Distribution Agreement

In presenting this thesis or dissertation as a partial fulfillment of the requirements for an advanced degree from Emory University, I hereby grant to Emory University and its agents the non-exclusive license to archive, make accessible, and display my thesis or dissertation in whole or in part in all forms of media, now or hereafter known, including display on the world wide web. I understand that I may select some access restrictions as part of the online submission of this thesis or dissertation. I retain all ownership rights to the copyright of the thesis or dissertation. I also retain the right to use in future works (such as articles or books) all or part of this thesis or dissertation.

Signature:

Amy Greenblatt_____ 4/20/2015_____
Date

Relational Correlates of Mental Illness Stigma in Female Adolescents

By

Amy Greenblatt
MPH

Behavioral Sciences and Health Education

Carla Berg, PhD
Committee Chair

Melissa Pinto, PhD, RAN, FAAN
Committee Member

Melinda Higgins, PhD
Committee Member

Colleen McBride, PhD
Department Chair

Relational Correlates of Mental Illness Stigma in Female Adolescents

By

Amy Greenblatt

BA, Keene State College, 2007

Thesis Committee Chair: Carla Berg, PhD

An abstract of
A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
in partial fulfillment of the requirements for the degree of
Master of Public Health
in Behavioral Sciences and Health Education
2015

Abstract

Relational Correlates of Mental Illness Stigma in Female Adolescents

By Amy Greenblatt

Limited research has examined the relationship between mental illness stigma and level of contact with persons with mental illness, nature of contact (severity of mental illness exposed to and relational strain attributed to mental illness), and mental health literacy in adolescent populations. Thus, we conducted an analysis exploring these associations cross-sectionally using baseline data from an intervention study in a sample of female adolescents (N=156). Stigma was measured using the modified five-item revised attribution questionnaire. No significant associations were found between mental illness stigma and level of contact, mental health literacy, and any sociodemographic variables (age, grade in school, race, and socioeconomic status). Severity of mental illness participants were exposed to (p=0.009) and relational strain attributed to mental illness (p=0.037) were significantly associated with mental illness stigma. Participants who reported knowing a person who had been treated for a mental illness in a psychiatric facility had lower stigma scores, and those who reported attributing relational strain to mental illness had higher stigma scores. Results suggest that adolescents who have contact with persons with more severe presentations of mental illness may have less stigmatizing attitudes towards mental illness. Additionally, findings suggest that adolescents who attribute a loss or worsening of a past personal relationship to mental illness may have more stigmatizing attitudes towards mental illness. Future research should explore these associations further with more in-depth measures in the context of both qualitative and quantitative studies as well as longitudinal studies that could illuminate causal relationships in order to inform subsequent intervention studies.

Relational Correlates of Mental Illness Stigma in Female Adolescents

By

Amy Greenblatt

BA, Keene State College, 2007

Thesis Committee Chair: Carla Berg, PhD

A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
in partial fulfillment of the requirements for the degree of
Master of Public Health
in Behavioral Sciences and Health Education
2015

Acknowledgement

First and foremost, I would like to express my gratitude to my mentor and committee member, Dr. Melissa Pinto. Dr. Pinto has continuously supported me throughout my time in graduate school and her knowledge, guidance, encouragement, and support have made my time at Emory all the more valuable and enjoyable. Her kindness and desire to help me grow as an academic have been crucial to my success as a graduate student.

I also want to acknowledge and thank Dr. Carla Berg who served as my thesis chair. Dr. Berg's willingness to take me on advisee and her feedback throughout the thesis process are truly appreciated.

I would also like to thank my committee member, Dr. Melinda Higgins. I greatly appreciate all the time she took to provide me guidance during the thesis process. Her patience and knowledge helped me immensely.

I feel so fortunate to have had such a wonderful thesis committee.

Lastly, I want to thank my loving parents, Deb and Glenn Korner. I am appreciative of their support throughout my time in graduate school and am incredibly grateful for all that they have done for me. This thesis is dedicated to them.

Table of Contents

Chapter I

Introduction

Adolescence is a critical period in physical, cognitive, social, and emotional development (Rickwood, Deane, Wilson, & Ciarrochi, 2005; Schwarz, 2009). It is also a time in which the onsets of many mental disorders occur (Kessler et al., 2005). Approximately one in every 4 to 5 adolescents (13-18 years) in the U.S. meets criteria for a mental disorder (Merikangas et al., 2010). In order to ensure healthy development, and prevent an extensive host of negative outcomes associated with mental illness, it is imperative that adolescents receive treatment at the onset of symptoms (Kuehn, 2005; O'Connor, Martin, Weeks, & Ong, 2014; Rickwood et al., 2005). Unfortunately, studies show that a majority of adolescents in need of mental health treatment do not receive it, or delay seeking treatment, sometimes for a decade or more (Wang et al., 2005). Numerous studies have established that stigma is a significant barrier to mental health treatment utilization (Heflinger & Hinshaw, 2010). The fear of discrimination and shame that result from mental illness stigma affects young people's decisions to seek help and deters early treatment (Gulliver, Griffiths, & Christensen, 2010; Pinto-Foltz, Hines-Martin, & Logsdon, 2010; Rickwood et al., 2005). Thus, stigma reduction is incredibly important for promoting early treatment and positive mental health outcomes of adolescents.

As the harms of mental illness stigma have become increasingly recognized over the years, its reduction has become an important public health initiative, and several stigma reduction interventions have been developed. These interventions include various

approaches to stigma reduction, the most common of which are improving mental health literacy (providing education about mental illness), and increasing contact between persons with and without mental illness (Collins, Wong, Cerully, Schultz, & Eberhart, 2012; Corrigan & Penn, 1999; Pinto-Foltz & Logsdon, 2009). Intergroup Contact Theory supports this approach. Intergroup Contact Theory has been applied to many situations between ingroup members and outgroup members (groups of people who face prejudce) including persons with AIDS and racial and religious minorities (Pettigrew, 1998). Across stigmatized groups, situations, and nations, intergroup contact has been shown to facilatate less prejudical attitudes towards the stigmatized groups (Pettigrew, 1998; Pettigrew, Tropp, Wagner, & Christ, 2011).

Research Aim

Because female adolescents are approximately twice as likely as their male counterparts to suffer from two of the most common forms of mental illness that affect adolescents, mood and anxiety disorders, this study focuses on mental illness stigma in female adolescents. Drawing from Intergroup Contact Theory, this study aims to determine the association between mental illness stigmatization and level of contact with mental illness, nature of contact (severity of mental illness encountered and relational strain attributed to mental illness), and mental health literacy among female adolescents aged 13-17 years enrolled in a randomized clinical trial intervention study.

Chapter II

Literature Review

Prevalence and Impact of Mood and Anxiety Disorders in Female Adolescents

Approximately one in every 4 to 5 adolescents (13-18 years) suffer from a mental disorder (Merikangas et al., 2010), and about one half of all Americans can expect to meet criteria for a DSM-IV mental disorder in their lifetime (Kessler et al., 2005). The onsets of most mental disorders occur during childhood or adolescence, with half of all lifetime cases beginning by 14 years of age and three-fourths by 24 years of age (Kessler et al., 2005). Thus, adolescence and young adulthood are critical times for the identification and treatment of disorders.

Mood and anxiety disorders are among the most common and impairing mental disorders in adolescents (Merikangas et al., 2010). Of all age groups, adolescents (ages 13 to 17) have the highest prevalence of mood and anxiety disorders (Kessler, Petukhova, Sampson, Zaslavsky, & Wittchen, 2012). Adolescent mood and anxiety disorders are frequently comorbid, and epidemiological studies have consistently demonstrated their persistence and reoccurrence throughout life (Bradley, 2001; Kessler, 2007; Perou et al., 2013). Both mood and anxiety disorders are more prevalent in adolescent females than males, and this difference persists into adulthood (Merikangas et al., 2010). Rates of unipolar depression, a common type of mood disorder, are relatively equal among the sexes prior to adolescence, but around the ages of 13 to 14, females begin to show consistently higher rates of depression (Nolen-Hoeksema & Girgus, 1994). After the age of 15, females are approximately twice as likely to be depressed as males (Nolen-

Hoeksema & Girgus, 1994). For anxiety disorders, the sex differentiation begins earlier but increases with age and becomes markedly apparent by adolescence; female adolescents are two to three times more likely to have an anxiety disorder than their male counterparts (Beesdo, Knappe, & Pine, 2009; Lewinsohn, Gotlib, Lewinsohn, Seeley, & Allen, 1998).

