

SINGLE-SESSION GROWTH MINDSET INTERVENTION AS A PRECURSOR TO  
SCHOOL MENTAL HEALTH SERVICES FOR RURAL YOUTH: A PILOT STUDY

A Thesis  
by  
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Submitted to the School of Graduate Studies  
at Appalachian State University  
in partial fulfillment of the requirements for the degree of  
Master of Arts

December 2021  
Department of Psychology

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## **Abstract**

### **Single-Session Growth Mindset Intervention as a Precursor to School Mental Health Services for Rural Youth: A Pilot Study**

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Approximately 80% of children experiencing mental health concerns do not receive treatment. Even when youth do have access to services, treatment dropout rates are high and the modal number of therapy sessions attended is one. Evidence-based treatments are sparse, however single-session interventions (SSIs) eliminate several traditional barriers to treatment and have shown preliminary effectiveness in preventing and reducing psychopathology in youth. A specific type of SSI that could be effective for youth are growth mindset interventions, which aim to enhance growth mindset (i.e., a belief in malleability or that an individual's traits, abilities, and/or thoughts are malleable rather than fixed). The present study utilized an experimental, repeated measures design to pilot test an adapted, computerized growth mindset SSI as a precursor to mental health services in a sample of rural, treatment-seeking youth. Due to a small sample size obtained during the COVID-19 pandemic, only three participants fully completed the intervention. It was hypothesized that the growth mindset SSI will increase growth mindset with changes seen across measures of mindset at pre-intervention and post-intervention. Percentage of non-overlapping data results were promising and in the predicted direction, thus future research should continue to examine growth mindset SSIs in treatment-seeking populations with larger samples, comparison to an active control condition, and longer follow-up.

*Keywords:* growth mindset, single-session interventions, youth mental health treatment, rural mental health services

## **Acknowledgements**

I would like to sincerely thank each of my committee members for sharing their wisdom, guidance, and unwavering support throughout this process. I am grateful for my thesis chair, Dr. Jacqueline Hersh, for her patience and continued mentorship, as well as challenging me to grow into the best researcher and clinician I can be. I would also like to thank the ASC Centers and Dr. Kurt Michael for their willingness to help and for the use of their facilities to conduct my study.

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Single-Session Growth Mindset Intervention as a Precursor to Mental Health Services for  
Rural Youth: A Pilot Study

Mental health disorders, inclusive of mental, behavioral, and developmental disorders, affect approximately 15-20% of children and adolescents (i.e., youth; Centers for Disease Control and Prevention [CDC], 2019; CDC, 2018; O’Connell et al., 2009). Only approximately 20% of children who experience mental health disorders receive treatment (CDC, 2018; Martini et al., 2012; Schleider & Weisz, 2017); this treatment gap was similar in the 1980s (i.e., with 70-75% of youth who needed treatment not receiving it) and has since persisted and increased (Kazdin et al., 1997; McKay & Bannon, 2004). Geography may be particularly important to consider in relation to youth mental health, as some evidence suggests that prevalence of parent-reported mental health disorders in children age two through eight are higher in small rural than urban areas, with prevalence rates of 18.6% in rural areas compared to 15.2% in urban areas (CDC, 2018; Kelleher & Gardner, 2017; Robinson et al., 2017). Rates of suicide are also higher among rural individuals (e.g., Ivey-Stephenson et al., 2017) and rural youth specifically (e.g., Fontanella et al., 2015) compared to their urban counterparts. Additionally, unique barriers to treatment (i.e., factors that “impede participation in treatment”) exist for individuals from rural settings and contribute to differences in treatment outcome (Kazdin et al., 1997, p. 1052). These unique barriers, including the availability, accessibility, and acceptability of services, in addition to treatment drop-out and potential ways to mitigate such barriers are discussed below (Mohatt et al., 2005a).

## **Barriers to Treatment in Rural Areas**

### ***Accessibility and Availability***

Due to a shortage of mental health professionals, there is a lack of access to mental health services generally in the United States (US; CDC, 2018). Not having access to mental health services is a more salient issue for rural communities, given that approximately 61-62% of areas with a shortage of mental health providers are rural or partially rural (CDC, 2018; Domino et al., 2018). In addition to the lack of mental health providers available in rural areas, research has found additional accessibility barriers to mental health services often exist for individuals in rural settings, such as financial concerns (e.g., poverty), limited transportation, and long travel distances (Kelleher & Gardner, 2017; Schleider et al., 2019b). Limited public transportation is a large barrier to accessing services when they are available in rural areas (Hargrove et al., 2017; Schleider et al., 2019b). Even if the person finds a provider and has transportation, oftentimes rural individuals and families must travel long distances to get to their appointments, which may not be sustainable for multiple reasons (e.g., time off from school/work, cost of traveling; Kelleher & Gardner, 2017). This likely contributes to high attrition or treatment drop-out rates for treatment in rural settings (Kelleher & Gardner, 2017).

### ***Acceptability***

Further, mental health services that are available and accessible for those in rural areas might not be utilized if they are considered unacceptable (Hargrove et al., 2017; Mohatt et al., 2005b). Such services may be deemed unacceptable in rural areas due to heightened social stigma, concerns over confidentiality, or negative attitudes towards seeking healthcare or help (Hargrove et al., 2017; Mohatt et al., 2005b; Mullins & Chaney, 2013). Stigma can be

conceptualized in two ways: public stigma (i.e., stereotypes, prejudice, and discrimination from others) and self-stigma (i.e., internalized stigma; Crumb et al., 2019). Thus, stigma may impact an individual's perceptions of others and themselves, as well as their attitudes towards seeking professional help (Crumb et al., 2019).

In rural areas, it can be particularly challenging for individuals to seek treatment privately and the knowledge of an individual receiving treatment can have real consequences (Mohatt et al., 2005b). For example, a consequence of being labeled “insane” after being seen at a mental health clinic could have a negative impact on relationships (personal or professional), which might lead rural individuals to be weary of receiving labels and delay or avoid help-seeking altogether (Mohatt et al., 2005b). Crumb et al. (2019) recently examined common themes in rural culture that might increase stigma (e.g., “just get over it”). Stigma may additionally obstruct the recognition of mental health problems in rural populations (Crumb et al., 2019). For example, layperson recognition of the signs and symptoms of mental health problems and knowing how to respond (i.e., mental health literacy) is lower in rural, and rural marginalized (e.g., low income) groups (Crumb et al., 2019).

### ***Treatment Drop-out***

Even when youth and their families access mental health services, they often cease treatment prematurely (Schleider et al., 2019b). Generally, the modal number of sessions attended by youth is one, with the average youth attending approximately 3.9 sessions after beginning therapy (Harpaz-Rotem et al., 2004). Attrition or treatment dropout rates are high, with sometimes as few as 9% of youth remaining in care after a 3-month period (McKay & Bannon, 2004). An estimated 28-59% of young people across the U.S. drop out of treatment prematurely, however it is suspected that rates in rural areas may be higher (e.g., Harpaz-

Rotem et al., 2004; Kelleher & Gardner, 2017; Schleider et al., 2019b). Rural rates could be higher for several reasons, including higher perceived barriers and socioeconomic disadvantage (Block & Greeno, 2011; Kazdin et al., 1997). Additionally, parent/caregiver perception of barriers to treatment related to a higher proportion of treatment dropout among youth (Kazdin et al., 1997).

Reasons for treatment dropout vary, but commonly fit within four main themes: 1) stressors and obstacles that compete with treatment (e.g., perceive that treatment will be an added stressor), 2) treatment demands and issues (e.g., financial concerns, lack of insurance, or socioeconomic disadvantage), 3) perceived relevance of treatment (e.g., viewed as unimportant by the parents/caregivers), and 4) relationship with the therapist (e.g., problems with the therapeutic relationship; Garcia & Weisz, 2002; Kazdin et al., 1997). Engaging children and adolescents in mental health services is a well-documented struggle in the field (McKay & Bannon, 2004). The fact that treatment dropout rates are high and appear higher among individuals in rural settings points to the need for more accessible, brief mental health interventions that address barriers to treatment and minimize the most common reasons for treatment dropout (Harpaz-Rotem et al., 2004).

## **Addressing Barriers to Treatment**

### ***Service Delivery***

Improving mental health treatments for youth, particularly underserved youth (e.g., youth in rural settings) is an important line of research. While evidence-based mental health treatments certainly exist for youth, they are often costly, both in time and money, to disseminate. The current methods for delivering interventions to youth inherently limit access to treatment and are not reducing the burden of mental illness (Kazdin, 2019; Kazdin &

Blase, 2011). In the dominant model of treatment delivery, services are provided at a clinic or office and they are one-on-one, delivered in person by trained professionals (Kazdin, 2019). Kazdin (2019) discussed several overarching characteristics of alternative treatment delivery models that can help bridge the need-to-access gap, such as scalability (i.e., capacity for an intervention to be applied in a way that will reach large groups of people), reach (i.e., capacity to be extended to individuals who are underserved by current service delivery models), affordability, feasibility (i.e., intervention is implementable and adaptable for diverse, underserved groups), flexibility (i.e., providing multiple delivery models so as to further reach), and acceptability of the model of delivery (i.e., judgements made by clients or others on the model of delivery). “Best buy” interventions meet these characteristics by being cost-effective, feasible, affordable, and appropriate for the setting (Kazdin, 2019; Schleider et al., 2019c). These interventions innovatively extend reach to include those who would potentially not be served under traditional service delivery models (Kazdin et al., 2019; Schleider et al., 2019c).

