

IS COGNITIVE-BEHAVIORAL THERAPY EFFECTIVE IN REDUCING
INTERNALIZING SYMPTOMS IN THE CONTEXT OF A RURAL SCHOOL
MENTAL HEALTH PROGRAM?

A Thesis
by
ABBY ALBRIGHT

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Abstract

IS COGNITIVE-BEHAVIORAL THERAPY EFFECTIVE IN REDUCING INTERNALIZING SYMPTOMS IN THE CONTEXT OF A RURAL SCHOOL MENTAL HEALTH PROGRAM?

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Given the prevalence of mental health difficulties among children and adolescents, schools have become a suitable context for providing psychological services to those who may otherwise go untreated. School mental health (SMH) programs provide a feasible and accessible means of providing mental health care to young people where they spend the majority of their days. Moreover, the empirical evidence of providing evidence-based interventions, such as cognitive-behavioral therapy (CBT) for common adolescent ailments (e.g., internalizing symptoms) in the context of SMH programs is underdeveloped, especially in rural settings. The effectiveness of the Assessment, Support, and Counseling (ASC) Center, a SMH program in rural western North Carolina, in treating adolescent internalizing symptoms was evaluated in the present study. In particular, the aims of the study were: 1) to test the effectiveness of providing CBT to adolescents with elevated internalizing symptoms, 2) to examine whether there was evidence of reliable change in symptoms at post-treatment among the participants,

3) to determine whether there was appreciable improvements in academic outcomes following treatment, and 4) to assess self-reported levels of satisfaction with ASC Center services among the recipients. Participants were 36 high school students between 14 and 18 years old. Most were Caucasian (94%), and the majority (69%) were female. The primary methodology was a within-subjects design where the recipients were continuously enrolled during the 2011-2012 academic year. Self- and parent-report measures were administered at baseline and post-treatment. Academic performance was measured by pre-, post-treatment, and 6-month follow-up changes in percent attendance, grade point average (GPA), and number of discipline referrals. After an average of 16 sessions of CBT, 60% of the sample was deemed recovered or improved overall based on the Reliable Change Index (RCI) guidelines. Results also indicated that 42% of those who began treatment with elevated depression symptoms and 28% of those who began treatment with elevated anxiety symptoms were functioning within the normal range of functioning at post-treatment. The majority of the sample demonstrated improvements or stability in grade point average, attendance, and discipline referrals from baseline to final and follow-up semesters. On average, the sample was satisfied with the services they received. Results are consistent with large, randomized, controlled trials for internalizing disorders, including child and adolescent depression and anxiety, and suggest that a moderate dosage of CBT in the context of a rural school mental health program was associated with a reduction of psychological symptoms as well as stability in academic variables among the majority of participants.

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Dedication

I would like to dedicate this thesis to three influences that have helped make this project possible: first, to Nick Bode, whose support and encouragement, despite the hours lost between us, were unwavering throughout the process; to my parents, Michael and Nancy Albright, for their unconditional love and support, and their modeling of hard work and perseverance, which ultimately made this paper a finished project; and to Kurt Michael, for his knowledge and expertise in the field of school mental health, whose ideas for providing easily accessible services to under-served youth have made this project a meaningful contribution to the literature in psychology.

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Foreword

This thesis is written in accordance with the style of the *Publication Manual of the American Psychological Association (6th Edition)* as required by the Department of Psychology at Appalachian State University.

Is Cognitive-Behavioral Therapy Effective in Reducing Internalizing Symptoms in the
Context of a Rural School Mental Health Program?

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Abstract

School mental health (SMH) programs provide a unique opportunity to serve adolescents who might otherwise not receive adequate mental health care. Moreover, the empirical evidence of providing evidence-based interventions, such as cognitive-behavioral therapy (CBT) for common adolescent ailments (e.g., internalizing symptoms) in the context of SMH programs is underdeveloped, especially in rural settings. The effectiveness of the Assessment, Support, and Counseling (ASC) Center, a SMH program in rural western North Carolina, in treating adolescent internalizing symptoms was evaluated in the present study. The impact of treatment on academic variables was also assessed. Participants were 36 high school students between 14 and 18 years old. They were predominately Caucasian (94%) and female (69%). After approximately 16 sessions of CBT, 60% of the sample was recovered or improved overall based on the Reliable Change Index (RCI) guidelines. The results also indicated that 42% of those who began treatment with elevated depression symptoms and 28% of those who began treatment with elevated anxiety symptoms were functioning within the normal range of functioning at post-treatment. The majority of the sample demonstrated an improvement or stability in grade point average, attendance, and discipline referrals from baseline to final and follow-up semesters. Results are consistent with large randomized controlled trials for internalizing disorders, including child and adolescent anxiety, and suggest that a moderate dosage of CBT in the context of a rural school mental health program was associated with a reduction of psychological distress and stability in academic variables among the majority of participants.

Keywords: school mental health, adolescent mental health, rural psychology

Is Cognitive-Behavioral Therapy Effective in Reducing Internalizing Symptoms in the
Context of a Rural School Mental Health Program?

According to the U.S. Surgeon General (Satcher, 1999), approximately one in five adolescents exhibit symptoms of a diagnosable mental illness during any given year. In addition, adolescents who develop mental illness at an early age portend a more severe and chronic course of symptoms when compared to their adult counterparts whose conditions emerge much later in life (Satcher, 1999). Despite the prevalence of mental disorders among adolescents, most do not actively seek treatment due to a variety of barriers, including the perceived stigma of seeking services, a lack of transportation, or limited financial resources (Owens, Watabe, & Michael, 2011). Exacerbating matters, when the adolescents' symptoms are not recognized or treated, these youngsters are at an increased risk for struggles in other areas of their life, including but not limited to peer isolation, social difficulties, academic struggles, dropping out of high school, family conflicts, and an increased possibility for engaging in risky behaviors such as substance use and unprotected sex (Aseltine, Gore, & Gordon, 2000; Flaherty, Weist, & Warner, 1996; McWhirter & Page, 1999).

While all geographical regions have substantial prevalence rates of mental illness, there is some evidence that certain conditions (e.g., suicide, substance abuse) might be more prevalent in rural regions (Eberhardt & Pamuk, 2004; Singh & Siahpush, 2002), such as western North Carolina. Indeed, evidence indicates that self-reported mental health has a negative correlation with level of rurality (Hauenstein et al., 2007). Despite the usual barriers to utilizing services (i.e., lack of transportation and stigma), rural

regions face additional challenges to providing adequate mental health services due to a limited availability of qualified mental health professionals (e.g., child psychologists) beyond general practitioners (Michael, Renkert, Wandler, & Stamey, 2009). One investigation of service utilization among rural populations found that less than half of individuals with a 12-month psychiatric diagnosis (e.g., Major Depressive Disorder, anxiety disorders) residing in a rural region used mental health services within the previous year of the study (Wang et al., 2005). Further, Wang et al. found that among those living in rural areas with a mental health disorder, only about one-third received treatment that was classified as “at least minimally adequate” care (p. 631). Having a dearth of qualified mental health professionals in a region reduces the chance of adolescents and families seeking care on their own. This professional shortage in rural areas is especially problematic for school personnel when their students are in need of psychological treatment above and beyond what can be provided by existing support services (Owens et al., 2011).

In addition to a lack of child psychologists and other trained professionals, the Appalachian region in North Carolina has student-to-counselor ratios well above the recommended ratio of 250 students per counselor (U.S. Department of Education, 2010). In the state of North Carolina as a whole, the ratio is 379 students per counselor, and as the availability of counselors is lower in rural areas, the ratio likely exceeds that of the rest of the state (Owens et al., 2011; U.S. Department of Education, 2010). Having higher student-to-counselor ratios than the recommended ratio results in a limited supply and quality of services available (Macklem, 2011; Owens et al., 2011).

Other barriers to seeking mental health care are commonly seen in rural communities. For example, rural areas, because of the small population, tend to have close knit communities and networks (Beggs, Hains, & Hurlbert, 1996). While these social networks can serve to provide support to its members, they can also serve to prohibit community members from seeking professional care due to a lack of trust for “outsiders” (Owens et al., 2011). Another significant barrier to seeking care in a rural area may involve concerns regarding confidentiality and the stigma associated with seeking mental health treatment. As Owens et al. (2011) stated “when community members recognize each other through the cars they drive and the routines in which they engage, privacy about appointments at a mental health clinic may be difficult to maintain” (p.11). Indeed, perceptions of acceptability of seeking mental health care differ between metropolitan and nonmetropolitan areas, as those in more rural regions tend to perceive less anonymity in seeking mental health treatment, compared to those in urban areas (Rost, Fortney, Fischer, & Smith, 2002).

Due to the aforementioned barriers to treatment seeking within rural communities, many researchers have recommended revisions to the service delivery system in order to better reach individuals in need. For instance, Merwin, Hinton, Dembling, and Stern (2003) suggested that treatment providers in rural settings should focus on developing innovative strategies to bring effective services to rural regions, including collaborating with existing community networks and adapting evidence based treatments in order to reach and serve rural constituents. Consistent with these recommendations, school mental health (SMH) programs are gaining momentum as a viable platform for addressing some of the unique needs and barriers in rural areas. Indeed, Owens et al.

(2011) emphasized that by implementing evidence-based practices in the school setting, clinicians are able to soften the effects of limited mental health resources in rural communities.

School-based delivery of mental health services can also address a common interpersonal barrier to seeking services that is often observed in rural communities. Because the services are offered during school hours within the school building, adolescents are less likely to feel stigmatized or embarrassed for seeking help, as the counseling can be sought in a more discreet format, including the assumption that the meeting is for academic purposes only. Additionally, Owens, Murphy, Richerson, Girio, and Himawan (2008) found that 22% of parents whose children were involved in a school mental health program preferred to attend school-based meetings because attending school meetings was less embarrassing than attending clinic-based meetings. Indeed, there is evidence that those in rural settings rely heavily on school personnel as the first contact among families that seek assistance for emotional and behavioral concerns for their children (Lyneham & Rapee, 2007). In contrast, Lyneham and Rapee (2007) found that specialists (e.g., pediatricians, psychologists) were more likely to be sought as the primary entry point to mental health care among those in urban regions.

Providing mental health services within the school context has received a great deal of attention in the literature in recent years, given that schools are a reliable source of accessing students with either undiagnosed or untreated mental health ailments (Michael et al., 2009). As mentioned above, offering mental health services for adolescents in the schools provides a method of reducing many of the common barriers to treatment seeking, such as limited access to qualified providers and transportation

difficulties (Zirkelback & Reese, 2010). Perhaps due to some of these factors, school systems around the world are increasing the integration of mental health services in the school environment for adolescents who would otherwise not receive adequate professional help (Swannell, Hand, & Martin, 2009). Additionally, providing psychological interventions in the schools can provide a cost effective means for adolescents to receive mental health treatment expeditiously, especially when services are brought directly to a location where youth spend the majority of their days (Flaherty et al., 1996). Despite the existence of a solid rationale for providing mental health services in schools, assessing the effectiveness of SMH programs is equally essential.

