

STORIES: A REVISION OF THE WILLINGNESS & ACTION MEASURE FOR
CHILDREN AND ADOLESCENTS (WAM-C/A)

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In its earliest stages, acceptance and commitment therapy (ACT; Hayes, Strosahl, & Wilson, 1999) with youths appears to be a promising therapeutic approach. Experiential willingness and committed action are two foci of ACT, making their assessment an integral part of therapy. Field tests have found validity problems with the Willingness and Action Measure for Children and Adolescents (WAM-C/A). The current study utilized the Story Version of the Willingness and Action Measure for Children and Adolescents (SWAM-C/A). Results supported the relationship between the SWAM-C/A and measures of experiential avoidance and mindfulness. Factor analysis indicated the presence of several distinct willingness and action factors. These results support the need for continued work on measurement of willingness and action in youth.

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INTRODUCTION

Philosophy, Theory & Practices of Acceptance and Commitment Therapy (ACT)

Following traditional behavior therapy and cognitive therapy, a third wave of behavior therapies has emerged, bringing with it the introduction of acceptance and commitment therapy (ACT; Hayes, Strosahl, & Wilson, 1999). The first wave of behavior therapy emphasized replacing problematic behaviors through conditioning. Second wave behavior therapy focused on changing problematic behaviors by attempting to change the thoughts that were associated with the problematic behaviors. The current wave of behavior therapy incorporates a variety of techniques including acceptance, mindfulness, cognitive defusion, dialectics, and values (Hayes, Follette & Linehan, 2004, pp. 1-29). For some psychologists, this new integration of techniques has reshaped diagnostic and treatment approaches. The focus of intervention is no longer on just changing the form, or content, of experiences but rather identifying the context and function of such experiences. These newer treatments, including ACT, no longer focus on symptom removal but on psychological flexibility.

ACT is an example of how integrating philosophy, theory and practice can move therapeutic approach beyond syndromes toward the broader problem of human suffering. Rather than viewing suffering as abnormal, ACT clinicians view most psychopathology as the result of ordinary psychological processes, especially those involving human language. Philosophically, ACT, an empirically based behavioral treatment model, is rooted in functional contextualism (Hayes, Strosahl, & Wilson, 1999). The philosophy of functional contextualism is characterized by its focus on behavior as ongoing in a context for a specific set of reasons. The context of a

behavioral event, which can be an internal or external, contains features that contribute to the nature and function of the event. ACT clinicians do not try to change the form of a private experience but rather attempt to alter the functions of clients' private experiences by manipulating the context in which such events are related.

The theoretical basis of ACT is relational frame theory (RFT). Proponents of relational frame theory (RFT; Hayes, Barnes-Holmes, & Roche, 2001) postulate that events can become related through verbal behavior. According to RFT, relations among stimulus events (defined as any internal or external event with which an individual comes into contact) are derived as a result of indirect learning (Hayes et al., 2001). Unlike non-human organisms, verbal humans are capable of deriving (or indirectly learning) arbitrary relations, relations that are not formal, among events through contextual control. These relations, also known as derived stimulus relations, affect the functions of other events that co-occur in a context (Hayes, Follette & Linehan, 2004). In this way, different stimuli can become related and in turn cause the same behavior. For example, the formal properties of the written word "sad" (i.e., the black color of the ink, the curvature of the shapes making letters, etc.) have nothing to do with the psychological experience of sadness. However, when a person literate in the English language reads this word, "sad" has meaning and may even guide the person's behavior.

ACT researchers and clinicians propose that psychological suffering stems from language processes that foster psychological inflexibility. The persistent use of language in ways that are not helpful can lead to rigid, constrained ways of behaving. The ACT goal of psychological flexibility is accomplished through six core processes:

acceptance, cognitive defusion, contact with the present moment, self as context, values, and committed action (Hayes & Strosahl, 2004, pp. 3-29). The emphasis of each of these processes is to build positive skills and create movement toward valued living. Acceptance involves the direct experience of thoughts, feelings, and bodily sensations as they are, unaltered and unregulated. Cognitive defusion techniques are aimed at changing the context, or relation to content, in an attempt to distance attachment to thoughts and feelings. In contact with the present moment, ongoing, nonjudgmental contact is made with psychological and environmental events. Self as context involves viewing self-relevant content within a broader context. Values are recognized as what makes a person's life meaningful. They are non-tangible and identified in treatment to choose a valued life direction and bring awareness to valuing as a behavior. Committed action is integral and involves making commitments and following through to take action toward a valued life direction. These six core processes overlap and together form the path toward psychological flexibility.

Acceptance and Commitment Therapy with Children and Adolescents

While ACT is a relatively new treatment, starting in the late 1980s with the seminal text published in 1999 (Hayes, Strosahl, & Wilson), there is growing empirical support for ACT interventions (Hayes et al., 2006). Preliminary data suggests that ACT can be adapted for children in developmentally appropriate and effective ways (Murrell, Coyne & Wilson, 2004). Recent studies of ACT interventions with children and adolescents span a broad range of areas including anorexia, anxiety, relaxation, chronic pain and sexual risk behavior (for review, see Murrell & Scherbarth, 2006).

The ACT consistent goals of letting go of control and avoidance strategies lend themselves to use in the treatment of anorexia, which is hypothesized to be the result of a need for control (Fairburn, Shafran, & Cooper, 1999). The potential for ACT as an effective treatment model of adolescents with anorexia was illustrated in one case study of a 15-year-old female with anorexia nervosa (Heffner, Sperry, Eifert, & Detweiler, 2002). In treatment, ACT components of therapy were directed at development of acceptance regarding weight-related cognitions as well as healthier valued-based living. ACT techniques in combination with parental support, rapport, and other cognitive-behavioral techniques resulted in a reduction of anorexic symptoms.

Greco, Blackledge, Coyne & Ehrenreich (2005) have expanded the realm of ACT treatment through exploring the integration of acceptance and mindfulness into child and adolescent anxiety treatment. Traditional cognitive-behavior therapy treatments while regarded as effective are limited in that they tend to focus on anxiety management and symptom reduction. ACT clinicians' focus on acceptance, mindfulness, defusion and values, broadens the scope of treatment for children and adolescents with anxiety disorders to include values-consistent behaviors, quality of life, and acceptance of private events, including anxiety-related thoughts, emotions, and bodily sensations (Greco et al., 2005).

Heffner, Greco, and Eifert (2003) investigated children's preference and compliance with literal versus metaphorical (ACT consistent) instructions. Their study involved teaching preschoolers progressive muscle relaxation (PMR), a common relaxation technique used for children experiencing anxiety, with literal instructions and

metaphors. Results indicated that children preferred metaphors to literal instructions but there was no overall difference in compliance with either method.

In the first study of the effects of ACT with adolescents experiencing chronic pain, Wicksell, Dahl, Magnusson, & Olsson (2005) present a case study of an adolescent experiencing disabling idiopathic generalized pain for which an ACT treatment model was employed. The adolescent's disability was hypothesized to be related to avoidance of pain and pain-related stimuli. The incorporation of ACT into a behavioral medicine approach to rehabilitation of chronic pain with the patient resulted in increases in valued life/goal achievement, functioning, and school attendance. Gradual decreases in pain ratings and disability that continued post-treatment were also reported. Additional support for exposure and acceptance-based intervention for adolescents with chronic debilitating pain has been reported (Wicksell, Lennart, & Olsson, 2007). In their pilot study of 14 adolescents, improvement of ability to act in line with personal values in the presence of negative thoughts, emotions, and bodily sensations was emphasized over the traditional focus of reduction in pain and distress. Results following treatment at 3- and 6-month follow ups indicated that the ACT-based approach was successful in improving functional ability, school attendance, catastrophizing, and pain reports in adolescents with chronic debilitating pain.

Further support for the use of ACT in treatment of adolescents with chronic health conditions, has been found by Greco, Blomquist, Acra, & Mouton (in review) with their pilot investigation of an "ACT for Teens" program. The program, designed specifically for adolescents experiencing functional, or medically unexplained, abdominal pain, aims at promoting life quality and decreasing school absence and

functional disability. Results provide initial support for the utility of ACT in treatment of adolescents with physical and emotional pain. Adolescents involved in the ACT for Teens program were found to have significant increases in life quality and significant decreases in functional disability and school absences at post-treatment and follow up. Participants also reported lower levels of somatic complaints, anxiety and depression at follow up.

Metzler, Biglan, Noell, Ary and Ochs (2000) contributed to the empirical support for ACT (or ACT consistent) interventions with their study of an individualized behavior change intervention for adolescents with risky sexual behavior. The intervention focused on decision-making about safer sex goals, social skills, and acceptance of negative thoughts and feelings. Particularly ACT consistent was the emphasis on working with adolescents to accept rather than control unpleasant thoughts and feelings such as fear of rejection, anxiety and embarrassment as part of the path towards the goal of safer sex. At 6-month follow up after the behavioral intervention, adolescents who had received treatment reported fewer sexual partners, fewer non-monogamous partners and fewer sexual contacts with strangers in comparison to controls.

Considerations

ACT with children, like ACT with adults, focuses on the inflexibility that results from language processes and how this resultant rigidity hinders valued living. As with adults, the first step of therapy is a functional analysis of the problem behavior(s). The focus of functional analysis in ACT with children is identification of form, frequency, and intensity of the problem behavior, situational triggers for behaviors (internal and private events), experiential avoidance strategies, short-term reinforcers, valued directions

assessment, and the degree of interference of problem behaviors on valued ends (Murrell et al., 2004).

