THE ROLE OF STIGMA, SCHOOL CONNECTEDNESS, AND DEPRESSION IN SCHOOL-BASED MENTAL HEALTH

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Abstract

THE ROLE OF STIGMA, SCHOOL CONNECTEDNESS, AND DEPRESSION IN SCHOOL-BASED MENTAL HEALTH

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Stigma is a significant barrier to receiving mental health services. Public stigma may be especially salient for adolescents, for whom social relationships are of particular importance. Public stigma has been shown to predict self-stigma, which has associated with depression. In contrast, school connectedness has been shown to be a protective factor against depression. However, the relationship between school connectedness and stigma has not yet been established. Further, very little research exists to inform adolescent experiences of stigma, in part due to a lack of validated instruments to measure stigma among youth receiving mental health services. The present study examined the factor structure of two measures of stigma adapted for use in school mental health, as well as the factor structure of the Psychological Sense of School Membership (PSSM). Additionally, the current study investigated the relationship between public stigma, self-stigma, school connectedness, and depression among adolescents receiving mental health services in a school setting. Results indicated serious problems in the measurement of public stigma and school connectedness. Additional findings are discussed.

Keywords: stigma, school connectedness, depression, adolescents, school mental health

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Dedication

This thesis is dedicated to my parents, Julie and Robert Schorr. Thank you for instilling in me a passion for learning and the stubborn willfulness to never give up.

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The Role of Stigma, School Connectedness, and Depression in School-Based Mental Health

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The Role of Stigma, School Connectedness, and Depression in School-Based Mental Health

Though approximately one in five adolescents in the U.S. suffers from a mental disorder, the majority are left untreated (Costello et al., 1996; Flisher et al., 1997; Kataoka, Zhang, & Wells, 2002). Untreated childhood mental illness is associated with poor long-term outcomes (Mattison, Spitznagel, & Felix, 1998), including increased rates of school dropout and expulsion (Stoep, Weiss, Kuo, Cheney, & Cohen, 2003), more frequent interaction with the court system (Office of the Surgeon General, 2001), and decreased quality of life (Bastiaansen, Koot, & Ferdinand, 2005). Stigma is among the most notable of barriers to accessing mental health treatment. In a sample of 49 adolescents, Bowers, Manion, Papadopoulos, and Gauvreau (2013) found 69.5% identified stigma as a meaningful barrier to receiving school-based mental health services. Of those who reported having mental health concerns, over half endorsed stigma as the most prominent obstruction to accessing services. Stigma may serve as an impediment for receiving treatment due to expected social consequences or to a belief that mental illness is a sign of weakness (Chandra & Minkovitz, 2007). The vast majority of stigma research, however, has been conducted using adult participants (Mukolo, Heflinger, & Wallston, 2010), and models of stigma derived from this research may not reflect the experiences of adolescents accurately. Further understanding of the adolescent perspective is crucial to improving treatment accessibility and utilization.

Conceptualization of Stigma

Classically, stigma has been defined as "an attitude that is deeply discrediting and reduces the bearer from a whole and usual person to a tainted, discounted one" (Goffman, 1963, p. 3). Stigma is not a static construct, but a dynamic process that changes over time. Link and Phelan (2001) posited that stigmatization is the co-occurrence of labeling,

stereotyping, separation, status loss, and discrimination within the context of a power differential; this definition serves as the basis for Modified Labeling Theory (MLT). MLT proposes a mechanism by which negative beliefs held broadly by members of a social group influences behavior that devalues and discriminates against individuals with mental illness. Link, Cullen, Struening, Shrout, and Dohrenwend (1989) suggest that all members of a society, regardless of mental health status, develop unique understandings about the social implications of possessing a label of mental illness. Specifically, individuals form beliefs about the extent to which most people in society will devalue and discriminate against people with mental illness. The authors argue that an individual may not personally endorse these negative attitudes, but will still likely believe that most others would discriminate against and devalue those with mental illness. These beliefs are typically established long before a person enters treatment (Link et al., 1989; Link & Phelan, 2001).

MLT posits that a diagnostic label brings personal relevance to the broadly held belief that society devalues and discriminates against individuals with mental illness. Thus, an individual who has labeled with a diagnosis will become increasingly concerned with how he or she expects to be treated by most people (Link et al., 1989). MLT contends that an individual who expects to be treated poorly by most people may cope by concealing his or her mental illness status or by withdrawing from social interaction. However, these responses often result in a sense of shame, social isolation, and reduced self-esteem (Link, Mirotznik, & Cullen, 1991). This model proposes that stigma is shaped by the experiences of discrimination from others as well as the stigmatized individual's response to such experiences, suggesting that both external and internal factors influence the development of stigma. Though this conceptual framework was developed for mental health stigma among

adults, it provides an informed foundation upon which research of adolescent stigma can build (Moses, 2009; Mukolo et al., 2010).

Corrigan (2004) elaborated upon MLT by identifying public stigma and self-stigma as related but conceptually distinct constructs. Public stigma is characterized by social devaluation and discrimination against individuals with mental illness. In contrast, self-stigma occurs when an individual who possesses a label of mental illness internalizes and self-applies prejudicial beliefs about mental illness. In the context of MLT, public stigma relates to the social mechanism through which individuals develop a belief that negative attitudes toward the mentally ill are widely held, and self-stigma refers to the sense of shame and reduced self-esteem experienced by persons with mental illness in response to public stigma (Corrigan, 2004; Corrigan & Watson, 2002). Consistent with the principles of MLT, longitudinal research suggests a temporal relationship in which public stigma predicts future self-stigma (Vogel, Bitman, Hammer, & Wade, 2013).

While there is evidence to support an association between public and self-stigma (e.g., Vogel et al., 2013), the relationship appears to operate indirectly. Corrigan, Rafacz, and Rüsch (2011) suggested a progressive model of stigma, through which one must interact with stereotypes about mental illness before they can inflict psychological harm. Corrigan et al. hypothesized that one must be aware of stereotypes before they can be endorsed, and one must endorse the stereotypes before they can be self-applied. Only after an individual has applied stigmatizing beliefs toward oneself can stigma result in a decrement of self-esteem. The authors found moderate support for this "trickle down" approach. Results showed that the mean scores of stereotype awareness were greater than those for stereotype endorsement, which were, in turn, greater than mean scores of self-stigma and its harmful effects. The

greatest discrepancy was found between stereotype awareness and endorsement, suggesting a meaningful difference between being cognizant of a stereotype and agreeing with it. Of note, no statistically significant differences were found between mean scores of self-application of stigma and stigma-related harm. Additionally, multiple regression analyses indicated strong associations between self-stigma and hopelessness, even when controlling for depression, suggesting little discrepancy between the development of self-stigma and adverse effects such as hopelessness and low self-esteem (Corrigan et al., 2011). These findings suggest that public stigma influences but does not solely determine the development of self-stigma.

Stigma Among Adolescents

Unfavorable attitudes toward mentally ill individuals develop early in life and may be present long before the emergence of psychological symptoms (Wahl, 2002), thereby establishing in childhood the foundation for self-stigma with stereotype awareness and endorsement. Wahl, Susin, Lax, Kaplan, and Zatina (2012) surveyed 193 middle school students and found that 72% perceived that individuals with mental illness were often treated unfairly. While children are often unable to identify specific prejudices or stereotypes, children in the third grade tend to rate individuals with mental illness as generally more negative than they do individuals with physical disabilities (Adler & Wahl, 1998). Additionally, children's negative beliefs about the mentally ill tend to increase with age (Wahl, 2002).

Given the heightened importance of social relations in adolescence, public stigma may be especially germane to this population (Chandra & Minkovitz, 2007). Adolescents who are considering seeking mental health services may be deterred by expected negative reactions from peers, such as teasing or social exclusion (Kranke, Floersch, Townsend, &

Munson, 2010; Moses, 2010b). Chandra and Minkovitz (2007) found that the majority of the teens interviewed expected that most young people would have negative reactions if they were to find out a peer were receiving mental health services. Participants predicted that though some teens would be accepting of a peer's mental illness, many would tease or harass a classmate and others would increase social distance.

Concern about public stigma among adolescents may not be unfounded. Like adults, adolescents often prefer to maintain social distance from individuals with mental illness. Wahl et al. (2012) found that 90% of the students surveyed indicated that people with mental illness should be treated with respect and many rejected stereotypes, including the notion that people with mental illness were dangerous or that it would be wise to avoid people with mental illness. However, less than half (42%) reported that they would invite a peer with mental illness into their home and only 14% indicated that they would date someone with a mental illness. These findings suggest that youth often prefer social distance from individuals with mental illness even when they reject stigmatizing attitudes.

Consistent with the reported preference for social distance, adolescents who are diagnosed with a mental illness tend to experience less social support (O'Driscoll, Heary, Hennessy, & McKeague, 2012; Moses, 2010b). A study conducted by Moses (2011) demonstrated that adolescents with low levels of support from friends reported greater anticipation of stigma, which suggests an association between social support and perception of stigma. Furthermore, in a separate study of 56 adolescents receiving mental health treatment, Moses (2010b) found that almost two-thirds reported experiencing devaluation from some friends following diagnosis. Social rejection prompted most youth to seek more accepting friends, but nearly one in five reported almost complete social isolation due to their

mental illness status. For some teens, social withdrawal may be an effort to manage feelings of shame related to having a mental illness (Kranke et al., 2010). However, coping through disengagement or avoidance is associated with psychological and physiological distress (Miller & Kaiser, 2001).