When examining the effects of SMH services overall, Prout and DeMartino (1986) conducted a meta-analysis of school-based counseling and psychotherapy across 33 controlled studies for a wide range of problem types between 1962 and 1982 and found a mean effect size [ES] of 0.58, which is considered a “medium effect” according to Cohen’s (1988) ES interpretation standards (small = 0.20 – 0.49; medium = 0.50 – 0.79; large \geq 0.80). In an updated meta-analysis of a non-overlapping sample of school-based psychotherapy studies ($N = 17$) between 1985 and 1994, Prout and Prout (1998) found that school-based intervention resulted in a large effect (ES = 0.97) “across all treatments and outcome variables” compared to comparison or control conditions (p. 128).

More recently, Baskin, Slaten, Crosby et al. (2010) examined the effectiveness of psychotherapy in schools over 107 studies (1983 – 2008) and 132 treatments. They found significant support for conducting therapy in the school context and that school-based therapy was better than no treatment (ES = 0.45). Similarly, Baskin, Slaten,

Sorenson, Glover-Russell, and Merson (2010) examined the impact of school-based psychotherapy on academic outcomes from 83 studies (1980 – 2008), 59 of which were unique from the aforementioned meta-analysis by the same primary author. In this meta-analytic review, the researchers found support for school-based therapy (ES = 0.46), with specific mental health outcomes from school-based therapy yielding a moderate effect (ES = 0.50) and a small effect for academic outcomes (ES = 0.38), as measured by any direct instrument designed to measure present academic performance, such as teacher reports, grades, attendance, or attitude to school. Additionally, Baskin, Slaten, Sorenson et al. (2010) noted that self-reported academic outcomes showed the largest effects (ES = 0.59). A recent meta-analysis examined the effectiveness of school-based CBT on treating anxiety and depressive symptoms over 63 studies between the years 1990 and 2009 (Mychailyszyn, Brodman, Read, & Kendall, 2012). Researchers found support for CBT conducted in the school setting for the treatment of internalizing symptoms, with treatment targeted for anxiety symptoms yielding a moderate pre- to post-treatment effect (ES = 0.50), and CBT for depression symptoms yielding a small effect (ES = 0.29; Mychailyszyn et al., 2012).

Although the meta-analyses described above give us a broad and historic snapshot of the SMH literature overall, it is important to narrow the review of previous findings a bit further. There are some promising specific results from a few broad-based SMH programs. For example, Linkages to Learning (LTL) is a SMH program aimed at providing a range of broadly defined mental health, social, educational, and health services to elementary school children and their families ($N = 119$; Fox et al., 1999). For instance, the mental health services were described as *assessments, child therapy,*

classroom-based social skills training, and *family therapy*. The dosage of services was not explicitly reported for the entire evaluation period. Nonetheless, Fox et al. (1999) reported that the program was effective in reducing internalizing and externalizing problematic behaviors for the treated students (by school) as compared to the students from no treatment comparison schools. Improvements in student academic outcomes were noted as well, as those in the active treatment schools evidenced significant improvements in math achievement scores, compared to the students from no treatment control schools (Fox et al., 1999).

More recently, Sander, Everts, and Johnson (2011) evaluated outcomes of a broad-based SMH program in 14 Minneapolis Public Schools across 4 cohorts of children in kindergarten through the eighth grade ($N = 805$). Over the 4-year period, the students received at least 4 service events (e.g., individual or family counseling) between 2006 and 2009. The average dosage was 25 sessions; and although the treatment components were not clearly defined, they were provided by licensed practitioners from social work (majority), psychology, and counseling (Everts, 2011). Outcome analyses indicated that parent and teacher ratings of students showed significant improvements in ratings of emotional and behavioral symptoms compared to baseline ratings. Furthermore, the program resulted in a delayed effect (i.e., modest decline) in the number of overall suspensions for program participants. Regarding academic outcomes, while overall standardized scores for the entire sample declined somewhat, family involvement (adjunctive family therapy, parent consultation) and higher dosages of services (i.e., more sessions) were associated with higher standardized math scores at follow-up (Everts, 2011; Sander et al., 2011). Furthermore, in a matched comparison between students who

received services and those who did not, standardized reading scores were significantly higher among the no treatment comparison group during school year 2008; however, the differences in reading test scores were no longer significantly different between the comparison and treatment group at the next follow-up interval (2009; Everts, 2011). In other words, the authors suggested that the treatment group closed the gap between these years. In a comparison of suspension rates between the groups, the treatment group had significantly higher rates of suspensions than the comparison group at the start of treatment. Both groups evidenced a decrease in suspension rates, yet the difference between the groups was non-significant at follow-up, suggesting the “treatment group decreased the number of suspensions more than the comparison group” (Everts, 2011, p. 64).

Although the current project is part of a broad-based SMH program, this thesis project aims to contribute to the SMH outcome literature by focusing on a more defined sub-sample: adolescents who presented for treatment with elevated internalizing symptoms (anxiety, depression) in the context of a rural SMH program. Indeed, among the population served by the Assessment, Support, and Counseling (ASC) Center, internalizing problems was the primary presenting complaint for the majority (60.9%) of those who sought services during the 2011-2012 academic year. Furthermore, the prevalence of internalizing symptoms in the identified sub-sample was reflective of the Watauga High School (WHS) population, based on data from the Youth Risk Behavior Survey (YRBS) in 2011 (Matthew & West, 2011). The YRBS is a national survey that measures a variety of risk behaviors among middle and high school students. According to YRBS data, approximately 25.7% of the WHS student population endorsed a core

symptom of a major depressive episode (MDE) within the previous 12 months (Matthew & West, 2011). See Figure 1.

The rates at which WHS students experience a key feature of a MDE is concerning, given that 8.36% of adolescents between the ages of 12 and 17 in North Carolina endorsed experiencing a MDE between the years of 2005 and 2006 (Substance Abuse and Mental Health Services Administration [SAMHSA], 2008). The standards for classification of MDE varied slightly between the two surveys, as SAMHSA defines a MDE as “a period of at least 2 weeks when a person experienced a depressed mood or loss of interest or pleasure in daily activities and had a majority of the symptoms for depression as described in the DSM-IV” (SAMHSA, 2008), and the YRBS defines a MDE as “feelings of sadness or hopelessness for two weeks or more in a row in the past 12 months” (Matthew & West, 2011; p. 37). More specifically, the YRBS asked adolescents “during the past 12 months, did you ever feel so sad or hopeless almost every day for two weeks that you stopped doing some usual activities (p. 38)?” The rates at which WHS students experience depressive symptomatology are alarming because 40% of male suicides and 37% of female suicides in North Carolina in 2009 were associated with depressed mood (NC Division of Public Health, 2009). Indeed, approximately 14.9% of WHS students seriously considered committing suicide within the past 12 months, and 4.3% attempted suicide that resulted in injury requiring medical treatment (Matthew & West, 2011). Comparatively, in 2007, 12.5% of North Carolina adolescents state-wide endorsed seriously considering suicide (NC Division of Public Health, 2007).

The literature on SMH outcomes does offer some support for treating internalizing conditions using evidence-based treatments in the school context. Reynolds

and Coats (1986) were among the first to assess psychological outcomes of a school-based mental health treatment among 20 high school students with elevated symptoms of depression. The researchers reported that both cognitive-behavioral therapy (CBT) and relaxation therapy delivered in the school were effective in reducing depressive symptomology at post-treatment, which was subsequently maintained after a 5-week follow-up (Reynolds & Coats, 1986). Further, Kahn, Kehle, Jensen, and Clark (1990) found support for implementing brief CBT within the schools for the treatment of 68 adolescents with symptoms of depression. Based on self-report and parent-report questionnaires, adolescents in the CBT condition exhibited statistically significant improvements in depressive symptoms compared to a waitlist control condition, and the changes were clinically meaningful in that they moved from a clinically elevated level to non-elevated range at post-treatment (Kahn et al., 1990).

In a related study, Mufson et al. (2004) examined the effectiveness of using a school-based interpersonal psychotherapy (IPT) for the treatment of 64 depressed adolescents. They found that students who received interpersonal therapy demonstrated statistically significant reductions in depression symptomology and improvement in social functioning as measured by clinician and self-reports when compared to those who did not undergo treatment (Mufson et al., 2004). Similarly, Shirk, Kaplinski, and Gudmundsen (2009) also demonstrated the success of implementing empirically-based interventions for treatment of depression within the school setting. Shirk et al. (2009) found that among the 50 students who were treated for depression with a manualized 12-session CBT, 64% demonstrated a response to treatment, which the researchers defined

as ending treatment with an absence of the diagnosed psychiatric condition with which they began the intervention.

Overall, the research on treating internalizing symptoms (i.e., depression, anxiety) in the school context suggests that CBT and IPT are effective in reducing these symptoms. Thus, coupled with the general need to provide effective SMH services in rural regions, the current study will focus on an investigation of whether CBT is effective at reducing internalizing symptoms in the context of one particular SMH program. The ASC Center is a SMH program that provides psychological services to high school students in Watauga County, a rural county in western North Carolina. This school mental health initiative is unique because it is designed to address many of the barriers to seeking treatment that are often associated with rural communities, as described above. By partnering with Appalachian State University (ASU), the ASC Center is able to address the financial burden that is often associated with seeking mental health services since the services are provided at no cost to the adolescents and their families. The partnership is mutually beneficial to the school district and ASU, given that it provides pre-professional development for graduate students in training, who, in turn, serve the school and the students with evidence-based, closely supervised interventions at no charge (Michael et al., 2009). The graduate students at the ASC Center provide the vast majority of the treatment (approximately 80%). Although there have been some criticisms of utilizing graduate trainees in the provision of treatment for internalizing disorders (e.g., Christensen & Jacobson, 1994), there is evidence to suggest that graduate students (i.e., Master's and Ph.D. students) under supervision are as effective as doctoral

level providers (Michael, Huelsman, & Crowley, 2005; Weisz, Weiss, Alicka, & Klotz, 1987; Weisz, Weiss, Han, Granger, & Morton, 1995).

In summary, the purpose of the current study is to evaluate the effectiveness of the ASC Center in treating adolescents who present primarily with elevated internalizing symptoms in the context of a rural SMH Program. The ASC Center is an Appalachian State University-School Partnership that is aimed at reducing psychological symptoms and improving academic outcomes across a diverse treatment sample. The provision of SMH services is a rapidly expanding area of service delivery, pre-professional development, and empirical inquiry. The primary aim of the ASC Center is to provide Watauga High School students with high quality, scientifically-based, and effective mental health and related services. Given the scope of mental illness and the associated impairments, especially in rural school settings, this project will address a major public health issue. The current study has four primary research questions: 1) “Is CBT provided by ASC Center clinicians effective in reducing internalizing symptoms (e.g., depression and anxiety) for students treated for these conditions?”; 2) “Is there evidence of reliable change in overall psychological distress following treatment among those served by the ASC Center during the 2011-2012 school year?”; 3) “Is ASC Center treatment associated with positive changes in attendance, grades, and discipline referrals for those who received treatment for elevated internalizing symptoms?”; and 4) “Were students who underwent treatment for elevated internalizing symptoms satisfied, on average, with ASC Center services?”

Method

Participants

The eligible participants for the current study were Watauga High School students who elected to receive services through the ASC Center during the 2011-2012 academic year ($N = 64$). Those students who were 18 years-old and older and elected to receive services, and those students who were younger than 18 years-old and who provided parental consent to receive ASC services were eligible for inclusion in the study. Those students who already received active ASC treatment were asked to sign an additional consent for research participation. The consent for research participation required minimal additional burden to the students and their families, given that they will have already voluntarily enrolled (see Appendices A and B for consent forms).