ACT with children and adolescents is still in its early stages of development and there is scrutiny of its potential for success. Some may see it as too complex or beyond the intellectual

understanding of children. However, there is reason to believe with its use of experiential exercises and metaphors that ACT can be successfully applied to children.

Developmentally, children begin applying knowledge of language and can use symbols to represent objects by the age of eight. During this period, sense of self-worth is also developing. With ACT specific treatment in children eight years and younger, parental participation is combined with language appropriate role-played metaphors and hands-on activities. Between the ages of 9 and 15 years, thinking becomes more abstract and by 16 to 18 years of age, thought incorporates hypothesizing and deductive reasoning. Thus, even from a young age, children appear to have the capacity to participate in developmentally appropriate ACT-consistent therapeutic activities.

Acceptance and Mindfulness

The therapeutic activities utilized in ACT can be divided into two primary areas: acceptance and mindfulness and commitment and behavior change. The latter is easier to measure as overt actions can be readily observed. However, the former is more difficult to assess as it involves processes that cannot be overtly observed. Through acceptance and mindfulness activities, an ACT approach emphasizes the need to undermine control in the face of negative, unwanted private experiences. Simply stated,

“control is the problem, not the solution” (Hayes & Strosahl, 2004, pp. 3-29). Rather, the first step toward the solution is acceptance, “the alternative to avoidance” (Hayes, Strosahl, & Wilson, 1999). Acceptance is a complete “letting go” of the need to regulate private experiences (Hayes, Follette, & Linehan, 2004, pp. 1-29). Thoughts, emotions, and sensations are experienced directly without regulation, with the goal of moving towards valued-living. The choice is made willingly to experience rather than to struggle or control private events. Therapeutically, willingness and acceptance are promoted through the use of client-specific exercises, metaphors, and behavioral tasks. Mindfulness, or the awareness and attention of the present moment, involves noticing thoughts, feelings, and sensations without attempting to do anything with or in response to them. In this sense, mindfulness is a means to acceptance (Hayes, Follette, & Linehan, 2004).

The goal of the treatment model is to undermine rigid language processes and gain psychological flexibility. The objective is to experience thoughts and feelings fully, as they are without change. Strategies include the use of metaphors and experiential exercises as alternatives to traditionally employed techniques that focus on changing thoughts and feelings. These techniques ideally allow for an individual to see the consequences of inflexibility and choose willingness to experience thoughts, emotions, and memories in order to move toward the things that are personally important and meaningful (Hayes, Follette, & Linehan, 2004).

Measures of Acceptance, Willingness & Mindfulness for Children and Adolescents

In evaluating the effectiveness of ACT employed in child and adolescent treatment, ACT specific measures of acceptance and willingness as well as measures

of mindfulness serve as potentially strong support. Measures that assess ACT specific constructs can demonstrate the feasibility of ACT with treatment in younger populations. However, there are few validated measures to assess changes in avoidance, (de)fusion and valuing in ACT treatment with children and adolescents. Currently, there exist three ACT-specific measures designed for assessment with children and adolescents: the Child Acceptance and Mindfulness Measure (CAMM; Greco, Dew, & Baer, 2005), the Avoidance and Fusion Questionnaire for Youth (AFQ-Y; Greco, Murrell, & Coyne, 2005) and the Willingness and Action Measure for Children and Adolescents (WAM-C/A; Greco, Murrell, & Coyne, 2004). A brief introduction of each measure follows with more detailed discussion in the Methods Section.

Child Acceptance and Mindfulness Measure (CAMM)

The CAMM consists of 25 items that measure mindfulness and assess the degree to which children and adolescents observe internal experiences, act with awareness and accept internal experiences without judging them. Sample questions include, “I notice small changes in my body, like when my breathing slows down or speeds up,” “I keep myself busy so I don’t notice my thoughts and feelings,” and “I push away thoughts that I don’t like.” Children respond to items with a Likert-like scale ranging from 0 (“never true”) to 4 (“always true”). A total acceptance-mindfulness score is obtained by reverse scoring negatively worded items and summing all of the items. Total scores for the CAMM can range from 0 to 100 with higher scores indicating higher acceptance and mindfulness. Findings suggest that the CAMM correlates positively with positive functioning (Greco, Dew, & Ball, 2005). There is research currently underway on CAMM revisions, as one hypothesized factor is not evidencing validity.

History of the AFQ-Y and WAM-C/A

In an effort to expand knowledge about the role of acceptance in children and adolescents, the Child Acceptance and Action Questionnaire (CAAQ; Greco & Murrell, 2004), a precursor to the two separate measures currently named the AFQ-Y and the WAM-C/A, was developed. The 47-item CAAQ was modeled after the Acceptance and Action Questionnaire used with adults (AAQ; Hayes, Strosahl, Wilson, et al., 2004). The AAQ measures psychological flexibility in adults by assessing need for emotional and cognitive control, avoidance of private events, inability to take action, and negative evaluations of private experiences and/or self. For the CAAQ, AAQ directions, item wording, and scales were reformatted in an effort to create a developmentally appropriate measure. When administered to youth in the 7th and 8th grades, data indicated that there were large age differences, due to 7th graders experiencing difficulties in understanding items.

Significant correlations were expected with other measures of functioning, including the Harter Scales of self-worth, the Children's Somatization Inventory, and the Functional Disability Inventory. However, no significant correlations between total score and any other measures were observed. Evidence was lacking for validity for the entire measure but there was validation for some individual scales. The Action scale positively correlated with the Harter Scales of self-worth ($r = .169, p < .01$) and school competence ($r = .205, p < .01$). Negative correlations were reported between the Willingness scale and the Harter Scales of self-worth ($r = -.188, p < .01$), school competence ($r = -.140, p < .01$), and social competence ($r = -.147, p < .01$) (Greco et al., 2004).

Following the results of the CAAQ validation study, in efforts to increase understandability as well as validity, the Experiential Acceptance and Action Scale (Greco & Murrell) was developed. It was quickly superseded by the Experiential Acceptance Measure for Children & Adolescents (EAM-C/A; Greco, Murrell, & Coyne, 2004). The EAM-C/A was a slightly modified and more understandable version of the Experiential Acceptance and Action Scale. In testing for understandability, reliability and validity, the EAM-C/A proved to have similar validity problems as its predecessor, the CAAQ.

In response to these findings, the WAM-C/A was created with 50-items designed to assess willingness, action, and fusion. Items drew upon similar concepts as those in the AAQ but were more youth-oriented and administered with simplified instructions. Construction of the items was guided by all of the experiences theoretically involved in experiential avoidance: bodily sensations, emotions, thoughts, memories and overt behavioral predispositions (Hayes et al., 1996). Item revision and editing involved the feedback of clinicians specializing in the treatment of children and ACT assessment experts, as well as review of items with children. Later, items were further reduced through the use of factor analysis.

Preliminary data from community and clinic samples provided support for the WAM-C/A as a measure of acceptance in children and adolescents (Greco, Murrell, Coyne, et al., 2004). Findings indicated good comprehensibility of items and satisfactory internal consistencies (ranged from .70 to .85). Expected correlations were observed with quality of life ($r = .21$), adaptive functioning ($r = .23$), self-care behavior ($r = .22$), and emotional symptom measures ($r = -.26$).

Problems with the 50-item WAM-C/A

Further support for the psychometric properties of the 50-item version of the WAM-C/A was not observed. In addition, results from factor analyses indicated that there were separate factors for fusion and willingness/action items. Thus, there was a separation into two measures, resulting in the AFQ-Y and the WAM-C/A. This revision process resulted in the 14 items of the current version of the WAM-C/A as well as the 17-item AFQ-Y.

Avoidance and Fusion Questionnaire for Youth (AFQ-Y)

The AFQ-Y is a 17-item measure that assesses experiential avoidance/control and cognitive and emotional fusion. The item content is based on the Acceptance and Action Questionnaire (AAQ; Hayes, Strosahl, Wilson, et al., 2004), a measure of psychological flexibility for adults (Greco, Lambert, & Baer, in press). Items assess psychological inflexibility as related to cognitive fusion (e.g., “My life won’t be good until I feel happy”), experiential avoidance (e.g., “I push away thoughts and feelings that I don’t like”), and inaction or behavioral ineffectiveness in the presence of unwanted internal experiences (e.g., “I don’t try out new things if I’m afraid of messing up”). Items are responded to using a Likert-like scale that ranges from 0 (“not at all true”) to 4 (“very true”). High scores indicate psychological inflexibility. Preliminary findings indicate that the AFQ-Y correlates positively with child-reported somatic complaints, anxiety, problem behavior, and thought suppression. Significant negative correlations have been found with overall quality of life, mindfulness and acceptance (Greco, Lambert, & Baer, in press). These results suggest that the AFQ-Y may serve as a strong predictor of negative outcomes including physical and emotional symptoms.