Existing evidence-based treatments for youth that meet all or most of the characteristics outlined above (e.g., low-cost, feasible, reach) are sparse, thus prompting the call for investigation of alternative service delivery models (Kazdin, 2019; Schleider et al., 2019b). Other models of delivery, such as the use of technology (e.g., online interventions) and integrated settings (e.g., school-based mental health) have been proposed (Kazdin & Blase, 2011). In fact, research has shown that having mental health services in rural schools may help decrease stigma and reach youth who otherwise may not be able to receive services (e.g., homeless youth; Owens et al., 2013; Sulkowski & Michael, 2014). School mental health (SMH) services expand reach in rural areas while simultaneously addressing many of

the aforementioned barriers to treatment (e.g., transportation, finances, acceptability) and reducing the burden of mental illness (e.g., Kirk et al., 2019; Michael et al., 2009).

For example, previous research has found that in rural areas, SMH may be more acceptable than traditional services (5% in rural areas sought out specialists compared to 25% in urban areas, but individuals in rural settings received much of their services from schools; Lyneham & Rapee, 2007). SMH programs, particularly those utilizing cognitive-behavioral therapy (CBT), have shown promising effects in previous literature. The Assessment, Support, and Counseling (ASC) Center (a SMH program with a CBT focus that serves multiple schools in several rural NC districts, discussed in more detail later), has been found to produce desirable effects in treating anxiety and depression and the reduction of psychological distress (Albright et al., 2013), a modest impact on academic outcomes (e.g., increased GPA; Albright et al., 2013), and notably not causal but promising trends in suicidality since implementing crisis intervention and risk assessment protocols (Michael et al., 2015). A noteworthy drawback of many SMH programs is that students could lose instructional time, thus SMH necessitates interventions that are both effective and efficient (Kirk et al., 2019). The variety of services offered by SMH programs (such as the ASC Center) can include many services, such as targeted intervention, mental health promotion, and prevention efforts, making SMH settings an appropriate place to further the literature that examines SSIs (Weist et al., 2014).

### ***Brief Interventions***

Brief interventions offer one way to address the barriers of accessibility, availability, and acceptability in rural areas. Brief interventions have historically included Motivational Interviewing (MI; a guiding, client- and change-focused style) and single session therapy (a

short, solution-focused approach; Perkins, 2006). MI and single session therapy are typically delivered in one-on-one meetings between a highly trained therapist and a patient, in traditional clinic, office, or medical settings. MI was initially conceptualized as a precursor to treatment, but research has shown it is effective on its own (Miller & Rollnick, 2013; Project MATCH, 1993, 1997). MI has been shown to be successful in face-to-face and online modalities (e.g., Fachini et al., 2012; Neale et al., 2018). Naar-King (2011) reviewed the literature on MI for adolescents and provided adaptations for this population, suggesting that MI is effective for substance use treatment with adolescents and shows promise for treating mental health problems in adolescence as well. In contrast to traditional therapies and in-person MI, single session interventions (SSIs) feature alternative modes of delivery such as online, self-administered (i.e., asynchronous) interventions that do not require the physical presence of a trained professional and can be offered for little to no cost (Schleider et al., 2019c). Single session interventions (SSIs) have recently shown preliminary, promising effectiveness for improving mental health outcomes (Schleider et al., 2019c; Schleider & Weisz, 2017). Notably, online SSIs could be available for use at any time of day or at any location (e.g., school, home), so long as the patient has internet and device (e.g., computer, smartphone) access. SSIs are structured and designed to only require one visit or encounter to complete (Schleider et al., 2019c). SSIs address many of Kazdin's suggestions for improving service delivery as they are often affordable and can be scaled up (i.e., to reach many people who are in need) to reduce the burden of mental illness (Kazdin & Rabbitt, 2013).

The B.E.S.T. elements for SSI design recently outlined by Schleider et al. (2019c) include: “1) *Brain science* to normalize concepts in the program, 2) *Empower* youths to a ‘helper’ or ‘expert’ role, 3) *Saying-is-believing* exercises to solidify learning, [and] 4)



Testimonials and evidence from valued others” (p. 11). Schleider et al., (2019b, 2019c) found that SSIs can aid in reducing or preventing psychopathology among youth. In a recent meta-analysis by Schleider and Weisz (2017), researchers examined 50 randomized, controlled trials across four types of SSIs, including a mix of self-administered (i.e., asynchronous) and therapist-administered SSIs: youth-focused behavioral interventions (hedges’  $g = .74$ ), youth-focused non-behavioral interventions (hedges’  $g = .26$ ), caregiver- and family-focused behavioral interventions (hedges’  $g = .31$ ), and MI (hedges’  $g = .11$ ). These were in comparison to control conditions of no treatment/waitlist (hedges’  $g = .41$ ) and psychotherapy placebo or psychoeducation (hedges’  $g = .14$ ; Schleider & Weisz, 2017). This meta-analysis found moderate effect sizes for SSIs on anxiety (effect size [ES] = 0.56) and conduct problems (ES = 0.54), with a promising but nonsignificant effect on depression (ES = 0.21; Schleider & Weisz, 2017). These findings are especially promising given how SSIs address typical barriers to treatment and treatment dropout. A promising line of SSIs are growth mindset interventions, described below.

**Growth mindset.** One brief way to potentially prepare individuals for treatment, enhance treatment effectiveness, and decrease attrition, while simultaneously addressing many of Kazdin’s (2019) characteristics for treatment models and the B.E.S.T. elements (Schleider et al., 2019c), may be through a growth mindset SSI. Growth mindset is essentially a belief in malleability or the idea that an individual’s traits, abilities, and/or thoughts can be changed rather than being fixed (Chiu et al., 1997; Schleider et al., 2019b). Some researchers propose that life events impact youth psychopathology indirectly through individual social-cognitive style (Beck, 1976; Miu & Yeager, 2015). Having a fixed mindset (the opposite of a growth mindset, wherein things cannot change) increases vulnerability for

maladaptive responding (e.g., avoidance-oriented, suppression); it can be conceptualized as a cognitive vulnerability factor for youth psychopathology, whereas having a growth mindset is thought to promote adaptive, approach-oriented responding (Beck, 1976; Mullarkey & Schleider, 2020; Schleider et al., 2019b; Schroder et al., 2014; Yeager et al., 2014). An individual's mindset regarding their personal traits or attributes can shape their interpretation of events (Schleider et al., 2019b). In the face of negative events, having a fixed mindset would not only increase risk for maladaptive coping for youth, it could also elicit negative attributions (e.g., thoughts such as "I'm unlikeable" after getting into a fight with a friend), fuel hopelessness, and aggression and has been linked to both internalizing and externalizing psychopathology (Erdley et al., 1997; Schleider et al., 2019b; Yeager & Dweck, 2012).

**Growth mindset interventions.** Growth mindset interventions aim to teach adaptive views of self and malleability, promoting reconceptualization, flexibility, and better coping when faced with negative events (Schleider et al., 2019b). Proposed mechanisms of change for growth mindset interventions include social stress recovery, perceived control, and hopelessness (Mullarkey & Schleider, 2020; Schleider & Weisz, 2016). Social stress recovery is an important target for youth, given the increase in change and social stress that is almost inherently part of the adolescent experience. During this time, reactivity to stress (i.e., the hypothalamic-pituitary-adrenal axis [HPA-axis] and sympathetic nervous system [SNS]) is increased, as evidenced by prolonged and increased activity in the HPA-axis and SNS (Schleider & Weisz, 2016). This has been found to increase risk for internalizing problems, such as anxiety and depression (Schleider & Weisz, 2016). Research demonstrates that growth mindset SSIs for adolescents can improve arousal response and rate of recovery from social stress, which suggests that adolescents may develop better coping strategies as a result

of such an intervention (Schleider & Weisz, 2016).

Another possible mechanism of change is perceived control, a relevant transdiagnostic construct that has been linked to anxiety disorders and treatment outcome (Gallagher et al., 2014). Having low perceived control over behaviors and emotions consistently relates to depression and anxiety (Schleider & Weisz, 2016). Perceived primary control is defined as, “one’s perceived ability to improve real-world outcomes through personal effort” (Schleider & Weisz, 2016; p. 174). The Two Process Model of perceived control by Rothbaum et al. (1982) asserts that perceived control relates to familiar concepts, such as helplessness and locus of control, and that it has two forms: primary and secondary. Secondary control is defined as, “one’s perceived ability to emotionally adapt to events that are out of one’s own control” (Schleider & Weisz, 2016; p. 174). Schleider and Weisz (2016) found that growth mindset SSIs improve perceived primary and secondary control indirectly through associations with reduced fixed mindset. Improvements in social stress recovery indirectly and sequentially correlated with reduced fixed mindset and increased perceived primary control (Schleider & Weisz, 2016). Research has found that more adaptive perceptions of control were linked to better treatment outcomes in CBT across several anxiety-related disorders (e.g., generalized anxiety disorder [GAD]), supporting perceived control as a transdiagnostic predictor of CBT outcome (Gallagher et al., 2014). Data from ASC Center services in the past suggest that the velocity at which students respond to CBT treatment in SMH programs is rapid (Kirk et al., 2019). For example, an analysis of ASC Center participants by Kirk et al. (2019) found that some youth outcomes had improved significantly (i.e., “a drop of 10 points or more” on the Youth Outcome Questionnaire [YOQ-30]) within just three sessions. This provides additional evidence that a SSI, such as in the

present study, would complement the rapid gains of treatment at the ASC Center and other SMH programs.

A change in hopelessness is another proposed mechanism of change for growth mindset interventions. Maladaptive cognitions, such as hopelessness, have been linked to depression and sometimes anxiety as well (e.g., Mullarkey & Schleider, 2020; Starr & Davila, 2012; Strohmeier et al., 2016). Indeed, hopelessness has been shown to uniquely account for approximately 22-28% and 33-39% of the variance in anxiety and depression, respectively (Mullarkey & Schleider, 2020). Hopelessness also has shared theoretical roots with mindset (e.g., learned helplessness) and with current evidence-based treatments (Mullarkey & Schleider, 2020). Mindset interventions are hypothesized to help in part because they likely target maladaptive cognitions such as hopelessness (e.g., through cognitive restructuring or promoting strategies for reappraising the cognition, which is a more helpful response that challenges maladaptive strategies [e.g., suppression] for regulating one's emotions; see Schroder et al., 2014 and Gross, 2002), similarly to the core of Beck's cognitive therapy and CBT (Beck, 1976; Mullarkey & Schleider, 2020; Schroder et al., 2014). Maladaptive strategies have consistently been more associated with psychopathology and symptomatology than adaptive strategies (e.g., Aldao & Nolen-Hoeksema, 2010; Moritz et al., 2016). Research has found that targeting and challenging maladaptive cognitions (e.g., through reappraisal) may be more effective for treating psychopathology than solely promoting adaptive coping (Moritz et al., 2016).