Alternatively, adolescents may respond to expected or experienced social rejection by attempting to conceal their mental illness from others (Kranke et al., 2010). Chandra and Minkovitz (2007) found that most adolescents were hesitant to discuss mental health concerns with friends, family, and teachers. Given the expected and actual reactions of people to individuals with mental illness, secrecy is often intended as a coping response. However, secrecy may place undue strain on an individual, ultimately inflicting more harm than good (Hinshaw, 2005; Link et al., 1991). Moreover, secrecy to protect against stigma is associated with interpersonal strain, shame, and negative affect (Pachankis, 2007).

In addition to diminished peer support, adolescents with mental health issues may also experience reduced support from adults. Moses (2010b) also found that over one-third of participants experienced discriminatory treatment by some school employees. Students reported feeling underestimated, avoided, feared, and scapegoated by teachers or other school staff. Adults tend to find behaviors considered typical of mental illness (e.g., depression, hyperactivity, inattention) to be disturbing and prefer social distance from children who displayed such behaviors (Martin, Pescosolido, Olafsdottir, & Mcleod, 2007).

Despite the myriad sources of public stigma to which adolescents with mental illness are exposed, proportionally few endorse self-stigmatizing beliefs. Upon surveying 60 adolescents with diagnosed mental illness, Moses (2010a) found that 23% reported frequently experiencing self-stigmatizing beliefs. This is consistent with findings from adult

samples, in which 20-25% of adults with non-psychotic affective disorders reported frequently experiencing of self-stigmatizing beliefs (Brohan, Gauci, Sartorius, & Thornicroft 2010; Yen et al., 2005). Furthermore, this suggests discordance between the awareness of public stigma and the endorsement of self-stigma. This is consistent with the trickle-down model proposed by Corrigan et al. (2011), which suggests that factors other than public stigma influence the development of self-stigma. Thus it appears that public stigma contributes but cannot solely account for self-stigma.

Depression has been associated with both public and self-stigma. Depressed adults have been shown to perceive higher public stigma than non-depressed individuals (Golberstein, Eisenberg, & Gollust, 2008), and Pyne et al. (2004) found that severe depression predicted perceived public stigma. Furthermore, Corrigan, Watson, and Barr (2006) demonstrated a moderate correlation between self-stigma and depression, while Yen et al. (2005) found that depression predicted self-stigma among depressed adult outpatients in Taiwan. Among a sample of adolescents with severe mental illness, Moses (2009) found that depression predicted both public stigma and self-stigma scores. The association between depression and self-stigma, however, may be complicated by the tendency for depression to cast all perceptions in a negative light. Therefore it may be challenging to distinguish whether self-stigmatizing attitudes are the product of the internalization of stigma or the product of depression (Corrigan & Watson, 2002). MLT suggests that self-stigma would produce depression and Moses' findings support the direction of this relationship. However, the reverse may also be true; the pessimistic outlook of depression may cause individuals to experience a more negative self-concept and therefore more likely to self-stigmatize (Moses, 2009). It is possible that the relationship between depression and self-stigma is bidirectional;

that which is suggested by MLT, in which individuals self-affix negative beliefs about mental illness, resulting in depression, and one in which depression produces globally negative perceptions that permeate an individual's beliefs about mental illness and form the basis for self-stigma. While the two constructs appear to be closely interrelated, Moses' findings and those in the adult literature (e.g., Corrigan et al., 2006) have demonstrated statistical distinctions between depression and self-stigma, suggesting that self-stigma is likely influenced, but not solely accounted for, by depression.

While the literature on adolescent stigma is scarce, research examining bully victimization of adolescents may provide some additional insight into characteristics of stigma in adolescents. Conceptually, stigmatization and bullying are closely linked. Both stigma and bully victimization refer to the social exclusion that occurs in the presence of a power imbalance (Link & Phelan, 2001; O'Brennan & Furlong, 2010). Skues, Cunningham, and Pokharel (2005) suggested that, much like the targets of stigmatization, victims of bullying might experience a sense of social distance from their peers. It is important to note that bullying is "proactive aggression" and therefore does not require the victim to possess a stigmatized condition (Olweus, 1993). Therefore, despite their shared components, these constructs should not be conflated. Nevertheless, youth who are the victims of bullying often face similar experiences as those who are stigmatized; namely, both are likely to be the target of teasing or harassment (Moses, 2010a; O'Brennan & Furlong, 2010) and both are at increased risk of depression (Moses 2009; Brunstein Klomek, Marrocco, Kleinman, Schonfeld, & Gould, 2007), and low self-esteem (Corrigan et al., 2006; Skues et al., 2005).

Given the conceptual and outcome similarities between bullying and stigma, it is conceivable that correlates of bully victimization may also be related to stigma. Of particular

interest is the relationship between stigma and school connectedness. To the best of our knowledge, a potential association between adolescent mental illness stigma and sense of school connectedness has not previously been examined. Adolescent mental illness stigma, however, is underrepresented in the literature and therefore analogous research on otherwise marginalized adolescents may better inform our predictions.

School Connectedness

Schools are the most common entry point for youth to receive mental health services (Farmer, Burns, Phillips, Angold, & Costello, 2003; Lyon, Ludwig, Vander Stoep, Gudmundsen, & McCauley, 2013; Stephan, Weist, Katoka, Adlesheim, & Mills, 2007). For this reason, the school context may provide important insight into adolescent experiences of mental illness stigma. School connectedness is a particularly useful representation of the school context. School connectedness has been defined as "the extent to which students feel personally accepted, respected, included, and supported by others in the school social environment" (Goodenow, 1993b, p. 80). Also referred to as school membership or school engagement in the literature, school connectedness encompasses students' academic engagement, sense of belonging, perceived fairness, and sense of autonomy and empowerment at school (Libbey, 2004).

A strong connection to school is associated with a host of positive outcomes. School connectedness appears to function as a protective factor from substance use, gang involvement, and school withdrawal or expulsion (Catalano, Haggerty, Oesterle, Fleming, & Hawkins, 2004; McNeely & Falci, 2004). Students who report feeling highly connected to school also tend to demonstrate greater academic achievement, effort, participation, and earn higher grades than those who experience overall detachment from school (Goodenow, 1993a;

Hagborg, 1998). Furthermore, a school connectedness intervention program developed by Eggert, Thompson, Herting, Nicholas, and Dicker (1994) revealed that students receiving the intervention showed progressively higher school connectedness scores and correspondingly increasing self-esteem scores. In contrast, the scores of the students in the control group, who did not receive any intervention, remained stable for both constructs. This suggests that school connectedness and self-esteem are closely intertwined.

Likewise, low school connectedness predicts a host of negative outcomes in adolescent students. Students with low levels of school connectedness are more prone to internalizing symptoms such as anxiety and depression (Langille, Rasic, Kisely, Flowerdew, & Cobbett, 2012). This association between school connectedness and depression has been well documented in the literature and school connectedness has been identified as an important protective factor against adolescent depression (e.g., Anderman, 2002; Langille et al., 2012; Millings, Buck, Montgomery, Spears, & Stallard, 2012). Drawing from a large sample of Australian adolescents, Shochet, Dadds, Ham, and Montague (2006) found a moderate correlation between depression and school connectedness. Moreover, these authors found evidence that supports a temporal relationship in which low levels of school connectedness predict later depressive symptoms. Furthermore, Rosenfeld, Richman, and Bowen (1998) found that students who perceived receiving little support from the school had lower self-esteem and felt less able than their moderately supported peers to overcome school problems. Thus it appears that school connectedness has important implications for adolescent mental health.

Research also suggests a negative association between school connectedness and bully victimization. Skues et al. (2005) surveyed nearly 4,800 students attending American

middle and high schools and found that students who experienced frequent teasing or harassment from peers tended to hold negative attitudes toward school. Similarly, O'Brennan and Furlong (2010) found that students' level of school connectedness was associated with bully victimization, particularly when the bullying included teasing, mocking, or other verbal harassment. Consistently, Eisenberg, Neumark-Sztainer, and Perry (2003) found that students who reported frequently experiencing bully victimization had lower self-esteem and were less connected to peers, teachers and school, as compared to students who were sometimes bullied. Furthermore, students who experienced occasional bullying reported lower self-esteem and school connectedness than those who rarely experienced such victimization. Thus it appears that bully victimization and school connectedness are inversely related. Given the shared components of stigma and bully victimization, it is tenable that stigma and school connectedness would exhibit a similarly negative association.

The Present Study

MLT posits that individuals who perceive and endorse a high degree of social stigma will internalize the prejudicial beliefs and develop self-stigmatizing attitudes (Link et al., 1989; 1991). However, not all individuals who experience public stigma develop self-stigmatizing beliefs (Corrigan et al., 2011; Vogel et al., 2013). It was hypothesized that the extent to which an adolescent feels connected to his or her school and levels of depression may explain some of this variance.