Willingness and Action Measure for Children and Adolescents (WAM-C/A)

The WAM-C/A is a 14-item measure that assesses experiential acceptance, with an emphasis on children's ability to take action and engage in meaningful activities when experiencing (negatively) evaluated private events (Greco, Murrell, & Coyne, 2004). Two scales comprise the WAM-C/A— a 9-item Action Scale and a 5-item Willingness Scale. Sample items include, "I do things that are important to me, even when I have a headache or stomachache" and, "It's OK for me to feel nervous or upset." Items are responded to using a Likert-like score ranging from 0 ("not at all true") to 4 ("very true"). Preliminary data from community and clinical samples suggested it to be a potential predictor of positive outcomes such as quality of life and social effectiveness.

Problems with 14-item WAM-CA

Subsequent data collection and evaluation have shown the 14-item, current version to have adequate reliability but not adequate validity. Factor analyses indicate that, while two factors can be found, only the action items seem to correlate with expected constructs. This problem has been found in several samples (Greco, Lambert, & Baer, in press).

In a study designed to examine the psychometric properties of Dutch translations of the WAM-C/A and the AFQ-Y, factor structure and reliability were examined for both measures (Blokzijl, 2005). As with the English version of the WAM-C/A, two factors were found (willingness and action) and reliability was satisfactory ($\alpha = .65$). However, the 'action' factor was found to be the only factor with adequate convergent validity and the 'willingness' factor did not correlate with any related constructs. Overall, results indicated agreement with the more recent WAM-C/A validity studies conducted

in English (Greco, Lambert, & Baer, in press), and it was concluded that translation of the current English version of the WAM-C/A may not be appropriate given the difficulty of the 'action' factor driving the results of the WAM-C/A.

Willingness is one of the key aspects of ACT with children and adolescents. It is often necessary for children to be willing to make room for feared content in order to achieve valued goals. Given the importance of willingness as well as committed action in ACT, it is essential that there be an adequate child measure to assess both components. Continued research into assessment of ACT constructs is important to the attempt to determine whether willingness is a measurable construct among children and adolescents. The current psychometric difficulties with the WAM-C/A may be remedied through the use of vignettes as a tool to more equally assess willingness and action in children and adolescents.

Use of Stories in Assessment Measures

Effective child assessment can be hampered by children's reading abilities, comprehension and attention capacity. Deficits in these areas may lessen reliability and validity of measures. Child assessment measures must be developmentally appropriate and engage the child in the task at hand. One technique that is both potentially interesting and understandable to young children is story telling. Story-stem narratives contain incomplete scripts which children are encouraged to complete by using their own personal experiences, emotions, and creativity.

As early as three years of age, children acquire the ability to produce narratives (Emde, Wolf, & Oppenheim, 2003). Narratives reflect the cognitive ability to organize content (i.e., goals, actions, and outcomes) and structure into a coherent whole. Children, like

adults, can use narratives to make sense of their personal experiences. Narratives enable children to organize, understand and communicate personal experiences. Within the framework of narratives, children can express memories, thoughts and feelings (Shields, Ryan, & Cicchetti, 2001). The utilization of narratives in child assessment can open a window into a child's inner world of thoughts and emotions. Stories reflect children's cognitive, affective and creative development (Allan & Bertoia, 1992; Markham, 1983; Sutton-Smith, 1985).

The use of stories in the form of narratives or vignettes can offer several advantages in assessment. Employing this method may make children feel more comfortable reporting internal experiences, including goals and values. Testing with narratives or vignettes is potentially non-intrusive and less stressful in that it encourages children to enjoy the task. Story themes can also span a variety of situations from peer to family. The form and content of children's narratives are hypothesized to reflect important aspects in social communication and emotional processing tactics (Bar-Haim, Fox, VanMeenen, & Marshall, 2004). The analysis of narrative form and content can convey self-representation in a variety of contexts including conflict, interpersonal relationships and emotional events (Buchsbbaum, Toth, Clyman, Cicchetti, & Emde, 1992; Oppenheim, Nir, Warren, & Emde, 1997).

Self-Representation and Developmental Differences in Child Narratives

Investigation of child narratives has included research on developmental differences in stories created by children. While the ability to produce narratives develops relatively early in a child's life, it appears as though narrative abilities follow a developmental sequence. Geist & Aldridge (2002) analyzed developmental differences

in content and organization across stories (i.e., personal narrative, fantasy, realistic fiction) created by children in several age groups. Participants in their study were exposed to selected fairy tales as an instructional method on story structure, plot, characters, and conflict. Once children received instructions on fairy tale components, they were asked to create their own fairy tales. Data analysis suggested a developmental shift in the genre, content, and organization of children's created stories. In terms of genre, children in kindergarten created mostly fantasy stories, 1st and 2nd graders tended to create mostly realistic fiction and 3rd graders created predominantly personal narratives depicting their own life experiences or those of someone they knew. Kindergarten participants tended to base the content of their created stories on previously heard material. By 3rd grade, the creativity of story content seen in 2nd graders appeared to be replaced by personal experiences, reflecting little to no imagination, but considerable reflection of social and emotional interactions.

Application to Research

Over the past two decades, narratives and vignettes have been utilized to assess a wide variety of childhood issues including attachment, anxiety, behavior and self-perception. Narratives and vignettes have become measurement tools for studies investigating children's internal working models such as attachment and emotional regulation. Steele, Hodges, Kaniuk, Hillman & Henderson (2003) utilized narratives in their investigation of the link between adoptive mothers' attachment representations and emotion narratives of adopted-maltreated children. In their study, children completed story stems to assess expectations and perceptions of family roles, attachments and relationships. Findings indicated that mothers' state of mind concerning attachment

influenced children's story stem completions. Narrative structure has been utilized as an indicator of processing, organization and coping in regard to emotional information (Shields et al., 2001). In their examination of children's narrative representations of caregivers, Shields and colleagues coded for coherence of representations. Results concluded that maltreated children's narratives were more negative/constricted and less positive/coherent than those of nonmaltreated children. Maltreated children's narratives were associated with emotional dysregulation, aggression and peer rejection.

In efforts to validate the emotional regulatory role of narratives, analysis of children's narratives was taken a step further by incorporating physiological measurements associated with emotional responses (Bar-Haim et al., 2004). Relations between narrative processing, narrative production and cardiovascular measures sensitive to emotional processing and cognitive effort were assessed as measures of the regulatory purpose of narratives. Results indicated that there was significant cardiac reactivity during narrative production to story-stems with emotional content when compared to neutral story-stems. Specifically, an increase in emotional and cognitive load was observed with stories containing separation-reunion themes.

Perhaps one of the most popular narratives techniques employed by researchers, especially those investigating attachment, is the MacArthur Story Stem Battery (MSSB; Bretheron, Oppenheim, Buchsbaum, & Emde, 1990). The MSSB presents the child with a vivid story stem and a set of dolls to act out their narrative response. The stem provides the child with an introduction and an unresolved conflict to which the child must provide a resolution. The completion of this task requires children to organize their feelings and thoughts about the world into a complete, coherent story.

Thus, the examiner is provided with a picture of the internal private events of the child without subjecting the child to difficult scale items that could produce confusion, stress and socially desirable responses (Emde, Wolf, & Oppenheim, 2003).

The format of narrative techniques can vary, with children supplying either the end of the story, such as with the MSSB, or the middle of a provided story-stem. Shure & Spivack (1972) employed this method with their measure, the Means-Ends Problem-Solving (MEPS) Procedure. The MEPS is an instrument designed to measure an individual's ability to conceptualize the "means" of moving towards a specific goal (Beveridge & Goh, 1987). Means-ends thinking is one component of an interpersonal problem-solving program that hypothesizes that a group of interpersonal cognitive problem solving (ICPS) skills mediate thinking processes utilized in social problems (Spivack, Platt, & Shure, 1976). Administration of the MEPS involves presenting nine stories that depict hypothetical real life interpersonal problems or conflicts. The initial situation and outcome are provided, leaving participants to provide the middle, the means of problem or conflict resolution.

More recently, the concept of utilizing narratives and vignettes in research has produced a different format of child assessment measurement. Shipman & Zeman (2001) created the Emotion Management Interview – Child Version (EMI-C) to assess children's emotion regulation and their expectancies about maternal reactions to emotional displays. The interview consists of vignettes written in the first-person narrative that are designed to elicit anger and sadness. After each vignette is read, children are asked close-ended questions about their decision to express emotions and open-ended questions about their anticipation of consequences for emotional

expression. Questions regarding emotional expression are scored on a 1 (“definitely would not show”) to 4 (“definitely would show”) scale. The questions regarding maternal response to emotional expression are coded for the presence or absence of support and conflict.

While research thus far appears to support the use of stories for accessing the internal worlds of children, there remains much to be done in terms of the validation of narratives as an assessment tool. In particular, research is lacking regarding the standardization of administration and coding of narrative assessments. A variety of narrative measures exist, with a variety of coding and interpretation procedures. Coding guidelines can be difficult to understand or in some cases, are not reported at all. Furthermore, obtaining reliable coding can be very time consuming (Bettmann & Lundahl, 2007). A second limitation of narratives is that, even though response to them does not require sophisticated verbal abilities, it does require some verbal ability and thus may not be suitable for all children.