Previous research found that brief growth mindset interventions for youth can facilitate positive emotional outcomes (e.g., Yeager et al., 2014; Schleider & Weisz, 2016). Schleider et al. (2019b) showed that SSIs for growth mindset are moderately effective in

reducing depression symptom severity among non-treatment seeking adolescents ( $d = .28 - .60$ ). This study further found that these effects maintained at 4-month and 9-month follow ups, compared to an active, time-matched control condition. Less promising results have also been found for growth mindset SSIs on anxiety symptom reduction (parent- and child-reported), with significant reductions in anxiety found in a meta-analysis and study that compared the SSI to an active control condition, but did not meet significance for reductions at the 9-month follow-ups (Schleider & Weisz, 2018). Growth mindset SSIs show promise, especially when considering their impact on proposed intervention mechanisms. For example, in one trial of a personality growth mindset SSI, adolescents who were anxious or depressed (i.e., met a threshold of symptoms, received accommodations at school for anxiety/depression, or whose parents had sought treatment for them within the previous three years) and received a growth mindset SSI reported greater increases in growth mindset, primary perceived control, and perceived secondary control, which maintained at a 9-month follow-up (Schleider & Weisz, 2016). In summary, SSIs may reduce risk and maintenance factors for internalizing disorders, in addition to benefiting those who already experience symptoms (Schleider & Weisz, 2016).

As with any relatively new intervention, there are gaps in the research that need to be addressed. Growth mindset interventions have been initially studied in educational research (e.g., Burnette et al., 2018) to promote positive academic attitudes, learning efficacy, learning motivation, and higher grades. Adapting and testing growth mindset SSIs for mental health concerns has been a growing area of research. Further research is needed to assess growth mindset SSIs (that are designed with the B.E.S.T. elements in mind), particularly by assessing immediate post-intervention outcomes (Schleider et al., 2019c). This allows for

both testing manipulation checks and the mechanisms by which the SSI may change outcomes (Schleider et al., 2019c). Research has found that the effect a SSI might have is not influenced by symptom severity, thus it is important that future research examine the utilization of SSIs in high-acuity populations, such as youth with high-severity symptoms or acute problems, as opposed to solely conducting such research with low-acuity populations or youth whose symptoms are mild (Schleider et al., 2019c). SSIs have been examined in a few samples of high-risk populations (e.g., Schleider & Weisz, 2018) and high-symptom adolescents (e.g., Schleider et al., 2019a; females only), but more work is needed with high-acuity samples that include males and growth mindset SSIs have not been tested with samples of rural treatment-seeking youth.

To further improve accessibility to mental health care, it has been recommended that future researchers implement SSIs in diverse settings, by evaluating SSIs in non-traditional mental health settings, such as in schools or primary care (Schleider et al., 2019c). It has been hypothesized that increasing growth mindset prior to engaging in change-focused therapy, such as CBT, might help to increase buy-in to the treatment (which may in turn reduce treatment drop out; Schleider & Schroder, 2018). Strategies that prepare clients for treatment (e.g., MI, motivational enhancement, and training clients on roles/how to utilize psychotherapy) may decrease attrition and increase participation in treatment, and thus improve treatment effectiveness (Walitzer et al., 1999). It has also been proposed that using a growth mindset SSI as a precursor to mental health treatment could both empower youth (e.g., teaching them that people or symptoms can change) and complement treatment (e.g., improve homework compliance; Schleider & Weisz, 2016). In addition, research on the change mechanisms behind the effect of growth mindset SSIs is sparse. Perceived

primary/secondary control and hopelessness have been hypothesized to function as moderators and explain the mechanisms driving the effect of growth mindset SSIs on youth psychopathology (Schleider et al., 2019b).

### **Purpose of the Present Study**

The present study aims to address these gaps in the literature by examining an adapted, computerized, growth mindset SSI as a precursor to mental health services among a treatment-seeking sample of rural youth. Addressing gaps from previous literature (e.g., Schleider et al., 2019b), this study utilizes a sample with both genders and a clinical/treatment seeking sample with more age variability. This pilot study was designed to employ an experimental design, testing pre- to post-intervention change in growth mindset compared to an active control. Specifically, this pilot study was designed to address some of the aforementioned limitations and future directions from previous literature (e.g., immediate post-intervention assessment of variables, mechanisms of change, a high-acuity, treatment-seeking, school mental health setting, rural youth sample; Schleider et al., 2019c) and potentially inform a larger, future study. No study has tested a growth mindset SSI in a sample of students seeking therapy that we are aware of, which is important because preparing youth for treatment by enhancing growth mindset may be a way to increase access to and the effectiveness of mental health services. We hypothesized that the adapted intervention would increase growth mindset when compared to an active control condition, indicated by differences in growth mindset ratings from pre-intervention to immediate post-intervention (Hypothesis One). Consistent with past research (e.g., Schleider & Weisz, 2018), we also hypothesized that the increase would be maintained at a three-week follow up

(Hypothesis Two – later eliminated). In order to explore a possible transdiagnostic mechanism of change, perceived control and hopelessness were measured also.

## **Method**

### **Participants**

The sample included youth who were recruited from school mental health centers, specifically known as Assessment, Support, and Counseling (ASC) Centers at local high schools. The ASC Centers are located in rural Western North Carolina schools. Established in 2006, the ASC Center is staffed primarily by graduate student clinicians from multiple Appalachian State University programs (under supervision by Licensed Psychologists or Licensed Psychological Associates) and other staff on site (e.g., Licensed Clinical Social Workers) and primarily focuses on providing evidence-based interventions (e.g., CBT) to youth (Michael et al., 2009; Kirk et al., 2019). To be included in the study, participants had to be seeking treatment services at an ASC Center. ASC Center clients are typically referred by parents/guardians, teachers, school staff (e.g., counselors, administrators), or self-refer for psychotherapy. Participation in the research study required informed consent from the youth and their parent/guardian. The informed consent procedure preceded participation in the study, requiring consent from the youth and their parent/guardian for treatment and research separately, which emphasized the voluntary nature of their participation. The Institutional Review Board of ASU approved this study on October 27<sup>th</sup>, 2020.

Results from G\*Power 3.1 for a repeated measures, between factors analysis of variance (ANOVA) determined that based on an effect size of .30, with two groups and three measurements, 62 people (31 in each condition of the study) will be needed to obtain a .8 estimate of power (Faul et al., 2007).



Due to the COVID-19 pandemic leading to school closures, reduced ability to implement recruitment strategies, and possible computer fatigue making completion of this online intervention less desirable, the target sample size could not be obtained. The present pilot study and this power analysis can inform future investigations. Six people clicked on the link to participate, however, three people did not make it further than one or two initial measures (i.e., did not reach the active or control condition). Participants who fully completed the study consisted of three individuals between the ages of 16-18 (100% White; 100% Qualify for Free/Reduced Lunch; Grades 10-12). Participants varied in their reported gender identity (33% Female, 33% Male, 33% Prefer not to answer) and sexual orientation (33% Bisexual, 33% Heterosexual; 33% Prefer not to answer). All but one participant reported that they had no prior experience with therapy. Measures

**Mindset questionnaires.** The “Kind of Person” Implicit Theory Scale (KOPITS) is an eight-item, self-report scale measuring growth mindset (Dweck, 1999; Dweck et al., 1995; Levy et al., 1998a; Yeager et al., 2014). It uses a 6-point Likert scale (1=strongly agree, 6=strongly disagree) to rate agreement with each statement (e.g., “The kind of person someone is, is something very basic about them and it can’t be changed very much” and “People can do things differently, but the important parts of who they are can’t really be changed” [see Appendix A]; Dweck, 1999; Dweck et al., 1995). It contains two subscales, one for fixed mindset and another for growth mindset, though participants are often given only the fixed mindset items (see Dweck et al., 1995). The growth mindset subscale items are reverse scored. Item responses are averaged yielding a total score that ranges from 1 to 6, where a higher total score (4.0 or greater; incremental theory) is indicative of a growth mindset and a lower score (3.0 or below; entity theory) indicates a fixed mindset (Dweck et

al., 1995; Levy et al., 1998b; SPARQtools, 2019). Its structure is parallel to similar measures, including Dweck's other measures of growth mindset, and has been used in studies with middle- and high-school students (in addition to adults). Internal reliability of the scale ranges from .90 to .94 and it is considered valid (Dweck et al., 1995).

The Fixed-Trait Attributions Measure (FTAM; see Appendix B) is a two-item, self-report measure designed to assess the efficacy of growth mindset interventions in adolescents (Yeager et al., 2016). It includes a scenario that is read by participants ("Pretend that, later today or tomorrow, you got a bad grade on a very important math assignment. Honestly, if that happened, how likely would you be to think these thoughts?"), and two follow-up statements (i.e., "This means I'm probably not very smart at math" and "I can get a higher score next time if I find a better way to study [reverse-scored]") that assess for person-focused (fixed trait) as opposed to process-focused (growth mindset) attributional styles respectively. On a 5-point scale (1=not at all likely, 5=extremely likely), the participant rates the likelihood of each statement. Item responses are averaged yielding a total score that ranges from 1 to 5, with higher values indicating more fixed traits. To date, no study has tested its psychometric properties, however it will still be used in the present study as it uniquely assesses growth and fixed mindset (by asking for participants' responses to a scenario), has been used in prior studies, and evidences face validity.