The current study aimed to adapt and validate measures of public stigma and self-stigma for youth receiving SMH services. Additionally, this study tested the factor structure of the PSSM among this same sample of adolescents receiving SMH services. The third aim of this study was to investigate a potential relationship between perceived public stigma, self-

stigma, school connectedness, and depression among adolescents receiving school-based mental health services. Informed by findings from the adult literature (e.g., Corrigan, 2004; Vogel et al., 2013), we posited that perceptions of public stigma would independently predict self-stigma. Drawing from analogous literature on bully victimization and school connectedness (e.g., O'Brennan & Furlong, 2010), we hypothesized that school connectedness would also predict self-stigma. Further, it was hypothesized that public stigma would predict school connectedness and that school connectedness would predict depression.

Both public and self-stigma have been associated with depression and depression may play an integral role in the perception of stigma (e.g., Golberstein et al., 2008; Moses, 2009). However, it is tenable that depression interacts with stigma in complex ways that may not be accurately represented by a predictive model and cross-sectional design. Therefore it was considered parsimonious to treat the respective relationships between depression and public stigma and self-stigma as bidirectional.

Method

Participants

The sample consisted of 59 high school students (52.5% male; M_{Age} = 16.04, *SD* = 1.16) who received school mental health services through the Assessment, Support, and Counseling (ASC) Centers at high schools in three rural districts in western North Carolina. The majority of students were in the ninth- and tenth grades (33.9% 9th grade, 32.2% 10th grade, 18.6% 11th grade, 15.3% 12th grade). Demographic information is presented in Table 1.

Measures

Societal Devaluation scale. To assess students' perceived public stigma of receiving mental health services, a modified version of the Societal Devaluation (SD) scale (Moses, 2009) was administered. This 14-item self-report questionnaire was adapted from the Perceived Devaluation/Discrimination scale (Link, Streuning, Rahav, Phelan, & Nuttbrock, 1997; see Appendix A), a well-validated instrument for assessing public stigma among adults. The scale measures the extent to which students believe that most people would devalue or discriminate against youth who receive mental health services. Responses are rated on a five-point Likert scale, with one indicating *strongly disagreeing* and five indicating *strongly agreeing* with the item. Preliminary testing of this scale by its original author demonstrated adequate internal consistency ($\alpha = .76$) and comparisons between item responses and qualitative data indicated good construct validity. The modified measure demonstrated good internal consistency in this sample ($\alpha = .86$).

This SD scale was developed for use with youth with severe emotional disturbances who require a higher level of services than the current study population. In the present sample, a substantial proportion of the students demonstrated subclinical levels of symptoms and may not have perceived having any significant psychological or behavioral concerns. However, students may have been more willing to acknowledge general depression or anxiety as well as their involvement in counseling. Therefore, the phrases "emotional and behavioral issues" and "mental health issues" were replaced with "depression or anxiety" and the phrase "mental health treatment" was replaced with "in counseling" or "receiving mental health services." Furthermore, these linguistic adjustments improved the readability of this measure and the revised version is appropriate for students in the 8th grade or above (Kincaid,

Fisburne, Rogers, & Chissom, 1975). Additionally, the response options were modified from a four-point Likert scale to a five-point scale to improve sensitivity.

Self-Stigma scale. Self-stigmatizing attitudes were measured using the self-stigma (SS) scale, a five-item measure originally developed for use with children with epilepsy (Austin, MacLeod, Dunn, Shen, & Perkins, 2004; see Appendix B) and adapted by Moses (2009) to assess the extent to which youth with mental illness experience related shame and embarrassment. The items are rated on a five-point Likert scale ranging from one (*strongly disagree)* to five (*strongly agree*). In relation to epilepsy, the scale has shown adequate internal consistency ($\alpha = .81$). As adapted for mental illness, the measure has demonstrated good construct validity as evidenced by correlations between item content and qualitative data (Moses, 2009) and the modified scale showed good internal consistency with this sample ($\alpha = .90$).

To accommodate the reduced psychological acuity of the study population as compared to the population for which the measure was developed, "emotional and behavioral issues" and "mental health issues" were again replaced with "receiving counseling" or "receiving mental health services." Additionally, the item content was adjusted to capture the strength of self-stigmatizing beliefs rather than the frequency of self-stigmatizing experiences. Therefore response options were modified from a four-point scale ranging from "almost never" to "very often" experiencing the item to a five-point Likert scale that assesses the degree to which students endorse the item. These linguistic modifications improved this measure's readability, making the revised version appropriate for students in the 9th grade or above (Kincaid et al., 1975).

School connectedness. The Psychological Sense of School Membership (PSSM; Goodenow, 1993b; see Appendix C) consists of 18 items and responses are scored on a 5-point scale, with five items reverse-coded. Items tap in to student relationships with peers and teachers, as well as students' sense of pride and belonging. It has been adequately tested for use among adolescents and demonstrates strong psychometric properties, with an internal consistency reliability that ranges from .77 to .88 for different samples (Goodenow, 1993b). This measure demonstrated strong internal consistency among this sample ($\alpha = .90$).

The majority of studies using the PSSM have assumed it measures a single latent factor. Other studies, however, have suggested the PSSM may be more meaningfully used as a multidimensional measure. Hagborg (1994), using a principal-components factor analysis, found three latent factors that the author labeled belonging, rejection, and acceptance. Similarly, You, Ritchey, Furlong, Shochet, and Boman (2010) found support for three factors, which these authors referred to as caring relationships, acceptance, and rejection. Additionally, You et al. suggested there may be increased utility in an abbreviated, 12-item version of the PSSM, as their findings indicated six items which loaded on to at least two factors.

Behavioral Assessment Scale for Children-2. The Behavioral Assessment Scale for Children-2 (BASC-2; Reynolds & Kamphaus, 2004) is a norm-referenced measure designed to assess a spectrum of emotional and behavioral functioning. Students completed the Self-Report of Personality-Adolescent (SRP-A) version of the BASC-2 at the onset of services. The SRP-A consists of 176 items, of which 69 are rated in a true or false format and 107 are rated on a four-point scale of *never*, *sometimes*, *often*, and *almost always* true. The SRP-A produces 16 clinical, 4 content, and 5 composite scales, but only the depression scale scores

was used to assess the extent of students' depressive symptomatology. The SRP-A depression scale demonstrates high internal consistency ($\alpha = .84$) and good test-retest reliability (.82), with an interval of 13 to 66 days between test administrations (Reynolds & Kamphaus, 2004).

SRP-A scale scores are derived by calculating the sum of the items that contribute to each scale and converting the sum into a raw score. Raw scores are then transformed into *T*-scores based on a combined-sex normative sample of the general adolescent population. The BASC-2 *T*-scores have a mean of 50 and a standard deviation of 10. Scale scores that are two standard deviations above the mean (*T*-score > 70) are considered clinically significant. The normative sample of the SRP-A comprised of 1,900 adolescents that were nationally representative in terms of socioeconomic status, race, ethnicity, and geographic region, based on 2001 population estimates (Reynolds & Kamphaus, 2004).

Procedure

Data collection began upon university institutional review board approval on March 20, 2014; August 11, 2014; and August 20, 2015, respectively (see Appendix D). Students who were 18 years or older provided their own legal consent for treatment, while those under the age of 18 provided assent in addition to the written consent of their legal guardian or guardians (see Appendix E). Inclusion in this study required three or more therapy sessions with an ASC Center clinician, as well as the completion of the modified SD scale, modified SS scale, PSSM, and BASC-2. No exclusionary criteria were based on participant diagnosis, as clinical diagnosis is not necessary for ASC services.

The BASC-2 was administered at the onset of services. In order to allow students to become familiar with the nature of treatment prior to assessing stigmatizing beliefs, the SD

and SS scales on or between the third and fifth sessions. The PSSM was administered at the same time as the SD and SS scales, between the third and fifth sessions. Data collection was completed on October 13, 2015.

Analyses

Maximum likelihood estimate was used with the structural equation modeling (SEM) software Mplus Version 7.4 (Muthén & Muthén, 1998-2012). Because evidence for their validity is limited, confirmatory factor analyses (CFAs) were conducted on the SD and SS scales to examine the extent to which these scales measured single constructs as hypothesized. A single factor was expected to emerge from each scale. Additionally, a CFA was conducted on the PSSM to test the fit of both single- and three-factor models. The relationships between variables were then to be explored using a three-level path analysis (see Figure 1). Public stigma and school connectedness were each expected to predict self-stigma. Furthermore, public stigma was hypothesized to predict school connectedness, and school connectedness was expected to predict depression. Depression was expected to share a bidirectional relationship with public stigma and self-stigma, respectively.

To maximize power from a small sample, a bootstrapping procedure was used. While path analysis assumes normality, bootstrapping estimates the bias of a non-normal distribution to provide a more accurate estimate of the relationship between variables (Wright, London, & Field, 2011). The bootstrapping procedure created 500 bootstrap samples from the data set via random sampling with replacement, which were then used to calculate 500 bootstrap parameters to test the model 500 times, resulting in 500 estimates of each path coefficient. The path was considered statistically significant at the .05 level if the

95% bootstrapped confidence interval for path weights did not include zero (Shrout & Bolger, 2002).

