jobs and related stress, family make-up, etc.) and problem-solve as needed in order to provide the intervention.

**Limitations and Future Directions**

Despite the novelty and strengths of the BRAVO intervention, it is important to acknowledge its limitations. First, sample size and data gathered were significantly limited for various reasons including inherently few referrals and adolescents pursuing surgery within the bariatric clinic during the study period. Additionally, the study duration was limited due to the COVID-19 pandemic, as well as providers taking extended leave within the Healthy Lifestyle
Clinic and halting new patient referrals. Lack of feasibility of completing research surveys was apparent, which limited acceptability gathered. It is important to consider how attrition may have biased acceptability data that were gathered via research surveys and to use caution when interpreting acceptability findings from research measures alone. Finally, within session, interventionists prioritized engagement in the present moment over ensuring to gather helpfulness and acceptability ratings from caregivers in session which would have provided valuable acceptability data in the place of the missing acceptability surveys.

The BRAVO team chose not to record sessions in order to reduce clinic burden and, in efforts to engage in cultural humility, limit hesitation to engage in interventions as well as reduce participant privacy concerns. Though debriefing discussions between interventionists were held immediately following each session, recordings of the intervention sessions would provide rich data to evaluate thematic content and interventionist fidelity to FACT and MCO principles. It is important to note that ACT fidelity ratings focused on the presence of ACT inconsistent behaviors versus presence of ACT consistent behaviors. Given the flexible nature of ACT, it is not necessary for behaviors consistent with all elements of the hexaflex, assessed by the ACT Fidelity Measure (O’Neill et al., 2019), be present in all sessions and thus scores may have reflected low ACT consistency simply due to absence of opportunity for ACT elements to take place in session. However, focusing on inconsistent behaviors may have missed specificity of presence of ACT behaviors seen in sessions.

Given initial acceptability and feasibility of the BRAVO intervention, this study should be replicated within a larger pilot sample in order to further assess acceptability among a wider variety of families, as well as to determine efficacy of the intervention in improving caregiver psychological flexibility and adolescent well-being. Future studies should include acceptability
interviews to gather specific facets of the intervention that are more or less acceptable to caregivers of various identities and backgrounds. Studies should evaluate acceptability and feasibility of this modified FACT protocol in clinics treating various pediatric conditions and adapted to incorporate FACT and MCO principles as is appropriate. Further evaluation of pediatric psychology interventions involving caregivers and promoting caregiver well-being are necessary to determine the most beneficial dosage and method of caregiver-focused intervention.

Conclusion

Overall, the family based multicultural orientation-informed FACT intervention developed within the BRAVO study was shown to be acceptable, feasible, and culturally responsive intervention to the needs of diverse adolescents pursuing bariatric surgery and their caregivers. Given high caregiver rating of acceptability, as well as rich, diverse conversation held during these sessions, caregivers should be involved in intervention aimed at preparing adolescents and families for bariatric surgery. With some considerations, this study should be implemented on a larger scale to further confirm acceptability in families of various cultural identities and backgrounds as well as in various medical populations. These larger studies should also look at efficacy of the BRAVO intervention on caregiver and adolescent psychological flexibility, psychosocial well-being, and health outcomes. This study provided further evidence that caregivers are play key roles in intervention and there are a number of ways in which they could be beneficially involved in session.
References


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https://doi.org/10.1016/j.amepre.2016.09.004


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https://doi.org/https://doi.org/10.1002/9780470939383.ch16


Appendix A

Original FACT Intervention Session Guide

1. **Intro/Setting the stage (introduce ourselves, purpose of session, instill hope for change)**

2. **Rapid assessment of love, school/work, play, health**
   a. **Love:**
      i. Who lives in your home with you?
      ii. How long have you lived there?
      iii. Does everybody get along okay?
      iv. Who makes the rules in your house? Are they good rules?
      v. Who are you close to? Family? Friends?
   b. **School/Work**
      i. Are you going to school?
      ii. What do you like about school?
      iii. Do you make good grades?
      iv. Are your teachers nice?
      v. Are the kids at school nice to you?
      vi. What do you want to be when you grow up?
      vii. Do you work? Study? Do you enjoy it?
      viii. If not in school or working, what do you do with your time?
   c. **Play**
      i. What do you do for fun?
      ii. For relaxation?
      iii. To get together with your friends or others in your community?
   d. **Health**
      i. What does health mean to you?/What is your definition of health?
      ii. What types of things do you do to care for your health?
      iii. What makes you interested in bariatric surgery?
      iv. How does health relate to your values/things that are important to you?