**Hopelessness scale.** The Hopelessness Scale for Children (HSC) is a 17-item rating scale designed to assess hopelessness in clinical samples of children and adolescents (Kazdin et al., 1983). Its items are answered in a true/false format in response to statements such as, "Someday, I will be good at doing the things I really care about" (Kazdin et al., 1983). Items are added together, and thus the range of possible total scores is 0-17. A higher score on this

scale reflects a greater level of hopelessness. The HSC has demonstrated high internal consistency (coefficient alpha = .97), good concurrent validity, and good test-retest reliability (.52,  $p < .001$ ) and has been tested for use with both clinical and non-clinical samples of youth (Kazdin et al., 1986).

**Perceived control scale.** The Anxiety Control Questionnaire for Children - Short Form (ACQ-C; Appendix D; Weems, 2005) is a 10-item rating scale adaptation of a full form designed by Weems and others to measure perceived lack of control over both external threats (e.g., events) and internal reactions (e.g., emotional reactions to anxiety; Weems et al., 2003). On a 5-point scale (0 = none, 4 = very very much), the participant rates their agreement with each statement. Items are added together, and thus the range of possible total scores is 0-40, where higher scores reflect higher perceived control (Weems, 2005). This scale can be additionally broken up into external and internal subscales if desired (Weems, 2005). It has demonstrated good internal consistency (alpha = .85), convergent validity and one year test-retest reliability similar to the full form, and clinical utility (such as incremental validity over other anxiety measures and has been shown to be a mediator of CBT change [see Pereira et al., 2018]; Weems, 2005; Hogendoorn et al., 2014).

**Demographics questionnaire.** Based upon demographic information in previous studies (e.g., Schleider & Weisz, 2016; Schleider et al., 2019b), we included basic demographic questions. These demographics questions (see Appendix E) gather information pertaining to gender identity, sexual orientation, race/ethnicity, age, grade, free/reduced-price lunch status (a proxy for socioeconomic status used in other studies, such as Schleider et al., 2019b), and if they have had prior experience with therapy/treatment for mental health.

## Procedure

The following procedures were approved by the Appalachian State University Institutional Review Board (IRB; #21-0016) prior to the start of data collection. First, participants were either referred or self-referred to the ASC Center for services that do not include any pre-treatment intervention. This theoretically allows for comparison on the key variables of interest between participants who received the growth mindset SSI and those who received the active control SSI. Once participants had been identified and consent was obtained, they received the link to participate. The link included the informed assent to be read by participants, and by continuing forward they agreed to participate (see Appendix I). Next, participants were randomized to one of two conditions, using an online randomization generator tool in Qualtrics. Of note, none of those who fully completed the study were randomized to the control group.

Participants then completed the measures in random order: mindset questionnaires, hopelessness scale, perceived control scale, and demographics questionnaire. Then, participants were asked to complete the SSI for the respective condition they were randomly assigned to, either experimental or control. For the purposes of this study, the experimental condition was a growth mindset SSI, operationalized as an adapted version of “Project Personality” (Creative Commons license: <http://creativecommons.org/licenses/by-nc-sa/4.0/>; Schleider & Weisz, 2019a). This SSI was designed to encourage the belief that personality is malleable (modeled after preceding growth mindset interventions) and has been tested within the field of mental health in several research studies previously (e.g., Schleider et al., 2019c; Schleider & Weisz, 2018). It was designed with the B.E.S.T. elements in mind (see Schleider et al., 2019c for an overview) and includes narrated stories told by other youth, three case

vignettes, an activity in which participants apply the concepts to their own lives, and a self-persuasion activity in which participants write a note to a younger student about their newly acquired knowledge (i.e., that personality traits are malleable). Adaptations include providing more broad examples of mental health symptoms being malleable to change (e.g., sadness, anxiety, social anxiety). The control condition was an active control SSI that is similar to the experimental condition in structure, format, and completion time, titled, “Sharing Feelings” (Schleider & Weisz, 2019b Creative Commons License: <http://creativecommons.org/licenses/by-nc-sa/4.0/>). This control condition has face validity and yet does not contain the active ingredient of the experimental condition (i.e., promoting growth mindset). Estimated completion time for either SSI condition was approximately 30 minutes and completion of the full study took on average 29 minutes. Immediately following the completion of the SSI, participants completed measures again (i.e., mindset questionnaires, hopelessness scale, perceived control scale). Participants were thanked for their time. Lastly, an online follow-up survey containing the mindset questionnaires, hopelessness scale, and perceived control scale (estimated time to complete: ten minutes) was sent to participants by email approximately three weeks post-participation for both conditions (one reminder email sent to each participant). However, none were completed.

### **Data Analysis**

Given the limited number of participants who completed a SSI and that our planned analyses would be severely underpowered, we examined pre- and post-intervention data for each participant utilizing more of a case design approach. Visual analysis is indicated for single-case, multiple baseline designs and includes a systematic process of examining data across conditions and participants (Kazdin, 2011; Ledford & Gast, 2018). While the present

study did not employ a multiple baselines design, this process can still provide valuable data to inform future directions.

A measure of an intervention's effectiveness called percentage of non-overlapping data (PND) can be interpreted as an effect size with suggested cutoffs for interpretation, such that PND scores above 90 represent "very effective" treatments, from 70-90 represent "effective," from 50-70 represent "questionable," and below 50 represent "ineffective" treatments (Olive & Franco, 2008; Scruggs & Mastropieri, 2001, p. 230). To calculate a PND score when an increase is expected from pre-post (e.g., in behavior, skill, or a hypothesized increase in growth mindset, perceived control), one must ascertain the proportion of post-treatment data points that surpass the highest baseline score (Scruggs & Mastropieri, 2001). Similarly, when a decrease is expected post-treatment (i.e., hypothesized decrease in hopelessness), one must determine the proportion of post-treatment data points that are less than the lowest baseline score (Olive & Franco, 2008)). Data used from the measures examined using PND were all scored as averages, with the exception of the ACQ-C which is a composite.

## **Results**

Table 1 shows descriptive statistics for the growth mindset (i.e., the Kind of Person Implicit Theory Scale [KOPITS] and Fixed-Trait Attribution Measure [FTAM]), hopelessness (i.e., HSC), and perceived control (i.e., ACQ-C) measures. Table 2 shows pre- and post-SSI scores on the measures by participant.

*Table 1*  
*Descriptive Statistics for KOPITS, FTAM, HSC, and ACQ-C*

Measure	Pre-		Post-		n
	M	SD	M	SD	
KOPITS	4.21	1.15	5.00	1.15	3
FTAM	2.83	1.89	2.67	1.61	3
HSC	2.00	0.00	1.67	0.58	3
ACQ-C	21.3	7.57	24.0	5.29	3

*Table 2*  
*Demographics and Pre- and Post- Growth Mindset Intervention Scores by Participant*

Demographics	Participant 1		Participant 2		Participant 3	
Race/Ethnicity	White		White		White	
Gender Identity	Female		Male		Prefer not to answer	
Grade	12 <sup>th</sup>		10 <sup>th</sup>		10 <sup>th</sup>	
Free/Reduced Lunch	Yes		Yes		Yes	
Previous Therapy	Yes		No		No	
Sexual Orientation	Prefer not to answer		Heterosexual		Bisexual	
Measure	Participant 1		Participant 2		Participant 3	
	Pre-	Post-	Pre-	Post-	Pre-	Post-
KOPITS	2.875	3.75	4.875	5.25	4.875	6.00
FTAM	1.50	1.50	2.00	2.00	5.00	4.50
HSC	2.00	1.00	2.00	2.00	2.00	2.00
ACQ-C	16.00	22.00	30.00	30.00	18.00	20.00

Figures 1-4 (Appendix J) show participants' pre- and post-SSI scores by measure. Visual analysis indicated that from pre- to post- growth mindset SSI, participants' scores increased on the KOPITS and increased or maintained on the ACQ-C. On the FTAM and HSC, visual analysis indicated that participants' scores maintained or decreased slightly.

Percentage of non-overlapping data calculations yielded mixed results. Related to growth mindset, two of three participants (i.e., P2 and P3) met PND criteria for the questionable range (PND = 67%) for intervention effectiveness at increasing growth mindset, as measured by increases in KOPITS scores. It is important to note that for these same two participants, their pre- growth mindset SSI KOPITS score was higher than average, which

may have impacted these results. For example, based on Dweck and colleagues (1995) research on the reliability of the KOPITS, the present scores at baseline of 4.875 would fall at least one standard deviation above the mean found in five of six studies by Dweck and colleagues.

On the FTAM, which also measures growth mindset, and the ACQ-C (perceived control), the intervention was considered ineffective based on PND criteria (i.e., both PND = 0%) across all three participants. Regarding the HSC (hopelessness), the intervention was ineffective based on PND criteria, with one of three participants (i.e., P1) showing a decrease (PND = 33%).

### **Discussion**

Despite the unique challenges of collecting data during the COVID-19 pandemic, these data showed favorable results. Regarding growth mindset, as measured by the Kind of Person Implicit Theory Scale (KOPITS), each participant's score increased from pre- to post-growth mindset SSI, consistent with hypothesis one. Two of three participants' scores on this measure prior to the intervention were perhaps already higher than average among students in academic settings (e.g., Dweck et al., 1995), which could have impacted the variability and thus effectiveness of the intervention. Thus, it is even more meaningful that we saw additional increases in growth mindset. These data suggest that growth mindset SSIs have the potential to be effective at increasing growth mindset in rural, treatment-seeking youth. Other present results were in promising directions as well. For example, on the Fixed-Trait Attributions Measure (FTAM) and Hopelessness Scale for Children (HSC), participants' scores stayed the same or decreased, demonstrating the potential for a reduction in fixed-mindset and hopelessness respectively that could be studied further with larger samples. Both



the KOPITS and FTAM have been used previously in the literature to measure growth mindset, but these measures have notable differences. The KOPITS has been used in research related to growth mindset for years and has established reliability and validity, whereas the psychometric properties of the FTAM (for fixed mindset) have not been formally documented. In addition, the wording of the FTAM relates purely to fixed mindset as it relates to academics, whereas wording on the KOPITS is more globally representative of growth mindset. It is important to note that participants' scores on the HSC at pre- and post-growth mindset SSI would be considered "low" based on previous research comparing HSC scores in suicidal and non-suicidal youth (Spirito et al., 1988). Given already low scores at baseline, which resulted in little variability, it may have been particularly challenging to detect a difference and even more so using PND criteria that are intentionally stringent. Additionally, participants' scores on the Anxiety Control Questionnaire for Children (ACQ-C) maintained or increased from pre- to post-SSI, suggesting that future research should examine the impact of growth mindset SSIs on perceived control with more participants.