Results

The mean item score on the modified SD scale was 2.64 (*SD* = .63) and the mean item score on the modified SS scale was 2.14 (*SD* = .93), with higher scores indicating greater endorsement of stigma. The mean item score on the PSSM was 3.27 (*SD* = .70), with higher scores indicating a stronger sense of school connectedness. The mean *T*-score on the BASC-2 depression subscale was 60.93 (*SD* = 14.67), which falls in the at-risk category. Correlations between scales are provided in Table 2. Though nonsignificant when $p \leq .05$, a negative correlation between the SS scale and BASC-2 depression subscale approached significance, $p = .053$. Additionally, a negative correlation between the PSSM and the BASC-2 depression subscale trended toward significance, $p = .064$. Interscale item correlations for each scale are provided in Tables 3-5.

The Kolmogorov-Smirnov test was used to assess normality of sample distribution. The SD scale, $D(59) = .06$, $p = .20$, and the PSSM, $D(59) = .09$, $p = .20$, did not deviate significantly from normal. However, the BASC-2 depression scale, $D(59) = .15$, $p = .003$, and the SS scale, $D(59) = .12$, $p = .045$, were both significantly non-normal. Of note, a large proportion (21.7%) of participants earned the lowest score possible (1.0) on the SS scale, endorsing none of the instrument's self-stigmatizing statements.

Factor Analyses of Study Instruments

Separate CFAs were used to test the following models. Due to the small sample size, a bootstrapping procedure using 500 samples was used to maximize power on these analyses. Further, the bootstrapping procedure is robust to non-normality within sampling distribution.

Societal devaluation. Results are presented in Table 6. The model chi-square tests the "exact-fit hypothesis", or whether the predicted covariances perfectly fit those observed in the data (Kline, 2011). The model chi-square is distinct from other indices in that it provides a significance value. A non-significant chi-square value indicates the model fits the data. The CFA resulted in a significant chi-square value, χ^2 (77) = 155.91, $p < .001$, suggesting a poor model fit to data. However, the model chi-square has several limitations, including its assumption that the model should perfectly fit, rather than closely approximate, the data. Further, the model chi-square value is prone to inflation with larger sample sizes. Therefore, consistent with the recommendations of Hu and Bentler (1999), additional fit indices were examined to assess model fit.

The model was evaluated using the criteria established by Hu and Bentler (1999), who recommend using the standardized square mean ratio (SRMR) supplemented with additional comparative fit indices. Model fit was evaluated using model chi-square, the comparative fit index (CFI), the root-mean-square error of approximation (RMSEA), and SRMR. The CFI (Bentler, 1990) tests the relative improvement of the hypothesized model against a null model that assumes zero population covariance between observed variables (Kline, 2011). According to the guidelines set by Hu and Bentler (1999), the minimum cutoff value for adequate fit is .90. The CFA tested here did not meet this cutoff value (CFI = .75). The RMSEA is a parsimony-adjusted index that favors simpler models of comparable explanatory power. The RMSEA is scaled as a "badness of fit" index, wherein a value of zero reflects the best model fit, and higher values indicate poorer fit (Kline, 2011). Hu and Bentler (1999) advised that a value below .06 indicates good model fit, while Browne and Cudeck (1992) suggested RMSEA value above .10 indicates unacceptable fit. The CFA

tested here failed to meet even these more lenient criteria (RMSEA = .13). The SRMR measures the overall difference between the observed and predicted correlations, with lower values indicating better fit (Kline, 2011). Hu and Bentler (1999) recommended a cutoff value of .08, with higher values indicating unacceptable fit. The CFA tested here exceeded that cutoff, suggesting a poor model fit (SRMR = .10).

Overall, these results suggest the single-factor model poorly explains the data. Though this CFA failed to converge on a one-factor solution, the scale demonstrated good internal consistency. Thus, the following analyses treated public stigma as an observed factor using the mean SD scale score rather than as a single latent factor. Additional implications for this scale are discussed in the limitations section.

Self-stigma. A CFA was run to test the one-factor model on the modified SS scale (Table 7). The model was evaluated using the criteria described by Hu and Bentler (1999), described above. According to the CFI and SRMR, the model demonstrated acceptable fit (CFI = .94, SRMR = .04). However, the model chi-square test was significant (χ^2 (5) = 15.86, p = .008), suggesting the model does not perfectly fit the data. While the model chi-square test has important limitations, discussed above, the RMSEA was also too high to be considered adequate (RMSEA = .19). Nevertheless, given the support from the CFI and SRMR, as well as its good internal consistency, this model fit was deemed acceptable.

Psychological sense of school membership. Separate CFAs were conducted to test one- and three-factor models (Table 8). Using the criteria established by Hu and Bentler (1999), model fit indices suggested poor model fit (χ^2 (135) = 227.93, p < .001, CFI = .78, RMSEA = .11, SRMR = .10). Considering only the items with significant factor loadings, we then ran a CFA to test a single factor model on a shortened, 12-item version of the scale. The

six items (Items 1, 8, 11, 12, 15, 16) that were eliminated were very similar to those dropped by You et al. (2010; Items 1, 8, 11, 12, 15, 17). However, this model also demonstrated poor fit (χ^2 (54) = 102.51, p = .001, CFI = .79, RMSEA = .12, SRMR = .10). Finally, a CFA was conducted to test a three-factor model on this 12-item scale (Table 8). This model also demonstrated inadequate fit (χ^2 (51) = 78.67, p = .008, CFI = .89, RMSEA = .97, SRMR = .09). Given the poor fit of all models tested, we decided to proceed using the single-factor model that includes all scale items. Further implications will be discussed in the limitations section.

Model path analysis. Preliminary evidence suggested the proposed model was impractical given the available data. Specifically, the original model relied heavily on the SD scale as the sole level one predictor. Given the poor psychometric properties of this scale, a revised version of this original model was tested (Figure 2). Public stigma, school connectedness, and depression were each expected to independently predict self-stigma. Furthermore, school connectedness was expected to predict public stigma and depression, respectively. Depression was expected to correlate with public stigma.

The total model with statistically significant path weights is presented in Figure 2. According to the SRMR and CFI, the model demonstrated acceptable fit (CFI = .91, SRMR = .06). However, other indices indicated poor model fit (χ^2 (17) = 39.41, p = .001, RMSEA = .15). Thus, the hypothesis was only partially supported by these data.

The model supported the hypothesis that societal devaluation would positively predict self-stigma (b = 1.61, β = .71, p < .001). Support for the hypothesis that school connectedness, as measured by the PSSM, would predict self-stigma was not found, however (b = .28, β = .14, p = .22). Further, none of the hypothesized relationships between school

connectedness and other model variables were supported, as school connectedness did not significantly predict societal devaluation (b = -.14, β = -.13, p = .33) or depression (b = -.01, β = -1.53, p = .16). Finally, as predicted, public stigma was significantly correlated with depression (b = 3.95, β = .44, p = .003). Overall, the model indicated that societal devaluation is a strong predictor of self-stigma. However, school connectedness was not shown to uniquely contribute to this model.

Discussion

The three major aims of this study were as follows: 1) to adapt and validate measures of public stigma and self-stigma for adolescents receiving SMH services; 2) to validate the factor structure of the PSSM among this same sample of youth receiving SMH services; and 3) to test a conceptual model of public stigma, school connectedness, and depression as predictors of self-stigma.

Instruments measuring mental health-related stigma in adolescents are notably lacking in the extant literature, and the measures developed by Moses (2009) had only preliminary support for their psychometric properties. Thus, one primary aim of this study was to adapt and independently validate these measures in a sample of youth receiving SMH services. The results of this study indicated the modified SD scale did not measure a single latent factor. However, it did not appear that the data would be better represented as a multidimensional construct either. Thus, despite the high internal consistency of the scale, the results suggested the modified version of this scale did not accurately measure perceptions of public stigma within this sample. It is possible the scale's items, which included six items tapping into the stigma of receiving counseling and eight items about the of having mental health concerns, may have been measuring two distinct forms of stigma.

While Link (1987) originally conceptualized the stigma of help-seeking underneath the broader umbrella of mental illness stigma, some research has suggested a more nuanced distinction between these types of stigma. For example, Ben-Porath (2002) found that individuals perceived greater public stigma toward those who sought help for depression than those who did not seek help yet displayed symptoms of depression. While this study's sample was unique in that most participants did not independently initiate help-seeking, but instead were referred by school counselors, administrators, teachers, or parents, these results may suggest important differences in the stigma of having mental health concerns and that of receiving mental health services. Further, the involvement of school personnel in accessing services may impact students' perceptions of stigma, as the referral may have implied approval of utilizing mental health services. It is possible these factors were too complex to be represented by a single scale, and future research may benefit from limiting the scope of the instrument to the stigma of having mental health concerns or to that of receiving treatment.

Some support was found for the modified SS scale, also developed by Moses (2009). The scale met criteria for adequate model fit on two of four fit indices, suggesting the instrument has some utility in measuring self-stigma as a single factor with adolescents receiving SMH services. However, the model chi-square test demonstrated that the model does not fit the data and the model exceeded the cutoff value on the RMSEA. Thus, while the modified SS scale was deemed adequate, it leaves room for improvement in the measurement of self-stigma. Further, nearly one-quarter of the sample scored the lowest value possible, indicating strong disagreement with each of the self-stigmatizing statements. This may represent a fairly low prevalence of self-stigma within this sample, which would be

consistent with the aims of SMH programs to provide accessible and acceptable services (Bringewatt & Gershoff, 2010; Owens, Watabe, & Michael, 2013), as well as Moses' (2010a) finding that only approximately one-quarter of her sample reported frequently experiencing self-stigmatizing beliefs. However, it is also possible that the scale lacks the sensitivity needed to detect low-levels of self-stigmatizing beliefs or that items fail to capture self-stigma as experienced by adolescents in treatment settings.