The students involved in the present study were actively enrolled in WHS and the ASC Center after a full informed consent procedure. Among those actively involved in services, the participants for this study were included based on presentation of internalizing symptoms at baseline, defined as elevations on at least two of three instruments (Youth Outcome Questionnaire [YOQ], Self-Report form Behavior Assessment System for Children-II [BASC-2], Parent-Report BASC-2, described below). That is, in order to be included in the study, there must have been an elevated score on the YOQ (≥ 29) and/or one or more elevations (T -score ≥ 60) on one of the BASC-2 subscales (i.e., depression, anxiety, and/or internalizing scales) regardless of whether the elevation appeared on the Parent- or Self-Report BASC-2 ($n = 39$). A T -score is a standardized metric that assumes normal distribution of the sample ($M = 50 \pm 10$). Self-report measures are considered an accurate portrayal of adolescents' internalizing

symptoms, as children as young as 8 years-old have been found to be consistent and reliable reporters of a range of internal emotional states including depression and anxiety even when their parents do not necessarily identify similar concerns (for a review, see Michael & Merrell, 1998).

Watauga High School is located in Watauga County in rural western North Carolina. Watauga County has a population of about 51,000 according to the 2010 Census Bureau. The participants range from ninth to twelfth graders, with ages ranging from 14 to 18 years-old. IRB approval (11-0270) for this project was given on April 21, 2011 (see Appendix C).

Measures

BASC-2. To assess behavioral, emotional, and adaptive functioning, the Behavioral Assessment System for Children – 2nd Edition (BASC-2; Reynolds & Kamphaus, 2004) was used. The BASC-2 is a multi-observer measure of behavioral functioning in youth and has broad- and narrow-band subscales. The broad-band scales on self-report form include school problems, internalizing, inattention and hyperactivity symptoms, emotional symptoms, and personal adjustment. The narrow-band scales on the self-report form include attitude to school, attitude to teachers, sensation seeking, atypicality, locus of control, social stress, anxiety, depression, sense of inadequacy, somatization, attention problems, hyperactivity, relations with parents, interpersonal relations, self-esteem, and self-reliance. The broad-band scales on the parent form include externalizing, internalizing, adaptive skills, and behavioral composite. The narrow-band scales on the parent form include hyperactivity, aggression, conduct problems, anxiety, depression, somatization, atypicality, withdrawal, attention problems,

adaptability, social skills, leadership, activities in daily living, and functional communication. Raters are asked to rate behavior and emotional responses as they apply to the individual. Some of the questions are rated on a dichotomous true or false format, whereas other questions are rated on a 4-point Likert scale of *never*, *sometimes*, *often*, or *almost always* true of the individual. Once informed consent is obtained for each student, the BASC-2 Parent Rating Scale (PRS) was administered to parents/guardians and the Self-Report Form (SRP-A) was administered to the students at the time of intake. Subsequently, the BASC-2 was administered to the same respondents at least 2 more times, once at the midpoint of treatment (after engagement in 4 or more sessions) and once at termination of services. In order to determine eligibility for the study, students' and/or parents' BASC-2 scores that were one standard deviation above the mean (i.e., T -score ≥ 60) on the depression, anxiety, and/or internalizing scales at baseline were considered elevated.

The BASC-2 has been tested for use in the target population with a sample of children across the United States who were representative of the normal population in terms of "socioeconomic status, ethnicity, geographic region, and classification into special-education or gifted programs" (Reynolds & Kamphaus, 2004, p.115). The normative sample included a large degree of overlap across the forms, with 709 participants overlapping between the SRP-A and PRS forms. The normative sample for the SRP-A form for adolescents between the ages of 12 and 18 years old was $N = 1,900$. The normative sample for the PRS version for adolescents between the ages of 12 and 18 years old was $N = 1,800$ (Reynolds & Kamphaus, 2004).

The PRS form exhibits high internal consistency on the composite scales for the adolescent general normative samples, with all alpha coefficients ranging from .91 to .95. The PRS median test-retest reliability for the individual scales is .81, with an interval of 9 to 70 days between ratings. Additionally, the PRS exhibits good inter-rater reliability standards, as the median inter-rater reliability for PRS form is .77. The SRP-A version exhibits high internal consistency on composite scales, with alpha coefficients ranging from .84 to .96. The SRP-test-retest reliabilities for the composite scales range from the upper .70s to low .80s, with an interval of 13 to 66 days between administrations (Reynolds & Kamphaus, 2004). Furthermore, McClendon et al. (2011) found support for the BASC-2 as an outcome instrument, as it was not statistically different from the Child Behavior Checklist in terms of sensitivity to change resulting from treatment. Additionally, the BASC-2 has been used in other studies as an outcome measure to assess symptom outcome resulting from school-based psychotherapy (e.g., Evans, Serpell, Schultz, & Pastor, 2007).

YOQ-30. To assess a student's response to the ASC Center services as it pertains to mental health outcomes, the Youth Outcome Questionnaire (YOQ-30) was administered at baseline (the time of intake) and at the beginning of at least every other session with the students. The 30 questions from the YOQ-30 were selected from the full length version "based on their sensitivity to change as estimated from a large scale study of patients undergoing treatment in a variety of settings" (Burlingame et al., 2004, p. 2). Additionally, the items (based on a 0 – 4 scale, with 0 indicating never experiencing the item, to 4 indicating always, or almost always, experiencing the item within the past 7 days) address concerns and symptoms across problem types and disorders (e.g., mood

disorders, anxiety disorders, conduct problems, attention problems, interpersonal concerns). The YOQ purports to measure treatment effects for adolescents engaged in psychotherapy and it has been found to be sensitive to changes that take place over the course of treatment. A YOQ-30 total score of 29 has been identified as an appropriate cutoff in distinguishing between clinical and non-clinical levels of symptomology (Burlingame et al., 2004). While subscales are available for scoring, the total score is the most sensitive to tracking change and has the highest reliability and validity standards. In order to determine eligibility for the study, students whose YOQ score is 29 or higher were considered “elevated” given the previous literature that established this as the clinical cutoff for the YOQ (Burlingame et al., 2004).

The YOQ has been adequately tested for use in the target population with a community normative sample of 530 youth in junior and high schools located in the Western United States. A clinical normative sample was obtained through two separate adolescent day treatment centers, one located in the Western United States ($N = 311$), and one located in the Eastern United States ($N = 298$). An outpatient normative sample was obtained from an Eastern United States city ($N = 151$) as well as from an adolescent substance abuse treatment program ($N = 88$). The YOQ has high internal consistency, with community normative sample yielding a Cronbach’s alpha value of .92, and outpatient normative sample yielding a value of .93 (Burlingame et al., 2004). Convergent validity for the YOQ-30 is supported by an adequate correlation with the Achenbach Child Behavior Checklist ($r = .76$; Burlingame et al., 2004).

Academic variables. The academic outcomes include grade point average (GPA), attendance, and discipline referrals at baseline (semester prior to receiving

services, if available), the end of treatment, and 6-month follow-up, and whether the student graduated (if applicable). The academic variables of interest were selected based on findings that early indicators of behavioral engagement (i.e., attendance) serve as early predictors to later academic success, even graduation from high school (Balfanz, Herzog, & Mac Iver, 2007). GPA was calculated for each semester using the unweighted credits given for each semester of interest. Attendance was measured by the percentage of time present during instructional time. When a student was absent for three or more class meetings on one school day, it was counted as one full missed day, or six instructional hours missed. The percentage of attended instructional time was calculated by dividing the total attended days by 90, which is the total number of days per semester (total semester days may vary slightly depending on the number of days missed due to inclement weather). However, if the student began services after October 1 of their year of enrollment, the number of attended days was divided by the number of days leading up to October 1. October 1 was established as a cutoff point for the academic variable baseline as the same semester as initial referral in order to increase the number of available baseline data for those students who were in another school during the previous school year. In order to capture the attendance and disciplined behavior that most closely preceded the ASC Center referral, the October 1 cutoff for baseline was used for all ASC Center referrals, regardless of the student's location during the previous school year.

Discipline referrals were measured by counting the number of referrals given to each student involved in services at baseline and in each semester of service attainment within the school years of interest. Discipline referrals were categorized by type of offense, as based on the descriptive categories used by Positive Behavioral Interventions

and Supports (PBIS) data collection. However, this categorization was subjective during data collection for this project, as the category for each referral was determined by the description of the offense given by the teacher and interpreted by the research assistants based on the descriptive categories provided by PBIS. Grade point averages were calculated for each student's baseline (semester prior to starting services) and at the completion of the school year. The academic, attendance, and discipline variables will be described for each student and by group, but we were not able to compare these data to the larger population of high school students due to limitations in the existing data management system.

MASS-23. The Multidimensional Adolescent Satisfaction Scale (MASS) is a self-report scale aimed to evaluate adolescents' satisfaction with mental health services and was given upon termination of ASC Center services, or at final assessment (i.e., end of spring 2012 semester). The MASS assesses satisfaction on four domains: counselor qualities, meeting needs, effectiveness, and counselor conflict (Garland, Saltzman, & Aarons, 2000). The counselor qualities scale assesses the adolescent's perception of the counselor's level of competency (e.g., "I feel like my counselor is an expert"). The meeting needs scale assesses how well the treatment addressed his or her specific concerns (e.g., "I wish I were getting more information and advice at counseling"). The effectiveness scale assesses adolescent perceptions of the outcome of the treatment (e.g., "Has counseling made you feel better about yourself?"). The counselor conflict scale assesses the adolescent's perception of whether the counselor was overbearing in treatment (e.g., "My counselor tells me what to do too much"). The MASS questionnaire includes 23 items. The first 16 items assess adolescent satisfaction with services on a 4-

point Likert rating scale with rating options ranging from *strongly agree* to *strongly disagree*. The remaining questions assess helpfulness of the counseling on a 4-point Likert rating scale, with options ranging from *yes, a lot* to *no, not at all* (see Appendices D and E; copyright permission given on 12/02/2011; Garland et al., 2000). Using all of the items in the normative sample of 180 adolescents between 13 and 18 years-old in a community treatment (Garland et al., 2000), the overall total mean score for satisfaction using all of the items was 65.58, out of a total possible score of 84. The item level mean for the measure on the 4-point scale was 3.12 ($SD = 0.89$).

The MASS has high internal consistency, with the normative sample yielding a Cronbach's alpha value of .91. The Cronbach alpha values for each subscale range from .91 for "counselor qualities" to .72 for "meeting needs" (Garland et al., 2000). Convergent validity for the MASS is supported by an acceptable correlation with the Client Satisfaction Questionnaire ($r = .80$; Garland et al., 2000).

Procedures

The ASC Center is comprised of ASU faculty supervisors who are licensed mental health providers/trainers, graduate trainees, undergraduate research assistants, and school professionals across disciplines (e.g., psychology, social work, marriage and family therapy, education) who are charged with providing mental health services in the context of the school system. The ASC Center is currently in its seventh year of operation, and although data for internal auditing and learning purposes have been collected to date, additional data collection efforts along with plans for broader dissemination of aggregate and non-identifiable clinical findings are in process at this time.