Despite the availability of effective mental health treatment and increased public awareness of mental illness in young people, studies consistently demonstrate that many young people with a mental disorder do not receive any form of professional mental health care (estimates range from 25% to 50%) (Costello, He, Sampson, Kessler, & Merikangas, 2014; Merikangas et al., 2011). Often, when treatment is initiated, it is after a significant delay from the onset of symptoms. The average treatment delay for mood disorders is six to eight years, and the average treatment delay for anxiety disorders is nine to twenty-three years (Wang et al., 2005). When mental illness occurs early in life and is not treated at onset, young people can experience significant functional impairment in all developmental domains—emotional, cognitive, physical, and social—during their most productive years (Kuehn, 2005; O'Connor et al., 2014; Rickwood et al., 2005). Rickwood and colleagues (2005) note that even relatively mild mental health symptoms during adolescence can cause emotional, cognitive, or social changes that can significantly affect outcomes in later adult life (Rickwood et al., 2005).

A wide range of negative outcomes have been associated with mood and anxiety disorders in adolescence and young adulthood that include self-harm, suicidality, and suicide attempts (Brent, 1995; Ghaziuddin, King, Naylor, & Ghaziuddin, 2000; Tuisku et al., 2006; Woodward & Fergusson, 2001); sexual risk behaviors (Brown et al., 2010;

Lehrer, Shrier, Gortmaker, & Buka, 2006; Rubin, Gold, & Primack, 2009); early parenthood (Kessler et al., 1997); being overweight or obese (Goodman & Whitaker, 2002; McElroy et al., 2004); substance use, abuse, and dependence (Crum et al., 2008; Edwards et al., 2014; Tuisku et al., 2006; Woodward & Fergusson, 2001); and low educational attainment (Kessler, Foster, Saunders, & Stang, 1995; Woodward & Fergusson, 2001). Long-term negative outcomes in adulthood associated with mood and anxiety disorders include psychosocial and functional impairment (Weissman, Wolk, Goldstein, et al., 1999; Weissman, Wolk, Wickramaratne, et al., 1999); chronic medical diseases (Audrey, 1988; Brown, Majumdar, Newman, & Johnson, 2005; Scott et al., 2007; Scott et al., 2008); and increased morbidity and mortality (National Center for Health Statistics, 2012).

Stigma: A Barrier to Help-seeking and Mental Health Treatment in Adolescents

Although the reasons for delays in help-seeking and the lack of mental health treatment in this age group are many, varied, and not fully understood, epidemiological surveys and descriptive studies demonstrate that stigma toward mental illness is a powerful factor that impedes help-seeking in both young people and adults (Gulliver et al., 2010; Henderson, Evans-Lacko, & Thornicroft, 2013; O'Connor et al., 2014; Rickwood et al., 2005; Wilson, 2007). Prejudice toward people with mental illness and fear of discrimination are among the most consistently indicated and most potent barriers to care (Gulliver et al., 2010; Henderson et al., 2013; Pinto-Foltz et al., 2010; Rickwood et al., 2005). A systematic review of the literature on barriers and facilitators to young people's mental health help-seeking confirms the significance of stigma in adolescent's decisions to seek help for their mental health concerns; stigma and embarrassment were

the most cited barriers across twenty-two published studies (Gulliver et al., 2010).

Fear of prejudice and discrimination is not unfounded. Research has shown that, regardless of specific diagnosis, mental illness is among the most stigmatized conditions in our society (Corrigan & Penn, 1999; Spagnolo, Murphy, & Librera, 2008), and many studies have detailed the American public's widespread endorsement of stigmatizing attitudes about mental illness (Corrigan, Kerr, & Knudsen, 2005). According to Henderson and colleagues (2013), pervasive societal stigma about mental illness and the resultant discrimination can obstruct access to care on several levels, including institutional (reflected in legislation, funding and service availability), community (reflected in public attitudes and actions), and individual (Henderson et al., 2013).

In response to the widespread recognition of the harms of mental illness stigma, President Obama directly addressed the need to eliminate it during a White House conference on mental health in 2013, stating "…there should be no shame in discussing or seeking help for treatable illnesses that affect too many people that we love. We've got to get rid of that embarrassment; we've got to get rid of that stigma" (Compton, 2013). Two previous landmark publications, the U.S. Surgeon General's Report on Mental Health (1999) and President Bush's New Freedom Commission on Mental Health Report (2003) also identified the public health importance of eliminating mental illness stigma to promote treatment (President's New Freedom Commission on Mental Health, 2003; United States Health and Human Services, 1999).

Various methods have been proposed to reduce stigma. One common interventional approach for stigma reduction is a combination of promotion of mental health literacy and facilitation of social contact (Pinto-Foltz & Logsdon, 2009). Mental

health literacy, a termed coined by Jorm and colleagues (1997), refers to "knowledge and beliefs about mental disorders which aid their recognition, management, or prevention" (Jorm et al., 1997). The knowledge component of mental health literacy includes the ability to recognize specific disorders; knowledge of risk factors and causes of mental illness; and awareness of mental health treatment options and how to seek mental health information (Jorm et al., 1997). The belief(s) component refers to "attitudes that promote recognition and appropriate help-seeking" (Jorm et al., 1997). Mental health literacy is generally thought to be associated with stigma; the expectation of improved knowledge about mental illness is that it will facilitate support for, and change negative attitudes about, mental illness, thus reducing stigma (Angermeyer & Matschinger, 2005; Evans-Lacko, Brohan, Mojtabai, & Thornicroft, 2012). Poor mental health literacy has been associated with societal stigma and discriminatory behavior (Perry et al., 2014). Social contact in the context of mental illness refers to personal direct interaction between individuals with and without mental disorders (London & Evans-Lacko, 2010; Pinto-Foltz & Logsdon, 2009). The notion that interpersonal contact between a member of a majority group and a minority group (stigmatized group or outgroup) can be an effective way to reduce prejudice and discrimination is typically credited to Allport's (1954) Intergroup Contact Hypothesis.

Intergroup Contact Theory

Intergroup Contact Theory evolved from Allport's (1954) contact hypothesis and is consistent with more broad social and psycholgical theories of discrimination and prejudice reduction (Collins et al., 2012; Pettigrew et al., 2011). Allport specified four conditions required for intergroup contact to reduce prejudice: equal status within the

situation; common goals; intergroup cooperation; and support by institutional and social authority (Pettigrew, 1998). However, Thomas Pettigrew, a social psychologist and prolific researcher of racial prejudice, contends that although these conditions facilitate the effect, they are not necessary for the positive effects of contact to occur (Pettigrew, 1998; Pettigrew et al., 2011). In fact, when Pettigrew and Troop (2006) conducted a comprehensive meta-analysis of the results of all studies on intergroup contact, published or unpublished in the 20th century, they found that intergroup contact typically reduces prejudicial attitudes about the outgroup regardless of whether the optimal conditions were met (Pettigrew & Tropp, 2006). Additionally, Pettigrew notes that studies have shown that even indirect contact— like vicarious contact through mass media, or having a friend who is friends with an outgroup member— reduces prejudice (Pettigrew et al., 2011). Further, one study found that *imagined* positive intergroup contact was enough to facilitate some of the purported beneficial effects of intergroup contact, including reduced endorsement of stereotypes (Turner, Crisp, & Lambert, 2007).

Allport originally believed that contact served to increase ingroup members' knowledge about the outgroup and that this greater knowledge was responsible for reductions in prejudice (Pettigrew et al., 2011). However, a meta-analysis by Pettigrew and Troop (2008) of the three most-studied mediators of intergroup contact, increased knowledge, anxiety reduction, and enhanced empathy, found that the two "affective mediators"— anxiety reduction and enhanced empathy —were more influential mediators than increased knowledge (Pettigrew & Tropp, 2008). According to the review, research indicates that positive intergroup contact decreases anxiety about interacting with outgroup members which results in reduced prejudice (Pettigrew & Tropp, 2008).

Research also demonstrates that positive contact "enhances empathy for the outgroup and adoption of the outgroup's perspective" and that this increase in empathy and perspective taking decreases prejudice toward the outgroup (Pettigrew & Tropp, 2008).

Literature Gaps Regarding Stigma in Adolescents

Adolescents' stigma toward mental illness is largely understudied (Link, Yang, Phelan, & Collins, 2004; Pinto-Foltz, 2009). Although a significant amount of research is published on mental illness stigma in adult populations, it would be unwise to simply extrapolate findings from studies of adults to adolescents, given the differences in cognitive development between the two (Corrigan, Lurie, et al., 2005). Further, the majority of literature in this area involves intervention research that aims to reduce stigma among adolescents. These studies examine factors that may influence a change in stigmatizing attitudes, like contact and mental health literacy; however, there is a lack of analyses that focus on these factors as stand-alone factors associated with stigma.