**Values:** If you could wave a magic wand and live any way you want, what would you live?
   v. Why is this so important to you?
   vi. What could you do differently?
   vii. Who or what matters the most to you?

3. **3Ts (Problems)**
   a. Identify a current problem to living in a way that they describe as healthy (in line with their value of health)
      i. What are things that get in the way of you living the way you want to live/be the type of person you want to be
   b. **Time**
      i. When did this start?
      ii. How often does it happen?
      iii. What happens before/after the problem?
      iv. Why do you think it is a problem now?
c. Triggers
   i. Is there anything – a situation or a person – that seems to set it off?

d. Trajectory
   i. Has this always been a problem? How has it changed over time?
   ii. Have there been times when it was less of a concern? More of a concern?
   iii. How has it been most recently?

e. Severity
   i. On a scale of 1 to 10, how big of a problem has this been? How much has it gotten in the way of healthy behaviors?

4. Workability
   f. What are you doing now to cope with this problem?
   g. Who helps you with this problem?
   h. What have you tried to address the problem?
   i. How has that worked in the short run?
   j. How has it worked in the long run or in the sense of helping you be the person you want to be?

5. Overview/Conceptualization:
   a. The client’s strengths
   b. The client’s values related to the problem
   c. Barriers the client faces to addressing the problem in a more optimal way

6. Intervention: Identify options for addressing the problem with greater psychological flexibility
   a. Option A – Requires less effort and less risk; has more certain results
   b. Option B – Requires greater effort and potentially promotes more radical change

How helpful was this session/visit?
How confident are you in your ability to practice this skill?
### Appendix B

#### Acceptability Measures

**B.1 Prospective TFA Assessment**

Thinking about your next behavioral health visit at the Healthy Lifestyle Clinic, please rate how much you agree with the following statements from 0 (I do not agree) to 100 (I strongly agree).

<table>
<thead>
<tr>
<th></th>
<th>Statement</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>What I discuss at the visit will fit with my values (what is important to me) ()</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>I feel positively about how the visit will go ()</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>I feel negatively about how the visit will go ()</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>It will be easy to participate in the visit. ()</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>It will be hard to participate in the visit. ()</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>I understand how what we discuss during this visit will be helpful. ()</td>
<td></td>
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<tr>
<td>7</td>
<td>I will have to give up meaningful things in my life to engage in the visit. ()</td>
<td></td>
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<tr>
<td>8</td>
<td>The visit will help me engage in health behaviors that fit with my values (what is important to me). ()</td>
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<tr>
<td>9</td>
<td>During the visit I will be able to talk about what gets in the way of accomplishing important health goals. ()</td>
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</table>
B.2 Retrospective TFA Assessment- Post-Patient Intervention Session

Thinking about your **most recent** behavioral health visit at the Healthy Lifestyle Clinic, please rate how much you agree with the following statements from 0 (I do not agree) to 100 (I strongly agree).

<p>| | | | | | | | | | |</p>
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<tr>
<td>1)</td>
<td>What I discuss at the visit fit with my family's values (what is important to me)</td>
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<td>2)</td>
<td>I feel positively about how the visit went</td>
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<tr>
<td>3)</td>
<td>I feel negatively about how the visit went (R)</td>
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<td>4)</td>
<td>It was easy for my child and me to participate in the visit.</td>
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<tr>
<td>5)</td>
<td>It was difficult for my child and me to participate in the visit. (R)</td>
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<td>6)</td>
<td>I understand how what we discuss during this visit was/is helpful.</td>
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<td>7)</td>
<td>My family had to give up meaningful things to engage in the visit. (R)</td>
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<td>8)</td>
<td>The visit helped/will help my family engage in health behaviors that fit with our values (what is important to my family).</td>
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<tr>
<td>9)</td>
<td>During the visit my family was able to talk about what gets in the way of accomplishing important health goals.</td>
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</table>
B.3 Retrospective TFA Assessment- Post-Caregiver Intervention Session

Thinking about your **most recent** behavioral health visit at the Healthy Lifestyle Clinic, please rate how much you agree with the following statements from 0 (I do not agree) to 100 (I strongly agree).