Data was collected as students and their parents/guardians voluntarily enrolled (provide informed consent/assent) to take part in ASC Center services. Academic variables were collected at baseline, which is defined as the semester before enrolling in services, or in the instance of a referral midway through the fall semester, is defined as the first half of the fall semester (prior to October 1), and again at the end of the school year, and at a 6-month follow-up period. After the informed consent process, but prior to treatment, the assessments (e.g., BASC, YOQ) were administered to the students at baseline by a clinician not assigned as the primary therapist. Outcome measures were administered as part of the treatment process (i.e., at referral, formative, repeated, post-treatment, and follow-up assessments). The time necessary to administer the assessment procedures was between 10-20 minutes during the baseline phase for students and parents and took no more 10 minutes during any subsequent assessment phase (active phase, post-treatment, follow-up). The frequency of assessment was either every other or every active treatment session for YOQ-30 administrations (5 minutes during a 30-60 minute treatment event).

The treatment itself consisted of non-manualized, individual CBT coupled with crisis and case management as deemed appropriate for each individual case. CBT treatment was tailored for each student and in consultation with each therapist's clinical supervisor (75% of the cases were supervised by a Licensed Psychologist) with a predominant CBT orientation. The treatment elements included but were not limited to psychoeducation, mood monitoring, identification of cognitive distortions, cognitive restructuring, behavioral activation, activity scheduling, exposure, relaxation training, problem-solving, social skills training, communication skills training, and self-

monitoring procedures. These components are consistent with the most common elements for the modularized treatment of internalizing symptoms for children and adolescents (Chorpita, Daleiden, & Weisz, 2005).

Across the 36 students who presented with elevated internalizing symptoms, 8 clinicians provided individual therapy: four graduate students in Clinical Health Psychology, one graduate student in Clinical Social Work, one graduate student in Marriage and Family Therapy, one master's level psychologist, and one Licensed Clinical School Social Worker (LCSW). Clinicians with psychological training provided treatment to 75% of the sample; social work clinicians provided treatment to 14% of the sample; and the Marriage and Family Therapy clinician met with 11% of the sample. Eighty-six percent of the cases were treated by graduate student clinicians, and the remaining 14% of cases were served by licensed professionals (LCSW and master's level psychologist). In addition to one hour of weekly individual supervision, the therapists met weekly for an average of two hours and received group supervision and consultation from the ASC Team, which included three doctoral level, licensed faculty (psychologist, clinical social worker, marriage and family therapist). Moreover, additional supervision was provided as needed when students experienced crises or when case management needs arose.

Finally, the MASS-23 was administered following the termination of services to assess levels of satisfaction for the services rendered. The data were analyzed, anonymized, and aggregated to answer research questions regarding the effectiveness of the ASC Center services. As described above, the four primary research questions were:

- 1) Is CBT provided by ASC Center clinicians effective in reducing internalizing symptoms (e.g., depression and anxiety) for students treated for those conditions?;
- 2) Is there evidence of reliable change in overall psychological distress following treatment among those served by the ASC Center during the 2011-2012 school year?;
- 3) Is ASC Center treatment associated with positive changes in attendance, grades and discipline referrals for those who received treatment for elevated internalizing symptoms?; and
- 4) Were students who underwent treatment for elevated internalizing symptoms satisfied, on average, with ASC Center services?

Analyses

To assess changes in internalizing symptoms following ASC Center treatment, the sample's BASC-2 anxiety, depression, and internalizing scale *T*-score averages at baseline and final were examined. More specially, a within group mean difference weighted effect size (ES) was computed for the depression, anxiety, and internalizing scales to compare the strength of the outcome change to the values at baseline. This procedure has been used in several meta-analyses designed to assess the effectiveness for treatments for children and adolescents (e.g., Michael and Crowley, 2002; Mychailyszyn et al., 2012).

To assess overall emotional, behavioral, and mental health outcomes as measured by administrations of the BASC-2, a practical, case-by-case analysis was conducted with the BASC-2, including an examination if the elevated scores reported at baseline are in a non-elevated range at the conclusion of treatment. More specifically, changes in the

number of clinically significant (i.e., T -scores ≥ 70) broadband scale elevations from baseline to final assessment were examined.

To determine whether changes in the YOQ-30 scores over time were reliable and clinically meaningful, we employed an analytic method first suggested by Jacobson and Truax (1991). Jacobson and Truax (1991) recommended computing the Reliable Change Index (RCI) for each individual who undergoes treatment. Jacobson et al. established a method for evaluating whether meaningful change has occurred by utilizing a two-part criterion. First, the client must begin treatment with symptom levels that meet or exceed established cutoffs for clinically elevated difficulties and end up in the non-clinical range at post-treatment. The cutoff for a particular measure is defined as a score on the measure that falls between the functional and dysfunctional populations. According to Jacobson and Truax (1991), there are three potential cutoff scores. Cutoff A is defined as below the mean of the dysfunctional population, Cutoff B is the point just within two standard deviations greater than the functional population mean, whereas Cutoff C is the weighted midpoint between the means of functional and dysfunctional samples. According to Jacobson, Roberts, Berns, and McGlinchey (1999), Cutoff C is the best choice when utilizing the RCI because it is the least arbitrary. As indicated above, the established cutoff for clinical significance for the YOQ-30 is a total score of 29 or higher (Burlingame et al., 2004), which was used in the present study.

The second part of the two-part criterion is that the amount of change or movement must be sufficient enough to suggest reliable change has occurred as opposed to random fluctuations or measurement error. To reflect this, Jacobson, Follette, and Ravenstorf (1984; as later revised by Christensen & Mendoza, 1986) recommend

computing a RCI for each individual. The RCI is the difference between an individual's pretest score and his or her posttest score, adjusted for the standard error of the difference between the scores. The RCI is based on a standardized metric, and Jacobson and Truax (1991) suggest that if the amount of change observed exceeds a particular threshold (e.g., z-value 1.96, 2 tailed) at the desired level of significance ($p < .05$), then he or she has shown "reliable change." The RCI is 2-tailed, given that it is possible for clients to improve or worsen as a result of the intervention (Lilienfeld, 2007). In the case of the YOQ, the amount of change between assessments to qualify for reliable change is 10 points (Burlingame et al., 2004). From this tradition, individuals who meet both criteria are considered *recovered* – that is, they have moved from a score in a clinical range to a score in a non-clinical range, and they evidence a "reliable" amount of change. In addition, there are several delineations of the *non-recovered* patients. Specifically, patients who show reliable change but who do not move from a clinical to non-clinical range are considered *improved*; those who meet neither criterion are considered *unchanged*; and for those patients where the symptoms worsen, they are considered *deteriorated*.

As described above, based on the criteria outlined by Jacobson and Truax (1991), Burlingame et al. (2004) generated an RCI value of 10 as an indication of clinically significant change based on the YOQ-30. In other words, those whose baseline YOQ is 29 or higher *and* who experience a decrease of 10 points or more from pretest to posttest evidence a significant improvement in outcome. The use of the RCI as a measure of clinically significant change has been tested in several studies (Anderson & Lambert, 2001; Burgess, Pirkis, & Coombs, 2009; Eisen, Ranganathan, Seal, & Spiro, 2007;

Ferguson, Robinson, & Splaine, 2002; McGlinchey, Atkins, & Jacobson, 2002) that suggest it is an effective method of evaluating symptomatic improvement across several dependent measures of outcome (e.g., Outcome Questionnaire-45, OQ-45; Lambert et al., 1996). Finally, as with the BASC-2, a practical, case-by-case visual analysis of the YOQ was conducted to examine for trends and patterns in the outcome data.

To evaluate academic outcomes, student grades, attendance, and classroom behavior were analyzed in terms of amount of change across baseline, final, and follow-up semesters. Changes in academic outcomes were categorized as *improved*, *stable*, or *worse*. Stability on the academic variables was conceptualized as a treatment success, as it indicated a protection from a decline on that variable (e.g., Balfanz et al., 2007). A change (i.e., improvement or reduction) in GPA was defined as a change by one tenth of a point or more on GPA from baseline to final and follow-up semesters. Stability in GPA was defined as a final or follow-up GPA value that was within a tenth of a point as the baseline value. Although there are no established guidelines in the SMH literature to assess changes in GPA as a result of treatment, the aforementioned criteria should be considered exploratory.

Changes in attendance were defined as an increase or decrease in at least one-half of a standard deviation (i.e., 3.96%) in percent attendance from baseline to final and follow-up semesters, or approximate +/- change of 3.56 days (21 instructional hours). Stability or “no change” in attendance was defined as final and follow-up semester percent attendance within 3.96% as the individual’s baseline percentage. Changes in attendance were also described in terms of average amount of instructional time at each semester of interest. A change in discipline incidents was defined as an increase

(worsening) or decrease (improvement) by a standard deviation (i.e., 2.74, or a change ≥ 2) or more. Stability of discipline incidents were defined as the student remaining within 1 discipline incident from baseline to final and follow-up semesters. The weighted standard mean difference within group effect size was computed for each academic variable to assess the degree of the difference between the baseline values and the outcome values of each academic variable.

To assess degree of satisfaction among ASC Center clients who presented with internalizing symptoms, the average of the MASS-23 total scores were computed and compared to the normative sample's (i.e., Garland et al., 2000) average level of satisfaction. Mean item averages were computed for each domain, and descriptively compared (i.e., more or less satisfied) with Garland et al.'s (2000) normative sample.

Results

Demographics

The ASC Center served 64 students during the 2011-2012 school year. Among the 64 who provided consent for treatment, 39 students presented to the ASC Center with elevated levels of internalizing symptoms, as measured by the YOQ and parent and self-report versions of the BASC-2, and 36 students had two or more administrations of the YOQ-30, the minimum necessary administrations for pre- and post-test analyses. Outcomes discussed in this section will be based on the sample of 36 students. Sixty-nine percent (i.e., 25 out of 36) of the sample were female. Ninety-four percent of the sample was Caucasian, and 6% was either Hispanic ($n = 1$) or African American ($n = 1$).

Twenty-two percent of the sample (i.e., 8 out of 36) presented primarily with anxiety symptoms, based on the inclusion criteria (i.e., BASC-2 *T*- scores of ≥ 60 on the

internalizing, anxiety or depression subscales of the SRP-A or PRS versions). Fourteen percent of the sample (i.e., 5 out of 36) presented with primarily depressive symptoms, and 64% of the sample presented with both anxiety and depression elevations according to the baseline BASC-2 SRP-A and PRS forms. The average dosage of treatment was 16.03 sessions ($SD = 9.24$) during the 2011-2012 school year and the students were seen for an average of 11.49 hours ($SD = 7.08$) during the course of the school year, or approximately 43.01 minutes per session. The average duration of treatment was 19.25 weeks ($SD = 10.69$) during the 2011-2012 school year.

Internalizing Symptoms Outcomes

At baseline, the sample presented with an average SRP depression scale T -score that fell within the at-risk range ($M = 65.32$, $SD = 13.36$). At final assessment, the sample's mean depression scale T -score was no longer in the at-risk range ($M = 57.55$, $SD = 14.5$). In order to examine changes in average levels of internalizing symptoms following treatment, only those who had both pre and post treatment BASC-2 administrations ($n = 31$) were used to compute means of the internalizing broadband T -scores. The average baseline depression T -score was 62.80 ($SD = 8.34$) for the $n = 5$ students whose posttreatment BASC-2 was missing. Among those missing cases, 60% (i.e., 3 out of 5) of the students withdrew from school enrollment over the course of the study period. The pre-post ES between baseline and final depression T -scores was 0.55 (95% Confidence Interval [CI] = 0.04 – 1.06). Among the 24 students who began treatment with at least an at-risk elevation for depression, 42% ended treatment with a depression T -score within normal range.