Stories and the Willingness and Action Measure for Children and Adolescents

Stories in the form of vignettes may be especially well suited for use in ACT with children, given the use of metaphors and stories as therapeutic tools. The structure and content of presented vignettes can convey contexts in which characters are either moving towards or away from goals and values. The use of language in a less literal, and more context dependent, manner may in fact make ACT- assessment instruments easier for children to understand. Therefore, this study included vignettes designed to measure willingness and action. Given that this scale development study proposed to evaluate the use of qualitatively and quantitatively scored vignettes in assessing

willingness and action, more reliable report was hypothesized. By additionally including a sentence completion task assessing emotional content, researchers were able to determine verbal comprehension of the stories as well as varying levels of self- and other- representation of emotion. A final advantage to this study over other narrative studies was that open-ended responses were coded based on well-defined constructs of willingness and action.

As a pilot study, investigation included examining children's ability to identify and comprehend emotional content. Measures progressed from asking children to identify a character's emotion in a sentence to identification of their own feelings, willingness and action. This organization of measurement provided insight into children's ability to understand written description of feelings in simple and complex formats. Additionally, it allowed the investigator to examine the feasibility of use of vignettes as a measure of willingness and action in children.

The following hypotheses were expected:

Hypothesis 1 – Willingness and action scores would correlate negatively with measures of experiential avoidance, cognitive and emotional fusion, and psychological and behavioral symptoms.

Hypothesis 2 – Willingness and action scores would correlate positively with measures of quality of life, mindfulness and acceptance.

Hypothesis 3 – Investigation of the factor structure of the story version of the WAM-C/A (SWAM) would reveal two factors: Factor 1 - ability to engage in desired behavior when feeling bad; Factor 2 - belief that it is okay to experience negative thoughts and feelings.

Hypothesis 4 – A series of informative analyses was conducted to explore potential relationships between variables (e.g., age, gender, willingness, action).

METHOD

Participants

Participants ($N = 94$) were recruited from three separate sites, including one private school (grades 3 through 5; $n = 9$) and two public schools (grades 3 through 5; $n = 13, 72$), all of which were located in the same geographic region of the south-central United States. Multiple sites were utilized in an effort to increase generalizability of the findings to multiple child samples. The current sample contained approximately equal number of males ($n = 42$) and females ($n = 52$). The average age for the sample was 9.74 years ($SD = 1.03$).

Due to limited previous studies of willingness and action in children and adolescents, prior studies of avoidance in youth were reviewed for the estimation of a priori sample size. Across several studies, the difference between means of avoidant and non-avoidant youth was considerable. The average effect size (Cohen's $d = 0.77$) from these studies was used in the current power analysis. Power analysis was conducted with the program G-power (Faul & Erdfelder, 1992), which indicated that a sample size of 56 would ensure an 80% likelihood of detecting an effect size of 0.77 ($p \leq .05$, in a two-tailed test).

Measures

Demographics Questionnaire

Participants completed a brief demographics questionnaire (Appendix) to determine age, grade in school, biological sex, ethnicity, and living arrangements (i.e., whether both parents reside at home with child, number of children in household).

Feelings Sentence Completion (Larson, 2007)

The Feelings Sentence Completion is a 10-item measure administered to assess reading comprehension and ability to identify a character's feeling in a sentence. Graduate students experienced in assessment and ACT reviewed sentences on the Feelings Sentence Completion. Those sentences that achieved ninety percent agreement for answers were included; any items that did not achieve ninety percent agreement were reworded and again reviewed. For any items that did not reach ninety percent agreement after the second revision, the item was removed from the measure. For all items, scores are either one for correct identification or zero for incorrect identification of the character's feeling in the sentence.

Story Version of the Willingness and Action Measure for Children and Adolescents (SWAM-C/A; Larson & Murrell, 2007)

The current study used a preliminary story version of the WAM-C/A, which consists of nine total vignettes. Vignettes were modeled after the Willingness and Action Scale items of the WAM-C/A. Popular children's stories were also reviewed as a source of age-appropriate story ideas. In order to increase relevance to children's everyday life experiences, story contexts consist of school, sibling relationships, and peer rejection. A pre-pilot ($n = 2$) of the SWAM-C/A was conducted with children in order to gather feedback regarding clarity and comprehension of vignettes and accompanying questions. There were some revisions made to the instructions and formatting of the measure based on that feedback.

With the exception of the first vignette, all vignettes portray the feelings of anger, sadness, embarrassment, and feeling scared. For all vignettes, participants were asked

to identify the one feeling they would have as the character in the story. This served as a check to see whether or not participants identified the story as portraying a negative feeling. The specific feeling was recorded but not meaningfully coded. The participants were then asked to answer some questions about themselves when they feel like they do in the vignette (e.g., “Is it okay to feel how you do?”, “Do you do your work at school?”). Questions regarding the vignettes are theorized to assess experiential acceptance. All vignettes were scored with the exception of the first vignette, which is meant to be an introduction to the task. The remainder of the items, answered in a yes/no format, were scored as a four for answers that reflected willingness or action. For answers that indicated no willingness or action, scores of zero were given. The open-ended questions at the end of each vignette were scored by two raters. The principal investigator scored responses for all stories, while a graduate student and an undergraduate student served as second raters. The stories were split between the two second raters so that each scored four different stories. For each response, a score between zero and four was given for willingness and a score between zero and four given for action. Raters established interrater reliability by independently scoring 10 responses at a time and then comparing results until reliability was satisfactory ($\kappa \geq 0.70$). On items where there was only a one-point discrepancy, the two raters discussed their responses and mutually agreed upon an appropriate score. For any item where there was more than a one-point discrepancy between the raters, a blind independent rater resolved the discrepancy. In these cases, the independent rater’s score for the response was used as the final score. Interrater reliabilities for the open-ended questions can be found in Table 1.

Table 1

Interrater Reliabilites for SWAM-C/A Stories (n = 94)

Story & Theme	Interrater Reliability	
	Action	Willingness
2. Trouble with homework.*	.84	.78
3. Friend not talking to you.	.69	.87
4. Moving.	.64	.83
5. Dog dies.	.75	.69
6. Learning to rollerblade.*	.93	.76
7. Stuttering in class.*	.78	.73
8. Scary noises at bedtime.	.57	.62
9. Singing in front of a crowd.*	.74	.73

Note. * indicates satisfactory kappa on both action and willingness items.

Scores from the forced choice items and open-ended question were summed to create a total score as well as two subscale scores, one for willingness and one for action. It was hypothesized that scores on the SWAM-C/A would correlate positively with scores of mindfulness, acceptance, and quality of life. In contrast, it was expected that scores on the SWAM-C/A would correlate negatively with scores of experiential avoidance, cognitive and emotional fusion, and symptoms of psychological distress. For the current sample, the SWAM-C/A demonstrated satisfactory internal consistency ($\alpha = 0.75$).

Willingness and Action Measure for Children and Adolescents (WAM-C/A; Greco, Murrell, & Coyne, 2004)

The WAM-C/A is a 14-item measure that assesses experiential acceptance. Two scales comprise the WAM-C/A, a 9-item Action Scale and a 5-item Willingness Scale. Sample items include, “I do things that are important to me, even when I have a headache or stomachache” and, “It’s OK for me to feel nervous or upset.” Items are responded to using a Likert-like score ranging from 0 (“not at all true”) to 4 (“very true”). Preliminary data from community and clinical samples suggested it to be a potential predictor of positive outcomes such as quality of life ($r = 0.21, 0.28$) and social effectiveness ($r = 0.23$). However, field tests have shown that the Action Scale items of the measure seem to be driving the results of the WAM-C/A, obscuring the Willingness Scale items. The internal consistency for the WAM-C/A with the current sample was satisfactory ($\alpha = 0.76$).

Child Acceptance and Mindfulness Measure (CAMM)

The CAMM (Greco, Dew, & Baer, 2005) is a 25-item measure that measures mindfulness and assesses the degree to which children and adolescents observe internal experiences, act with awareness and accept internal experiences without judging them. Sample questions include, “I notice small changes in my body, like when my breathing slows down or speeds up,” “I keep myself busy so I don’t notice my thoughts and feelings,” and “I push away thoughts that I don’t like.” Children respond to items with a Likert-like scale ranging from 0 (“never true”) to 4 (“always true”). Findings suggest that the CAMM correlates positively with positive functioning. The CAMM has demonstrated good internal consistency ($\alpha = .87$) and good concurrent validity. However, the CAMM did not demonstrate good internal consistency with the current sample ($\alpha = 0.55$).

Avoidance and Fusion Questionnaire for Youth (AFQ-Y; Greco, Murrell, & Coyne, 2005)

The AFQ-Y is a 17-item measure that assesses experiential avoidance/control and cognitive and emotional fusion. Items assess psychological inflexibility as related to cognitive fusion (e.g., “My life won’t be good until I feel happy”), experiential avoidance (e.g., “I push away thoughts and feelings that I don’t like”), and inaction or behavioral ineffectiveness in the presence of unwanted internal experiences (e.g., “I don’t try out new things if I’m afraid of messing up”). Items are responded to using a Likert-like scale that ranges from 0 (“not at all true”) to 4 (“very true”). The AFQ-Y has good internal consistency, with alphas ranging from .89-.93 in community and medical samples. For the current sample, internal consistency is also high ($\alpha = 0.85$). Preliminary findings indicate that the AFQ-Y correlates positively with child-reported somatic complaints ($r = 0.37, 0.45$), anxiety ($r = 0.55$), problem behavior ($r = 0.64$), and thought suppression ($r =$

0.53). Significant negative correlations have been found with overall quality of life ($r = -0.39, -0.31$), mindfulness and acceptance ($r = -0.53$). Thus, the AFQ-Y may serve as a strong predictor of negative outcomes including physical and emotional symptoms.