Important distinctions exist between the sample used in this study and the sample with which Moses (2009) originally tested the SD and SS scales. The participants in Moses' sample were predominantly male and all had been diagnosed with at least one psychological disorder. Importantly, the majority reported extensive histories of mental health problems and treatments, and all were receiving services through a wraparound program. Wraparound programs are designed for individuals who are at risk for institutional placement and the services provided are much more intensive than those provided in SMH settings, where many of the participants had no previous experience with mental health care and, in many cases, may not have been provided a diagnostic label as services were not based on diagnosis.

To accommodate for the discrepancy in psychological acuity and intensity of services, linguistic modifications were made to both the SD and SS measures. Additionally, minor adjustments were made to improve the readability of these measures to ensure they were appropriate for high school students. Despite efforts to retain item meanings, it is possible these adjustments affected students' interpretation of these items. For example, it was believed the phrase "depression or anxiety" would be more relatable to students than the original measures' terminology ("emotional and behavioral issues" or "mental health issues"). However, this modification may have also served to limit the scope of the measure

to depression and anxiety, which may be perceived as less stigmatizing than the broader term "issues". Further, the context in which services are received may differently affect adolescents' perceptions of stigma. Additional instrument modifications may be necessary to accurately capture the perception of stigma among subclinical youth and those receiving SMH services.

To the best of my knowledge, no other studies have examined the factor structure of the PSSM in the context of a SMH program. Thus, another important aim of this study was to investigate its structure in this setting. Much of the existing research has used the PSSM to represent a single observed factor, but evidence from two separate studies suggest that it may be better represented as multidimensional construct (Hagborg, 1994; You et al., 2010). In these studies, support was found for a three-factor model, and You et al. (2010) demonstrated preliminary support for an abbreviated, 12-item version of the PSSM based on these three factors. However, these findings were not replicated by this study, which supported neither a one- nor three-factor model of the PSSM. Compared with the single-factor model, the three-factor model suggested modest improvements, but model fit indices remained within unacceptable ranges. This may be due to limited variance within the sample or may reflect differences in measuring school connectedness among a sample of youth receiving SMH services.

The third aim of this study was to test a conceptual model of public stigma, school connectedness, and depression in the prediction of self-stigma. Initially, a three-level path analysis was proposed. However, upon review of preliminary statistics, it became clear that the original model was untenable because it was limited by the poor psychometric properties of the instruments used. The instability of the scales, namely the modified SD scale and the

PSSM, rendered the original model unworkable. Thus, for the purposes of this study, the model was revised to a three-level path analysis with public stigma, school connectedness, and depression as predictors of self-stigma. In retaining these three factors as unique predictors of self-stigma, the revised model more appropriately represents the data and continues to fulfill the aims of this study.

Consistent with predictions from Modified Labeling Theory (MLT) and the results of previous research, public stigma was shown to predict self-stigma. Further, a positive relationship between public stigma and depression was supported by this study, suggesting that those with high perceptions of public stigma also tend to endorse more depressive symptoms. However, a similar relationship between depression and self-stigma was not found; the trend toward a modest correlation between depression and self-stigma failed to reach significance, and depression did not significantly predict self-stigma in the larger model. This finding was particularly surprising, as adult studies have suggested depression is a moderately strong predictor of self-stigma among adult samples (Yen et al., 2005). Further, it is commonly assumed that depression symptoms interfere with the measurement of self-stigma and it is convention to control for its effects on self-stigma (e.g., Corrigan et al., 2011; Corrigan et al., 2006; Moses, 2009). In addition to concerns about measure overlap, self-stigma shares many conceptual elements commonly associated with depression, such as negative attributional biases and self-focused attention (Abramson, Seligman, & Teasdale, 1978; Pyszczynski, Holt, & Greenberg, 1987). The lack of support for the relationship between depression and self-stigma in this study may reflect the lack of sensitivity of the modified self-stigma scale or may reflect unique experiences of depression and self-stigma in SMH contexts.

Although there is a wealth of research investigating the relationship between public stigma and self-stigma, this is the first known study to examine school connectedness within the context of stigmatizing attitudes. However, the effect of school connectedness was minimal; it was predictive of neither public stigma nor self-stigma. Further, examination of scale correlations revealed no significant relationships between school connectedness and either type of stigma. Particularly surprising was the lack of support for school connectedness in this model. The relationships between school connectedness and stigma were exploratory in nature, and the findings suggest that sense of school membership may not meaningfully explain either type of stigma. However, this study also did not replicate the well-documented relationship between school connectedness and depression (e.g., Anderman, 2002; Resnick et al., 1997; Shochet et al., 2006). Conclusions about this model should be made with caution due to the psychometric properties of the measures used. However, several additional explanations for the lack of support for this model should also be considered.

One possible explanation for this discrepancy may be within the SMH context from which the sample was drawn, as most previous research has been conducted with a general sample of adolescents. The PSSM mean item response in this sample was slightly lower than means reported in other studies, which ranged from 3.54 (*SD* = .69; Hagborg, 1994) to 3.86 (*SD* = .72; Goodenow, 1993b). These lower scores may reflect the clinical nature of this sample, as school connectedness has been associated with internalizing problems (Langille et al., 2012; Shochet et al., 2006) as well as delinquency and externalizing behaviors (Battistich & Hom, 1997; Catalano et al., 2004). However, the depressive scores, which fell into the at-risk category, would likely be higher among this sample than in a general sample of adolescents. Thus, if there were a relationship between school connectedness and depression,

it should have been easily detected in this sample. That no relationship was found may suggest the presence of additional factors influencing these constructs.

Another possible explanation lies within the nature of the schools and school districts from which this sample originates. In her original study of the PSSM, Goodenow (1993b) found significantly higher scores among students at a suburban high school compared to those at two urban ones (mean scores of 3.86 and 3.10, respectively). Scores between the two urban schools were not significantly different, indicating that school connectedness may vary by population density. Other studies, however, found no differences in school connectedness across rural, suburban, and urban schools (McNeely, Nonnemaker, & Blum, 2002; Thompson, Iachan, Overpeck, Ross, & Gross, 2006). Thus, while the rural setting of this study should not be ignored, additional contextual factors should be considered.

Research suggests that school connectedness is inversely related to school size (Blum, McNeely, & Rhinehart, 2002; McNeely et al., 2002; Thompson et al., 2006). The recommended size to promote school connectedness varies across studies but maximum optimal sizes ranged from 300-600 (Blum et al., 2002; McNeely et al., 2002). In contrast, 85% of participants in this study attended schools with student body populations ranging from approximately 800 to 1,300; the remaining participants attended schools with approximately 400 students.

McNeely et al. (2002) also found a relationship between school connectedness and participation in extracurricular activities. However, they did not find support for their hypothesis that students in larger schools would have fewer opportunities to participate in extracurricular activities. In some cases, extracurricular opportunities may be more plentiful in smaller schools, where fewer individuals are vying for membership to a group whose

participation levels may be capped. However, this notion assumes that the variety and availability of extracurricular activities offered by schools will be constant across schools of various sizes. Small schools, particularly those in economically disadvantaged areas, may lack the financial resources needed to provide a wide array of academic and extracurricular opportunities available to students. Therefore, the protective effects of small schools may be limited to those with sufficient funding.

Studies exploring possible relationships between school funding issues and school connectedness have been largely absent from the literature, though Thompson et al. (2006) found lower levels of school connectedness at schools with high percentages of economically disadvantaged students. Further, data suggests that many high-poverty schools have per-pupil personnel expenditures lower than the national average (Heuer & Stullich, 2011), suggesting that schools with high rates of students in poverty also suffer from a lack of funding. While a direct measure of school funding was not available, two of the three school districts used in this study had rates of students eligible to receive free or reduced lunch higher than the state average (North Carolina Department of Public Instruction, 2015), a proxy measure to suggest higher-than-average poverty rates among students.

School funding issues may be particularly salient in the current economic climate, which has changed dramatically in the past decade. A recent report indicates that 31 states, including North Carolina, have decreased funding to schools since the 2008 recession (Leachman, Alabares, Masterson, & Wallace, 2016). Furthermore, North Carolina is currently ranked 46th in school funding, and funding has decreased in wealthy districts and stagnated in poor districts (Baker, Sciarra, & Farrie, 2015). Thus, it is possible these lower school connectedness scores reflect school-level factors such as economic climate and, given

this context, scores lack the sensitivity to predict depressive symptoms. As much of the extant literature on school connectedness emerged in the 1990s and early 2000s, before the onset of the global financial crisis, it is possible the field's current understanding of school connectedness may need to be updated to reflect modern realities.