Level of contact. Research on intergroup contact between people with mental illness and those without has been conducted primarily in adult samples. Research on the relationship between contact with persons with mental illness (also referred to as familiarity in the literature) (Corrigan, Green, Lundin, Kubiak, & Penn, 2001; Corrigan, Lurie, et al., 2005) and stigma in adult samples has demonstrated stigmatizing attitudes and beliefs about persons with mental illness can be reduced through interpersonal contact (Corrigan, Edwards, Green, Diwan, & Penn, 2001; Couture & Penn, 2003; Jorm & Wright, 2008). However, these relationships could be moderated or mediated by intimacy of contact. For example, Pettigrew's review findings revealed that the level of

contact, or the intimacy in intergroup contact, is an important factor in whether or not contact will be beneficial (Pettigrew, 1998). Pettigrew states, "Constructive contact relates more closely to long-term close relationships than to initial acquaintanceship" (Pettigrew, 1998).

An extensive literature review of mental illness stigma in adolescents yielded only two Western non-intervention studies that have investigated the relationship between level of contact and mental illness stigma in an adolescent samples (one other study of secondary school students in Hong Kong was identified. See: (Ng & Chan, 2000)). Findings from one of the studies were inconsistent with those of studies in adult populations. Specifically, Corrigan and colleagues (2005) found that more intimate contact increased stigma (Corrigan, Lurie, et al., 2005). This increase was noted in the domains of stigma pertaining to "responsibility" for having mental illness and "dangerousness" (Corrigan, Lurie, et al., 2005). A study by Jorm and colleagues (2008) found that contact was generally beneficial in regards to stigma, but that it did not reduce all aspects of stigma (Jorm & Wright, 2008). Taken together, the lack of research on the relationship between level of contact and mental illness stigma in adolescent samples and the mixed findings of the two aforementioned studies indicate a significant gap in the science that necessitates further investigation of the relationship between level of contact and stigma in adolescents. Furthermore, the contextual factors surrounding the level of contact or the nature of contact has not been accounted for in previous research and may provide additional insight into the differences in findings.

Nature of contact. Research indicates that the efficacy of contact as a stigma reduction approach depends on the nature of the contact (Corbiere, Samson, Villotti, &

Pelletier, 2012). Corrigan and Pettigrew, pioneers in the fields of stigma and racial prejudice research, respectively, acknowledge that intergroup contact in and of itself does not predict positive outcomes and that there can be negative effects of contact (Corrigan, Lurie, et al., 2005; Pettigrew et al., 2011). These negative effects may be due to the nature of interaction between the ingroup and outgroup members. The nature of the contact has been previously omitted from these studies.

Mental health literacy. Henderson and colleagues (2013) note that delays to care, treatment avoidance, and discontinuation of mental health services are influenced by both stigma and knowledge related factors. Stigma-related factors include prejudice and discrimination, and knowledge-related factors include one's lack of knowledge about how to access treatment, features of mental illness, and available treatments for mental illnesses (Henderson et al., 2013). Mental health literacy, by definition, encompasses knowledge regarding mental illness, including recognition of disorders and awareness of treatment options (Jorm et al., 1997). Therefore, it seems that addressing both stigma and mental health literacy may be necessary to promote mental health treatment. Additionally, since negative stereotypes and prejudicial attitudes implicit in mental illness stigma involves "distortions of knowledge and understanding" (Holman, 2014), it would be reasonable to assume that persons with higher mental health literacy would have less stigmatizing attitudes about mental illness. However, a study of stigmatizing attitudes in mental health professionals, who as a group have high mental health literacy, did not support this assumption. The study concluded that high levels of knowledge about mental illness among mental health professionals "did not entail fewer stereotypes nor enhance the willingness to closely interact with mentally ill people" (Nordt, Rössler, &

Lauber, 2006). Additionally, Jorm himself notes that mental health literacy and low stigma do not necessarily go together (Jorm et al., 2006). However, he does recognize that some research supports that mental health literacy interventions "do have a small impact on reducing social distance and stigma" (Jorm et al., 2006). In light of the evidence, it is unclear if mental health literacy is a stand-alone predictor of stigma or if altering stigma can be accomplished without addressing mental health literacy in adolescents. Additional research in adolescents is needed to explore this relationship.

Research Aim

This study uses the Intergroup Contact Theory and the aforementioned literature as a foundation to examine relational factors including level of contact with mental illness, nature of contact with mental illness (severity and relational strain), and mental health literacy in relation to mental illness stigma among adolescent girls. Specifically, this study uses baseline data from an intervention study in a sample of freshman and sophomore females in two urban schools in the Southern United States.

CHAPTER III

Methods

Participants and Procedures

The current study is a cross-sectional secondary analysis of data from a randomized controlled trial of a school-based intervention to reduce mental illness stigma and improve mental health literacy (Pinto-Foltz, 2009). Baseline data, derived from two public high schools in an urban area of the Southern United States was collected in late 2008 and early 2009. The current study utilizes this data to determine the association of mental illness stigma with level of contact with mental illness, severity of mental illness exposure, relational strain attributed to mental illness, and mental health literacy.

Main findings and further details about eligibility, recruitment, and procedural information of the parent study have been published elsewhere (Pinto-Foltz, Logsdon, & Myers, 2011). Briefly, freshman and sophomore females aged 13 to 17 enrolled in either of the two high school study sites were eligible to participate in the study. Adolescents who met eligibility, provided parental consent and participant assent forms, and were present on the school day when baseline data were collected were enrolled in the study. Approximately 20% of the adolescents eligible for participation were enrolled in the intervention study. A total of 156 female adolescents volunteered for the study. IRB approval was obtained prior to the study.

Measures

Sociodemographic data were collected. Additionally, baseline data were also collected on the following variables: participants' stigma about mental illness, participants' level of contact with mental illness, severity of mental illness participants have been exposed to, relational strain participants attributed to mental illness, and participants' mental health literacy.

Participant characteristics. Sociodemographic variables were captured in a short questionnaire that asked participants to report their age, race, and living arrangement (i.e., two-parent home, mother only, etc.) Because this study included adolescents who may not be able to accurately identify their socioeconomic level, a proxy measure was used to assess socioeconomic level that asked whether the participant received free or reduced price lunch.

Mental illness stigma. The primary outcome, mental illness stigma, was measured with an adapted short form of the Attribution Questionnaire (r-AQ) originally developed by Corrigan (Corrigan, Markowitz, Watson, Rowan, & Kubiak, 2003; Corrigan et al., 2002). This scale was modified for use with children by Watson and colleagues (Watson et al., 2004). The r-AQ and was submitted to psychometric testing in an adolescent sample by Pinto and colleagues (2012) and furthered revised to a five-item scale (Pinto, Hickman, Logsdon, & Burant, 2012). The five-item modified r-AQ measures emotional reaction to persons with mental illness, which is the affective response of the person who is stigmatizing (Pinto, Hickman, Logsdon, & Burant, 2012). Participants were instructed to provide their level of agreement or disagreement with statements about a scenario in which a new student joins their class who may have a

mental illness. Sample items include: “I am scared of the new student” and “I will try to stay away from the new student”. Item responses are on a 1 to 7 point Likert scale, where 1 indicates strong disagreement and 7 indicates strong agreement; one item is reverse coded. Scores range from 5 to 35, with a higher score reflecting greater stigma toward mental disorders. Pinto and colleagues (2012) assessed the validity through exploratory and confirmatory factor analyses in a group of adolescents who were predominately female (Pinto, Hickman, Logsdon, & Burant, 2012). The authors reported a Cronbach’s alpha of 0.70. Cronbach’s alpha in the current study was 0.73.

Level of contact with mental illness. The Level Of Contact Report Adolescent Version (Corrigan, Lurie, et al., 2005) was used to assess participant’s level of exposure to persons with mental illness and familiarity with mental disorders. The 12-item Level Of Contact Report (Holmes, Corrigan, Williams, Canar, & Kubiak, 1999) was adapted to an 8-item measure, more relevant to adolescents, by Corrigan and colleagues (Corrigan, Lurie, et al., 2005). The measure describes eight situations with varying levels of exposure to persons with mental illness, ranging from least intimate contact ("I have never observed a person with mental illness") to highest level of intimate contact ("I have a severe mental illness"). Scores range from 0 to 7, with 0 being the least intimate contact and 7 being the most intimate contact with individuals with mental disorders. Participants were instructed to mark all items that describe their exposure to persons with mental disorders. The highest rank score of intimacy served as the participant’s score. For example, if a participant marked two situations from the list — “I have been in class with a person with a severe mental illness (score of 3) and also marked “I have a relative who has a severe mental illness” (score of 5) — they would receive a score of 5, because

having a relative with a severe mental illness is the more intimate of the indicated situations. Although there is no published data on the psychometric properties of the Level of Contact Report in an adolescent sample, the reliability and validity of the Level of Contact Report have been demonstrated in adult populations (Corrigan, Edwards, et al., 2001; Corrigan et al., 2002).