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
<th>50</th>
<th>60</th>
<th>70</th>
<th>80</th>
<th>90</th>
<th>100</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>What I discussed at the visit fit with my values (what is important to me) (R)</td>
<td></td>
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<tr>
<td>2</td>
<td>I feel positively about how the visit went</td>
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<tr>
<td>3</td>
<td>I feel negatively about how the visit went (R)</td>
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<tr>
<td>4</td>
<td>It was easy to participate in the visit. ()</td>
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</tr>
<tr>
<td>5</td>
<td>It was difficult to participate in the visit. (R)</td>
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</tr>
<tr>
<td>6</td>
<td>I understand how this visit was/is helpful. ()</td>
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<tr>
<td>7</td>
<td>I had to give up meaningful things in my life to engage in the visit. (R)</td>
<td></td>
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<tr>
<td>8</td>
<td>The visit helped/will help me engage in health behaviors that fit with my values (what is important to me). ()</td>
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<tr>
<td>9</td>
<td>During the visit I was able to talk about what gets in the way of accomplishing important health goals. ()</td>
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*Note.* R indicates items that were reverse-scored. Retrospective measures were changed to past and/or present tense as necessary. Caregiver acceptability related to the patient-focused session assessed acceptability in relation to family values rather than individual values assessed at additional timepoints.
Appendix C
Health-Related Action and Acceptance Scale - Caregiver Report

Please select the number that tells how much you agree with each sentence:

<table>
<thead>
<tr>
<th></th>
<th>Strongly Disagree (1)</th>
<th>Disagree (2)</th>
<th>Neither Agree nor Disagree (3)</th>
<th>Agree (4)</th>
<th>Strongly Agree (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>My life can’t be good because of my child’s health concerns. (F)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>2.</td>
<td>I do things to forget about my child’s health concerns. (A)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>3.</td>
<td>My child’s health concerns get in the way of me living a good and meaningful life. (V)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>4.</td>
<td>My child’s health concerns mess up my life. (V)</td>
<td>☐</td>
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<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>5.</td>
<td>I do whatever I can to forget my child's health concerns. (A)</td>
<td>☐</td>
<td>☐</td>
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</tr>
<tr>
<td>6.</td>
<td>My child’s health concerns stop me from doing what I want to do. (V)</td>
<td>☐</td>
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<td>☐</td>
</tr>
<tr>
<td>7.</td>
<td>My negative thoughts about my child's health concerns can make their health worse. (F)</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>8.</td>
<td>I stay away from people and places that remind me of my child’s health concerns. (A)</td>
<td>☐</td>
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<tr>
<td>9.</td>
<td>My child’s health concerns stop me from having fun. (V)</td>
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Appendix D

Final Adapted BRAVO Session Guide, Vignettes

Being Resilient: Awareness, Values, and Openness (BRAVO)
Multicultural Orientation-Informed Focused Acceptance and Commitment Therapy for Use in
Pediatric Populations

Intervention Guide Co-Developed by Mary E. Keenan-Pfeiffer, MS & Jessica L. Cook, MEd

with

Kristoffer S. Berlin, PhD, and E. Thomaseo Burton, PhD, MPH

(the Bariatric Resilience: Awareness, Values, and Openness, BRAVO team)
Acknowledgements:

The BRAVO team would like to thank the Healthy Lifestyle Clinic at Le Bonheur Children’s Hospital for supporting initial development of this guide, especially the families who participated in the pilot pragmatic trial focused on developing and refining this guide.