At baseline, the average anxiety scale T -score for the sample ($n = 31$) fell within the at-risk classification ($M = 66.97$, $SD = 10.92$). At final assessment, the average T -score on the anxiety subscale decreased, but remained elevated in the at-risk category overall ($M = 61.10$, $SD = 13.41$). Comparatively, the average baseline anxiety T -score among the $n = 5$ students whose posttreatment BASC-2 was missing was 70.00 ($SD = 9.53$). The ES between the baseline and final anxiety scale was 0.47 ($CI = -0.03 - 0.98$). Among the 29 students who began treatment with at least an at-risk elevation on the anxiety T -score, 28% ended treatment within the normal range.

The sample presented with an average internalizing T -score that fell within the at-risk elevation categorization ($M = 68.13$, $SD = 10.12$), and ended treatment with an internalizing scale T -score average decreased, but remained elevated in the at-risk classification ($M = 61.58$, $SD = 13.65$). The average baseline internalizing T -score among the $n = 5$ students whose posttreatment BASC-2 was missing was 68.80 ($SD = 9.15$). The mean difference ES between the baseline and final average of the internalizing T -scores was 0.54 ($CI = 0.03 - 1.05$). See Table 1 for a summary of the sample's pre and post-test BASC-2 SRP depression, anxiety, and internalizing scale averages and effect sizes. Among the 29 students who presented for treatment with at least an at-risk elevation on the internalizing scale T -score, 34% ended treatment within the normal range.

At baseline, the sample presented with an average PRS depression scale T -score that fell within the at-risk elevation classification ($M = 68.64$, $SD = 13.09$). Again, for comparison purposes, only those with pre and post treatment BASC-2 PRS data available were used to computing average broadband T -scores ($n = 14$). At final assessment, the

average PRS depression *T*-score decreased from baseline, but was still within the at-risk classification ($M = 61.29$, $SD = 9.74$). The mean difference ES between baseline and final depression scale *T*-scores was 0.62 ($CI = -0.14 - 1.38$). The baseline PRS anxiety scale *T*-score average was on the high end of the normal spectrum ($M = 59.64$, $SD = 12.23$). At final assessment, the average anxiety *T*-score decreased, and was within the normal range ($M = 52.57$, $SD = 10.63$). The mean difference ES between the baseline and final anxiety *T*-scores was 0.60 ($CI = -0.16 - 1.36$). At baseline, the average PRS internalizing scale *T*-score fell within the at-risk classification ($M = 66.36$, $SD = 11.11$), and the final PRS internalizing *T*-score decreased and was no longer categorized as at-risk ($M = 59.29$, $SD = 10.86$). The mean difference ES between initial and final PRS internalizing *T*-scores was 0.62 ($CI = -0.13 - 1.38$). See Table 2 for a summary of the sample's pre and post-test BASC-2 PRS depression, anxiety, and internalizing scale averages and effect sizes.

Reliable Change Index and Descriptive Mental Health Outcomes

YOQ-30. At baseline, the sample presented for treatment with an average YOQ-30 total score of 45.97 ($SD = 16.59$). Seventy-five percent of the sample (i.e., 27 out of 36) ended treatment with a lower YOQ-30 total score than at baseline, and the average decrease was 22.70 points ($SD = 15.61$). Twenty-five percent (i.e., 9 out of 36) of the sample experienced an increase (worsening) in final YOQ-30 scores, compared to baseline, and the average increase was 10.44 points ($SD = 7.32$). At final assessment, the mean YOQ-30 total score was 31.56 ($SD = 19.20$). A mean difference ES between the average baseline and final YOQ-30 total scores was 0.79 ($CI = 0.31 - 1.27$). See Figure 2 for mean baseline and final YOQ-30 scores for the sample.

Using Jacobson and Truax's (1991) method of assessing for evidence of clinical significant change following treatment, the RCI was computed for the YOQ-30 outcomes among the clinical group. Among those students who began treatment with symptoms above the clinical cutoff (i.e., YOQ-30 total scores ≥ 29), 38% (i.e., 12 out of 32) recovered following treatment. That is, 12 students began treatment at clinically significant levels, decreased their total score by at least 10 points, and ended treatment with YOQ-30 total scores below the clinical cutoff. Twenty-two percent (i.e., 7 out of 32) significantly improved their symptoms following treatment, or decreased their distress by at least ten points on the YOQ-30, but did not end treatment below the clinical cutoff. Thirty-four percent (i.e., 11 out of 32) of those who began treatment with clinically significant symptoms were classified as unchanged, meaning that they began treatment above the clinical cutoff, but did not experience a change in symptoms of 10 points or more. Six percent (i.e., 2 out of 32) of those who began treatment above the clinical cutoff deteriorated, or increased their symptoms by 10 points or more at final assessment compared to baseline on the YOQ-30. Among those who began treatment below clinical significance, 2 out of 4 of the students deteriorated, meaning that they began treatment with distress below the clinical cutoff, but ended treatment with YOQ-30 total scores that were 10 points or higher compared to their baseline, which then put them above the clinical cutoff of a total score of 29 or higher. See Table 3 for a summary of the sample's RCI.

BASC-2 self-report form outcomes. At baseline, 44% began treatment with two or more clinically significant elevations, and 31% of the sample presented with no clinically significant broadband scale elevations (i.e., T -scores ≥ 70) on the SRP BASC-

2. At final assessment, the percentage of the sample experiencing two or more areas of clinically significant distress decreased from 44% at baseline to 32%. The percentage of students with no clinically significant elevations increased from 31% at baseline to 62% at final. See Table 4 for the sample's clinically significant (i.e., T -scores ≥ 70) broadband scale elevations at baseline ($n = 36$) and final ($n = 31$) assessment points.

BASC-2 parent-report form outcomes. At baseline, 27 BASC-2 PRS forms were obtained. Twenty-six percent of the sample presented for treatment with two or more domains of clinically significant levels of distress (i.e., T -score ≥ 70), and 55% of the sample began treatment with no clinically significant broadband scale elevations according to the parent's report. At final assessment, 16 PRS forms were obtained. The number of students with two or more significant elevations decreased from 26% at baseline to 6% at final assessment, and the number of students who reported zero significant elevations on the broadband scales increased from 55% at baseline to 75% at final assessment. See Table 7 for the PRS BASC-2 clinically significant broadband scale elevations (i.e., T -score ≥ 70) at baseline ($n = 27$) and final ($n = 16$) assessments.

Academic Outcomes

Grade point averages. Of those participants in which baseline GPA data were available, ($n = 34$), the sample presented for treatment with a mean GPA of 2.29 ($SD = 1.05$). At final assessment (spring 2012), the sample ended treatment with an average GPA of 2.14 ($SD = 1.36$). Comparatively, WHS had a school-wide average GPA of 3.05 ($SD = 0.71$) for the 2011-2012 school year. The mean difference ES between the baseline and final sample's GPA was -0.12 ($CI = -0.59 - 0.35$).

The majority (65%) of the sample who had baseline and final assessment GPA data improved (i.e., increased final GPA by a tenth of a point or more) or remained stable (i.e., remained within a tenth of a point) from baseline to final assessment. Thirty-five percent of the sample (i.e., 12 out of 34) ended treatment with a GPA one tenth of a point or more lower than where they began treatment.

During the follow-up period (i.e., end of fall 2012), 4/25 students still enrolled at Watauga (not graduated or withdrew) had incomplete GPA data during the follow-up and were excluded from the analyses. The sample with available baseline and follow-up GPA data (21/25) had an average GPA of 2.45 ($SD = 1.14$) at follow-up. The mean difference ES between the sample's baseline and follow-up GPA was 0.15 ($CI = -0.40 - 0.69$). Sixty-seven percent of the sample either improved or stabilized their GPA from baseline to follow-up. Thirty-three percent of the sample's follow-up GPA was at least a tenth of a point lower at follow-up than at baseline. See Table 6 for a summary of improvement, stability and worsening rates among participants' GPA at final assessment and follow-up.

Attendance. For those participants for whom baseline data were available ($n = 32$), on average, participants were present for 92.12% of their baseline semester ($SD = 7.92$), or 82.91 days in a typical 90 day semester. At final assessment, the sample was present an average of 90.44% ($SD = 10.70$) of the spring 2012 semester, or 81 days in a typical 90 day semester. On average, the sample was present for 9.07 fewer instructional hours at final assessment than at baseline. Comparatively, WHS had an average 2011-2012 school year attendance of 95.6%, or approximately 86 days in a 90 day semester.

The mean difference ES between the baseline and final assessment for the total sample's attended instructional time was -0.17 ($CI = -0.65 - 0.30$).

Seventy-five percent of the sample for whom baseline and final data were available (i.e., 24 out of 32) improved (i.e., increased attendance by half of a standard deviation) or remained stable (i.e., ended treatment within 3.96% of the baseline attendance rate) from baseline to final assessment. Twenty-five percent of the sample (i.e., 8 out of 32) decreased their attendance in the spring semester by 3.96% or more of their baseline percent attendance.

At follow-up, the sample with available follow-up data ($n = 25$) were present for an average of 93.04% of the semester ($SD = 4.68$), or 83.74 days in a 90 day semester. The mean difference ES between the sample's average baseline attendance and longer-term follow-up attendance was 0.14 ($CI = -0.39 - 0.66$). On average, the sample was present for 4.97 more hours of instructional time than at baseline. The majority (73%) of the sample for whom baseline and follow-up data were available (i.e., 16 out of 22) either improved or remained stable in their attendance from baseline to follow-up. Twenty-seven percent of the available sample decreased their percent attendance by 3.96% (i.e., a half of a standard deviation at baseline) or more from baseline to follow-up semesters. See Table 7 for a summary of the participants' improvement, stability, and decreases in attendance at final and follow-up semesters.

Discipline incidents. The sample presented for treatment with an average of 1.41 ($SD = 2.92$) discipline incidents per participant. At baseline, 42% of the recorded behavioral events were for tardiness, 34% of the incidents were for skipping class time, 11% of the incidents were recorded due to a student's defiance or disrespect to a school

personnel, 5% of the incidents were due to tobacco use on the school campus, 5% were due to use of inappropriate language, and 3% (i.e., 1 out of 38 total incidents) was due to a technology violation. The sample ended treatment with an average of 2.08 ($SD = 4.27$) discipline incidents per student. At final assessment, 68% of the recorded behavioral incidents were due to tardiness, 16% were due to skipping class time, 5% resulted from a student's defiance or disrespect to a school personnel, 4% were due to violating technology regulations, 3% were due to tobacco use on school grounds, 3% were due to inappropriate displays of affection, and 1% (i.e., 1 out of 75 discipline incidents) was due to a violation of the school's dress code. The mean difference ES between baseline and final assessment of the total sample's behavioral events was -0.18 ($CI = -0.66 - 0.30$).

Seventy-eight percent of the total sample for whom baseline and final data were available (i.e., 25 out of 32) improved (i.e., decreased behavioral events by 2 or more incidents, or approximately one standard deviation) or remained stable in the number of recorded behavioral offenses from baseline to the spring 2012 semester. Twenty-two percent (i.e., 7 out of 32) of the sample increased their behavioral offenses by two or more incidents from baseline to final assessment.