Nature of contact with mental illness. The Level of Contact Report assesses exposure to persons with mental illness but does not provide context surrounding the respondent's exposure, like severity of mental illness the respondent has been exposed to or how the exposure has affected the respondent. For this reason, participants were asked two investigator-developed questions about the nature of contact. The first question, which captured severity of mental illness exposure, included two statements, " I know someone who has received mental health treatment (counseling, medication, or therapy not in a hospital setting)" and "I know someone who has been in a psychiatric hospital", with the second statement representing exposure to a person or persons with more severe mental illness. Severity of mental illness was given a score of 0 to 2, with 1 indicating knowing a person who has been treated for mental illness outside of a psychiatric hospital (less severe) and 2 indicating knowing someone who has been treated in a psychiatric hospital (more severe). A score of 0 indicates not knowing anyone who has been in mental health treatment or not knowing what type of treatment was received. The second question assessed relational strain attributed to contact with an individual with mental illness and included three statements, "Mental illness has caused a personal relationship of mine to become worse or end", "Mental illness has had no effect on a past personal relationship of mine", and "I have had no contact with someone with mental illness". A

score of 0 was assigned if the respondent reported no contact with someone with a mental illness; a score of 1 indicates no relational strain attributed to mental illness; and a score of 2 indicates relational strain attributed to mental illness.

Mental health literacy. Mental health literacy was measured by the In Our Own Voice Knowledge Measure (IOOVKM) (Wood & Wahl, 2006). The IOOVKM was developed to measure specific facts presented in the National Alliance on Mental Illness In Our Own Voice intervention that aims to increase mental health literacy and reduce stigma toward mental illness. Detailed information on the development of the measure is published (Wood & Wahl, 2006). The measure consists of twelve items that include statements that capture emphasized information in the IOOV presentation (e.g., "Mental illness can strike people from all walks of life", "People with mental illnesses can reduce their symptoms through treatment"). Respondents were instructed to indicate their level of agreement with the statements on a 1 to 7 point Likert scale, where 1 indicates strong disagreement and 7 indicates strong agreement. Total scores range from 12 to 84, with higher scores indicating greater knowledge about mental illness. A previous cross-sectional descriptive study assessed the psychometric properties of instruments to measure stigma and attitudes of mental disorders and mental health literacy in a female adolescent population. The IOOVKM was found to have low internal consistency (α = 0.322) (Pinto, Hickman, & Thomas, 2014). In a study of predominately female graduate students, Pittman et al. found the measure to have good internal consistency (α = 0.70) (Pittman, Noh, & Coleman, 2010). Internal consistency reliability using Cronbach's coefficient in the current study was 0.508.

Data Analysis

Data from all participants with complete baseline data (n=156) were analyzed using the Statistical Package for Social Sciences (SPSS; version 22, Somers, NY). Descriptive statistics and measures of central tendency were conducted for all variables at baseline.

Bivariate analyses were then conducted. Independent t-tests were performed to examine differences in mean stigma scores for three dichotomous sociodemographic variables: grade in school (9^{th} and 10^{th}), race (Caucasian and other), and SES (low and moderate to high). A one-way ANOVA was performed to assess differences in mean stigma scores between ages (as a categorical variable). Pearson correlation tests were performed to examine the association between mental illness stigma and the following independent variables: age (as a continuous variable), level of contact, severity of mental illness exposure, relational strain attributed to mental illness, and mental health literacy.

A linear regression was then performed to assess correlates of mental illness stigma. The enter method was employed in order to assess the unique contribution of relational correlates. The inclusion of relational correlate variables in the model were informed by theoretical importance and/or gaps in the extant literature. Thus, these variables were included in the model regardless of whether they met empirical criterion for inclusion at the bivariate level (i.e., $p < 0.20$). Further, age (as a continuous variable), grade in school, race, and SES variables were included in the model to assess the extent to which mental illness stigma may be explained by sociodemographic variables.

Chapter IV

Results

Participant Characteristics

The sample was comprised of 156 female participants in 9th and 10th grade. The mean age of participants was 15.00 years (*SD*=1.31). Approximately 70.0% of the participants were Caucasian and 26.0% were African American. Further sociodemographic information can be found in Table 1.

Mental Illness Stigma

Scores on the modified five-item r-AQ ranged from 5 to 30 and the mean score was 9.33 (*SD*=4.25).

Table 1. ***Participant Characteristics***

	Total
Sociodemographic variables	**N (%)**
Age in years	
14	35 (22.4)
15	86 (55.1)
16	35 (22.4)
Grade in school	
9th	52 (33.3)
10th	104 (66.7)
Race/Ethnicity	
Caucasian	108 (69.2)
Other	48 (30.8)
Living arrangement	
Two-parent (including step-parents)	100 (64.1)
Mother only	50 (32.1)
Father only	2 (1.3)
Grandparent	2 (1.3)
Other family member	2 (1.3)
Socioeconomic level (receives free/reduced school lunch) (SES)	
No (moderate to high)	103 (66.0)
Yes (low)	53 (34.0)

Relational Correlate	
Level of Contact	
I have never observed a person with mental illness	2 (1.3)
I have seen a person with mental illness on TV	20 (12.8)
I have observed a person with severe mental illness	19 (12.2)
I have been in class with a person with severe mental illness	17 (10.9)
A friend of the family has severe mental illness	28 (17.9)
I have a relative with severe mental illness	54 (34.6)
I live with a person with severe mental illness	8 (5.1)
I have a severe mental illness	8 (5.1)
Severity of Mental Illness Exposure	
I know someone who has received mental health treatment in a non-hospital setting (counseling, medication, or therapy)	60 (39.5)
I know someone who has been in a psychiatric hospital	62 (40.8)
I don't know anyone who has been in any kind treatment/ I don't know level of treatment	30 (19.7)
Relational Strain Attributed to Mental Illness	**N (%)**
I have had no contact with someone with a mental illness	28 (17.9)
Mental illness has had no effect on a past personal relationship of mine	100 (64.1)
Mental illness has caused a past personal relationship of mine to become worse or end	28 (17.9)
Continuous Variables	M (SD)
Mental Health Literacy	60.94 (6.52)
Age (as a continuous variable)	15.0 (1.31)

Note: Level of contact is assigned a score of 0 to 7, with 0 representing lowest level contact and 7 representing the most intimate level of contact. Severity of mental illness exposure is assigned a score of 0 to 2. A score of 0 indicates not knowing anyone who has been in mental health treatment or not knowing what type of treatment was received; 1 indicates knowing a person who has been treated for mental illness outside of a psychiatric hospital (less severe); 2 indicates knowing someone who has been treated in a psychiatric hospital (more severe). Relational strain attributed to mental illness is assigned a score of 0 to 2. A score of 0 indicates no contact with someone with a mental illness; a score of 1 indicates no relational strain attributed to mental illness; a score of 2 indicates relational strain attributed to mental illness.

Relational Correlates

Level of contact with mental illness. The most common level of contact reported was having a relative with a severe mental illness (34.6%), followed by having a friend of the family with severe mental illness (17.9%). Eight participants (5.1%) reported a diagnosis of severe mental illness. Further information on level of contact can be found in Table 1.

Nature of contact with mental illness. Approximately 40.0% of participants reported they knew someone who had been treated with medications, counseling, or therapy *outside of a hospital setting*. Roughly, 41.0% of participants reported they knew someone who had been *in a psychiatric hospital*.

In terms of relational strain attributed to mental illness, of those who reported contact with a person with a mental illness, 78.0% of participants reported that mental illness had no effect on a past personal relationship and 28.0% reported they attributed a loss or worsening of a relationship to a mental illness. Further information on the nature of contact can be found in Table 1.

Mental health literacy. Participant scores on the IOOVKM ranged from 45 to 77. The mean IOOVKM score was 60.94 (SD=6.52).

Associations with Mental Illness Stigma

Table 2 presents the results of the bivariate analyses. Independent t-tests were performed to examine three dichotomous variables: grade in school (9^{th} and 10^{th}), race (Caucasian and other), and SES (low and moderate to high). No significance differences in mean mental illness stigma scores were found between 9^{th} and 10^{th} grade participants (t=-0.558, df=154, p=0.578), between Caucasian participants versus participants of another race (t=0.557, df=154, p=0.578), or between participants of low or moderate to high SES (t=0.171, df=154, p=0.864). A one-way ANOVA revealed no statistically significant differences in mean mental illness stigma scores between ages (F(2,153)=0.292, p=0.747).

Table 2. ***Bivariate Analyses Examining Associations With Mental Illness Stigma***		
	Association with mental illness stigma	
Sociodemographic Variables	**t-tests and ANOVA**	
Age in years	**M (SD)**	**p-value**
14	8.91 (4.42)	0.747
15	9.55 (4.37)	
16	9.20 (3.87)	
Grade in school	**M (SD)**	**p-value**
9th	9.06 (4.12)	0.578
10th	9.46 (4.33)	
Race/Ethnicity		**p-value**
Caucasian	9.45 (3.99)	0.578
Other	9.04 (4.82)	
Socioeconomic level (receives free/reduced school lunch)	**M (SD)**	**p-value**
No (moderate to high)	9.37 (4.56)	0.864
Yes (low)	9.25 (3.64)	
Relational Correlate	**Pearson correlation**	**p-value**
Level of contact	-0.113	0.162
Severity of mental illness exposure	-0.151	0.061
Relational strain attributed to mental illness	0.028	0.731
Mental health literacy	-0.072	0.373
Age (as a continuous variable)	0.023	0.780

A Pearson correlation test was performed to examine the association between mental illness stigma and age (as a continuous variable). No statistically significant association was found (p=0.780). Similarly, no significant associations were found between mental illness stigma and level of contact (p=0.162), severity of mental illness participants were exposed to (p=0.061), relational strain attributed to mental illness (p=0.731), or mental health literacy (p=0.373) (see Table 2).