In addition to the changes in the present fiscal climate, the past decade has been marked by rapid advances in technology, many of which may impact students' engagement in school. Several studies have suggested the use of social media may partially fulfill individuals' social needs by providing a sense of connectedness and belonging (Bessiere, Kiesler, Kraut, & Boneva, 2008; Grieve, Indian, Witteyeen, Tolan, & Marrington, 2013; Lee, 2009). Most research has examined social media use to communicate with peers, where it may enhance existing social connections (Valkenburg & Peter, 2009). However, isolated youth may utilize social media to initiate relationships with people outside of schools and other traditional social contexts (Lee, 2009). Research suggests meaningful differences exist social connectedness derived from social media use and that derived from in-person interactions (Grieve et al., 2013). However, it is unclear as to whether online social connectedness functions similarly to school connectedness. Future research should examine the relationship between social media use and school connectedness, particularly among youth who use social media to maintain primarily online relationships.

Limitations

These findings were limited by a number of factors. Notably, this study faced multiple problems with measurement. In order to improve our understanding of adolescent perceptions of stigma, particularly those experiencing mental health concerns or receiving

mental health treatment, future research should focus on the development and validation of instruments to assess stigma for this population.

In addition to the problems with the measurement of stigma described above, this study was not able to replicate previous studies' support for a three-factor model of the PSSM. This may partially explain the nonsignificant values for many of the proposed paths. Future research should examine the factor structure of the PSSM in various school contexts, including in rural schools and within SMH programs. It may be also valuable for the PSSM to be administered by a person other than the primary clinician so as to minimize bias in student responses.

This study is also limited by its cross-sectional design. Thus, the present results are only correlational and do not suggest causation. Further, these results only represent attitudes and experiences within a short window of time. Future research should examine longitudinal changes in stigma and school connectedness over time to gain additional insight into these variables.

Finally, the small sample size limited the ability to draw conclusions from the models tested. While the bootstrapping procedure maximized power, this small sample size provided a limited pool of variance from which to draw upon, thereby heavily weighting the individual responses for each item. This, in addition to the psychometric properties of the modified SD scale and the PSSM, limited the conclusions that can be drawn from the model.

Summary

Results did not support a relationship between stigma, school connectedness, and depression among adolescents receiving SMH services. However, perhaps the most striking finding of this study was the poor psychometric properties of the only available instruments

to measure public stigma among adolescents receiving mental health services. Results suggested this scale does not accurately represent youth perspectives of stigma, severely limiting research on stigma and associated factors. Also notable was this study's lack of support for the factor structure of the PSSM. A variety of contextual factors, including the SMH setting, rural area, and sociopolitical climate, may have impacted the psychometric properties of this scale and suggest that its generalizability may be more limited than previously expected. Thus, the development of improved instruments to measure public stigma and school connectedness is crucial for future research on these important variables.

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Table 1

Demographic Information

Characteristic	Total (N = 59)
Mean Age (SD)	16.04 (1.16)
Gender (% male)	52.5
Grade	
9	33.9
10	32.2
11	18.6
12	15.3

Table 2

Scale Correlations

	Modified SD Scale	Modified SS Scale	PSSM	BASC-2 Depression
Modified SD Scale	___			
Modified SS Scale	.62*	___		
PSSM	-.21	.03	___	
BASC-2 Depression	.44*	.25[§]	-.24[§]	___

Note. *$p \leq .001$. [§]Though nonsignificant at $p > .05$, these values trended toward significance ($p < .10$).

Table 3

Modified SD Scale Item Correlations

Item	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14
SD1	2.86	1.11	____													
SD2	2.31	1.03	.01	____												
SD3	3.02	1.12	.56**	.06	____											
SD4	2.95	1.11	.47**	.05	.39**	____										
SD5	2.27	.91	.38**	-.08	.35**	.72**	____									
SD6	2.92	1.15	.60**	.01	.36*	.51**	.42**	____								
SD7	2.36	.96	.23	-.04	.19	.29*	.36**	.26*	____							
SD8	3.14	1.18	.25	-.06	.30*	.26*	.29*	.35**	.50**	____						
SD9	2.24	.93	.51**	.04	.39**	.63**	.64**	.49**	.42**	.47**	____					
SD10	2.42	.98	.15	-.40**	-.05	.29*	.20	.34**	.40**	.41**	.34**	____				
SD11	2.53	1.02	.26*	.21	.20	.50**	.53**	.46**	.18	.15	.43**	.12	____			
SD12	2.52	1.08	.35**	-.04	.20	.38**	.51**	.44**	.56**	.46**	.55**	.41**	.48*	____		
SD13	2.34	1.12	.09	.04	.04	.21	.25	.22	.40**	.17	.17	.46*	.20	.44*	____	
SD14	2.32	1.06	.51**	.07	.27*	.41**	.43**	.51**	.31*	.24	.45**	.33*	.42**	.44**	.36**	____

Note: *$p < .05$; **$p < 001$

Table 4

Modified SS Scale Item Correlations

Item	*M*	*SD*	SS1	SS2	SS3	SS4	SS5
SS1	2.36	1.16	—				
SS2	2.15	1.10	.69*	—			
SS3	2.14	1.06	.52*	.83*	—		
SS4	2.12	1.07	.66*	.69*	.67*	—	
SS5	1.92	1.10	.54*	.61*	.63*	.61*	—

Note: *$p < .001$

Table 5

PSSM Item Correlations

Item	*M*	*SD*	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
PSSM1	3.00	1.16	____																	
PSSM2	2.92	1.18	.40**	___																
PSSM3	3.60	1.26	.46**	.21	___															
PSSM4	2.42	.83	.34**	.300	.38**	___														
PSSM5	2.97	1.10	.24	.40**	.111	.28*	___													
PSSM6	3.25	1.24	.47**	.28*	.63**	.23	-.06	___												
PSSM7	4.15	1.14	.21	.16	.07	.17	.21	.09	___											
PSSM8	3.54	1.04	.44**	.38**	.45**	.43**	.36**	.23	.19	___										
PSSM9	3.97	.95	.30*	.45**	.41**	.22	.53**	.40**	.07	.32*	___									
PSSM10	2.44	1.28	.34**	.38*	.11	.29*	.38**	.09	.20	.22	.27*	___								
PSSM11	3.46	1.13	.51**	.39**	.40**	.50**	.28**	.31*	.10	.50**	.35**	.45**	___							
PSSM12	2.70	1.28	.26	.07	.50**	.06	.18	.34**	.06	.27*	.35**	-.04	.10	___						
PSSM13	3.12	1.35	.53**	.44**	.46**	.40**	.14	.59**	.29*	.40**	.27*	.40**	.54**	.23	___					
PSSM14	3.64	1.11	.16	.28*	.31*	.41**	.49**	.10	.11	.54**	.45**	.22	.45**	.14	.26*	___				
PSSM15	3.51	.94	.24	.45**	.19	.54*	.30*	.26*	.06	.40**	.39**	.31*	.38**	.03	.29*	.53**	___			
PSSM16	3.61	1.43	.35**	.20	.56**	.32*	.07	.50**	.08	.40**	.35**	.23	.58**	.21	.52**	.31**	.37**	___		
PSSM17	3.09	1.36	.71**	.27*	.54**	.32*	.27*	.51**	.29*	.52**	.34**	.21	.41**	.36**	.55**	.31*	.29*	.43**	___	
PSSM18	3.42	1.09	.53**	.41**	.57**	.46**	.23	.57**	.13	.54**	.40**	.26*	.44**	.27*	.55**	.40**	.51**	.47**	.61**	___

Note: * $p < .05$; ** $p < .001$

Table 6

Model Fit Statistics for One-Factor Model of Societal Devaluation

	χ^2	CFI	RMSEA	RMSEA Confidence Interval	SRMR
N = 59					
1-factor	155.91*	.75	.13	.10-.16	.10

Note. *Chi-square value significant at p < .0001. CFI = comparative fit index; RMSEA = root-mean-square error of approximation; SRMR = standardized root mean square residual.

Table 7

Model Fit Statistics for One-Factor Model of Self-Stigma

	χ^2	CFI	RMSEA	RMSEA Confidence Interval	SRMR
N = 59					
1-factor	15.86*	.94	.19	.09-.30	.04

Note. *Chi-square value significant at p < .01. CFI = comparative fit index; RMSEA = root-mean-square error of approximation; SRMR = standardized root mean square residual.

Table 8

Model Fit Statistics for One- and Three-Factor Models of School Connectedness

	χ^2	CFI	RMSEA	RMSEA Confidence Interval	SRMR
18-item scale					
$N = 59$					
1-factor	227.93*	.78	.11	.09-.13	.09
12-item scale					
$N = 59$					
1-factor	102.51*	.79	.12	.09-.16	.10
3-factor	78.67**	.88	.10	.05-.14	.09

Note. *Chi-square value significant at $p \leq .0001$. **Chi-square value significant at $p < .01$. CFI = comparative fit index; RMSEA = root-mean-square error of approximation; SRMR = standardized root mean square residual.