At follow-up, among the students with available data, ($n = 25$) there was an average of 3.44 ($SD = 5.69$) discipline events per student. The mean difference ES between the sample's baseline and follow-up discipline incidents was -0.46 ($CI = -0.99 - 0.07$). Seventy-three percent for whom baseline and follow-up data were available (i.e., 16 out of 22) either improved (i.e., decreased number of discipline incidents by 2 or more) or remained stable from baseline to follow-up semesters. Twenty-seven percent (i.e., 6 out of 22) of the students had 2 or more discipline events during follow-up

semester compared to baseline. Among the 6 students who were worse at follow-up, they accounted for 73% (63/86) of the total number of discipline incidents for the sample at follow-up. See Table 8 for a summary of participants' improvement, stability, and increases in discipline incidents at final and follow-up semesters. At follow-up, 78% of the discipline events were due to tardiness, 9% were due to skipping class, 5% were due to disruption during class, 4% were due to insubordination or defiant acts of disrespect, 2% were due to use of inappropriate language, 1% were due to fighting, and 1% were due to tobacco use on school property.

Categorical outcomes. Of those students who were seniors during the 2011-2012 school year ($n = 6$), 83% (i.e., 5 out of 6) graduated at the end of the school year. The remaining senior withdrew from school during the spring semester. Comparatively, WHS had a graduate rate of 85.4% for the 2011-2012 school year. Three students graduated at the end of the follow-up semester (Fall 2012), and two of them had continued ASC Center services into the follow-up semester. Of the remaining 27 students in the sample, 15 terminated services at the end of the 2011-2012 school year, and 7 students continued ASC Center services into the 2012-2013 school year. Three students in the sample withdrew from school during the spring 2012 semester, and an additional 3 students withdrew from school during the fall 2012 semester.

Satisfaction with ASC Services

MASS-23 surveys were obtained from 24 students. Compared to the data from the MASS-23 normative sample (Garland et al., 2000), those served by the ASC Center during 2011-12 had higher overall total scores ($M = 70.04$, $SD = 9.72$ vs. $M = 65.58$, $SD = 11.24$). The overall mean item score for the study's sample was 3.33, meaning that on

average, each participant rated each item as approximately a 3 or higher (scores range 1 – 4, higher scores indicate more satisfaction). The factor mean item score for the counselor qualities factor was 3.32, compared to the normative sample's mean item score of 3.21. The meeting needs factor mean item score for the present sample was 3.10; comparatively, the normative sample's factor mean item score for meeting needs was 2.84. The effectiveness factor mean item score was 3.09 whereas the Garland et al. (2000) mean item score was 2.86. Last, the present sample's counselor conflict mean item score was 3.55, compared to the normative sample's mean item score of 3.47.

Discussion

Whether CBT was effective at reducing internalizing symptoms in a sample of adolescents in the context of a rural SMH Program was examined in the present study. Overall, the cumulative findings suggest that the majority of the treated sample exhibited clinically meaningful improvements (i.e., reliable change) in their symptoms at post-treatment. The data presented here are commensurate with previous findings that used evidence-based components from CBT for the treatment of adolescents with internalizing conditions (e.g., Coats & Reynolds, 1986; Kahn et al., 1990; Mufson, 2004; Shirk et al., 2009). Indeed, the pre- to post-test changes in depression and anxiety symptoms in the current study are modest yet comparable to the findings from a recent meta-analysis where the researchers reported mild to moderate pre- to post-test changes on anxiety and depression across 63 studies examining CBT for the treatment of depression and anxiety within the school context (Mychailyszyn et al., 2012). As these studies have shown, utilizing the most commonly used and validated CBT procedures (Chorpita et al., 2005) within the school context reduced and/or ameliorated internalizing symptoms. Moreover,

these outcomes were achieved with graduate students as the predominant treatment providers. Interestingly, the use of graduate students in psychotherapy studies is not without its skeptics (see Christensen & Jacobson, 1994 for a review). Nonetheless, the data here suggest that graduate students under supervision are as effective as doctoral level providers at treating internalizing conditions, which has already been documented in the literature (e.g., Michael et al., 2005; Weisz et al., 1987; Weisz et al., 1995).

In terms of clinically significant changes following treatment, 60% were deemed recovered or improved at posttreatment based on the RCI guidelines as described by Jacobson and Truax (1991). These results are consistent with large randomized controlled trials for internalizing disorders, including child and adolescent anxiety (Walkup et al., 2008) and adolescent depression (Treatment of Adolescent Depression Study [TADS], March et al., 2007). For instance, Walkup et al., used approximately 14 sessions of CBT in one arm of the study and 59.7% of the youth were deemed improved at posttreatment. Similarly, among the adolescents who received 12-18 sessions of CBT in the TADS Study, 65% were deemed improved after 18 weeks of treatment (March et al., 2007). Thus, the present study with a similar focus (internalizing symptoms), treatment components (CBT), dosage (16 sessions), and longevity (19 weeks), produced commensurate results in a sample of adolescents.

The third goal of the study was to determine whether ASC Center treatment was associated with changes in attendance, GPA, and discipline incidents among participants presenting with internalizing symptoms. In terms of academic outcomes, 53% of the sample improved their GPA and 19% showed improvement on attendance and discipline incidents at posttreatment compared to baseline period. Further, 12% remained stable on

GPA, 56% on attendance, and 59% on discipline incidents at posttreatment compared to baseline period. These rates were generally the same at follow-up. Although the proportion of students who improved, as defined above, was modest at best, those who maintained their status (i.e., the majority remained stable) can be viewed as an appropriate measure of success when it comes to the impact of intervening with youth who are at risk or currently exhibiting emotional and behavioral problems (poor attendance, low achievement) in school. That is, although the effect sizes for the academic outcomes were far from stellar, protecting students from deterioration in the form of stability seems like a sensible goal (Balfanz et al., 2007). This type of finding, where modest gains in school outcomes or even the maintenance of a positive trajectory associated with treatment (e.g., Multisystemic Therapy) is construed as a beneficial effect (e.g., Brown, Henggeler, Schoenwald, Brondino, & Pickrel, 1999). Helping these youth in the context of similar programs like the ASC Center has had a measurable impact on retention and graduation rates, especially when intervention begins at an earlier age (Balfanz et al., 2007).

Longer-term follow-up data regarding the academic outcomes revealed improvement and stability rates comparable to final assessment, perhaps indicating that those students who improved or stabilized their academic performance during the final semester continued to maintain or improve these changes through the follow-up semester as suggested by very small effect sizes. In terms of follow-up rates of attended instructional time, the sample was present for approximately 4 more hours at follow-up than at baseline. At the final time point (spring 2012), the sample had decreased their average attendance and decreased attended instructional time. Yet, the increase from

final to follow-up in attended instructional time might suggest a delayed beneficial effect on school attendance. Furthermore, increases in mean GPA from final assessment to follow-up also suggest a similarly delayed effect on academic performance. Delayed effects in academic success secondary to intervention have been noted in other SMH studies as well (e.g., Sander et al., 2011; Walker, Kerns, Lyon, Bruns, & Cosgrove, 2010). For instance, Walker et al. (2010) examined changes in academic variables following student use of a school-based health center (SBHC). The researchers reported an initial decrease in attendance among SBHC users, but that attendance rates actually increased at a greater rate over time and that these data were not evident until the students had been followed for a sufficient amount of time (Walker et al., 2010).

The final goal of the present study was to assess whether students who underwent treatment for elevated internalizing symptoms were satisfied, on average, with ASC Center services. When comparing the sample's means to those of Garland et al. (2000) normative sample means, the 2011-2012 ASC Center sample was on average at least as satisfied with their mental health services as those in normative sample. In addition to overall satisfaction level, the ASC Center sample indicated commensurate levels of satisfaction with the individual counselor's qualities, how the counselor met the students' needs, the counselor's effectiveness in providing services to the student, and the way in which the counselor approached conflict with the student than what was observed in the normative sample. The ASC Center sample indicated equivalent levels of satisfaction across all four domains on the MASS-23.

Limitations and Future Directions

Because the current study endeavored to evaluate the success of an established program, it offers generalizability of findings to real world settings and practices. At the same time, it is not without its limitations. There were several challenges related to the collection and interpretation of assessment data. Although the YOQ-30 was intended to be administered minimally at the start of every other session, there were several instances in which clinicians did not regularly administer the YOQ-30 on a weekly or biweekly basis. Thus, although pre- and post-treatment assessments of the YOQ were the minimum required to calculate a RCI, more consistent YOQ administrations throughout treatment may have allowed for improved symptom tracking over time. Furthermore, if we had a larger number of YOQ administrations for the entire sample, a clearer picture of the dosage required to achieve an even higher rate of improved or recovered participants would have been more feasible. Future studies will aim to collect more consistent YOQ data in order to more precisely monitor changes in symptoms over time.

Further limiting the interpretation of some of the psychological data was the low response rate among the parent version of the BASC-2. Although at baseline there was a 75% return rate among parent forms, at final assessment there were only 44% returned, and only 39% of the sample had both baseline and final parent BASC-2 administrations. While child and adolescent reports of internal distress are reliable (e.g., Michael & Merrell, 1998), having full data from parents may have provided more valuable information regarding the interpretation of the findings. For instance, Sander et al. (2011) and Everts (2011) found support for parent reports of reductions in mental health impairments. While the results of the present study indicate that parents observed

positive changes in their child's mental health status, the low response rate among parent raters on the BASC-2 compared to self-reports cause us to temper our interpretations of these data. Similarly, the effect sizes from the BASC-2 were small and insignificant (confidence intervals crossed zero), especially compared to the YOQ data. That is, the reliable change that was evident from the YOQ was not apparent based on the BASC-2 data. Therefore, other explanations for symptoms reductions on the BASC-2 (e.g., regression to the mean) could not be ruled out.

Another limitation was the inconsistent definition and classification of discipline referrals, attendance, and GPA from the students' baseline semester and the 2011-2012 school year. For instance, school administration altered the approach on discipline referrals during the 2011-2012 school year, and began to focus more on tardy and skipping incidents than previous school years. As a result, each individual tardy and skipping incident was recorded during the 2011-2012 school year, but in previous school years disciplinary action was taken as a result of "excessive tardiness" with no indication of specific dates of the offenses. Further, attendance rates were dependent on others' accurate recording of these data at the end of the day. Thus, it was not feasible to verify whether this was a consistent practice among school staff. Based on the existing data management system at the school, once the year was complete, student schedules were removed from the system, making it impossible to differentiate between the fall and spring semester courses that were taken within a given school year. Consequently, in those cases ($n = 11$), full year GPA was used instead of semester by semester grades.

Finally, a limitation of the study was the use of a within-subjects design. While pre-post designs allow for the measurement of individual change over the course of a

treatment event, more stringent comparisons including the effects of treatment as usual or the utilization of a no-treatment control group would have strengthened the study. Due to these limitations, on-going improvements and revisions in data collection methods should be implemented for future SMH studies. For instance, more consistent data collection (i.e., weekly YOQ-30 administrations) could strengthen the interpretation of mental health outcomes by more closely monitoring fluctuations in symptoms and allow for a clearer picture of the dosage required to achieve higher improvement and recovery rates among the participants. Further, because of the limited time frame for comparisons, particularly for academic outcomes, future work should expand academic data collection and track students' academic performance over multiple school years in order to better assess for the possibility of delayed effects in academic performance. Future studies should be designed to include comparison conditions, including active controls, and waitlist or no-treatment control groups.