The present study has several strengths (e.g., rural, treatment seeking youth) and limitations (e.g., a small sample size, lack of participants in the control condition, and lack of data from the planned three-week follow up). This study was also complicated by the COVID-19 pandemic, which has been a tumultuous time for many across the globe, including rural K-12 schools. Many schools closed, operated using remote learning, or embraced a hybrid model, which reduced school professionals' access to students and thus made seeing clients (and recruiting participants) at the ASC Centers more challenging (Holland et al., 2021). While a movement towards alternative models of care was present before the pandemic, it certainly accelerated the adoption of technology-based approaches as

providers needed feasible means of providing care during the pandemic that promoted physical distancing, such as telehealth (Jobes et al., 2020). Research has found that youth's self-reported mental health has decreased since the beginning of the COVID-19 pandemic (e.g., Hawke et al., 2020) and we know that many risk factors for mental health concerns (e.g., suicidality, anxiety, depression) have increased (e.g., stressors, social isolation), further confirming the need for accessible, online interventions (Jobes et al., 2020; Holland et al., 2021).

Given the present results and limitations, there are several additional considerations for future research. Researchers should continue to examine the use of growth-mindset SSIs as a precursor to mental health treatment, especially for underserved populations such as in rural and school mental health settings. When doing so, including an active control SSI and having an additional follow-up post-SSI data collection will be helpful in determining if growth mindset SSIs work in the ways we might expect (i.e., to increase growth mindset) and if such results maintain for longer periods of time post-SSI (e.g., three weeks, months). It is imperative that future research include an active control condition and a larger sample of rural youth, so that we may isolate the impact of the growth mindset SSI itself (i.e., does the intervention itself increase growth mindset) and control for as many extraneous variables possible that could otherwise explain any effects (e.g., time, increased attention). Thus, it is important to keep the structure, length, procedure, and other aspects similar across the two conditions in order to make the case that any effects seen are due to the active ingredient in the SSI – growth mindset.

Once this is established, it will be necessary to assess the feasibility, satisfaction, and acceptability of the growth mindset SSI by soliciting structured and open-ended feedback

from participants completing the intervention (i.e., rural, treatment seeking youth in a school-based mental health setting) as well as their caregivers and clinicians (rural clinicians in a school-based mental health setting). This is essential to addressing the aforementioned barriers to treatment by changing the service delivery model --- as Kazdin (2019) suggests, our services must be affordable, scalable, feasible, and acceptable. Previous research has begun to identify the benefits of more flexible interventions, such as smartphone-based interventions for youth, which thus far appear to have high acceptability in addition to accessibility (especially during the COVID-19 pandemic; Holland et al., 2021). Asynchronous interventions, such as in the present study, have been thought to even further increase access to care and may be the most effective solution to reducing the burden of increased mental health concerns on the healthcare system (Torous et al., 2020). In order to continue piloting growth mindset SSIs in rural, school-based mental health settings, it will be imperative to assess feasibility, acceptability, and satisfaction in future research.

With a large enough sample, given the mixed previous findings, it may be worth examining how response to the growth mindset SSI varies across different presenting concerns (e.g., anxiety, depression) and age ranges (e.g., younger treatment-seeking students). Given that much of the previous literature on this subject has focused on high school age students, as well as the importance of early intervention and prevention of severe symptoms, future research should consider expanding to earlier ages and following students throughout the course of treatment. For example, one could examine treatment variables for those who have engaged in a growth mindset-SSI (compared to those who have not or who received an active control) to see if and how having participated in such an intervention prior to treatment impacts treatment outcome variables (e.g., Is mental health treatment drop-out

lower among those who have an increased growth mindset? Does homework compliance increase?).

In sum, barriers to mental health treatment for youth are abundant and rural areas often disproportionately lack mental health providers (Domino et al., 2018). In order to address these barriers and increase access to care, Kazdin (2019) and others have suggested the field turn to alternative treatment delivery models that can help to bridge the large gap between youth who need and access services. Growth mindset SSIs delivered asynchronously online offer a promising approach for addressing the need-to-access gap among rural youth, as well as potentially improving treatment outcomes and the lives of our youth.

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## APPENDIX A

“Kind of Person” Implicit Theory Scale (Dweck, 1999; SPARQtools, 2019)

**Instructions:** Please circle how much you agree or disagree with each of the following statements.

1. The kind of person someone is, is something very basic about them and it can't be changed very much.

Strongly agree	Agree	Mostly agree	Mostly disagree	Disagree	Strongly disagree
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2. People can do things differently, but the important parts of who they are can't really be changed.

Strongly agree	Agree	Mostly agree	Mostly disagree	Disagree	Strongly disagree
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3. Everyone, no matter who they are, can significantly change their basic characteristics.

Strongly agree	Agree	Mostly agree	Mostly disagree	Disagree	Strongly disagree
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4. As much as I hate to admit it, you can't teach an old dog new tricks. People can't really change their deepest attributes.

Strongly agree	Agree	Mostly agree	Mostly disagree	Disagree	Strongly disagree
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5. People can always substantially change the kind of person they are.

Strongly agree	Agree	Mostly agree	Mostly disagree	Disagree	Strongly disagree
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6. Everyone is a certain kind of person, and there is not much that can be done to really change that.

Strongly agree	Agree	Mostly agree	Mostly disagree	Disagree	Strongly disagree
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7. No matter what kind of person someone is, they can always change very much.

Strongly agree	Agree	Mostly agree	Mostly disagree	Disagree	Strongly disagree
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8. All people can change even their most basic qualities.

Strongly agree	Agree	Mostly agree	Mostly disagree	Disagree	Strongly disagree
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## APPENDIX B

## The Fixed-Trait Attributions Measure (Yeager et al., 2016)

Pretend that, later today or tomorrow, you got a bad grade on a very important math assignment. Honestly, if that happened, how likely would you be to think these thoughts?

This means I'm probably not very smart at math. (Not at all likely, Slightly likely, Somewhat likely, very likely, extremely likely)

I can get a higher score next time if I find a better way to study. (Not at all likely, Slightly likely, Somewhat likely, very likely, extremely likely)

## APPENDIX C

## Hopelessness Scale for Children (Kazdin et al., 1986)

Instructions: These sentences are about how some teens feel about their lives. Read the following sentences and mark if the sentence is true for you or false for you. If the sentence is how you feel, you would say it is like you or mark true. If the sentence is not how you think you feel, you would say it is not like you or mark false. There are no right or wrong answers.

1. I want to grow up because I think things will be better (F).
2. I might as well give up because I can't make things better for myself (T).
3. When things are going badly, I know they won't be bad all of the time (F).
4. I can imagine what my life will be when I'm grown up (F).
5. I have enough time to finish the things I really want to do (F).
6. Someday, I will be good at doing the things I really care about (F).
7. I will get more of the good things in life than most other kids (F).
8. I don't have good luck, and there's no reason to think I will when I grow up (T).
9. All I can see ahead of me are bad things, not good things (T).
10. I don't think I will get what I really want (T).
11. When I grow up, I think I will be happier than I am now (F).
12. Things just won't work out the way I want them to (T).
13. I never get what I want, so it's dumb to want anything (T).
14. I don't think I will have any real fun when I grow up (T).
15. Tomorrow seems unclear and confusing to me (T).
16. I will have more good times than bad times (F).

17. There's no use in really trying to get something I want because I probably won't get it (T).

## APPENDIX D

## Anxiety Control Questionnaire for Children - Short Form (Weems, 2005)

Instructions: Listed below are a number of statements which teens use to describe themselves. Please read each question and answer them as honestly as you can. There are no right or wrong answers. Use the numbers to show how much each question is true for you.