Positionality Statement:

In our work with youth and families and in the development of this intervention, the BRAVO team would like to acknowledge and strive to understand our positionality and the ways in which our backgrounds influence our work. As I, JLC, present this intervention manual, and in the spirit of MCO and practice of cultural humility, I recognize my positionality as a white, educated, able-bodied, middle-class woman of smaller body size. I acknowledge that my positionality has impacted my work, including the current study and manuscript, and that my privilege has inherently contributed to my ability to conduct this research project. It is important to reflect and acknowledge that while the aim of this study is to contribute to more equitable psychological and medical care for all adolescents and caregivers, I have not endured systemic oppression or experienced resulting health disparities related to my cultural background or identities. I have worked closely with families of marginalized backgrounds from the Memphis community and, while I have strived to provide a platform for their voices within my clinical and research activities in a way that is responsive to their specific identities, experiences, strengths, and needs, I acknowledge this is a lifelong process of learning and growth.
Intervention Development

This intervention guide was developed from a pragmatic trial in which sessions were conducted by advanced clinical psychology graduate students (JLC and MEK-P) in an interdisciplinary outpatient medical setting with teens seeking bariatric surgery and their caregiver (Keenan-Pfeiffer et al., 2023). Our work to develop, refine, and implement this guide was grounded in the multicultural orientation (MCO) framework detailed in Davis et al. (2018). We adapted Focused Acceptance and Commitment therapy (FACT) principles and materials from Brief Interventions for Radical Change: Principles and Practice of Focused Acceptance and Commitment by Kirk D. Strosahl PhD, Patricia J. Robinson PhD, and Thomas Gustavsson MSc, and related FACT trainings given by Dr. Strosahl and Dr. Robinson. Figures 1 and 2 illustrate core principles of the MCO framework and FACT. The authors want to highlight that the current intervention and guide specifically addresses adolescents pursuing bariatric surgery and their caregivers, however we strived to make this intervention and its guide flexible enough for use in various pediatric consultation/clinic settings. Additionally, it is our hope that those using this session guide will be actively engaged in the lifelong pursuit of increasing their awareness, knowledge, and skills to address systems of privilege and oppression, as well as reflect on their own positionally in the context of research and clinical practice.

Future BRAVO Research and Collaboration

The authors hope to continue research on the BRAVO intervention to further refine its development and expand its applicability and effectiveness in youth and families of diverse medical populations and cultural backgrounds. Research related to this particular adaptation of FACT is limited to a pilot pragmatic trial that aimed to assess feasibility and acceptability in a
small sample of youth pursuing bariatric surgery and their caregivers. Additional research in
diverse medical and cultural populations and with a larger sample size is warranted. Please
contact the developers at Jessica.cook@childrenscolorado.org and/or mary.keenan@cchmc.org,
to discuss collaboration and express questions or concerns regarding the use/adaptation of this
guide.
Figure 2
Principles of Focused Acceptance and Commitment Therapy

<table>
<thead>
<tr>
<th>Open</th>
<th>Aware</th>
<th>Engaged</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Open</strong></td>
<td><strong>Aware</strong></td>
<td><strong>Engaged</strong></td>
</tr>
<tr>
<td>Able to accept distressing thoughts, feelings</td>
<td>Connects with/experiences present moment</td>
<td>Maintains strong, clear values</td>
</tr>
<tr>
<td>Behavior shaped by experiences, not rules or habits</td>
<td>Able to take perspective on self and self-story</td>
<td>Engages in values-consistent behaviors</td>
</tr>
</tbody>
</table>

Figure 2
*Principles of Multicultural Orientation*

BRAVO Intervention Guide

The BRAVO intervention guide is broken down into sections of the session for comprehension. The goal of each individual section, as well as sample prompts/questions and important notes related to the delivery of session content can be found within the outlined boxes. The script in italics provides an example case vignette to illustrate what a session may look like. These vignettes were created from a combination of de-identified statements and common themes provided by the participants of the BRAVO study. In the spirit of FACT, the research team encourages flexibility, creativity, and incorporation of interactive elements when possible in the implementation of this intervention.
1) Setting the stage/Introduction
GOAL: Introduce yourself, purpose of sessions, instill hope for meaningful change

VIGNETTE

Client information: Brianna, a 37-year-old who identifies as a Black female, is the mother of Taylor, a 16-year-old who identifies as a black female, who is presenting for a medical appointment at a pediatric weight management clinic to prepare for bariatric surgery. During the adolescent-focused session, Taylor identified medication adherence as a problem that interfered with her ability to engage in actions consistent with her health-related values and collaboratively identified an intervention that would allow her to live more consistently with her values.