Summary

In conclusion, the findings of the present study offer support for the feasibility and the success of treating internalizing symptoms within a rural school context, which is among the first studies to document the beneficial role of a broad-based SMH program in a rural high school setting. In this study we implemented scientifically-supported components of CBT with a sample of depressed and anxious adolescents in a rural community setting and found rates of effectiveness that mirror large RCTs (Walkup et al., 2008; March et al., 2007). Furthermore, these results were achieved in the context of a rural, interdisciplinary SMH program wherein graduate students under supervision served as the primary clinicians (86% of the caseload). The use of graduate student

clinicians as primary therapists provided an innovative “quid pro quo” by providing cost-effective services to students in need while simultaneously increasing and improving the SMH workforce, both locally and on a broader scale. As Heflinger and Christens (2006), and others (e.g., Owens et al., 2008) have noted, capitalizing on already utilized resources (e.g., schools), and using well-trained clinicians under supervision can serve to increase accessibility to quality care within rural regions. Thus, models such as these, that place an emphasis on accountability in the form of research evaluation (e.g., McQuaid & Spirito, 2012), and employing evidence-based methods in clinical applications (Hershenberg, Drabick, & Vivian, 2012), might hold promise for developing and training a steady stream of scientist-practitioners in SMH for years to come. Furthermore, the data here suggest that graduate students under supervision are effective at treating internalizing symptoms, which is consistent with previous studies (e.g., Michael et al., 2005; Weisz et al., 1987; Weisz et al., 1995).

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Appendix A

**Watauga High School/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. Lauren Renkert, Dr. Jon Winek

I. Purpose of Research:

As described on the Consent to Treatment form that was signed and on-file at the ASC Center, we are committed to providing your children with effective interventions to address their behavioral and academic concerns. As you are already aware, we regularly collect data on treatment progress, satisfaction, academic outcomes, attendance, and disciplinary referrals that help us serve your children better. We now request your permission to present anonymous data regarding the effects of ASC Center services in the form of presentations and publications to an audience of professionals outside of the ASC Center. Information about the effects of the ASC Center services will be presented anonymously so that your children's identities will not be disclosed.

II. Procedures:

In addition to the information collected regularly as part of ASC Center involvement, students and parents will be asked to complete a few brief assessments before, during, and after ASC Center services have been delivered. The assigned ASC Center clinician will review these documents in detail with the students and parents (before and after) and if there is evidence on the assessments of significant distress or discomfort, interventions will be delivered (or referrals made) immediately, up to and including the disclosure of this information to parents/guardians should it deemed consistent with the "limits of confidentiality" described on the original Consent to Treatment Form (that is, danger to self or others, reasonable suspicion of abuse).

III. Risks:

As described above, the risks of participation in this project do not exceed the normal risks associated with receiving mental health/behavioral treatment in other settings. We will abide by all standards of confidentiality and we are committed to the safe and effective treatment of your children's concerns.

IV. Benefits:

Your participation in this project will help other professionals and society at large learn more about providing effective mental health and behavioral treatment for high school students.

V. Extent of Anonymity and Confidentiality:

The answers you and your student provide on the assessments will be kept confidential and under lock and key. Only authorized ASC Center personnel will know the identity of your children. When the data is presented, it will not include your children's identity. The information will be presented anonymously.

VI. Compensation:

There will not compensation for your participation. ASC Center services are provided at no cost to you or your child.

VII. Freedom to Withdraw:

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

VIII. Approval of Research:

This research project has been approved, as required, by the Institutional Review Board of Appalachian State University.

IRB Approval Date: 4/21/2011

Approval Expiration Date: 4/21/2012

IX. Participant's Responsibilities:

I voluntarily agree to participate in this study. I have the following responsibilities:

1. Review this consent form
2. Complete the assessments honestly if I consent to participation

Appendix B

Assessment, Support, and Counseling (ASC) Center: Watauga High School
Informed Consent for Clinical Services

We are pleased to have the opportunity to serve you and/or your child through the ASC (Assessment, Support, and Counseling) Center, a partnership between Watauga High School and Appalachian State University (ASU). 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. Clinical services are provided by qualified, licensed professional providers, faculty members, and/or students under supervision, as appropriate. As we proceed to work together, the following information may be helpful.

Depending on your situation, our 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, you and 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.

IHHS/ASC providers/faculty and students 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 share with us is strictly confidential—whether you say it in person, on the telephone, or write it. 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, ASU/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 ASU/ASC Center providers, faculty, and/or students would be required by law to reveal confidential information about you without your consent. One situation would be if we learned that you were at imminent risk of harming yourself or another person. Another situation would be if there is reasonable suspicion of abuse or neglect of a child. A third situation would be in the event of a court order compelling us to release your clinical record to a court of law. Other situations would be based on federal or state laws. Some of these situations are discussed in a separate document, the Notice of Privacy Practices, which we are providing as required by federal law.

Sound clinical practice and teaching includes consultation and discussion with other interdisciplinary providers, faculty members, and students, sometimes regarding specific cases. All those affiliated with ASU/ASC Center are also legally bound to keep the information confidential. If you do not object, we will not tell you about these consultations and discussion unless they are important to our work together.

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. 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. On occasion, we conduct specific research projects above and beyond these normal methods of data collection. If selected for a project beyond routine data collection, a separate consent form will be obtained and additional information provided for parent/guardian and student consideration.

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 the Watauga County HELP line, at 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 (828-262-2719), or Jennifer Wandler, ASC Center Coordinator (828-264-2407), 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: _____

Additional Signature of Child or Parent, if needed: _____ Date: _____

Witness (optional): _____ Date: _____

Copy given to Student Student declined copy

ASU/ASC Center reserves the right to revise, amend, supplement, and/or rescind this form, or portion thereof as it deems appropriate, in its sole and absolute discretion. Revised 8/19/2011

Appendix C



INSTITUTIONAL REVIEW BOARD
 Office of Research Protections
 ASU Box 21068
 Boone, NC 28608
 870.262.2130
 Web site: <http://www.orp.appstate.edu/protectons/irb>
 Email: irb@appstate.edu
 Federalwide Assurance (FWA) #00001076
 IRB Reg. #0021458

To: Kurt Michael
 Psychology
 CAMPUS MAIL

From: Dr. Timothy Ludwig, Institutional Review Board

Date: 4/21/2011

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

Study #: 11-0270

Sponsors: Watauga County Schools

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

Submission Type: Initial

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

Sponsors: Watauga County Schools

Approval Date: 4/21/2011

Expiration Date of Approval: 4/19/2012

This submission has been approved by the Institutional Review Board for the period indicated. It has been determined that the risk involved in this research is no more than minimal.

Investigator's Responsibilities:

Federal regulations require that all research be reviewed at least annually. It is the Principal Investigator's responsibility to submit for renewal and obtain approval before the expiration date. You may not continue any research activity beyond the expiration date without IRB approval. Failure to receive approval for continuation before the expiration date will result in automatic termination of the approval for this study on the expiration date.

You are required to obtain IRB approval for any changes to any aspect of this study before they can be implemented. Should any adverse event or unanticipated problem involving risks to subjects occur it must be reported immediately to the IRB. Best wishes with your research!

CC:
 Lauren Renkert, Social Work
 Jon Winck, Human Dev And Psych Counsel

Appendix D

Request for MASS scale

Subject: RE: Request for MASS scale Date: Fri, 02 Dec
2011 10:57:00-0800 From: Ann Garland
<agarland@ucsd.edu> Reply-To: agarland@ucsd.edu
Organization: CASRC
To: Kurt Michael <michaelkd@appstate.edu>

Hello

Yes, you are free to use it in research. Given that this is just a straight-forward self-report measure there is no manual. There are several manuscripts reporting on development and use of the measures, including:

Garland, A.F., Saltzman, M., & Aarons, G. (2000). Adolescents' satisfaction with mental health services: Development of a multi-dimensional scale. Evaluation and Program Planning, 23, 165-175.

Garland, A.F., Aarons, G., Saltzman, M., & Kruse, M. (2000). Correlates of adolescents' satisfaction with mental health services. Mental Health Services Research, 2, 127-139.

Good luck Ann

Garland

From: Kurt Michael [mailto:michaelkd@appstate.edu]
Sent: Friday, December 02, 2011 10:04 AM
To: agarland@ucsd.edu
Subject: Re: Request for MASS scale
Professor Garland,

Thank you so much for providing the MASS materials. Are you comfortable with us using the measure in our research? I want to make sure we do not violate copyright guidelines. Further, do you have a manual we could cite? Last question: do you have a reference list of studies that have used your device?

Best regards,

Kurt Michael

Appendix E

Multidimensional Adolescent Satisfaction Scale - MASS-23

We would like to know how satisfied or dissatisfied you are with the counseling services or psychotherapy you have received. There are no right or wrong answers to these questions. We want your honest opinions, whether positive or negative. Please circle your answers.

Please answer the questions based on your most recent counseling experience.

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
1. It is difficult for me to contact my counselor when I need to.....	SA	A	D	SD
2. I am comfortable with my counselor's age.	SA	A	D	SD
3. I feel like my counselor is an expert.....	SA	A	D	SD
4. I feel like my counselor is qualified to help people my age.....	SA	A	D	SD
5. I feel like my counselor knows how to help me.....	SA	A	D	SD
6. I wish I were getting more information and advice at counseling.....	SA	A	D	SD
7. I wish I were getting more help with my problems at counseling.	SA	A	D	SD
8. I wish I'd had more choice in choosing my counselor.	SA	A	D	SD
9. I wish I were getting other kinds of counseling than what I've gotten (for example, I am in individual counseling, but wish I was in group).....	SA	A	D	SD
10. I like talking to my counselor	SA	A	D	SD
11. My counselor tells me what to do too much	SA	A	D	SD
12. When my counselor and I disagree about something, my counselor always thinks he/she is right	SA	A	D	SD
13. My counselor understands my feelings and concerns.....	SA	A	D	SD
14. I can tell my counselor things that I don't feel comfortable telling other people.....	SA	A	D	SD
15. My counselor and I decide together what I should work on to help my problems get better.....	SA	A	D	SD
16. My counselor has been too nosy.	SA	A	D	SD

The next few items are about your family's involvement in your counseling.

17. How involved has your family been in your counseling?

Much too Involved	Somewhat too involved	A little too involved	As involved as I would like	A little less than I would like	Somewhat less than I would like	A lot less than I would like
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18. How much time do you feel your parents spend talking to your counselor?

Much too Involved	Somewhat too involved	A little too involved	As involved as I would like	A little less than I would like	Somewhat less than I would like	A lot less than I would like
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The next few items are about how helpful you feel counseling has been. Circle your answers.

19. Has counseling helped you feel better about yourself?

Yes, a lot	Yes, somewhat	Yes, a little	No, not at all
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20. Has counseling helped your problems get better?