None (0), A little (1), Some (2), A lot (3), Very Very Much (4)

1. I can take charge and control my feelings. (I)
2. When I am scared or nervous, I am able to stop myself from breathing too hard. (I)
3. I am able to change how much nervousness or fear I feel. (I)
4. I can make myself feel good again when bad things happen to me. (E)
5. I can usually calm myself down when I want to. (I)
6. I know how to deal with feeling scared or anxious so I do not care if I become scared or anxious. (I)
7. I can usually deal with hard problems. (E)
8. When I am anxious or nervous, I can still think about things other than my feelings of anxiety. (I)
9. I can handle scary things I did not expect or think would happen as good as I can handle scary things that I expected or thought would happen. (I)
10. I am good at taking care of things that go wrong. (E)

## APPENDIX E

## Demographics Questions

1. What is your gender identity?

- Male
- Female
- Transgender
- Self-Identify \_\_\_\_\_
- Prefer not to answer

2. How do you identify your sexuality?

- Heterosexual/Straight
- Gay or Lesbian
- Bisexual
- Asexual
- Self-Identify \_\_\_\_\_
- Prefer not to answer

3. How do you describe your race/ethnicity? (select all that apply)

- African American/Black
- American Indian or Alaskan Native



- Asian American/Asian
- Hispanic/Latino/a
- Native Hawaiian or Pacific Islander
- Multi-racial/ethnic
- White
- Self-Identify
- Prefer not to answer

4. How old are you? (please enter your age numerically, for example: 15)

If you prefer to not answer, enter N/A

\_\_\_\_\_

5. What grade are you in?

6th, 7th, 8th, 9th, 10th, 11th, 12th, Other, Prefer not to answer

6. Do you qualify for and/or receive free/reduced-price lunch?

Yes, No, Prefer not to answer

7. Do you have previous experience with therapy or treatment for mental health? (examples include seeing a counselor or psychotherapist, medication-based treatment)

- Yes
- No
- I'm not sure

- Prefer not to answer

8. If you answered "Yes" or "I'm not sure" to the previous question ("Do you have previous experience with therapy?") ... Please describe your previous experience(s) briefly here:

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## APPENDIX F

Watauga County Schools/Appalachian State University Informed Consent for Participation  
in Research

Title of Project: The Effectiveness of the Assessment, Support, and Counseling (ASC)  
Center

Investigator(s): Dr. Kurt Michael, Dr. Jon Winek, Dr. John Paul Jameson

I. Purpose of Research: We are committed to providing you and/or your children with effective interventions to address behavior and school performance. As such, we regularly ask you and/or your child through questionnaires. These questionnaires tell us about treatment progress, satisfaction, school outcomes, attendance, and disciplinary referrals that help us serve you and/or your children better. We request your permission to present and publish findings about ASC Center services to audiences of professionals. Publications and presentations about ASC Center services will be presented anonymously, meaning that you and/or your child's identities will not be disclosed.

II. Procedures: Information will be collected regularly as part of ASC Center involvement. Also, students and parents will be asked to fill out a few brief questionnaires before, during, and after ASC Center services. Student information may also be collected online via secure servers; this information will not be identifying. An ASC Center clinician will review the information with the students and parents. If the questionnaires reveal serious distress or discomfort, clinical services will be delivered (or referrals made) immediately. If this information meets the "limits of confidentiality" described on the Informed Consent for Clinical Services form (that is, danger to self or others, reasonable suspicion of abuse, court

order), parents/guardians will be contacted immediately.

III. Risks: The risks of participating in the research are no higher the normal risks associated with receiving mental health/behavioral treatment in other settings. We will follow all standards of confidentiality and we are committed to the safe and effective treatment of your and/or your child's concerns.

IV. Benefits: Your and/or your child's participation in this project will help other professionals and society learn more about providing effective mental health and behavioral treatment for school students.

V. Extent of Anonymity and Confidentiality: The answers you and/or your student provides on the assessments will be kept confidential and under lock and key. Only authorized ASC Center personnel will know your and/or your child's identity. When the data are presented, it will not include you and/or your child's identity. The information will be presented anonymously and will be combined with data from other students.

VI. Compensation: You will not be paid for your participation. ASC Center services are provided at no cost to you and/or your child.

VII. Freedom to Withdraw: You and/or your child do not have to answer any questions if you do not want to. You can stop at any time.

VIII. Participant's Responsibilities: I voluntarily agree to participate in this study. I have the following responsibilities:

- a. Review this consent form
- b. Complete the assessments honestly if I consent to participation

IX. Participant's Permission: I have read and understand the Informed Consent and conditions of this project. I have had all my questions answered. I hereby acknowledge the

above and give my voluntary consent by completing and signing this form.

Signature of Legally Responsible Person or Student: \_\_\_\_\_

Date: \_\_\_\_\_

Specify Relationship to Student and Print Name in

Full: \_\_\_\_\_

Signature of Student: \_\_\_\_\_

Date: \_\_\_\_\_

Should I have any questions about this research or its conduct, I may contact:

Kurt Michael, michaelkd@appstate.edu, (828) 262-8955

John Paul Jameson, jamesonjp@appstate.edu, (828) 262-8950

IRB Administrator, Research & Sponsored Programs, Appalachian State University, Boone,  
NC 28608 (828) 262-2130, irb@appstate.edu.

## APPENDIX G

Watauga County Schools/Appalachian State University Informed Consent for Clinical  
Services

We are pleased to have the opportunity to serve you and/or your child through the Appalachian State University Assessment, Support and Counseling Center located at Watauga County High School (hereinafter “ASC Center”). The ASC Center, is a partnership between Watauga County High School and Appalachian State University. ASC Center personnel are committed to providing the highest quality clinical services to students and their families, providing education and training for faculty and staff, and expanding the knowledge base for best practice standards through research. Qualified, licensed professional providers, Appalachian faculty members, and/or Appalachian graduate trainees under supervision, provide ASC Center services. As we proceed to work together, the following information may be helpful.

Depending on your situation, the first few sessions might be spent exploring and assessing your problems and the possible reasons for them. This might include written or oral testing and evaluation. Once we understand your issues to the best of our ability, we will agree on the goals you want to accomplish. Together, we may also agree to change the goals as we move along. We may set some time frames for action.

Appalachian ASC providers, faculty and graduate students under supervision will work to ensure that the theoretical perspectives, interventions, and treatments used are considered the best practice methods, supported by research, and are appropriate for your needs. However, it is important for you to know that there are often many different approaches to similar

problems. We will talk with you about the pros and cons of each approach before a decision is made to go ahead with any treatment plan. Successful treatment or problem resolution requires a commitment from you. There is always the possibility that our work will not result in the progress we hope to make. Please let us know immediately if you have any questions or concerns.

### CONFIDENTIALITY

Ordinarily, anything and everything you and/or your child share with us is strictly confidential—whether said in person, on the telephone, or in writing. Some of the information you give us about yourself and matters we discuss will be recorded in your clinical record. If we mutually decide that, in your interests, ASC Center personnel should provide some part of your confidential information to another professional, your insurance company, your attorney, or even you, you will sign a specific and time-limited release of information. You will know what is to be released, to whom, and how the information will be used. You will be able to stipulate the time period in which the release is to be in effect.

There are some circumstances in which ASC Center providers, faculty, and/or graduate students under supervision would be required by law to reveal confidential information about you without your consent. Examples of when this release of information would be required by law are if we learned that you and/or your child were at imminent risk of self-harm or harm to another person, if there is a reasonable suspicion of abuse or neglect of a child or dependent adult or if there is a court order compelling us to release clinical records to a court of law. There may be other situations where information is required to be released in accordance with federal or state laws. Some of these situations are discussed in a separate document, the Notice of Privacy Practices, which we provided as required by federal law.

Sound clinical practice and teaching includes consultation and discussion with other interdisciplinary providers, faculty members, and graduate trainees, sometimes regarding specific cases. All those affiliated with the ASC Center are also legally bound to keep the information confidential.

### RESEARCH PARTICIPATION

As indicated above, we endeavor to use best practices when providing treatment to students. In order to accomplish this, we regularly collect data on treatment progress, satisfaction, academic outcomes, attendance, and disciplinary referrals, some of which include deidentified student information collected via secure online servers. Although we use these data to facilitate best practices, participation in this type of data collection in no way reduces our commitment to protecting students' confidentiality. We also conduct specific research projects above and beyond these normal methods of data collection. Informed Consent for Participation in Research, a separate consent form, is included in the packet and additional information is provided for parent/guardian and student consideration. You and/or your child's participation is voluntary and refusal to participate in this research element or discontinuing participation will involve no penalty or loss of benefits to which you and/or your child are otherwise entitled, including services provided by the ASC Center.

### HOW TO REACH ASC CENTER PROVIDERS, FACULTY, AND STUDENTS

If it is necessary to cancel or reschedule an appointment, please do so at least 24 hours in advance. Please cancel your appointment by calling 828-264-2407 (ext. 10318), between 8:30 a.m. and 3:30 p.m., Monday through Friday. If your call is urgent or an emergency, please tell the operator immediately. If you have an imminent emergency, you may also contact Daymark's crisis line at 877-492-2785, the Watauga County HELP line at 828-264-



HELP, call 911, or go to any hospital emergency room. We will discuss other ways of dealing with crisis situations relevant to your personal situation, as needed.

Feel free to contact Dr. Kurt Michael, Licensed Psychologist, Professor of Psychology (828-262-8955); or Jennifer Wandler, MSW, LCSW, ASC Center Coordinator (828-264-2407, ext. 10318), if you have questions or comments regarding clinical services.

I have received and been given the opportunity to read a copy of this Informed Consent for Clinical Services sheet.

Signature of Student or Legally Responsible Person:

\_\_\_\_\_ Date: \_\_\_\_\_

Specify Relationship to Student and Print Name in Full:

\_\_\_\_\_

Signature of Student: \_\_\_\_\_ Date: \_\_\_\_\_

Witness (optional): \_\_\_\_\_ Date: \_\_\_\_\_

## APPENDIX H

Appalachian State University – Watauga High School Assessment, Support and  
Counseling Center (ASC Center) Authorization and Consent for Telehealth Services

In response to the Coronavirus Disease 2019 (COVID-19) national emergency and Appalachian State University's (Appalachian's) transition to online services, the University is offering the ability for certain campus units and departments to provide you with telehealth services, including the Assessment, Support, and Counseling (ASC) Center at Watauga High School.

Telehealth services involve the use of electronic remote web services to provide patients, clients, and other constituents with health and wellness consultation. The purpose of these services is to assist with providing continuity of health and wellness consultation during this national emergency, while adhering to federal and state mandates and recommendations for telehealth services for non-life threatening and non-emergency consultation.

**Benefits of Telehealth Services**

Benefits of telehealth services include continued access to health and wellness consultation as Appalachian transitions to online services, while minimizing exposure to infectious diseases by limiting in-person contact and interaction. Furthermore, telehealth services allot healthcare providers and wellness consultants with the ability to provide services to a larger population remotely while preserving limited resources for others in immediate need of in-person care for emergency treatment or consultation.