Because the data from the modified five-item r-AQ was slightly skewed, a Log-base e (LN) transformation was performed prior to the performing the regression. Results

of the t-tests and ANOVA using the log transformation did not vary, in regards to statistical significance (i.e., whether they reached statistical significance or not). Similarly, for the Pearson correlations, the statistical significance of the relational correlates using the log transformation did not vary, with the exception of severity of mental illness exposure. Severity of mental illness exposure was significantly associated with log-mental illness stigma (r=-0.185, p=0.021). The results of the log-transformed bivariate analyses can be found in Table 3.

Table 3. ***Bivariate Analyses Examining Associations With Mental illness Stigma With Log transformation***

	Association with mental illness stigma	
Sociodemographic Variables	**t-tests and ANOVA**	
Age in years	**M (SD)**	**p-value**
14	2.09 (0.43)	0.643
15	2.17 (0.42)	
16	2.14 (0.39)	
Grade in school	**M (SD)**	**p-value**
9th	2.11 (0.42)	0.517
10th	2.16 (0.44)	
Race/Ethnicity		**p-value**
Caucasian	2.17 (0.40)	0.336
Other	2.10 (0.44)	
Socioeconomic level (receives free/reduced school lunch)	**M (SD)**	**p-value**
No (moderate to high)	2.14 (0.42)	0.921
Yes (low)	2.15 (0.39)	
Relational Correlate	**Pearson correlation**	**p-value**
Level of contact	-0.127	0.114
Severity of mental illness exposure	-0.185	0.021
Relational strain attributed to mental illness	0.032	0.695
Mental health literacy	-0.077	0.337
Age (as a continuous variable)	0.044	0.584

Regression Identifying Correlates of Mental Illness Stigma

A linear regression model was conducted using the enter method for the natural log-transformed mental illness stigma. The overall model was not statistically significant ($adjR^2$= 0.037, p=0.095). However, results of the regression model yielded a significant association between severity of mental illness exposed to and log-mental illness stigma as well as between relational strain attributed to mental illness and log-mental illness stigma. Specifically, for each unit increase in severity of mental illness exposed to, log-mental illness stigma decreased on average by 0.15 points (p=0.009) and for every unit increase in relational strain attributed to mental illness, log-mental illness strain increased by 0.14 points (p=0.037) when controlling for the other variables in the model. There were no other significant associations between log-mental illness stigma and any the sociodemographic variables or relational correlates (see Table 4).

Table 4

Ordinary Least Squares Regression Identifying Correlates of Mental Illness Stigma With Log transformation

Sociodemographic variables	**Beta Coefficient**	**Standardized Beta Coefficient**	**95% Confidence Interval**	**p-value**
Age in years (as continuous)	0.012	0.020	-0.125, 0.149	0.861
Grade in school	0.044	0.050	-0.157, 0.244	0.667
Race/Ethnicity	-0.124	-0.139	-0.294, 0.047	0.154
Socioeconomic level (receives free/reduced school lunch)	0.100	0.115	-0.068, 0.268	0.243
Relational Correlate				
Level of Contact	-0.019	-0.080	-0.064, 0.025	0.395
Severity of Mental Illness Exposure	-0.147	-0.266	-0.256, -0.038	0.009
Relational Strain Attributed to Mental Illness	0.141	0.205	0.009, 0.274	0.037
Mental Health Literacy	-0.004	-0.068	-0.014, 0.006	0.395
Constant	2.436		0.36, 4.52	0.022

Chapter V

Discussion

This study sought to determine the association between mental illness stigma and level of contact with mental illness, nature of contact (severity of mental illness encountered and relational strain attributed to mental illness), and mental health literacy among female adolescents ages 13 to 17. The severity of mental illness adolescents were exposed to and relational strain attributed to mental illness were significantly associated with mental illness stigma. More specifically, adolescents who reported knowing someone who had been treated for mental illness in a psychiatric hospital (the proxy measure for severity of mental illness) had lower stigma scores, and those who reported attributing relational strain to mental illness had higher stigma scores.

The finding that participants who were exposed to individuals with more severe mental illness had lower mental illness stigma is supported by some previous research on intergroup contact. Some studies have provided evidence that salient categorization — an ingroup member's categorization of an outgroup member as a someone they perceive as "typical" of that group — can facilitate generalization of positive attitudes from an interpersonal experience with one outgroup individual to the outgroup as a whole (Pettigrew, 1998). A person with more severe mental illness, someone who has been treated in a psychiatric setting, may perhaps represent to an ingroup member someone who more closely resembles their preconceived stereotypes of a person with mental illness than a person who receives outpatient therapy or who takes medication for treatment of their symptoms.

Predictably, participants who attributed relational strain to mental illness had higher stigma scores. In an effort to capture the nature of contact, the investigator of the parent study created a question on attribution of relational strain to mental illness; in retrospective, there is ambiguity of the wording of the question and its answer options (discussed below). This ambiguity presents a challenge to drawing inferences from this finding and raises additional questions regarding the process by which individuals form, maintain, and terminate relationships with persons with mental illness that ultimately impact stigma.

Severity of mental illness exposure and relational strain provide context to intergroup contact; both variables provide details about the nature of the interpersonal contact with a person with mental illness. The nature of the intergroup contact, for example, whether the contact was perceived as a pleasant or unpleasant experience (Couture & Penn, 2003; Desforges et al., 1991), has implications for whether contact will inhibit or promote positive contact effects (Corbiere et al., 2012). The fact that intergroup contact in and of itself does not predict positive contact effects has been noted in literature (Pettigrew et al., 2011) and at least one study has found negative effects of contact (Corrigan, Lurie, et al., 2005). Pettigrew states that the body of evidence on intergroup contact is limited by studies' primary emphasis on positive features of the contact situation, noting that factors that "curb contact's ability to reduce prejudice are now the most problematic theoretically, yet the least understood" (Pettigrew, 2008). Pettigrew calls for a focus on negative factors in future intergroup contact research in order to better understand conditions that both facilitate and inhibit the potential positive effects of contact (Pettigrew, 2008; Pettigrew & Tropp, 2006). Regardless of the

inferences that could be made from the findings, severity of mental illness and attribution of relational strain to mental illness were significantly associated with mental illness stigma, and this finding indicates that nature of contact plays a role in mental illness stigma (e.g., may mediate the relationship between contact and mental illness stigma). Further, this finding provides evidence to support previous literatures' calls for the investigation of the role nature of contact plays in intergroup contact in the context of mental illness.

Although no association was found between level of contact and mental illness stigma, the finding that exposure to individuals with more severe mental illness was associated with less mental illness stigma may be related to level of contact. It is reasonable to assume that a participant who indicated knowing someone who had been in a psychiatric facility (the proxy indicator of more severe mental illness) is likely to have a relationship that is beyond an acquaintanceship with that person (e.g., they may be living with the person, or the person may be a relative), or, at the very least, the person with severe mental illness is known to someone close to them (e.g., a family friend). This would then be consistent with previous literature on the intergroup contact and mental illness stigma in adult samples. A review of the literature on interpersonal contact and mental illness stigma that examined both retrospective naturalistic studies (i.e., studies that evaluate previous contact of the participant, rather than contact as a result of experimental manipulation), as well prospective studies, found that contact generally reduces stigmatizing beliefs about persons with mental illness (Couture & Penn, 2003). There are few studies on the effect of contact on mental illness stigma in adolescent samples. A previous study of contact in this population found that adolescents who

reported more contact with persons with mental illness were more likely to endorse stigmatizing beliefs about persons with mental illness (Corrigan, Lurie, et al., 2005). Another study found that contact was associated with some reductions in stigma but did not reduce all aspects of stigma (Jorm & Wright, 2008).

The promotion of mental health literacy is frequently included in stigma reduction interventions (Collins et al., 2012; Pinto-Foltz & Logsdon, 2009), as it is generally assumed that improved knowledge about mental illness may change negative attitudes about mental illness and thus reduce stigma (Angermeyer & Matschinger, 2005; Evans-Lacko et al., 2012). Although the two do not go hand in hand, some studies of mental health literacy interventions have provided evidence that mental health literacy is associated with mental illness stigma (Jorm et al., 2006). This study found no statistically significant association between mental health literacy and mental illness stigma.