Therapist: Hi, my name is ___ and I will be working with you today for your behavioral health session. Usually these sessions are very focused on [teen]. We also know that teens don’t grow up in a vacuum, and that they are a part of many broader circles that impact them. Family and home environment is really impactful and often play a significant role in an adolescent’s bariatric surgery journey. So today we are hoping to focus more on you as a caregiver and hear about your experiences and how you support [teen].

Client: Ok, that sounds great.
2) Family Context, Health, and Values
GOAL: Learn about the client’s view of their role as a caregiver and support for their child (generally and specific to health) and their beliefs related to health as a value and/or as contributing to values. Provide space for client to discuss their culture, salient identities, and information about family’s sociocultural context as they find relevant.

EXAMPLE QUESTIONS/PROMPTS
- What has it been like in supporting (child’s name) during this journey?
- Preparation for bariatric surgery is very involved, how have you supported XX through this process?
- I imagine it can be tough/stressful sometimes supporting your child through this process. How do you manage to keep showing up, even when it becomes stressful?
- How, if at all, do you view health as a value for you and your family?
- What does health mean to you? How does it play a role in your ability to engage in things that matter or are important to you?

NOTES: Some clients might need more prompting than others. Some might not feel safe and/or comfortable describing aspects of their identity based on past experiences and context of the session. We encourage cultural humility, noticing cultural opportunities, and how you feel as the clinician in the room during this discussion especially. It is important to validate a client’s own values and not push/force values on to them, which might occur when discussing health in other contexts.

Similarly, it is important to ask the client to define health themselves. It may also be helpful to ask the client about their thoughts on pre-existing health conditions and/or aspects of health identified by other health providers and/or family members to see if they are truly meaningful/relevant to the client.

VIGNETTE (summarized to reduce length)

Therapist: Preparation for bariatric surgery is a long process and can be stressful. Why is it important to you to support your teen through this process even when it is difficult?

Client: Well, I am her mom and I would support her through anything that will help her to be the person she wants to be. [Teen] is really motivated to be healthy and she wants to accomplish so many things. This surgery is something she really wants to set her off on a good path to be healthier and to be successful so of course I would do anything that it takes to get her this surgery. She is always my number one priority and I have always put her before myself so of course her health is important to me.

Therapist: COVID has interrupted so many parts of so many people’s lives. I am sorry to hear it has been such a challenge toward your health goals. It sounds like supporting your daughter and also your health are very important values for you.
Client: Absolutely, we have been working very hard to get healthier and to do this together. It is important to me that health problems and weight aren’t things that get in the way of her being successful and having a good life. And of course, I haven’t always done the right thing for my health but I want to be a good example for her and to help her make changes so we are in this together! Right, [teen]?

Therapist: It sounds like [teen] is really lucky to have you as such a big support for her through this. I know there are a lot of things we ask of teens before they have surgery. In what ways have you supported her in those healthy lifestyle changes in her journey towards bariatric surgery?

Client: Whatever my daughter needs, I would do anything to help her get it. We talk a lot about health and about these visits. I make sure she comes to these visits every month and I am always reminding her to take her medications. I know she is staying on top of things at school and turning in her homework too. We go walking sometimes together and I have bought her the protein shakes you all recommended.
3) Identify a Problem/Barriers to Valued Living

GOAL: Identify barriers or a problem that is interfering with the caregiver’s ability to support the teen as they would like, validate systemic barriers/barriers outside of their control, and try to identify an area for intervention. If no barrier is identified by the client, clarify values-consistent behaviors to reinforce these behaviors.