Yes, a lot	Yes, somewhat	Yes, a little	No, not at all
------------	---------------	---------------	----------------

21. Has counseling made things worse in your life?

Yes, a lot	Yes, somewhat	Yes, a little	No, not at all
------------	---------------	---------------	----------------

22. Has counseling helped you learn more about yourself?

Yes, a lot	Yes, somewhat	Yes, a little	No, not at all
------------	---------------	---------------	----------------

23. Overall, how much has counseling helped you?

Yes, a lot	Yes, somewhat	Yes, a little	No, not at all
------------	---------------	---------------	----------------

Appendix F

Glossary of Acronyms

ASC Center: Assessment, Support, and Counseling Center

ASU: Appalachian State University

BASC-2: Behavioral Assessment System for Children, Second Edition

CBT: Cognitive Behavioral Therapy

CI: Confidence Interval

ES: Effect size

GPA: Grade point average

IPT: Interpersonal Therapy

LCSW: Licensed clinical social worker

LTL: Linkages to Learning

MASS-23: Multidimensional Adolescent Satisfaction Survey

MDE: Major Depressive Episode

PBIS: Positive Behavioral Intervention and Supports

PRS: Parent Rating Scale

RCI: Reliable Change Index

SD: Standard deviation

SMH: School mental health

SRP: Self-report form

WHS: Watauga High School

YOQ-30: Youth Outcome Questionnaire-30

YRBS: Youth Risk Behavior Survey

Table 1

Pre and Post-Test T-Score Averages on Depression, Anxiety, and Internalizing BASC-2 SRP Subscales

BASC-2 Subscale	Baseline	Post-test	Effect Size
Depression	65.32 (13.36)	57.55 (14.50)	0.55 (<i>CI</i> = 0.04, 1.06)
Anxiety	66.97 (10.92)	61.10 (13.41)	0.47 (<i>CI</i> = -0.03, 0.98)
Internalizing	68.13 (10.12)	61.58 (13.65)	0.54 (<i>CI</i> = 0.03, 1.05)

Note: Sample size ($n = 31$) was adjusted to include only those with pre and post-test BASC-2 SRP administrations. Standard deviations are listed in parentheses.

Table 2

Pre and Post-Test T-Score Averages on Depression, Anxiety, and Internalizing BASC-2 PRS Subscales

BASC-2 subscale	Baseline	Post-test	Effect Size
Depression	68.64 (13.09)	61.29 (9.74)	0.62 (CI = -0.14, 1.38)
Anxiety	59.64 (12.23)	52.71 (10.63)	0.60 (CI = -0.16, 1.36)
Internalizing	66.36 (11.11)	59.29 (10.86)	0.62 (CI = -0.13, 1.38)

Note: Sample size ($n = 14$) was adjusted to include only those with pre and post-test BASC-2 PRS administrations. Standard deviations are listed in parentheses.

Table 3

Pre to Post-Test Changes in Psychological Symptoms

Subject #	Internalizing T-score		Depression T-score		Anxiety T-score		Baseline YOQ	Final YOQ	RCI
	Pre	Post	Pre	Post	Pre	Post			
1	72	38	59	40	78	38	46	7	Recovered
2	65	83	55	66	69	83	47	53	No Change
3	62	63	72	64	69	72	20	3	--
4	75	53	55	43	70	61	33	26	No Change
5	62	54	53	49	62	54	35	25	Recovered
6	61	54	68	55	39	48	41	23	Recovered
7	92	88	89	82	73	73	61	66	No Change
8*	57	41	55	43	59	42	45	6	Recovered
9	77	41	80	40	80	45	41	5	Recovered
10	67	62	55	55	80	75	40	25	Recovered
11	70	50	59	47	70	40	34	11	Recovered
12*	56		51		58		30	25	No Change
13	77	63	74	51	69	56	76	34	Improved
14	68		61		83		53	29	Improved
15*	58	64	43	47	69	73	20	13	--
16	53	37	61	40	59	34	52	3	Recovered
17	67	64	47	51	86	81	29	30	No Change
18	62	57	53	47	65	62	40	29	Improved
19	75	85	86	91	38	53	42	50	No Change
20	55	58	68	70	56	61	47	54	No Change
21	70	70	62	61	65	72	45	17	Recovered
22	76		74		65		64	13	Recovered
23	65	54	61	47	56	46	68	51	Improved
24	74	67	74	55	78	72	49	43	No Change
25	65		66		69		40	37	No Change
26	73	58	80	51	62	58	65	35	Improved
27	70	66	62	57	75	73	66	42	Improved
28*	49	53	40	51	61	64	8	29	Deteriorated
29	71	77	80	76	60	67	42	54	Deteriorated
30	92	86	93	89	78	65	87	81	No Change
31	62	63	62	59	73	64	44	18	Recovered
32	80	78	85	85	64	61	57	37	Improved
33	66	70	64	61	75	85	39	50	Deteriorated
34	56	55	66	64	61	58	25	48	Deteriorated
35	77	57	64	47	77	58	68	12	Recovered
36	79		62		75		56	52	No Change

Note: * denotes students who were included based on PRS internalizing, depression, or anxiety baseline elevations ($T \geq 60$)

Table 4

Clinically Significant Self-Report BASC-2 Broadband Scales Across Data Points

BASC-2 SRP Scale	Baseline (N = 36)	Final (n= 31)
Internalizing Problems	8% (3)	0
Inattention/Hyperactivity	11% (4)	3% (1)
Emotional Symptoms Index	3% (1)	3% (1)
Personal Adjustment	3% (1)	0
Two+ Elevations	44% (16)	32% (10)
Zero Elevations	31% (11)	62% (19)
Percent return rate	100%	86%

Table 5

Clinically Significant Parent-Report BASC-2 Broadband Scales Across Data Points

BASC-2 PRS Scale	Baseline (<i>n</i> = 27)	Final (<i>n</i> = 16)
Externalizing Problems	4% (1)	6% (1)
Internalizing Problems	15% (4)	13% (2)
Behavioral Symptoms Index	0	0
Adaptive Skills	0	0
Two+ Elevations	26% (7)	6% (1)
Zero Elevations	55% (15)	75% (12)
Percent return rate	75%	44%

Table 6

Percent of Improvement, Stability, and Reduction in GPA at Final and Follow-up Assessment

	Final (<i>n</i> = 34)	Follow-up (<i>n</i> = 21)
Improved	18 (53%)	12 (57%)
Stable	4 (12%)	2 (10%)
Worse	12 (35%)	7 (33%)

Table 7

The Percentage of Improvement, Stability, and Reduction in Attendance at Final and Follow-up Assessment

	Final (<i>n</i> = 32)	Follow-up (<i>n</i> = 22)
Improved	6 (19%)	6 (27%)
Stable	18 (56%)	10 (46%)
Worse	8 (25%)	6 (27%)

Table 8

The Percentage of Improvement, Stability, and Increases in Discipline Incidents at Final and Follow-up Assessment

	Final ($n = 32$)	Follow-up ($n = 22$)
Improved	6 (19%)	1 (5%)
Stable	19 (59%)	15 (68%)
Worse	7 (22%)	6 (27%)

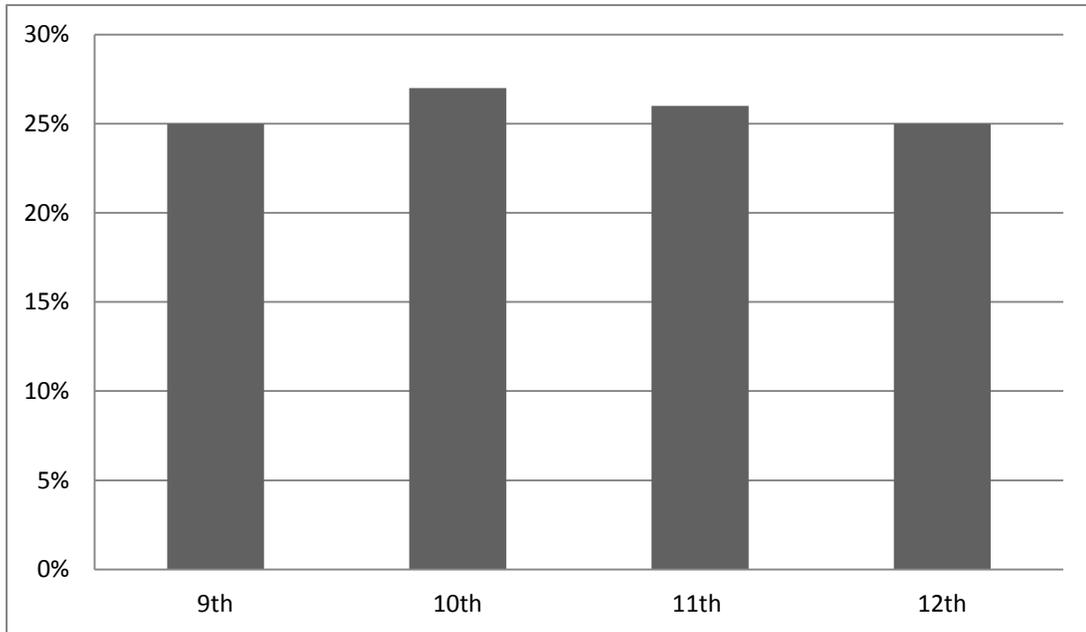


Figure 1. WHS students by grade level who endorsed a core symptom of a Major Depressive Episode within the previous year.

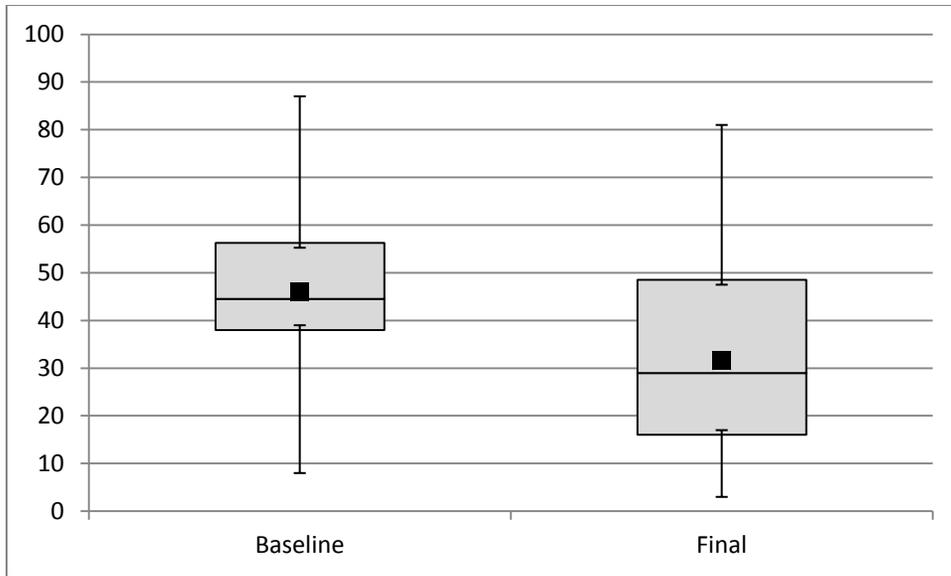


Figure 2. Mean baseline and final YOQ-30 scores for the sample.

Vita

Abby Elizabeth Albright was born in Richmond, Virginia, to Michael and Nancy Albright. She graduated from James Madison University in Virginia in December 2009 with a Bachelor of Arts in psychology. In the fall of 2010, she accepted a research assistantship in psychology at Appalachian State University and began study toward a Master of Arts degree. The M.A. was awarded in May 2013. In August 2013, Abby enrolled in a doctoral program at the University of South Carolina to pursue a Ph.D. in the Clinical-Community Psychology program.

Abby's research and clinical interests focus on providing adolescents with mental health services in rural regions. More specifically, Abby has conducted research and gained clinical practice within a school mental health program at Watauga High School. She will continue this line of research while studying at USC.