Pediatric Quality of Life Inventory™ (PedsQL™ 4.0; Varni, Seid, & Kurtin, 2001)

The PedsQL™ 4.0 is a modular instrument for measuring health-related quality of life (HRQOL) in children and adolescents ages 2 to 18. The PedsQL™ 4.0 consists of brief, practical, generic core scales suitable for use with healthy school and community populations, as well as with pediatric populations with acute and chronic health conditions. The 23-item PedsQL™ 4.0 Generic Core Scales are multidimensional child self-report and parent proxy-report scales designed to measure the core dimensions of health as outlined by the World Health Organization (WHO) as well as school functioning. The Generic Core Scales measure: 1) Physical Functioning (8 items), 2) Emotional Functioning (5 items), 3) Social Functioning (5 items), and 4) School Functioning (5 items). The PedsQL™ 4.0 has demonstrated good reliability in healthy and patient populations (alphas for child self-report = 0.88; Parent Proxy-Report = 0.90), as well as for the current sample ($\alpha = 0.89$).

Symptoms and Functioning Severity Scale (SFSS; Bickman et al., 2007)

The SFSS is a 33-item child report measure designed to be a general measure of psychological and behavioral problems. The SFSS produces a total score and two subscale scores for internalizing symptoms (e.g., anxiety, depression) and externalizing behavior (e.g., hyperactivity, conduct problems). It is used to assess progress in reduction of symptom severity and increase of functionality. In youth samples used to test the psychometric properties of the SFSS, the SFSS has been reported to have

good internal consistency ($\alpha = 0.93$ for SFSS-Youth). Results from the current sample also indicate the SFSS to have good internal consistency ($\alpha = 0.93$).

Procedure

To recruit participants from the local private and public schools, the principal researcher visited various schools to introduce and explain the project to the school principal. At each approved school, cover letters and consent forms were distributed to each student in grades 3 through 5 (Appendix). Prior to data collection, teachers distributed a follow-up flyer to students to remind them of the project and the need for signed consent forms.

The purpose, risks, and benefits of the study were detailed in a cover letter and attached to the informed consent form that was sent home with students. Contact information for the principal investigator and research advisor were located on the informed consent sheet if parents/guardians had questions about the study. Potential participants at all schools were given approximately two weeks to have the informed consent signed by a parent or legal guardian.

Before participation in the study, the procedure was explained and participants were asked to read and sign a copy of the Assent Form (Appendix). Upon agreement to participate, each participant was assigned an identification number to label all data relating to that particular participant. All data with any identifying information, including copies of informed consent forms signed by the participant's parent or legal guardian and signed assent forms are currently stored in a cabinet in a locked room in Dr. Amy Murrell's research lab (328) in Terrill Hall at the University of North Texas. Research

assistants who have access to this research lab have been thoroughly trained in procedures necessary to protect participant confidentiality.

Administration of all measures took place in a group setting where participants filled out individual packets of self-report measures. Following introduction of the project and completion of assent forms, participants were instructed to complete the questionnaire packet in full, and not to skip any questions. The principal investigator and/or a research assistant were available to assist participants in understanding or defining any unknown terms. Participants were given approximately one hour and fifteen minutes to complete the questionnaire packet.

Compensation for participation included a small, inexpensive prize (e.g., “sticky” hand toy) for every participant. At each data collection site, a reward of a pizza party was given to the class that returned the most completed consent forms. To receive this reward, consent forms were required to be returned and signed, either agreeing or declining to participate in the study. Regardless of participation, the class with the most completed consent forms received the reward.

RESULTS

The purpose of the data analyses was exploratory in nature and incorporated correlation and factor analysis. In addition, analyses of variance, chi-square and t-tests were conducted in efforts to investigate sample characteristics. Comparison statistics did not indicate a significant demographic difference between data collection sites, therefore, all analyses were run for the overall sample. Due to the high risk of Type I error in this study resulting from repeated comparisons, Bonferroni corrections were consistently implemented.

Descriptive Statistics

Overall Sample Demographics

Descriptive statistics were gathered for data regarding sample gender, age, grade, and ethnicity as reported on the demographic questionnaire. Demographic statistics were calculated for the overall sample and each data collection site. In the overall sample, gender was approximately even between male ($n = 42$) and female ($n = 52$) and several ethnic groups were represented (see Table 2). Ethnic groups represented by participants included Caucasian ($n = 63$), African American/Black ($n = 4$), Native American ($n = 2$), Asian ($n = 1$), Hispanic or Latino ($n = 12$), and biracial/multiracial ($n = 12$). With the exception of ethnicity, demographic characteristics did not vary widely between data collection sites. All participants at the private school reported a Caucasian racial identity, a finding that was not duplicated among other data collection sites, although the majority of participants at all three sites did identify this way.

Table 2

Descriptive Statistics for Sample (n = 94)

	Frequency	Percent
Grade		
3 rd	40	42.6
4 th	24	25.5
5 th	30	31.9
Gender		
Male	42	44.7
Female	52	55.3
Ethnicity		
Caucasian (White)	63	67
African American (Black)	4	4.3
Native American (Indian)	2	2.1
Asian	1	1.1
Hispanic (Latino, Latina, Mexican)	12	12.8
Biracial/Multiracial	12	12.8

Demographic differences among data collection sites were evaluated using either one-way analysis of variance (ANOVA) with Tukey HSD range tests, or chi-square analysis. Results indicated that there was not a significant difference among data collection sites regarding mean age, $F(2, 91) = 0.42, p > .05$ or grade in school, $F(2, 91) = 0.11, p > .05$. Chi-square analyses indicated that there were no significant differences among sites regarding gender, $\chi^2(2, N = 94) = .860, p > .05$ or ethnicity $\chi^2(10, N = 94) = 9.15, p > .05$. Given that there was no significantly different demographic makeup between data collection sites, it was determined that further analyses should evaluate the sample as a whole.

Measures

Internal consistency reliability coefficients for the current sample were calculated for the following scales: SWAM-C/A, WAM-C/A, AFQ-Y, CAMM, PedsQL™, and SFSS. Additionally, means and standard deviations were calculated for the entire sample for each scale. Results of these analyses can be found in Table 3.

Preliminary Data Analysis

Distribution and pattern of missing data was evaluated based on procedures outlined in Tabachnik & Fidell (1996). Two cases were immediately removed from the data set due to incompleteness of half or more of all measures. Examination of absolute number of missing data points and their percentages indicated a systematic pattern of missing data across open-ended questions on the SWAM-C/A. For these missing data points, an attempt was made at multiple imputation procedure (MI) using the NORM program. However, following inability for expectation maximization (EM; Little & Rubin, 1987) to converge, MI was not possible. Subsequently, mean substitution based on the

Table 3

Descriptive Statistics and Correlations Among Key Variables (n = 94)

Variables			1.	2.	3.	4.	5.	6.
	<i>M</i>	<i>SD</i>						
1. SWAM-C/A	147.05	20.97	(.75)	.51**	-.31**	-.07	-.19*	.24*
a. Willingness	48.93	14.53	(.76)	.36**	-.32**	-.01	-.07	.21*
b. Action	67.19	13.61	(.74)	-.34**	.14	.13	.20*	-.13
2. WAM-C/A	35.53	9.22		(.76)	-.22*	-.09	-.11	.20*
3. AFQ-Y	26.93	12.80			(.85)	.47**	.46**	-.35**
4. SFSS	51.91	12.12				(.93)	.80**	-.11
5. PedsQL™	31.71	16.06					(.89)	.00
6. CAMM	51.72	8.92						(.55)

Note. SWAM-C/A = Story Version of the Willingness and Action Measure for Children and Adolescents; WAM-C/A = Willingness and Action Measure for Children and Adolescents; AFQ-Y = Avoidance and Fusion Questionnaire for Youth; SFSS = Symptoms and Functioning Severity Scale; PedsQL™ = Pediatric Quality of Life Inventory™; CAMM = Child Acceptance and Mindfulness Measure. Values enclosed in parentheses represent Cronbach's Alpha for each measure.

* $p < .05$, ** $p < .01$ (one-tailed).

individual's mean response for the measure was implemented for missing data points on the SWAM-C/A. Several other variables ($n = 27$) within the data set contained missing data on 5% or fewer of the cases and were ignored for measures that did not have total scores based on an sum of the measure's items (Tabachnick & Fidell, 2001). For measures where the total score was the sum of all items (i.e., WAM-C/A, AFQ-Y), mean substitution based on the individual's mean response of other items for the measure was implemented for missing data points.

Following screening procedures outlined by Tabachnick & Fidell (1996), standardized scores and frequency histograms were examined for univariate outliers on variables relevant to hypothesis testing including: reading comprehension (Feelings Sentence Completion), experiential acceptance (Total SWAM-C/A Score, Total WAM-C/A Score), experiential avoidance (Total AFQ-Y Score), psychological and behavioral symptoms (Total SFSS Score), quality of life (Total PedsQL™ Score), and mindfulness (Total CAMM Score). A total of five cases were identified as outliers. Two of these univariate outliers were removed from the data set as they scored extremely low on the reading comprehension screening measure. The impact of the remaining three univariate outliers was resolved through transformation of variables to create a more normal distribution. Computation of Mahalanobis distance values revealed two multivariate outliers. Further investigation revealed that these two multivariate outliers had a response pattern across measures that indicated inattention and/or fatigue (responded with all "0"s or "1"s) and thus they were removed from the data set.