### **Risk of Telehealth Services**

As with any medical or wellness consultation there are risks associated with the use of telehealth services. These risks include:

- Delays in diagnosis and treatment and/or misdiagnosis and mistreatment;
- An increased risk of disclosure of personal health information or other confidential personal data due to temporary emergency use of platforms not specifically designed for telehealth use;
- Inadequacy or inefficiency of web-based telehealth platforms due to global demand affecting technical network connections; and
- Potential exposure to personal health information or other confidential personal data due to network security breaches from bad actors.

Due to Appalachian's rapid response to meet the telehealth needs of the University community these risks have been amplified further. Specifically, the technical and procedural safeguards that would typically be in place for telehealth services may not be in place to meet the compliance needs of the service being provided. On a temporary basis, until more adequate technical and procedural safeguards are in place, Appalachian has permitted the use of a web service platform – Zoom – to provide you with telehealth services. However, the University is updating safeguards on an ongoing basis to minimize privacy and security risks. A few select departments and units on campus are subject and responsible for compliance with the Health Insurance Portability and Accountability Act (HIPAA). Consistent with guidance provided from the U.S. Department of Health and Human Services (HHS), the Zoom platform will be utilized to provide telehealth services. This platform may not be

compliant with HIPAA and is only being utilized until a more reliable HIPAA compliant resource is available. Other resources are currently under review.

Despite utilizing telehealth platforms that may not have safeguards that would typically be in place for the services provided, the University has provided directives to departments and units to minimize risks, including placing an emphasis on using best professional judgment and ethical standards when utilizing the University designated telehealth service platform. Furthermore, units are working with Information Technology Services (ITS) to ensure that practical technical and security measures are in place to limit the risk of third-party access to your confidential information.

By participating in telehealth services, I understand that these services are not a substitute for emergency or life-threatening health care services and that I am responsible for seeking such treatment, if needed for my child. I acknowledge that my child may have a medical or wellness problem which may require additional medical attention and that telehealth services may not be adequate to meet such needs.

I certify that I am at least eighteen (18) years of age and authorized to accept the terms and conditions as expressed within this Acknowledgement on behalf of myself and my child, that I have read this entire Acknowledgment carefully, and that I understand the content of this Acknowledgment. I have agreed to accept telehealth services without any inducement and intend for my participation to serve as a confirmation of my complete and unconditional acceptance of receiving telehealth services.

I understand that I may withhold or withdraw consent to telehealth services at any time without affecting any right of future care or treatment, or risking the loss or withdrawal of

any program benefits to which I would otherwise be entitled. However, I do understand that due to the COVID-19 national emergency I may not be able to receive certain health and wellness consultation services due to mandates and recommendations prescribed by federal and state authorities.

BY PARTICIPATING IN TELEHEALTH SERVICES WITH THE ASC CENTER, I ACKNOWLEDGE THAT I HAVE READ THIS AUTHORIZATION AND CONSENT FOR TELEHEALTH SERVICES FORM AND THAT I UNDERSTAND THE RISKS OF PARTICIPATING IN TELEHEALTH SERVICES WITH THE UNIVERSITY. I FURTHER ACKNOWLEDGE THAT I AGREE TO THE TERMS AND CONDITIONS EXPRESSED IN THIS ACKNOWLEDGMENT. FURTHERMORE, I FURTHER REPRESENT AND WARRANT THAT I AM COMPETENT TO AGREE TO THESE TERMS AND CONDITIONS KNOWINGLY AND VOLUNTARILY.

Signature of Student or Legally Responsible Person:

\_\_\_\_\_ Date: \_\_\_\_\_

Specify Relationship to Student and Print Name in Full:

\_\_\_\_\_

Signature of Student: \_\_\_\_\_ Date: \_\_\_\_\_

Witness (optional): \_\_\_\_\_ Date: \_\_\_\_\_

## APPENDIX I

**Assent – Single-Session Growth Mindset Intervention as a Precursor to School Mental Health Services for Rural Youth: A Pilot Study**

Principal Investigator: Emma Walker

Contact Information: walkerem@appstate.edu

Faculty Advisor: Jacqueline Hersh, Assistant Professor, Department of Psychology, Appalachian State University; (828)262-6969

**Joining a Research Study**

**What is research?**

Research is a way to test new ideas. Research helps us learn new things.

Being part of a research study is your choice. We are asking you to join a research study.

You can say Yes or No. Whatever you decide is OK.

**Why are we doing this research?**

In our research study we want to learn more about how teens think.

**What will happen in the research?**

I am asking your permission to have those who join read about some scientific findings and personal stories, and answer some questions about themselves.

**What are the good things that can happen from this research?**

What we learn in this research may or may not help you now. When we finish the research, we hope we know more about how we can help teens like you.

**What are the bad things that can happen from this research?**

If ever you decide you don't like answering the questions, you can select "prefer not to answer" or stop and not answer. It is ok if you choose to do this.

**What else should you know about the research?**

Joining a research study is your choice. You can say Yes or No. Either way is OK.

If you say Yes now and change your mind later that is OK. You can stop being in the research at any time. If you want to stop, please tell me or a staff member of the ASC Center.

Take the time you need to make your choice. Ask us any questions you have. You can ask questions any time.

If you would like to be in the research, please read this statement:

**By continuing to the next page, I agree that the researcher has told me about the research study. I had a chance to ask questions. I know I can ask questions, not answer, or stop at any time. I want to be in the research study.**