EXAMPLE QUESTIONS/PROMPTS
- What gets in the way of what matters/supporting your child?
- You said health/parenting/supporting [teen] matters to you. And sometimes things get in the way and make that difficult. What are some barriers that come to mind?
- How have you dealt with these barriers?/How do you deal with these barriers now?

NOTES: It’s important to recognize that there are systemic factors (along with internalized, interpersonal, institutional, and ideological oppression) that serve as barriers to valued living. Work with the client/family to identify which barriers are within their control/could feasibly be changed. We encourage validation and addressing any cultural opportunities that arise especially during this discussion.

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Therapist: Ok, so from everything you have said, I hear that health and supporting [teen] really matter to you. And it sounds like COVID and gym expenses have been getting in the way of you being able to take actions that you would like to support [teen] and their health. Are there other barriers that come to mind that are getting in the way of you trying to live out those values of being healthier and helping [teen] get closer to bariatric surgery?

Client: Getting back into that routine is really hard. We were really on track before. We signed up for the gym together and we were doing really good with everything until COVID happened and then the gym shut down. Now it is still not open and I know there is another gym but it is farther from the house it is more expensive. Even if we could afford it, I couldn’t get her there very often because of her band schedule and my work schedule. It has been hard to get back to our routine and to exercise together like before since everything. I mean, our diet isn’t perfect, but we have made a lot of changes there. She has done better with taking her medicine most days recently. And we don’t drink sodas anymore and [teen] drinks a lot of water. I guess our diet could be better, but I just don’t know what to do about being more active again.

Therapist: Wow, I am hearing that you have made a lot of positive changes already: replacing high calorie drinks with water, choosing some more nutritious foods, and you had a great schedule for activity going. It sounds like getting back into an exercise routine has been the most challenging thing keeping you from consistently doing what matters for yours and [teen’s] health. Would you say that is the biggest problem now or is there something more difficult or important that comes to mind?

Client: No, that is definitely the biggest and hardest change we need to make.
Therapist (directed at teen): [Teen], I would love to hear your thoughts. Would you agree that being more active and getting in a routine is the biggest challenge or the most important step toward doing what is important for your health? Or is there something else that comes to mind?

Teen: I agree with what she said. I am doing good with my medicine and our diet is okay. Like, I don’t think we could do much better and I have wanted to go back to the gym for a long time and it hasn’t worked out. That has been really hard.

Therapist: Great, thanks for that. I want to make sure that even though we are talking to mom a lot today, that we are still coming up with goals and working toward change as a team. We are here to get you prepared for surgery and it sounds like mom really has been a great support in helping you do that! Ok, so would it make the most sense, the, to come up with a strategy to overcome some of the challenges that is getting in the way of exercising, which you have said is something really important to you and your health?
4) Collaborative Intervention Planning (OPTIONAL)

GOAL: Collaborate with the client to develop a realistic, achievable, and values-consistent behavioral goal that represents meaningful change in their life.

EXAMPLE QUESTIONS/PROMPTS
- What is something feasible/in your control that would overcome one of those barriers to living a valued life?
- What is one step that we can identify that you could take to get closer to living in a way that is important to you/continue supporting [teen]?
- What supports do you need to overcome any challenges that may come up to living a valued life?

NOTES: This can be framed as a goal or a behavioral experiment. It can sometimes be helpful to come up with 2 options, an easier goal and a “reach” goal and allow the client to choose. Other times, it can become clear throughout the session, due to statements made by the caregiver regarding what would be most helpful, that one particular intervention would best meet the needs or align with patient goals. It is important that this process is collaborative, the client plays an active role, and understands how the specific intervention can be helpful in their unique life context.