Additionally, sociodemographic variables like SES and race were included in the regression model to determine their association with mental illness stigma. Some studies have found an association between perceptions of public stigma of mental illness and/or personal stigma about mental illness stigma and sociodemographic variables like age (Eisenberg, Downs, Golberstein, & Zivin, 2009; Golberstein, Eisenberg, & Gollust, 2008); sex (Angermeyer & Dietrich, 2006; Eisenberg et al., 2009; Golberstein et al., 2008); education level (Evans-Lacko et al., 2012); SES (Eisenberg et al., 2009; Golberstein et al., 2008); and race (Eisenberg et al., 2009; Golberstein et al., 2008). Although there was not much variation in age and grade in school (education level), both variables were included in the regression model, as were race and SES. Sex was not applicable as the study consisted of only females. This study did not find any association

between sociodemographic variables and mental illness stigma. This finding is consistent with a recent review of the literature that found no consistent evidence of sociodemographic differences in mental illness stigma (Collins et al., 2012).

Limitations

The findings of this study are limited by the cross sectional design; the temporal relationship between mental illness stigma and correlates is unknown and casual relationships cannot be inferred. Additionally, mental illness stigma was particularly low in this sample, and the findings may not be generalizable to other groups of adolescents. Low stigma scores may be reflective of the adolescents who volunteered to be participants in this study. In other words, adolescents who were interested in learning about mental illness may be more likely to have lower mental illness stigma than an adolescent who is not interested in learning more about mental illness.

Additionally, there are some weaknesses regarding the measurement instruments. The Level of Contact Report uses a rank score; however, there may be a dose response relationship that cannot be accounted with this type of measure. Further, although higher rank scores are considered to indicate more intimate contact, a person may have more frequent and more actual intimate contact (that is, contact that is marked by a close personal relationship) with a lower score contact, like a person in their class (a score of 3), than a family friend (a score of 4) or family member (a score of 5). Although the investigator of the primary study recognized the shortcomings of the Level of Contact Report, and even created two questions in order to provide some context to level of contact, the investigator was limited by the lack of more comprehensive, established

measures. That limitation extends to this analysis and the extent to which inferences can be made from the data yielded from this measure.

The answer options for relational strain do not allow for differentiation of whether the relational strain attributed to mental illness is between the respondent and the person with mental illness or if the respondent believes the mental illness of an individual affected their relationship with another person. Although both these options indicate a negative experience associated with mental illness, knowing what relationship the respondent feels was negatively affected may tell us more about how attribution of relational strain to mental illness is related to stigma. Further, although the answer option that indicates relational strain attributed to mental illness reads "*Mental illness has caused* a personal relationship of mine to become worse or end", it is not clear if respondents understood this to mean that they believe the *person with mental illness* is to blame for the strain or if they believe the culpability lies with the *mental illness itself*. Lastly, the answer options do not include one that would account for an improvement in a relationship because of mental illness. It has been well documented in the social psychology literature that self-disclosure plays a significant role in the development of close relationships (Collins & Miller, 1994), and it is entirely possible that a relationship could be strengthened through one individual revealing their mental illness.

Nevertheless, very little research has been conducted on the relationship between mental illness stigma and level of contact in adolescent samples. Further, to the best of this author's knowledge, no adolescent studies have examined the relationship between the nature of the contact and mental illness stigma.

An additional strength of this study is its exploration of correlates outside of an

intervention study. Although stigma intervention efficacy studies are generally very practical in their nature, they are typically composed of numerous components believed to reduce stigma (e.g., mental health literacy, contact, first person narrative, perspective taking), which makes it difficult to determine which approach is most critical for reducing stigmatizing attitudes (Mann & Himelein, 2008). Theoretically-driven research on factors related to mental illness stigma, like this study, is important in determining which factors are most associated with stigmatizing attitudes (Mann & Himelein, 2008).

Implications

The findings of this study have implications for public health practice. Namely, public health professionals may not need to construct formal interventions to promote the reduction of mental illness stigma. Instead, encouraging a more grass roots approach that empowers adolescents with mental illness to disclose their mental illness to their close friends may prove beneficial in reducing stigma among adolescents.

One approach to this could involve enlisting the support of celebrities who are active on social media. Social media has worldwide and instantaneous reach and its use is among the most common activities of today's adolescents (O'Keeffe & Clarke-Pearson, 2011). Many celebrities use their social media accounts like Twitter, Facebook, and Instagram to promote causes close to their heart and engage their followers in a discussion on social issues important to them. In their efforts to raise awareness about social issues and causes important to them, some celebrities disclose sensitive personal information. Often, this is done in efforts to reduce stigma around a particular issue. In an effort to promote reproductive rights and reduce stigma around abortion, Lena Dunham,

an author, screenwriter, actress, and advocate for female reproductive rights, has been open in interviews and on social media about having an abortion. She has used Instagram and Twitter to promote her partnership with Planned Parenthood and foster support for the organization. Similarly, Demi Lovato, an actress and singer, has been very open about her bipolar disorder diagnosis, as well as the time she spent in a treatment center for an eating disorder, self-harm and substance use. She has posted videos on Facebook, messages on Twitter, and photos on Instagram to promote her advocacy efforts around mental illness recovery. Both women have reached hundreds of thousands of adolescents with their messages of hope and empowerment through these mediums. Celebrities with personal connections to mental illness, whether it is their own mental illness, or the mental illness of their friend or family member, can use their influence and social media presence to share how mental illness has touched their lives. These public figures can also disseminate messages that discourage shame, encourage disclosure to close friends, emphasize hope, and encourage proper treatment.

The findings of this study indicate that promoting disclosure to friends may reduce stigma around mental illness. In addition to stigma reduction, disclosure could have the additional benefit of strengthened friendships (Collins & Miller, 1994). This would then foster social support, which has been shown to be an important factor in promoting mental health (Thoits, 2011).

Conclusions

Mental illness stigma is a serious public health problem and its reduction has been identified as an important public health priority (Compton, 2013; President's New

Freedom Commission on Mental Health, 2003; United States Health and Human Services, 1999). However, the nature of adolescent stigma must be understood before it can be effectively combatted (Pinto, Hickman, Logsdon, & Burant, 2012). Research on mental illness stigma continues to grow, including research on mental illness stigma in adolescent populations; however, it still only constitutes about a quarter of the mental illness stigma research that has been published (Corrigan, Morris, Michaels, Rafacz, & Rüsch, 2012). According to Corrigan and colleagues (2005), studying mental illness stigma in adolescents should be a top research priority; combatting prejudicial attitudes during childhood and adolescence may prevent individuals from becoming adults who stigmatize persons with mental illness, which, Corrigan states, "can lead to full-blown social injustice" (Corrigan, Lurie, et al., 2005). This study is a step in the right direction in that it adds to the growing body of literature on mental illness stigma in adolescents.

References

Angermeyer, M. C., & Dietrich, S. (2006). Public beliefs about and attitudes towards people with mental illness: a review of population studies. *Acta Psychiatrica Scandinavica, 113*(3), 163-179.

Angermeyer, M. C., & Matschinger, H. (2005). Causal beliefs and attitudes to people with schizophrenia Trend analysis based on data from two population surveys in Germany. *The British Journal of Psychiatry, 186*(4), 331-334.

Audrey, M. (1988). Psychiatric disorder in a sample of the general population with and without chronic medical conditions. *Am J Psychiatry, 145*, 976-998.

Beesdo, K., Knappe, S., & Pine, D. S. (2009). Anxiety and anxiety disorders in children and adolescents: developmental issues and implications for DSM-V. *Psychiatric Clinics of North America, 32*(3), 483-524.

Bradley, S. J. (2001). Anxiety and mood disorders in children and adolescents: a practice update. *Paediatrics & child health, 6*(7), 459.

Brent, D. A. (1995). Risk factors for adolescent suicide and suicidal behavior: mental and substance abuse disorders, family environmental factors, and life stress. *Suicide and Life-Threatening Behavior, 25*(s1), 52-63.

Brown, L. C., Majumdar, S. R., Newman, S. C., & Johnson, J. A. (2005). History of depression increases risk of type 2 diabetes in younger adults. *Diabetes care, 28*(5), 1063-1067.

Brown, L. K., Hadley, W., Stewart, A., Lescano, C., Whiteley, L., Donenberg, G., & DiClemente, R. (2010). Psychiatric disorders and sexual risk among adolescents in mental health treatment. *Journal of consulting and clinical psychology, 78*(4), 590.

Collins, N. L., & Miller, L. C. (1994). Self-disclosure and liking: a meta-analytic review. *Psychological bulletin, 116*(3), 457.

Collins, R. L., Wong, E. C., Cerully, J. L., Schultz, D., & Eberhart, N. K. (2012). *Interventions to reduce mental health stigma and discrimination*. California: The RAND Corporation.

Compton, M. (2013). The National Conference on Mental Health.