To determine distributions of variables that deviated significantly from the normal distribution, skewness and kurtosis data were examined for variables measuring

experiential acceptance, experiential avoidance, psychological and behavioral symptoms, quality of life and mindfulness. Excessive skewness and kurtosis was determined by calculating ratios for both skewness and kurtosis (e.g., skewness/standard error of skewness, kurtosis/standard error of kurtosis) for each measure. Skewness and kurtosis coefficients were considered to be significant if the absolute value of the ratio was greater than two. Three variables were in need of data transformation due to high levels of skew and kurtosis. The first variable transformed was the PedsQL™ Physical Health Summary Score, which was normalized through use of a square root transformation due to its moderate positive skew. Because SWAM-C/A action scores exhibited negative skew, they were reflected and then subject to a square root transformation. The third variable that required transformation was the SFSS Total Score, which was transformed by using log transformation due to its substantial positive skew.

As part of the exploratory analysis of this study, a correlation matrix was constructed to examine the relationship between experiential acceptance, as measured by the total scores of the SWAM-C/A and the following variables: experiential acceptance as measured by the WAM-C/A ($r = 0.51$, $p < .01$, $r^2 = 0.26$), experiential avoidance, as measured by the AFQ-Y ($r = -0.31$, $p < .01$, $r^2 = 0.10$), psychological and behavioral symptoms as measured by the SFSS ($r = -0.07$, ns), quality of life, as measured by the PedsQL™ ($r = -0.19$, ns), and mindfulness as measured by the CAMM ($r = 0.24$, $p < .05$, $r^2 = 0.06$). All other measures were correlated with each other as well (See Table 3). The correlation between the SWAM-C/A and WAM-C/A was expected given that in development, the SWAM-C/A items were modeled after the WAM-C/A. The

small yet significant correlation between total SWAM-C/A and AFQ-Y scores, indicate some support for the construct validity of the SWAM-C/A. As reported in a previous validation study (Greco, Lambert, & Baer, in press), the AFQ-Y demonstrated significant correlation with measures of psychological and behavioral problems ($r = 0.47$, $p < .01$, $r^2 = 0.22$) and mindfulness ($r = -0.35$, $p < .01$, $r^2 = 0.12$). Unexpectedly, the AFQ-Y demonstrated a significant positive correlation with the measure of quality of life ($r = 0.46$, $p < .01$, $r^2 = 0.21$).

An additional correlation matrix (See Table 3) was constructed to further examine the relationship between experiential acceptance as measured by the individual subscales of willingness and action on the SWAM-C/A with the following variables of interest: experiential acceptance as measured by the WAM-C/A (willingness $r = 0.36$, $p < .01$, $r^2 = 0.13$; action $r = -0.34$, $p < .01$, $r^2 = 0.12$), experiential avoidance, as measured by the AFQ-Y (willingness $r = -0.32$, $p < .01$, $r^2 = 0.10$; action $r = 0.14$, ns), psychological and behavioral symptoms as measured by the SFSS (willingness $r = -0.01$, ns; action $r = 0.13$, ns), quality of life, as measured by the PedsQL™ (willingness $r = -0.07$, ns; action $r = 0.20$, ns), and mindfulness as measured by the CAMM (willingness $r = 0.21$, ns; action $r = -0.13$, ns). Scores on the willingness subscale of the SWAM-C/A demonstrated small but significant correlations with WAM-C/A and AFQ-Y scores. The only significant correlation observed with action subscale scores and variables of interest suggested an inverse relationship between the SWAM action subscale and the WAM-C/A. This finding is not expected and suggests that action items of the SWAM-C/A did not adequately capture the theorized construct.

Hypothesis Testing

Hypotheses 1 and 2

Bivariate correlations (one-tailed) were conducted to examine the correlations of total and willingness and action subscale scores on the SWAM-C/A with each of the following: experiential avoidance/control and cognitive and emotional fusion as measured by the total AFQ-Y score and psychological and behavioral problems as measured by the SFSS. The correlations between total and willingness and action scores on the SWAM-C/A and quality of life as measured by the PedsQL™, and mindfulness and acceptance of internal experiences as measured by the CAMM were also assessed for statistical significance. Prior to further statistical analyses, assumptions of multicollinearity, linearity and homoscedasticity were examined.

Hypothesis #1 stated that willingness and action scores would correlate negatively with measures of experiential avoidance, cognitive and emotional fusion, and psychological and behavioral symptoms. Bivariate correlation analyses with applied Bonferroni corrections ($p = .05$ divided by 2 comparisons = .03 significance level) indicated that total willingness and action, as measured by the SWAM-C/A, was significantly correlated with scores on the AFQ-Y ($r = -0.31$) but not with scores on the SFSS ($r = -0.07$). A breakdown and examination of the individual subscales of the SWAM-C/A revealed that the willingness subscale significantly correlated with scores on the AFQ-Y ($r = -0.32$). Thus, the data indicated that scores on the SWAM-C/A, in particular those of the willingness subscale, did correlate as expected with the conceptually overlapping process of experiential avoidance as measured by the AFQ-Y.

Hypothesis #2 stated that willingness and action scores would correlate positively with measures of quality of life, mindfulness and acceptance. Bivariate correlation

analyses with appropriate Bonferroni corrections ($p = .05$ divided by three comparisons = .02 significance level) indicated that willingness and action, as measured by the SWAM-C/A, was not significantly correlated with scores on the PedsQL™ ($r = -0.19$). However, the total scores on the SWAM-C/A did exhibit a significant relationship with scores on the CAMM ($r = .24$). Further evaluation revealed that the willingness subscale appeared to be driving the results of this correlation ($r = .21$). Thus, the data indicated that scores on the SWAM-C/A, in particular those of the willingness subscale, did correlate as expected with the conceptually overlapping process of mindfulness and acceptance as measured by the CAMM.

Hypothesis 3

Hypothesis #3 stated that investigation of the factor structure of the SWAM-C/A would reveal two factors: Factor 1 - ability to engage in desired behavior when feeling bad; Factor 2 - belief that it is okay to experience negative thoughts and feelings. To evaluate the factor structure of the SWAM-C/A, factor analysis was conducted using Principal Component Analysis (PCA) with oblique rotation to allow correlations between the factors. Eigenvalues and a scree plot were analyzed for factor solution.

Assumptions for factor analysis were first tested. The assumption of multicollinearity was met in that it did appear as though some variables were highly associated with each other ($r = .90$). The anti-image correlation matrix and Kaiser-Meyer-Olkin (KMO) values were examined to determine sampling adequacy and which variables to remove from the model. A total of 13 items were removed to achieve a satisfactory overall KMO statistic (KMO = .61). Bartlett's Test of Sphericity was significant, indicating that the correlation matrix was not an identity matrix. The

requirement of sufficient sample size was met only by using the significance rule, which requires fifty-one more cases than the number of variables (Lawley & Maxwell, 1971).

This initial analysis before rotation yielded 11 factors with eigenvalues greater than 1.00 and cumulatively accounted for 65% of the variance. The scree plot indicated that the curve began to flatten between six and seven factors. Subsequently, another factor analysis with extraction of six factors and oblique rotation was performed. For this analysis, the first and second factors had eigenvalues of 5.05 and 3.94 and accounted for 14.42% and 11.26% of the variance, respectively. Examination of the pattern and structure matrices revealed that factors one, two and four appeared to represent the belief that it is okay to experience negative thoughts and feelings (willingness) while factors five and six appeared to represent ability to engage in behavior (action).. Investigation of factor three did not yield a clear picture of what the factor represented. Loadings for the items are shown in Table 4. Internal consistency (Cronbach's alpha) for these items was 0.76. While the two hypothesized factors did appear to be represented across distinct factors (three willingness factors and two action factors), extreme caution should be exercised in drawing any significant conclusions due to the presence of six factors and weak loading values. Thus, the data did not fully support Hypothesis #3.