Examples of interventions/experiential exercises (this is not an exhaustive list, note that some exercises target multiple FACT processes):

Open exercises: practice phrases to increase defusion (e.g., my mind is telling me…, I’m noticing the thought that), speaking a feared thought/concept out loud in different voices (e.g., saying “I’m not good enough” in a humorous voice), using a metaphor to build/explain acceptance (e.g., passengers on the bus or tug of war)

Aware exercises: mindfulness practice with a particular focus, such as mindful eating, or practicing mindfulness while in stressful situations by checking in with current thoughts and emotions, metaphor to build/explain self-as-context (e.g., chessboard, clouds in the sky)

Engaged exercises: clarifying values with the values bullseye or using values cards, creating a SMART goal to take one step closer towards the person they want to be and engage with their values

We recommend developing a few interventions to target each process that you can adapt readily. Consult published resources such as:

- Brief Interventions for Radical Change: Principles and Practice of Focused Acceptance and Commitment Therapy by Kirk D. Strosahl, PhD, Patricia J. Robinson, PhD, and Thomas Gustavsson, MSc

- Learning ACT: An Acceptance and Commitment Therapy Skills Training Manual for Therapists, 2nd Edition, by Jason B. Luoma, PhD, Steven C. Hayes, PhD, and Robyn D. Walser, PhD
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Therapist: Ok, so we have agreed that health is important and that engaging in physical activity together on a regular basis is important to you both. We also identified that busy schedules, financial cost, and COVID have interfered with the consistent schedule you had previously. I have an idea if our goal is to get back to that or increase the amount we are able to exercise, and I am wondering if you are interested?

Client: Sure, of course.

Therapist: One thing that has been helpful with other families in the past is to set SMART goals. Have you ever heard of SMART goals before?

Clients state they have not and SMART goals framework is introduced and clients agree this would be a helpful exercise.

Client: We could try walking more often. I usually take the dog by myself but we have some time on the weekends and the weather is getting a little nicer so we could go on some evenings when [teen] doesn’t have band practice.

Teen: That’s true. And I guess we could try a yoga video sometimes. We did one in PE a couple weeks ago and it was okay.

Therapist: These are excellent ideas! So you could walk the dog together and try yoga videos on YouTube. Between evenings you don’t have band, [teen], and the weekends, what do you think is a good goal for how many days a week you could start off exercising?

Teen: I have two nights a week free and the weekends we could at least do one day. So 3-4 times?

Therapist: Great, so since we are just starting out and want to make sure we are setting ourselves up for success, what do you think about the goal to either walk the dog or do a yoga video together 3 days per week? And then, if you are able to hit that goal and the weather gets better and band season ends and the gym hopefully reopens, you can slowly work your way up? Does that sound reasonable?

Client: Definitely, I think we can get that done and it could be a good start until we can get back to the gym!
5) Confidence & Helpfulness Ratings

GOALS:
- Ask the client to rate their confidence in doing the planned behavior/experiment 1-10
- Ask the client to rate the helpfulness of the session 1-10

NOTES: If their confidence rating is below a 7, problem solve/troubleshoot barriers. It may be necessary to identify supports (e.g., caregiver or other family member) to increase confidence and feasibility of performing the desired behavior. It important to reinforce if the client thinks doing this might be hard, and to remind them that they’ve identified it as important/meaningful. In some cases, offering/developing two interventions (one that is easier and the other that results in more rapid change) can be helpful. Other times, you and the client might quickly identify a single goal/intervention that would be beneficial.

If their helpfulness rating is below a 7, it can be helpful to elicit ways that it could have been more helpful, and/or identify other ways the client would benefit from support.

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Therapist: Excellent, you are sounding pretty confident in this goal. If I asked you to rate your confidence in your ability to try out this SMART goal on a scale from 1-meaning very little confidence- and 10-meaning you are absolutely certain that nothing can stop you from trying out this plan, what would you both say?

Client: Oh we will absolutely get it done. A 10. We’ve got this!

Teen: Yeah, I would probably say 10. We did it before so we will try it.

Therapist: I am really looking forward to hearing about it at next visit. Good luck. Now one last question from me. We ask this to get feedback about if and how we could be working with families in a different or better way. We always want to make sure we are trying our best to support what you need from us so we really appreciate your honesty on this one. On a scale from 1 to 10 with 10 being a lot and 1 being not really at all, how helpful would you rate today’s session?