Corbiere, M., Samson, E., Villotti, P., & Pelletier, J.-F. (2012). Strategies to fight stigma toward people with mental disorders: perspectives from different stakeholders. *The Scientific World Journal, 2012*.

Corrigan, P., Markowitz, F. E., Watson, A., Rowan, D., & Kubiak, M. A. (2003). An attribution model of public discrimination towards persons with mental illness. *Journal of Health and Social Behavior*, 162-179.

Corrigan, P. W., Edwards, A. B., Green, A., Diwan, S. L., & Penn, D. L. (2001). Prejudice, social distance, and familiarity with mental illness. *Schizophrenia bulletin, 27*(2), 219.

Corrigan, P. W., Green, A., Lundin, R., Kubiak, M. A., & Penn, D. L. (2001). Familiarity with and social distance from people who have serious mental illness. *Psychiatric Services, 52*(7), 953-958.

Corrigan, P. W., Kerr, A., & Knudsen, L. (2005). The stigma of mental illness: explanatory models and methods for change. *Applied and Preventive Psychology, 11*(3), 179-190.

Corrigan, P. W., Lurie, B. D., Goldman, H. H., Slopen, N., Medasani, K., & Phelan, S. (2005). How adolescents perceive the stigma of mental illness and alcohol abuse. *Psychiatric Services, 56*(5), 544-550.

Corrigan, P. W., Morris, S. B., Michaels, P. J., Rafacz, J. D., & Rüsch, N. (2012). Challenging the public stigma of mental illness: a meta-analysis of outcome studies. *Psychiatric Services, 63*(10), 963-973.

Corrigan, P. W., & Penn, D. L. (1999). Lessons from social psychology on discrediting psychiatric stigma. *American Psychologist, 54*(9), 765.

Corrigan, P. W., Rowan, D., Green, A., Lundin, R., River, P., Uphoff-Wasowski, K., . . . Kubiak, M. A. (2002). Challenging two mental illness stigmas: Personal responsibility and dangerousness. *Schizophrenia bulletin, 28*(2), 293.

Costello, E. J., He, J.-p., Sampson, N. A., Kessler, R. C., & Merikangas, K. R. (2014). Services for adolescents with psychiatric disorders: 12-month data from the National Comorbidity Survey–Adolescent. *Psychiatric Services, 65*(3), 359-366.

Couture, S., & Penn, D. (2003). Interpersonal contact and the stigma of mental illness: A review of the literature. *Journal of mental health, 12*(3), 291-305.

Crum, R. M., Green, K. M., Storr, C. L., Chan, Y.-F., Ialongo, N., Stuart, E. A., & Anthony, J. C. (2008). Depressed mood in childhood and subsequent alcohol use through adolescence and young adulthood. *Archives of general psychiatry, 65*(6), 702-712.

Desforges, D. M., Lord, C. G., Ramsey, S. L., Mason, J. A., Van Leeuwen, M. D., West, S. C., & Lepper, M. R. (1991). Effects of structured cooperative contact on changing negative attitudes toward stigmatized social groups. *Journal of personality and social psychology, 60*(4), 531.

Edwards, A. C., Joinson, C., Dick, D. M., Kendler, K. S., Macleod, J., Munafò, M., . . . Heron, J. (2014). The association between depressive symptoms from early to late adolescence and later use and harmful use of alcohol. *European child & adolescent psychiatry, 23*(12), 1219-1230.

Eisenberg, D., Downs, M. F., Golberstein, E., & Zivin, K. (2009). Stigma and help seeking for mental health among college students. *Medical Care Research and Review, 66*(5), 522-541.

Evans-Lacko, S., Brohan, E., Mojtabai, R., & Thornicroft, G. (2012). Association between public views of mental illness and self-stigma among individuals with mental illness in 14 European countries. *Psychological medicine, 42*(08), 1741-1752.

Ghaziuddin, N., King, C. A., Naylor, M. W., & Ghaziuddin, M. (2000). Anxiety contributes to suicidality in depressed adolescents.

Golberstein, E., Eisenberg, D., & Gollust, S. E. (2008). Perceived stigma and mental health care seeking. *Psychiatric Services, 59*(4), 392-399.

Goodman, E., & Whitaker, R. C. (2002). A prospective study of the role of depression in the development and persistence of adolescent obesity. *Pediatrics, 110*(3), 497-504.

Gulliver, A., Griffiths, K. M., & Christensen, H. (2010). Perceived barriers and facilitators to mental health help-seeking in young people: a systematic review. *BMC psychiatry, 10*(1), 113.

Heflinger, C. A., & Hinshaw, S. P. (2010). Stigma in child and adolescent mental health services research: understanding professional and institutional stigmatization of youth with mental health problems and their families. *Administration and Policy in Mental Health and Mental Health Services Research, 37*(1-2), 61-70.

Henderson, C., Evans-Lacko, S., & Thornicroft, G. (2013). Mental illness stigma, help seeking, and public health programs. *American journal of public health, 103*(5), 777-780.

Holman, D. (2014). Exploring the relationship between social class, mental illness stigma and mental health literacy using British national survey data. *Health:*, 1363459314554316.

Holmes, E. P., Corrigan, P. W., Williams, P., Canar, J., & Kubiak, M. A. (1999). Changing attitudes about schizophrenia. *Schizophrenia bulletin, 25*(3), 447.

Jorm, A. F., Barney, L. J., Christensen, H., Highet, N. J., Kelly, C. M., & Kitchener, B. A. (2006). Research on mental health literacy: what we know and what we still need to know. *Australian and New Zealand Journal of Psychiatry, 40*(1), 3-5.

Jorm, A. F., Korten, A. E., Jacomb, P. A., Christensen, H., Rodgers, B., & Pollitt, P. (1997). Mental health literacy: a survey of the public's ability to recognise mental disorders and their beliefs about the effectiveness of treatment. *The Medical Journal of Australia, 166*(4), 182-186.

Jorm, A. F., & Wright, A. (2008). Influences on young people's stigmatising attitudes towards peers with mental disorders: national survey of young Australians and their parents. *The British Journal of Psychiatry, 192*(2), 144-149.

Kessler, R. C. (2007). The global burden of anxiety and mood disorders: putting ESEMeD findings into perspective. *The Journal of clinical psychiatry, 68*(Suppl 2), 10.

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of general psychiatry, 62*(6), 593-602.

Kessler, R. C., Berglund, P. A., Foster, C. L., Saunders, W. B., Stang, P. E., & Walters, E. E. (1997). Social consequences of psychiatric disorders, II: Teenage parenthood. *American journal of psychiatry, 154*(10), 1405-1411.

Kessler, R. C., Foster, C. L., Saunders, W. B., & Stang, P. E. (1995). Social consequences of psychiatric disorders, I: Educational attainment. *American journal of psychiatry, 152*(7), 1026-1032.

Kessler, R. C., Petukhova, M., Sampson, N. A., Zaslavsky, A. M., & Wittchen, H. U. (2012). Twelve-month and lifetime prevalence and lifetime morbid risk of anxiety and mood disorders in the United States. *International journal of methods in psychiatric research, 21*(3), 169-184.

Kuehn, B. M. (2005). Mental illness takes heavy toll on youth. *Jama, 294*(3), 293-295.

Lehrer, J. A., Shrier, L. A., Gortmaker, S., & Buka, S. (2006). Depressive symptoms as a longitudinal predictor of sexual risk behaviors among US middle and high school students. *Pediatrics, 118*(1), 189-200.

Lewinsohn, P. M., Gotlib, I. H., Lewinsohn, M., Seeley, J. R., & Allen, N. B. (1998). Gender differences in anxiety disorders and anxiety symptoms in adolescents. *Journal of abnormal psychology, 107*(1), 109.

Link, B. G., Yang, L. H., Phelan, J. C., & Collins, P. Y. (2004). Measuring mental illness stigma. *Schizophrenia bulletin, 30*(3), 511-541.

London, J., & Evans-Lacko, S. E. (2010). Challenging mental health-related stigma through social contact. *The European Journal of Public Health*, ckq014.

Mann, C. E., & Himelein, M. J. (2008). Putting the person back into psychopathology: an intervention to reduce mental illness stigma in the classroom. *Social psychiatry and psychiatric epidemiology, 43*(7), 545-551.

McElroy, S. L., Kotwal, R., Malhotra, S., Nelson, E. B., Keck, P. E., & Nemeroff, C. B. (2004). Are mood disorders and obesity related? A review for the mental health professional. *J Clin Psychiatry, 65*(5), 634-651.

Merikangas, K. R., He, J.-p., Burstein, M., Swanson, S. A., Avenevoli, S., Cui, L., . . . Swendsen, J. (2010). Lifetime prevalence of mental disorders in US adolescents: results from the National Comorbidity Survey Replication–Adolescent Supplement (NCS-A). *Journal of the American Academy of Child & Adolescent Psychiatry, 49*(10), 980-989.