Hypothesis 4

Hypothesis #4 involved investigation of a series of informative analyses to explore potential relationships between variables (e.g., age, gender, willingness, action). A series of *t*-tests and one-way analysis of variance (ANOVA) with Tukey HSD range tests were utilized to test for differences in age and gender on subscale scores of willingness and action. A series of *t*-tests revealed a significant difference between

Table 4

Factor Loadings (≥ 0.40) for the SWAM-C/A Items ($n = 94$)

Items	Component					
	1	2	3	4	5	6
2C. Do you try to stop your feelings?	-	-	-	.42	-	-
2D. Do you keep doing your homework?	-	-	-	-	.47	-
2F. Write one or two sentences about what you would do at the end of the story.	-	-	-	-	-	.55
2H. Is it okay to feel how you do? Why?	-	.46	-	-	-	-
3B. Is it normal to feel how you do?	1.0	-	-	-	-	-
3F. Write one or two sentences about what you would do at the end of the story.	-	-	-	-	-	.49
4C. Do you have to make your feelings go away?	-	-	-	-	.52	-
4F. Write one or two sentences about what you would do at the end of the story.	.60	-	-	-	-	-
4H. Is it okay to feel how you do? Why?	-	-	.66	-	-	-
5C. Do you have to get rid of your feelings?	-	-	-	-	.44	-
5H. Is it okay to feel how you do? Why?	-	-	.42	-	-	-
6C. Do you try to change your feelings?	-	-	-	.49	-	-
6D. Do you keep trying to rollerblade?	-	-	-	-	.49	-
6H. Is it okay to feel how you do? Why?	-	.62	-	-	-	-
7B. Do you wish you could hide from your feelings?	-	-	-	-	.52	-
7C. Do you tell yourself to not have these feelings?	-	-	-	-	.53	-
7D. Do you keep talking in front of the class?	-	-	-.75	-	-	-
7F. Write one or two sentences about what you would do at the end of the story.	-	-	-	-	-	.61
7H. Is it okay to feel how you do? Why?	-	.72	-	-	-	-
8H. Is it okay to feel how you do? Why?	-	.69	-	-	-	-
9C. Do you try to feel a different way?	-	-	-	.56	-	-
9D. Do you go on stage and sing your song?	-	-	-.57	-	-	-
9E. Do you keep working on singing in front of people?	-	-	-.48	-	.46	-
9H. Is it okay to feel how you do? Why?	-	.70	-	-	-	-

males and females on willingness, $t(92) = -3.09, p < .01, d = 0.64$. Males on average ($M = 44.00, SD = 14.32$) scored lower on the willingness subscale than females ($M = 52.90, SD = 13.57$). A t -test evaluating gender and action scores did not indicate a significant difference between males and females on action scores ($t(92) = 2.02, p > .05$). ANOVAs were conducted to evaluate the relationships between age and total and subscale scores of willingness and action as well as between grade and total and subscale scores for willingness and action. The ANOVA for age and total willingness and action was not significant, $F(4, 89) = 1.06, p = .38$. ANOVA conducted between age and the subscale for willingness was not significant, $F(4, 89) = 0.46, p = .76$ nor was the ANOVA for age and the subscale for action, $F(4, 89) = 1.27, p = .29$. The ANOVA for grade and total willingness and action also was not significant, $F(2, 91) = .77, p = .46$. Neither of the ANOVAs for grade and the willingness and action subscales were significant with $F(2, 91) = 0.84, p = .44$ and $F(2, 91) = 1.33, p = .25$ respectively.

DISCUSSION

The purpose of the current study was to investigate the use of stories in assessing willingness and action in children and adolescents. The SWAM-C/A, a proposed measure of experiential acceptance, was described and its relationship to experiential avoidance, psychological and behavioral problems, quality of life and mindfulness were explored. Additionally, there was an examination of the underlying factor structure of the SWAM-C/A. The hypothesized relationships with variables of interest and factor structure were not fully supported in the current study. The results of hypothesis testing, general implications, and limitations and future directions for research will be explored below.

The SWAM-C/A and Related Variables

It was hypothesized that scores on the SWAM-C/A would correlate negatively with experiential avoidance and psychological and behavioral problems and positively with quality of life and mindfulness. In the current sample, the total score of the SWAM-C/A was significantly correlated with experiential avoidance. Specifically, the SWAM-C/A subscale of willingness was significantly correlated with experiential avoidance. These findings are consistent with previous research on the AFQ-Y that demonstrated a negative correlation between experiential avoidance and acceptance. However, there was not a significant correlation between the SWAM-C/A and SFSS score measuring psychological and behavioral problems. Within the current sample, there was also a significant correlation between the SWAM-C/A total score and a measure of mindfulness. In particular, the willingness subscale demonstrated a positive relationship with mindfulness as measured by the CAMM. While not statistically significant when

examined at the subscale level, these findings are important in that the CAMM assesses the extent to which youth observe internal experiences, act with awareness and accept internal experiences without judgment. To more accurately examine this relationship, future research will want to incorporate the use of the new version of the CAMM, which is currently being researched. There was no significant correlation between the willingness and action subscales or total score on the SWAM-C/A and quality of life. This finding is inconsistent with previous research which found the WAM-C/A to be a potential predictor of quality of life. Failure to demonstrate all hypothesized relationships at a statistically significant level suggest that the current SWAM-C/A does not adequately measure willingness and action as proposed.

An important consideration to keep in mind when examining the results of bivariate correlations within this study is the strict use of Bonferroni corrections. While meant to reduce the likelihood of Type I error, this practice can lead to an inflation of Type II error (Nakagawa, 2004). In particular, Bonferroni corrections may be overconservative when used with variables that are dependent on each other or highly correlated with one another (Perneger, 1998). With the current study, the variables of willingness and mindfulness are highly correlated, which means that application of Bonferroni corrections may have led to a reduction in power and failure to reject a false null hypothesis. This potential reduction in power could have compounded the already existing power problem caused by the small sample size of the current study. To rule out these problems, future research with a larger sample size may want to consider use of effect sizes and confidence intervals in evaluating significant relationships among variables.

SWAM-C/A Factor Analysis

Results of factor analysis of the SWAM-C/A did not support a 2-factor model. Several limitations should be considered when evaluating the factor analysis of the SWAM-C/A. Of primary concern is the small sample size used within the factor analysis ($N = 94$). While a variety of rules exist concerning what is considered an adequate sample size for factor analysis, the current sample was only able to meet the most lenient of those rules. Future research should look to meet more stringent rules regarding the ratio of number of cases to variables (e.g., rule of 10). By increasing the total number of cases, correlations could be more adequately assessed and thus an accurate factor structure produced. However, even with a more appropriate sample size, the SWAM-C/A items may continue to exhibit an unclear factor structure.

An additional consideration regarding the factor analysis of the SWAM-C/A is the inclusion of dichotomous variables. In a study by Shapiro, Lasarev, & McCauley (2002), factor analysis of 19 randomly created and independent dichotomous variables resulted in a five-factor model accounting for only 30% of all variance. Factor loadings of 0.40 or more occurred more than 95% percent of the time within the randomly generated data set. Taking this into account, future research may want to consider use of a more stringent, higher loading factor than the traditional 0.40 cutoff for PCA. The development and validation of a related measure, the AFQ-Y, incorporated the use of a less traditional factor loading of 0.50 or higher (Greco, Lambert, & Baer, in press).

In relation to the current study, the findings of Shapiro, Lasarev, & McCauley (2002) suggest that factor analysis with dichotomous data could be suspect. Interestingly, a quick exploratory factor analysis of only the open-ended questions of the

SWAM-C/A resulted in a three-factor solution. Questions believed to in theory assess willingness loaded on to one factor while those assessing action loaded on to the second and third factor. These findings further suggest that the factor analysis for the SWAM-C/A as a whole may have been affected by the presence of dichotomous variables.

Another caution to take in interpreting the results of factor analysis with the SWAM-C/A is the potential role of negatively worded items. While it would be expected that items with related content would load together on a single factor, it is common for positive and negative items to load on separate factors (Enos, 2001; Finney, 2001). Thus, it is important to examine whether the presence of two or more factors demonstrates a meaningful distinction or is merely a byproduct of having both positively and negatively worded items within the same measure. Preadolescent children may in particular have a difficult time responding appropriately to negatively worded items (Marsh, 1996). This so called “negative item effect” has been found to be related to age and verbal ability (Marsh, 1996). Given that all dichotomous willingness items for the SWAM-C/A were negatively worded and the young age of participants, results of factor analysis with this sample may reflect a methods effect rather than true distinction of factors. In the future, it may be helpful to balance positive and negative items on the SWAM-C/A or include only positive items. The later option, however, may not be effective as willingness items for the WAM-C/A were all positively worded and did not successfully load on to one factor together.

Research Implications

As stated previously, further research is warranted to better evaluate the reliability and factor structure of the SWAM-C/A. It is promising that data supported the presence of a statistically significant relationship between the total scores of the SWAM-C/A and experiential avoidance and mindfulness scores. In particular, the willingness subscale demonstrated a positive relationship with these conceptually overlapping processes. Additionally, results of factor analysis of the SWAM-C/A resulted in higher factor loadings for items theorized to measure willingness. Of the items retained for factor analysis, 19 out of 35 were purported to assess willingness. These two observations are important given that the original WAM-C/A experienced significant problems in field research when it came to demonstrating the presence of a willingness factor. Since the WAM-C/A has demonstrated success with detecting an action factor and the SWAM-C/A appears to detect a willingness factor, future research may want to consider the combination of these two measures. Willingness items from the SWAM-C/A could be combined with action items from the WAM-C/A in a variety of ways. For example, willingness items from the SWAM-C/A could be substituted in for the old willingness items on the WAM-C/A. Alternatively, the WAM-C/A action items could be used in combination with the story format and willingness items of the SWAM-C/A. Should the two measures be combined in any way, the potential role of dichotomous data in obscuring factor analysis could be remedied by applying a Likert-like scale to all items. If a Likert-like scale is used, consideration should be given to using a shorter point scale (e.g., 3 points) with a mid-point that is understandable to children. Alternatively, an analog scale may be applicable for use with children. If any new version of the SWAM-C/A utilizes one method of response (dichotomous or Likert-like

scale), Rasch (1980) modeling may want to be implemented to help elimination of items and identification of items with excessive overlapping content.