Copies to: Research Participant and Parent/Legal Guardian

APPENDIX J

Figures 1-4

Figure 1 - KOPITS Scores

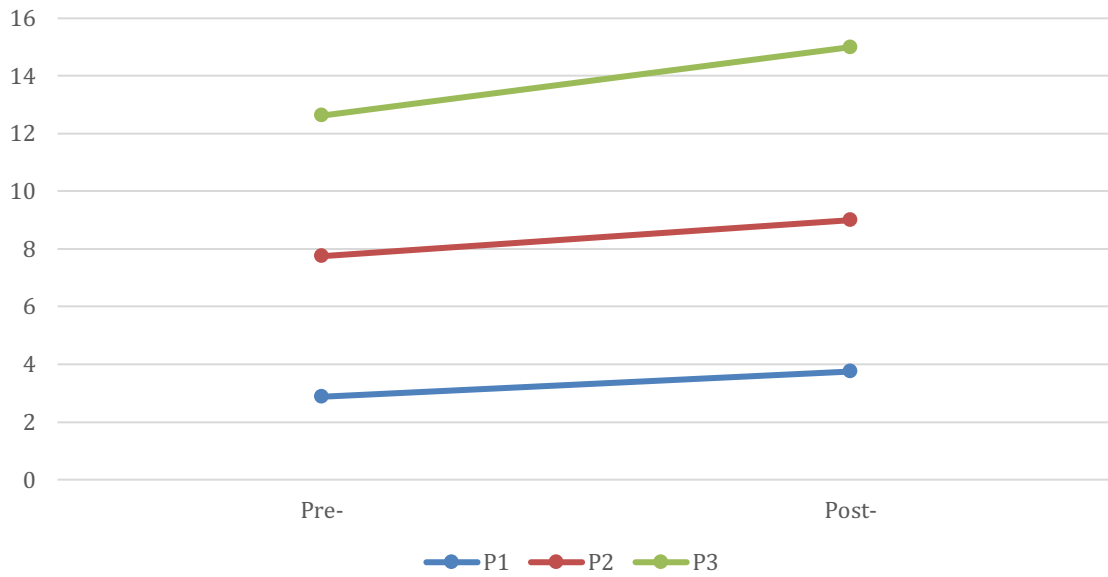


Figure 2 - FTAM Scores

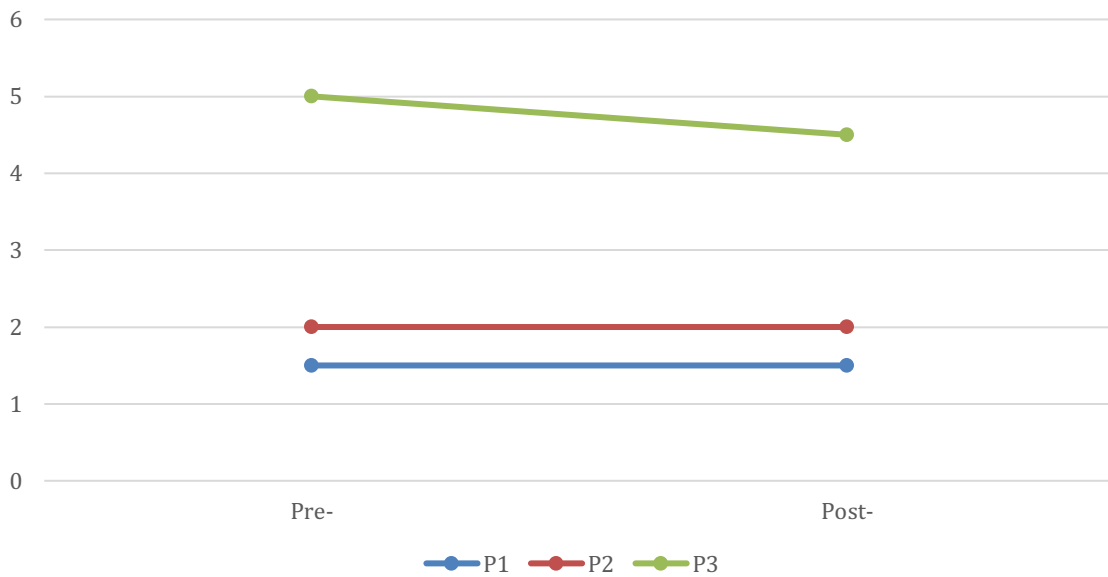




Figure 3 - HSC Scores

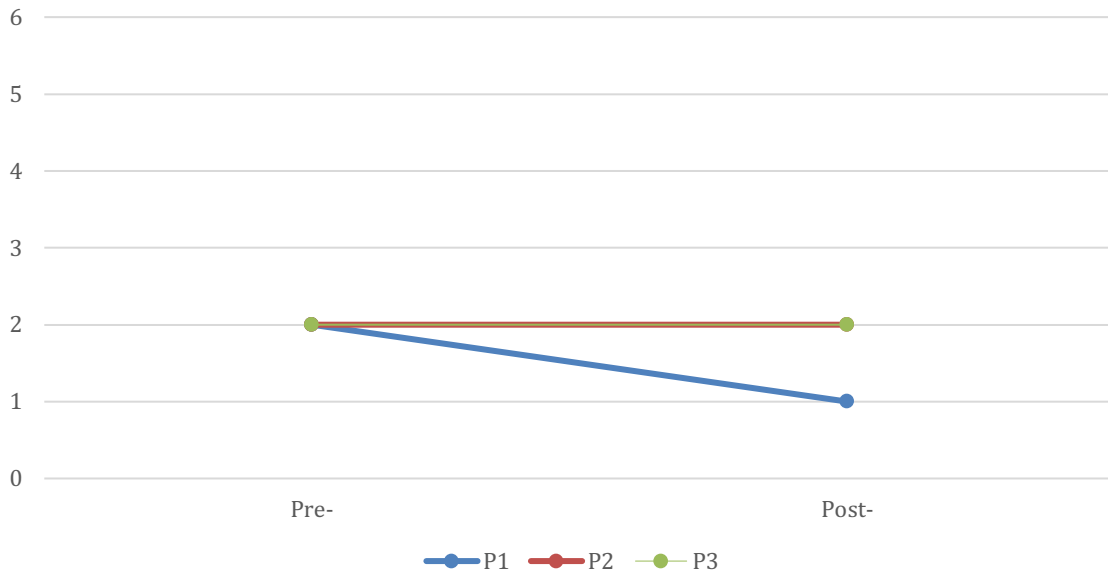
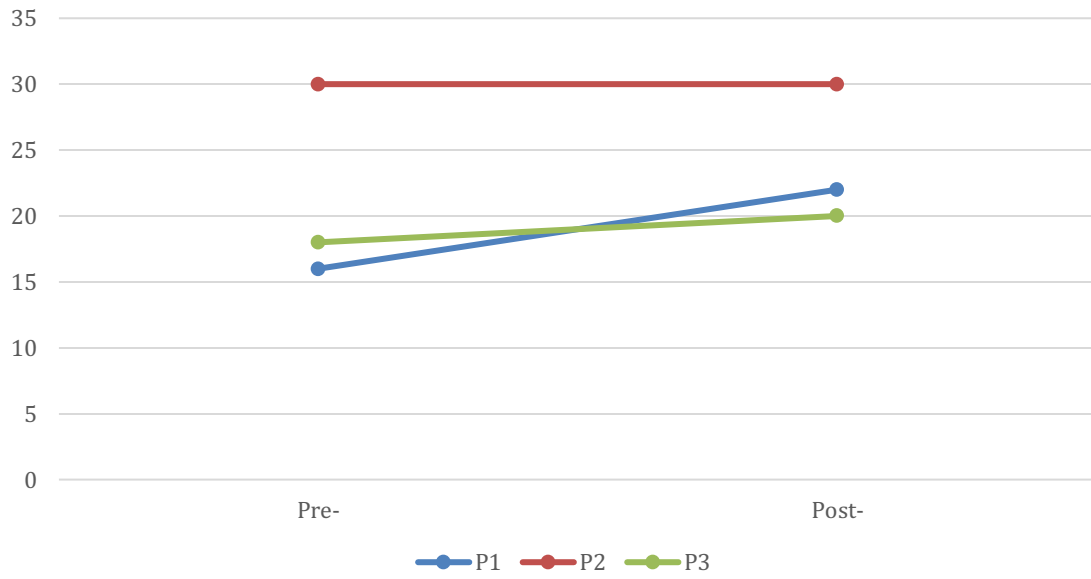


Figure 4 - ACQ-C Scores



## APPENDIX K

## IRB Approval Letter

**INSTITUTIONAL REVIEW BOARD**

Office of Research Protections ASU Box 32068  
Boone, NC 28608 828.262.2692

Web site: <http://researchprotections.appstate.edu>

Email: [irb@appstate.edu](mailto:irb@appstate.edu)

Federalwide Assurance (FWA) #00001076

**To:** Emma Walker Psychology CAMPUS EMAIL

**From:** IRB Administration

**Date:** 2/02/2021

**RE:** Notice of IRB Approval by Expedited Review (under 45 CFR 46.110)

**STUDY #:** 21-0016

**STUDY TITLE:** Single-Session Growth Mindset Intervention as a Precursor to School Mental Health Services for Rural Youth: A Pilot Study

**Submission Type:** Modification

**Expedited Category:** (5) Research Involving Pre-existing Data, or Materials To Be Collected Solely for Nonresearch Purposes, Minor Change to Previously Approved Research, (7) Research on Group Characteristics or Behavior, or Surveys, Interviews, etc.

**Approval Date:** 2/02/2021

**NOTE:** This project, like all exempt and non-exempt research with human subjects at Appalachian State University, is subject to other requirements, laws, regulations, policies, and guidelines of the University and the state of North Carolina. As of August 24, 2020 and until further notice, this includes the requirement by the Office of Research to pause in-person research projects until it receives an additional review to ensure the existence of an adequate COVID-19 mitigation protocol. Please see the full requirement on the Research Protections website, as well as answers to questions you may have.

The IRB found that the research procedures meet the expedited category cited above. IRB approval is limited to the activities described in the IRB approved materials, and extends to the performance of the described activities in the sites identified in the IRB application. In accordance with this approval, IRB findings and approval conditions for the conduct of this research are listed below.

**Submission Description:**

The purpose of the present modification is to widen the age range, thus allowing more youth to participate in the study. The age minimum was approved to be set at 10 years old, but this

was set arbitrarily. As discussed in the Schleider & Weisz (2017) meta-analysis, single session interventions (SSIs) may be quite effective in younger populations. While the present growth mindset intervention has been previously tested with mostly 12-15 year old youth, given the high effectiveness of SSIs with younger children, it would be novel and quite beneficial to test the intervention in a younger population as well as with adolescents. Growth mindset SSIs could be more effective with younger populations of youth, but we must first conduct research that includes multiple age ranges of youth to be able to address this assertion. Such research would allow us to further explore the clinical implications (e.g., treatment outcome) at different age ranges. I wrote the assent to be as child-friendly as possible. Additionally, I reviewed the intervention and confirmed that it uses simple language. While this is limited and informal, without collecting data, I had my sister (age 9 at the time) read through and she was able to understand. To ensure that younger participants do understand the single session intervention they receive, we added two simple (yes/no) comprehension questions to each intervention. Note that the document containing the interventions in qualtrics has been updated to include these new questions.

### **Study Regulatory and other findings:**

The IRB determined that this research meets the requirements of 45 CFR 46.404 for research with children because it is not more than minimal risk.

The IRB has determined that the research presents minimal risks to participants, adequate provisions are made for soliciting assent of minors, and obtaining the consent of one parent or guardian (45 CFR 46.408).

All approved documents for this study, including consent forms, can be accessed by logging into IRBIS. Use the following directions to access approved study documents.

1. Log into IRBIS
2. Click "Home" on the top toolbar
3. Click "My Studies" under the heading "All My Studies"
4. Click on the IRB number for the study you wish to access
5. Click on the reference ID for your submission
6. Click "Attachments" on the left-hand side toolbar
7. Click on the appropriate documents you wish to download

### **Approval Conditions:**

**Appalachian State University Policies:** All individuals engaged in research with human participants are responsible for compliance with the University policies and procedures, and IRB determinations.

**Principal Investigator Responsibilities:** The PI should review the IRB's list of PI responsibilities. The Principal Investigator (PI), or Faculty Advisor if the PI is a student, is ultimately responsible for ensuring the protection of research participants; conducting sound

ethical research that complies with federal regulations, University policy and procedures; and maintaining study records.

**Modifications and Addendums:** IRB approval must be sought and obtained for any proposed modification or addendum (e.g., a change in procedure, personnel, study location, study instruments) to the IRB approved protocol, and informed consent form before changes may be implemented, unless changes are necessary to eliminate apparent immediate hazards to participants. Changes to eliminate apparent immediate hazards must be reported promptly to the IRB.

**Approval Expiration and Continuing Review:** The PI is responsible for requesting continuing review in a timely manner and receiving continuing approval for the duration of the research with human participants. Lapses in approval should be avoided to protect the welfare of enrolled participants. If approval expires, all research activities with human participants must cease.

**Prompt Reporting of Events:** Unanticipated Problems involving risks to participants or others; serious or continuing noncompliance with IRB requirements and determinations; and suspension or termination of IRB approval by external entity, must be promptly reported to the IRB.

**Closing a study:** When research procedures with human subjects are completed, please log into our system at [https://appstate.myresearchonline.org/irb/index\\_auth.cfm](https://appstate.myresearchonline.org/irb/index_auth.cfm) and complete the Request for Closure of IRB review form.

**Websites:**

1. PI responsibilities:

<http://researchprotections.appstate.edu/sites/researchprotections.appstate.edu/files/PI%20Responsibilities.pdf>

2. IRB forms: <http://researchprotections.appstate.edu/human-subjects/irb-forms>

## Vita

Emma Micaela Walker was born in Bartow, Florida, to loving parents Benjamin Clayton and Rhonda Walker. She was primarily homeschooled and graduated high school in June 2015. The following autumn, she entered Appalachian State University to study Psychology. In May 2019, she was awarded a Bachelor of Science in Psychology, with a minor in Social Work and Psychology departmental honors, as well as a certificate in Experiential, Interdisciplinary Education. In the fall of 2019, she began graduate school at Appalachian State University in the Clinical Psychology doctoral (Psy.D.) program under the mentorship of Dr. Jacqueline Hersh.