Merikangas, K. R., He, J.-p., Burstein, M., Swendsen, J., Avenevoli, S., Case, B., . . . Olfson, M. (2011). Service utilization for lifetime mental disorders in US adolescents: results of the National Comorbidity Survey–Adolescent Supplement (NCS-A). *Journal of the American Academy of Child & Adolescent Psychiatry, 50*(1), 32-45.

National Center for Health Statistics. (2012). Health, United States, 2011: With Special Feature on Socioeconomic Status and Health. .

Ng, P., & Chan, K.-F. (2000). Sex differences in opinion towards mental illness of secondary school students in Hong Kong. *International Journal of Social Psychiatry, 46*(2), 79-88.

Nolen-Hoeksema, S., & Girgus, J. S. (1994). The emergence of gender differences in depression during adolescence. *Psychological bulletin, 115*(3), 424.

Nordt, C., Rössler, W., & Lauber, C. (2006). Attitudes of mental health professionals toward people with schizophrenia and major depression. *Schizophrenia bulletin, 32*(4), 709-714.

O'Connor, P. J., Martin, B., Weeks, C. S., & Ong, L. (2014). Factors that influence young people's mental health help-seeking behaviour: a study based on the Health Belief Model. *Journal of advanced nursing, 70*(11), 2577-2587.

O'Keeffe, G. S., & Clarke-Pearson, K. (2011). The impact of social media on children, adolescents, and families. *Pediatrics, 127*(4), 800-804.

Perou, R., Bitsko, R. H., Blumberg, S. J., Pastor, P., Ghandour, R. M., Gfroerer, J. C., . . . Schieve, L. A. (2013). Mental health surveillance among children—United States, 2005–2011. *MMWR Surveill Summ, 62*(Suppl 2), 1-35.

Perry, Y., Petrie, K., Buckley, H., Cavanagh, L., Clarke, D., Winslade, M., . . . Christensen, H. (2014). Effects of a classroom-based educational resource on adolescent mental health literacy: A cluster randomised controlled trial. *Journal of adolescence, 37*(7), 1143-1151.

Pettigrew, T. F. (1998). Intergroup contact theory. *Annual review of psychology, 49*(1), 65-85.

Pettigrew, T. F. (2008). Future directions for intergroup contact theory and research. *International Journal of Intercultural Relations, 32*(3), 187-199.

Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of personality and social psychology, 90*(5), 751.

Pettigrew, T. F., & Tropp, L. R. (2008). How does intergroup contact reduce prejudice? Meta-analytic tests of three mediators. *European Journal of Social Psychology, 38*(6), 922-934.

Pettigrew, T. F., Tropp, L. R., Wagner, U., & Christ, O. (2011). Recent advances in intergroup contact theory. *International Journal of Intercultural Relations, 35*(3), 271-280.

Pinto-Foltz, M. D. (2009). *School-based intervention to reduce stigma toward mental disorders and improve mental health literacy in female adolescents*: University of Louisville.

Pinto-Foltz, M. D., Hines-Martin, V., & Logsdon, M. C. (2010). How adolescent girls understand and manage depression within their peer group: A grounded theory investigation. *School mental health, 2*(1), 36-43.

Pinto-Foltz, M. D., & Logsdon, M. C. (2009). Reducing stigma related to mental disorders: initiatives, interventions, and recommendations for nursing. *Archives of psychiatric nursing, 23*(1), 32-40.

Pinto-Foltz, M. D., Logsdon, M. C., & Myers, J. A. (2011). Feasibility, acceptability, and initial efficacy of a knowledge-contact program to reduce mental illness stigma and improve mental health literacy in adolescents. *Social Science & Medicine, 72*(12).

Pinto, M. D., Hickman, R., Logsdon, M. C., & Burant, C. (2012). Psychometric evaluation of the Revised Attribution Questionnaire (r-AQ) to measure mental illness stigma in adolescents. *Journal of nursing measurement, 20*(1), 47.

Pinto, M. D., Hickman, R. L., & Thomas, T. L. (2014). Stigma Scale for Receiving Psychological Help (SSRPH) An Examination Among Adolescent Girls. *Western journal of nursing research*, 0193945914543954.

Pittman, J. O. E., Noh, S., & Coleman, D. (2010). Evaluating the effectiveness of a consumer delivered anti-stigma program: replication with graduate-level helping professionals. *Psychiatric rehabilitation journal, 33*(3), 236-238.

President's New Freedom Commission on Mental Health. (2003). Achieving the Promise: Transforming Mental Health Care in America [Electronic Version]. . Retrieved Retrieved January 7, 2015 from http://govinfo.library.unt.edu/mentalhealthcommission/reports/FinalReport/downloads/downloads.html

Rickwood, D., Deane, F. P., Wilson, C. J., & Ciarrochi, J. (2005). Young people's help-seeking for mental health problems. *Australian e-journal for the Advancement of Mental health, 4*(3), 218-251.

Rubin, A. G., Gold, M. A., & Primack, B. A. (2009). Associations between depressive symptoms and sexual risk behavior in a diverse sample of female adolescents. *Journal of pediatric and adolescent gynecology, 22*(5), 306-312.

Schwarz, S. W. (2009). Adolescent Mental Health in the United States: Facts for Policymakers. Retrieved February 12, 2015, from http://www.nccp.org/publications/pub_878.html

Scott, K. M., Bruffaerts, R., Tsang, A., Ormel, J. H., Alonso, J., Angermeyer, M. C., . . . De Graaf, R. (2007). Depression–anxiety relationships with chronic physical

conditions: results from the World Mental Health Surveys. *Journal of affective disorders, 103*(1), 113-120.

Scott, K. M., Von Korff, M., Alonso, J., Angermeyer, M. C., Benjet, C., Bruffaerts, R., . . . Kovess, V. (2008). Childhood adversity, early-onset depressive/anxiety disorders, and adult-onset asthma. *Psychosomatic medicine, 70*(9), 1035-1043.

Spagnolo, A. B., Murphy, A. A., & Librera, L. A. (2008). Reducing stigma by meeting and learning from people with mental illness. *Psychiatric rehabilitation journal, 31*(3), 186.

Thoits, P. A. (2011). Mechanisms linking social ties and support to physical and mental health. *Journal of Health and Social Behavior, 52*(2), 145-161.

Tuisku, V., Pelkonen, M., Karlsson, L., Kiviruusu, O., Holi, M., Ruuttu, T., . . . Marttunen, M. (2006). Suicidal ideation, deliberate self-harm behaviour and suicide attempts among adolescent outpatients with depressive mood disorders and comorbid axis I disorders. *European child & adolescent psychiatry, 15*(4), 199-206.

Turner, R. N., Crisp, R. J., & Lambert, E. (2007). Imagining intergroup contact can improve intergroup attitudes. *Group Processes & Intergroup Relations, 10*(4), 427-441.

United States Health and Human Services. (1999). Mental Health: A Report of the Surgeon General [Electronic Version]. Retrieved January 7, 2015 from http://profiles.nlm.nih.gov/ps/retrieve/ResourceMetadata/NNBBHS. Retrieved Retrieved January 7, 2015 from http://profiles.nlm.nih.gov/ps/retrieve/ResourceMetadata/NNBBHS

Wang, P. S., Berglund, P., Olfson, M., Pincus, H. A., Wells, K. B., & Kessler, R. C. (2005). Failure and delay in initial treatment contact after first onset of mental disorders in the National Comorbidity Survey Replication. *Archives of general psychiatry, 62*(6), 603-613.

Watson, A. C., Otey, E., Westbrook, A. L., Gardner, A. L., Lamb, T. A., Corrigan, P. W., & Fenton, W. S. (2004). Changing middle schoolers' attitudes about mental illness through education. *Schizophrenia bulletin, 30*(3), 563-572.

Weissman, M. M., Wolk, S., Goldstein, R. B., Moreau, D., Adams, P., Greenwald, S., . . . Wickramaratne, P. (1999). Depressed adolescents grown up. *Jama, 281*(18), 1707-1713.

Weissman, M. M., Wolk, S., Wickramaratne, P., Goldstein, R. B., Adams, P., Greenwald, S., . . . Steinberg, D. (1999). Children with prepubertal-onset major depressive disorder and anxiety grown up. *Archives of general psychiatry, 56*(9), 794-801.

Wilson, C. J. (2007). When and how do young people seek professional help for mental health problems? *The Medical Journal of Australia, 187*(Supplement), S35-S39.

Wood, A. L., & Wahl, O. F. (2006). Evaluating the effectiveness of a consumer-provided mental health recovery education presentation. *Psychiatric rehabilitation journal, 30*(1), 46.

Woodward, L. J., & Fergusson, D. M. (2001). Life course outcomes of young people with anxiety disorders in adolescence. *Journal of the American Academy of Child & Adolescent Psychiatry, 40*(9), 1086-1093.