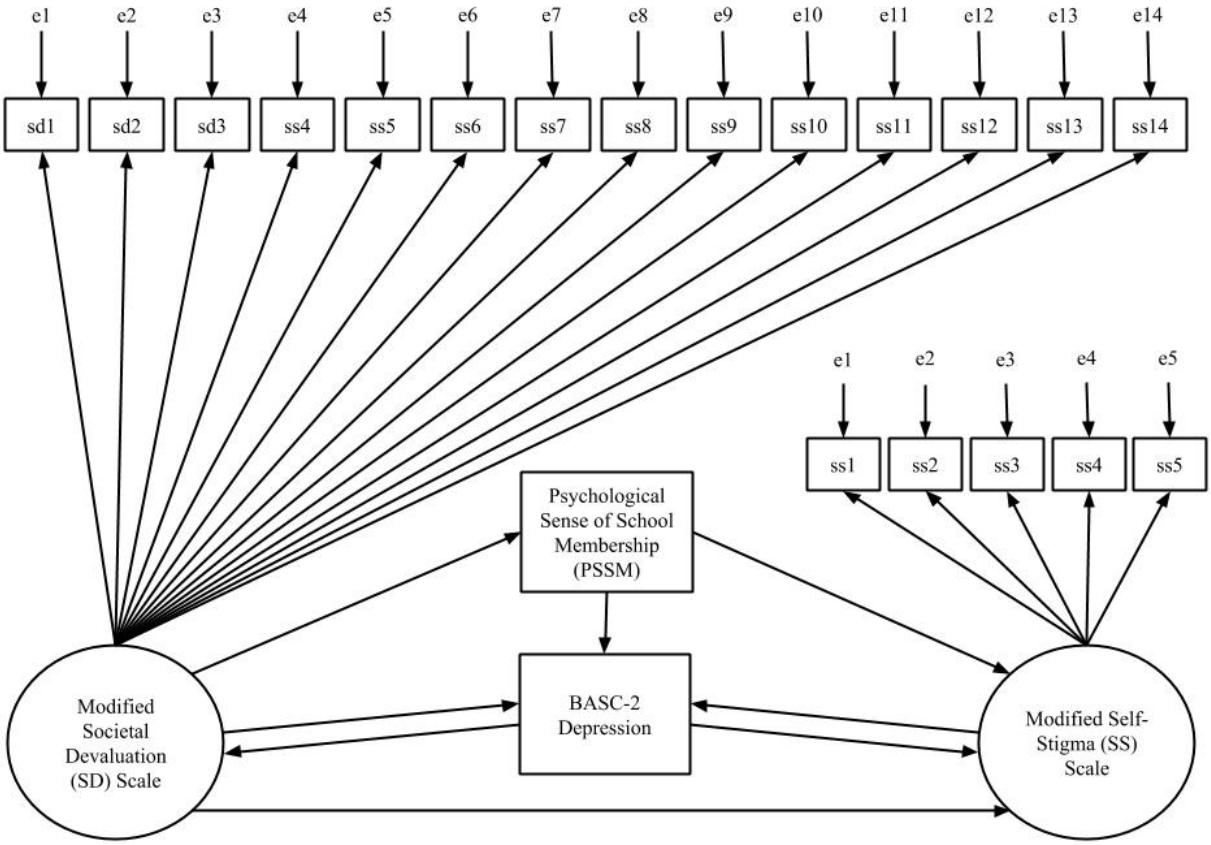

Figure 1. Proposed model. Three-level conceptual model of self-stigma.

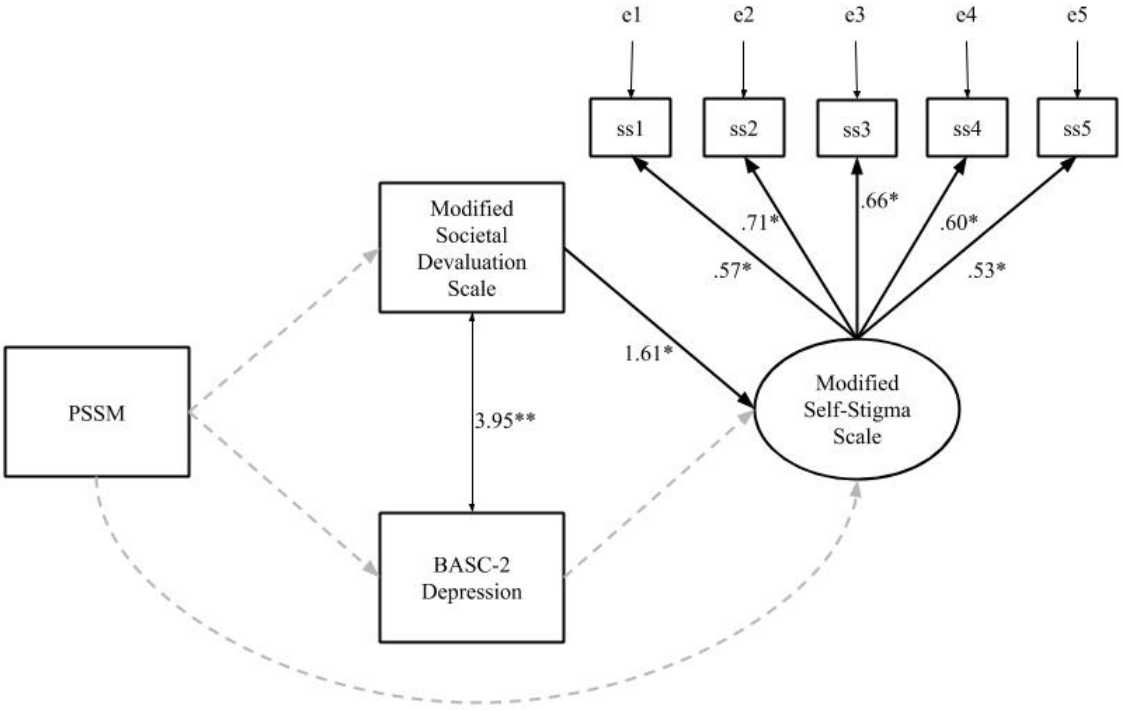

Figure 2. Revised three-level path analysis model of self-stigma. Model fit $\chi^2(17) = 39.41$, $p = .001$, CFI = .91, RMSEA = .15, SRMR = .06). Unstandardized estimates are reported here. Specified but non-significant paths are represented by shaded lines.
*$p < .001$. **$p < .01$.

Appendix A

Societal Devaluation Scale

Please circle the response that best describes your opinion.

1	**2**	**3**	**4**	**5**
Strongly Disagree	**Disagree**	**Neither Agree nor Disagree**	**Agree**	**Strongly Agree**

1. Most teenagers will tease or harass kids if they know he or she is in counseling.	1 2 3 4 5
2. Most people believe that teens with depression or anxiety are just as intelligent as other teens.	1 2 3 4 5
3. Most kids look down on other kids who are in counseling.	1 2 3 4 5
4. Most people believe that teens with depression or anxiety are dangerous.	1 2 3 4 5
5. Many people are afraid of kids who are in counseling.	1 2 3 4 5
6. Most people believe that kids with depression or anxiety are to blame for their problems.	1 2 3 4 5
7. Most employers will not hire a teen with depression or anxiety.	1 2 3 4 5
8. Most teens would not want to hang out with somebody that has issues with depression or anxiety.	1 2 3 4 5
9. Most people believe that teens who are in counseling cannot be trusted.	1 2 3 4 5
10. Most people believe that kids with depression or anxiety will never get better.	1 2 3 4 5
11. Most people believe that teens with depression or anxiety can't get good grades in school.	1 2 3 4 5
12. Most people believe that kids who are in counseling cannot take care of themselves.	1 2 3 4 5
13. Teachers tend to give kids with depression or anxiety a hard time.	1 2 3 4 5
14. Most kids my age will not date someone who is in counseling.	1 2 3 4 5

Appendix B

Self-Stigma Scale

Please circle the response that best describes your experience.

1 **Strongly Disagree**	**2** **Disagree**	**3** **Neither Agree nor Disagree**	**4** **Agree**	**5** **Strongly Agree**

I. I feel different from other kids my age because I am in counseling.	1 2 3 4 5
2. I feel people may not like me if they know I am in counseling.	1 2 3 4 5
3. I feel people will not want to be friends with me if they know I am in counseling.	1 2 3 4 5
4. I worry that other people are uncomfortable with me because I am in counseling.	1 2 3 4 5
5. I feel embarrassed about being in counseling.	1 2 3 4 5

Appendix C

Psychological Sense of School Membership Scale

Please rate yourself on the following items based on the scale below:

1 2 3 4 5
not at all true completely true

1. I feel like a real part of (school name).	1 2 3 4 5
2. People here notice when I'm good at something.	1 2 3 4 5
3. It is hard for people like me to be accepted here.	1 2 3 4 5
4. Other students in this school take my opinions seriously.	1 2 3 4 5
5. Most teachers at (school name) are interested in me.	1 2 3 4 5
6. Sometimes I feel as if I don't belong here.	1 2 3 4 5
7. There's at least one teacher or other adult in this school I can talk to if I have a problem.	1 2 3 4 5
8. People at this school are friendly to me.	1 2 3 4 5
9. Teachers here are not interested in people like me.	1 2 3 4 5
10. I am included in lots of activities at (school name).	1 2 3 4 5
11. I am treated with as much respect as other students.	1 2 3 4 5
12. I feel very different from most other students here.	1 2 3 4 5
13. I can really be myself at this school.	1 2 3 4 5
14. The teachers here respect me.	1 2 3 4 5
15. People here know I can do good work.	1 2 3 4 5
16. I wish I were in a different school.	1 2 3 4 5
17. I feel proud of belonging to (school name).	1 2 3 4 5
18. Other students here like me the way I am.	1 2 3 4 5

Appendix D

Notice of Institutional Review Board Initial Approval by Full Board Review

To: Kurt Michael
Psychology
EMAIL

From: Julie Taubman, IRB Administration
Date: 7/07/2014
RE: Notice of IRB Exemption
Study #: 14-0252

Study Title: Assessment, Support, & Counseling Center: Collection of Crisis Response Data

Exemption Category: (4) Collection or Study of Existing Data, If Public or Unable to Identify Subjects This study involves minimal risk and meets the exemption category cited above. In accordance with 45 CFR 46.101(b) and University policy and procedures, the research activities described in the study materials are exempt from further IRB review.