Applied Implications

As ACT with children and adolescents remains in early stages, research that supports the assessment of ACT processes within this population is integral to proper evaluation of ACT as an effective child and adolescent intervention. The current study contributes to the field in that it suggests that ACT processes (e.g., willingness) observed within the adult population may be assessed within a child population. Children's responses, in particular their open-ended responses, demonstrated the presence of willingness and action. Questions designed to elicit willingness resulted in responses that indicated both high willingness (e.g., "Yes. Because it is normal to have different feelings. And nobody should be afraid to show them.") and low willingness (e.g., "I don't know I just basically hate all of my emotions no matter what."). Children's open-ended responses were similarly indicative of action. For example, one response to the homework story that clearly demonstrated action was "I would ask my older sister or brother to help me. Then the next day at school, I would ask my math teacher for help."

While informative regarding children's knowledge and experience of emotions, the open-ended responses were plagued by poor interrater reliability. This finding highlights the context dependent nature of willingness and action. Each vignette only served as a "snapshot" of behavior. Within a therapeutic environment, the clinician should be attentive to the range of contexts in which willingness and action may or may not be present. It is a naïve assumption that one instance (e.g., vignette) can fully capture the processes of willingness and action.

Results from this current study support the idea that experiential acceptance and experiential avoidance are two separate, but related constructs. Thus, the absence of one (e.g., avoidance) may not necessarily mean the presence of the other (e.g., acceptance). As one of the central goals of ACT clinicians is to increase psychological flexibility, it will be important in practice to assess changes in experiential avoidance (psychological inflexibility) as well as experiential acceptance (psychological flexibility). While not part of the original hypotheses, this study did show support for the use of the AFQ-Y within a young child population. Previous validation studies for the AFQ-Y involved older children than that of the current sample.

Continued development of a measure that assesses both willingness and action could contribute to the effort to validate ACT as an effective treatment with children and adolescents by allowing for treatment progress to be empirically tracked. Children's reports of private internal events can provide unique information that is not available to other informants. These reports are more likely to reflect behavior across a range of situations than reliance on the limited reports of behaviors that are observable to others (Rohrbeck, Azar, & Wagner, 1991). The involvement of children through self-report expands the focus of treatment by providing the child's perspective on what is the problem. This allows for treatment to be appropriately tailored for each child and in turn, there is likely to be more motivation for treatment. As willingness is an internal event and is not always observable to others, every effort should be made to determine the feasibility of its measurement.

Limitations

Several limitations of this work should be considered when interpreting results and planning for future research. First, half of the stories on the SWAM-C/A had poor interrater reliability for open-ended questions. The remaining stories demonstrated adequate but not strong interrater reliability. The presence of a systematic pattern of missing data points on the SWAM-C/A was problematic in that mean substitution had to be utilized after failure of EM to converge. Furthermore, a comparison analysis could not be conducted on the sample without missing data ($N = 39$) as factor analysis on such a small sample would be inappropriate. Future research should attempt to obtain a larger, more sufficient, sample size in order to get a clearer idea of item correlation and underlying factor structure of the SWAM-C/A. A more representative sample in terms of age may help better distinguish the feasibility of stories in assessment of willingness and action.

In terms of overall sample characteristics, the mean age and grade were lower than expected. The younger age of most participants may have contributed to the difficulties with the SWAM-C/A. Given that performance on the sentence completion task indicated that participants were able to adequately comprehend the demands of the task at hand, there may be some other underlying factor related to age and performance on the SWAM-C/A. Of particular interest is any relation between participants' younger age and failure of theorized action items. Perhaps the situational nature of the stories and concrete dichotomous items resulted in children being less likely to view themselves as the character in the story and subsequently less likely to answer the closed ended questions accordingly. Given the better results from open-ended questions, it may have been possible that children responded to them as more of

a direct question to what they themselves would have done in the situation and not as the written character in the story.

The problem of missing data on open-ended questions may be remedied by conducting one-on-one interviews with participants to ensure complete, logical answers on those items. If an interview format was utilized, prompts and or cues could be included. This approach could help better assess the meaning behind non-responses (e.g., writing error or actual absence of willingness or action). As the SWAM-C/A used in this study was quite long (55 items), replication studies may want to consider use of only those stories that achieved satisfactory interrater reliability. This may help reduce any possible fatigue or inattention on behalf of participants.

Future Directions

Throughout the preceding discussion, several suggestions for future research have been made, including a study that would combine the most promising results of the WAM-C/A and SWAM-C/A. A combination of action items from the WAM-C/A and willingness items from the SWAM-C/A may produce a new measure that is able to adequately detect both willingness and action in children and adolescents. Important to this idea will be further assessment of the role of stories in assessing willingness and action. While the current study did not result in a two factor model, support was found for the detection of separate willingness and action factors. In particular, results from analysis of open-ended willingness questions appeared most promising. As the measurement of a willingness factor had previously plagued the WAM-C/A, it will be important to assess whether or not the presence of stories aided in assessment of willingness within a child population. Continued work into the assessment of ACT

processes, in particular willingness and action, is important to better assess feasibility of measurement as well as to continue the movement toward establishment of acceptance-based behavioral therapies for children and adolescents.

APPENDIX
INFORMED CONSENT AND CHILD ASSENT FORM

Informed Consent Form

Before agreeing to your child's participation in this research study, it is important that you read and understand the following explanation of the purpose and benefits of the study and how it will be conducted.

Title of Study: Narratives: A revision of the Willingness and Action Measure for Children and Adolescents

Principal Investigator: Christina M. Larson, B.A., a graduate student in the University of North Texas (UNT) Department of Psychology.

Purpose of the Study:

You are being asked to allow your child to participate in a research study on willingness and action in children. We are interested in looking at children's beliefs about experiencing negative thoughts and feelings as well as their behaviors when experiencing negative thoughts and feelings.

Study Procedures:

If you consent to your child's participation, your child will be asked to complete several self-report measures about his or her thoughts and feelings, and what behaviors he or she does when experiencing negative thoughts and feelings. Your child will also be asked to answer some questions about personal health, relationships with other children, and what he or she does at school. These questionnaires will take approximately 60 minutes for your child to complete. Your child's permission will be obtained before he or she participates in the study.

Foreseeable Risks:

It is possible that answering questions about thoughts, feelings, and behaviors may lead your child to think about upsetting things. We do not expect the level of distress that he/she might feel from completion of this study to be any greater than he/she would feel when discussing distressing topics in their daily life. If your child does become emotionally distressed, he/she may stop doing the study. The researchers will provide you with an appropriate referral should your child need psychological assistance.

Benefits to the Subjects or Others:

There will not be any direct benefits of this research to your child other than the experience of being involved in a study. There is a potential benefit to psychology, in that the research may advance our understanding children's thoughts, feelings and behaviors.

Compensation for Participants:

Your child will receive a small toy upon completion of the procedure.

Procedures for Maintaining Confidentiality of Research Records:

Your child's name will not be attached to any materials used except for this consent form. This form will be kept separately from all other information. Your child will be assigned a subject number at the beginning of the experiment. This number will be placed on a master list that connects their number to their name. After the study is complete we will destroy the master list. At that point, there will be no way to connect your name or your child's name to the questionnaires. All of your child's materials will be attached to this number and not your names. Your informed consent, and the data from this experiment, will be kept in a locked file cabinet in a locked room in Dr. Amy Murrell's lab in Terrill Hall. Your's and your child's name will not be used in any research reports or publications that result from this study, nor will your child's participation be disclosed to any unauthorized person. The confidentiality of your child's individual information will be maintained in any publications or presentations regarding this study.

Questions about the Study:

If you have any questions about the study, you may contact Christina Larson, or the faculty advisor, Dr. Amy Murrell, UNT Department of Psychology.

Review for the Protection of Participants: This research study has been reviewed and approved by the UNT Institutional Review Board (IRB). The UNT IRB can be contacted at (940) 565-3940 with any questions regarding the rights of research subjects.

Research Participants' Rights:

Your signature below indicates that you have read all of the above and that you confirm all of the following:

- This form has explained the study to you and answered all of your questions. You have read the possible benefits and the potential risks and/or discomforts of the study.
- You understand that you do not have to allow your child to take part in this study, and your refusal to allow your child to participate or your decision to withdraw him/her from the study will involve no penalty or loss of rights or benefits. The study personnel may choose to stop your child's participation at any time.
- You understand why the study is being conducted and how it will be performed.

- You understand your rights as the parent/guardian of a research participant and you voluntarily consent to your child's participation in this study.
- You understand that you will receive a copy of this form.

Please check one:

_____ I would like for my child to participate in the study.

_____ I do NOT want my child to participate in the study.

Printed Name of Child

Printed Name of Parent or Guardian

Signature of Parent or Guardian

Date

Child Assent Form

You are being asked to be part of a research project being done by the University of North Texas Department of Psychology.

This study looks at thoughts, feelings, and behaviors. We want to know more about how you think, how you feel, and what you do.

You will be asked to answer some questions about you, your thoughts and feelings, and things you do. You will also be asked some questions about how you get along with others and things you do at school.

If you decide to be part of this study, please remember you can stop participating any time you want to.

If you would like to be part of this study, please sign your name below.

Printed Name of Child

Signature of Child

Date

Signature of Principal Investigator

Date

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