Study Change: Proposed changes to the study require further IRB review when the change involves:

- an external funding source,
- the potential for a conflict of interest,
- a change in location of the research (i.e., country, school system, off site location),
- the contact information for the Principal Investigator,
- the addition of non-Appalachian State University faculty, staff, or students to the research team, or
- the basis for the determination of exemption. Standard Operating Procedure #9 cites examples of changes which affect the basis of the determination of exemption on page 3.

Investigator Responsibilities: All individuals engaged in research with human participants are responsible for compliance with University policies and procedures, and IRB determinations. The Principal Investigator (PI), or Faculty Advisor if the PI is a student, is ultimately responsible for ensuring the protection of research participants; conducting sound ethical research that complies with federal regulations, University policy and procedures; and maintaining study records. The PI should review the IRB's list of PI responsibilities.

To Close the Study: When research procedures with human participants are completed, please send the Request for Closure of IRB Review form to irb@appstate.edu.

If you have any questions, please contact the Research Protections Office at (828) 262-7981 (Julie) or (828) 262-2692 (Robin).

Best wishes with your research.

Websites for Information Cited Above
Note: If the link does not work, please copy and paste into your browser, or visit https://researchprotections.appstate.edu/human-subjects.

1. Standard Operating Procedure #9: http://researchprotections.appstate.edu/sites/researchprotections.appstate.edu/files/IRB20SOP920Exempt%20Review%20Determination.pdf

2. PI responsibilities: http://researchprotections.appstate.edu/sites/researchprotections.appstate.edu/files/PI20Responsibilities.pdf

3. IRB forms: http://researchprotections.appstate.edu/human-subjects/irb-forms

Notice of Institutional Review Board Initial Approval

To: Dr. John Paul Jameson
Psychology
EMAIL

From: Dr. Lisa Curtin, Institutional Review Board Chairperson
Date: 08/20/2015
RE: Notice of IRB Approval by Expedited Review (under 45 CFR 46.110)
Study #: 14-0037
Alleghany County Schools
Study Title: Expansion of the Assessment, Support, and Counseling (ASC) Center to Rural and High Schools
Submission Type: Renewal
Expedited Category: 5,7
Approval Date: 08/20/2015
Expiration Date of Approval: 08/19/2016

The Institutional Review Board (IRB) approved this study for the period indicated above. The IRB found that the research procedures meet the expedited category cited above. IRB approval is limited to the activities described in the IRB approved materials, and extends to the performance of the described activities in the sites identified in the IRB application. In accordance with this approval, IRB findings and approval conditions for the conduct of this research are listed below.
This study was found to be minimal risk.

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

Principal Investigator Responsibilities: The PI should review the IRB's list of PI responsibilities. The Principal Investigator (PI), or Faculty Advisor if the PI is a student, is ultimately responsible for ensuring the protection of research participants; conducting sound ethical research that complies with federal regulations, University policy and procedures; and maintaining study records.

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

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

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

Closing a study: When research procedures with human subjects are completed, please complete the Request for Closure of IRB review form and send it to irb@appstate.edu.

Websites:
1. PI responsibilities:http://researchprotections.appstate.edu/sites/researchprotections.appstate.edu/files/PI%20Responsibilities.pdf
2. IRB forms: http://researchprotections.appstate.edu/human-subjects/irb-forms

Kurt Michael

Notice of Institutional Review Board Modification Approval

To: Kurt Michael
Psychology
EMAIL

From: Dr. Stan Aeschleman, Institutional Review Board Chairperson
RE: Notice of IRB Approval by Expedited Review (under 45 CFR 46.110)
Date: 3/20/2014
Study #: 11-0270
Sponsors: Watauga County Schools
Study Title: The Effectiveness of the Assessment, Support, and Counseling (ASC) Center
Submission Type: Renewal
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
Renewal Date: 3/20/2014
Expiration Date of Approval: 3/19/2015

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

Regulatory and other findings:

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

Approval Conditions:

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

Principal Investigator Responsibilities: The PI should review the IRB's list of PI responsibilities. The Principal Investigator (PI), or Faculty Advisor if the PI is a student, is ultimately responsible for ensuring the protection of research participants; conducting sound ethical research that complies with federal regulations, University policy and procedures; and maintaining study records.

Modifications and Addendums: IRB approval must be sought and obtained for any proposed modification or addendum (e.g., a change in procedure, personnel, study location, study

instruments) to the IRB approved protocol, and informed consent form before changes may be implemented, unless changes are necessary to eliminate apparent immediate hazards to participants. Changes to eliminate apparent immediate hazards must be reported promptly to the IRB.

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

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

Closing a study: When research procedures with human subjects are completed, please complete the Request for Closure of IRB review form and send it to irb@appstate.edu.

Websites:

1. PI responsibilities: http://researchprotections.appstate.edu/sites/researchprotections.appstate.edu/files/PI%20Responsibilities.pdf

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

Notice of Institutional Review Board Modification Approval

To: Kurt Michael
Psychology
EMAIL

From: Dr. Stan Aeschleman, Institutional Review Board Chairperson
Date: 8/11/2014
RE: Notice of IRB Approval by Expedited Review (under 45 CFR 46.110)
Study #: 13-0020
Sponsors: Ashe County Board of Education: 13-0283
Study Title: Student Educational and Emotional Development (SEED) Study
Submission Type: Modification
Expedited Category: (6) Collection of Data from Recordings made for Research Purposes,(7) Research on Group Characteristics or Behavior, or Surveys, Interviews, etc.
Approval Date: 8/11/2014
Expiration Date of Approval: 8/06/2015

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

Submission Description:

An adapted societal devaluation scale will be administered within the first three sessions of initiating treatment. It will be used to measure the extent to which students believe that others hold stigmatizing beliefs toward those who receive mental health treatment. This self-report questionnaire was adapted from a measure that assesses the extent to which youth with severe emotional and behavioral disturbances perceive public stigma. Preliminary analyses of the original scale demonstrated good internal consistency and construct validity (Moses, 2009). Minor linguistic modifications were made to increase the relevance of item content to ASC Center students and to improve the readability of the measure.

To assess the extent to which students hold self-stigmatizing beliefs about receiving mental health treatment, an adapted self-stigma scale will be administered within the first three sessions of initiating treatment. This self-report survey was adapted from a measure developed for use with children with severe emotional or behavioral disturbances. Preliminary analyses of the original scale demonstrated adequate psychometric properties (Moses, 2009). Minor linguistic modifications were made to increase the relevance of item content to ASC Center students and to improve the readability of the measure.

Regulatory and other findings:

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

Approval Conditions:

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

Principal Investigator Responsibilities: The PI should review the IRB's list of PI responsibilities. The Principal Investigator (PI), or Faculty Advisor if the PI is a student, is ultimately responsible for ensuring the protection of research participants; conducting sound ethical research that complies with federal regulations, University policy and procedures; and maintaining study records.

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

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

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

Closing a study: When research procedures with human subjects are completed, please complete the Request for Closure of IRB review form and send it to irb@appstate.edu.

Websites:
1. PI responsibilities: http://researchprotections.appstate.edu/sites/researchprotections.appstate.edu/files/PI%20Responsibilities.pdf

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

Appendix E

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. John Paul Jameson, Carissa Orlando, M.A., Kelsey Toomey, M.A.

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

1. Review this consent form

1. Complete the assessments honestly if I consent to participation

IX. **Participant's Permission:**
I have read and understand the Informed Consent and conditions of this project. I have had all my questions answered. I hereby acknowledge the above and give my voluntary consent by completing and signing this form.

Signature of Legally Responsible Person or Student: _____Date: _____

Specify Relationship to Student and Print Name in Full:_____

Signature of Student: _____Date: _____

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

Kurt Michael, michaelkd@appstate.edu, (828) 262-2272, ext. 432
John Paul Jameson, jamesonjp@appstate.edu, (828) 262-2272, ext. 424
IRB Administrator, Research and Sponsored Programs, Appalachian State University, Boone, NC 28608, (828) 262-2130, irb@appstate.edu

Vita

Marisa Gabrielle Schorr was raised in Marquette, Michigan, the daughter of Robert and Julie Schorr. She completed her undergraduate studies at the University of Michigan, where she earned her Bachelor of Arts in Psychology with a minor in Program in the Environment. She began study toward a Master of Arts degree in Clinical Health Psychology at Appalachian State University in August 2013 and was awarded the degree in May 2016.