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CAREGIVER PERCEPTIONS OF STIGMA ASSOCIATED WITH YOUTH  
PSYCHOPATHOLOGY AND ITS TREATMENT: DEVELOPMENT AND INITIAL  
VALIDATION OF A NOVEL MEASURE

by

RACHEL E. WEINSTOCK

Under the Direction of Erin Tone, Ph.D.

ABSTRACT

According to a National Research Council and Institute of Medicine report (2009), approximately 13-20% of children in the U.S. meet criteria for a mental illness in any year. Of these children, only 50.6% receive treatment (CDC, 2014). Perceived stigma related to mental illness may prevent some caregivers from seeking services (Hinshaw, 2005). However, it is difficult to assess the impact of stigma on treatment-seeking, because a broad and psychometrically adequate measure of caregivers' perceived mental health stigma does not yet exist. The goal of this study was to develop a measure to address this gap. Initial items for the measure, the Mental Health Stigma Inventory for Caregivers (MSTIC), were developed based on a literature review, semi-structured interviews with caregivers, and stigma theory. Caregivers of

children 6-18 years of age ( $n = 483$ ) completed the MSTIC, and its factor structure was explored. A five-factor solution generally consistent with the literature emerged.

INDEX WORDS: Mental health stigma, Measure, Psychopathology, Youth, Service utilization, Caregivers, Treatment, Mental Health Stigma Inventory for Caregivers, MSTIC

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RACHEL E. WEINSTOCK

A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of

Masters of Arts

in the College of Arts and Sciences

Georgia State University

2017

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2017

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VALIDATION OF A NOVEL MEASURE

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December 2017

**DEDICATION**

I dedicate this thesis to my devoted, caring, and loving parents. Thank you for your words of encouragement and support throughout my life's endeavors.

## **ACKNOWLEDGEMENTS**

I would like to express my gratitude to Dr. Erin Tone for her excellent and detailed feedback, emotional support, and lastly, her willingness to take on this project without hesitation. I am so lucky to have had your encouragement throughout this process. I would like to thank Dr. Nicole Caporino for helping me to conceptualize this project, her continuous excitement about my ideas, and thoughtful feedback. Thanks to Dr. Winnie Chan for her interest in this project and for providing intellectual contributions from a new perspective



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## 1 INTRODUCTION

According to a National Research Council and Institute of Medicine report (2009), an estimated 13-20% of children in the United States will have a mental illness in any given year. Only 50.6% of affected children, however, receive mental health treatment (Centers for Disease Control and Prevention, 2014), despite the existence of empirically validated interventions that address a variety of childhood mental health problems (Hinshaw, 2005; Proctor et al., 2009). A potentially important factor limiting children's mental health service use is caregiver reluctance to pursue services due to fears or perceptions that stigma associated with youth psychopathology and treatment may lead others to view them or their children in a negative light.

Stigma related to mental illness is widespread, despite recent evidence of increased knowledge about mental illness in the general population (Hinshaw & Stier, 2008; Hinshaw, 2005). After reviewing the literature on stigma and care seeking, Corrigan (2004) concluded that stigma is one of the most important reasons that adults either do not seek help for their mental illness or do not fully engage in treatment. However, significantly less research has considered the consequences of mental illness stigma for youth (Hinshaw, 2005).

One of the largest studies investigating stigma related to children's mental health was the National Stigma Study-Children (Pescosolido, Perry, Martin, McLeod, & Jensen, 2007). In 2002, the NSS-C was included as a 15-minute component of the General Social Survey (GSS), a face-to-face interview used to monitor American's public attitudes, perceptions, and behaviors. The NSS-C sampled 1393 participants whose demographic characteristics are similar to those of the general population, with females slightly overrepresented (59% female; 78% non-Hispanic White, 15% African-American; 71% parents). To measure stigma, participants were randomly assigned to answer questions about one of four vignettes, each of which described a child or

adolescent with a psychological disorder (i.e., attention-deficit hyperactivity disorder or major depressive disorder), a medical diagnosis (i.e., asthma), or subclinical behavioral or emotional problems. The authors examined responses to post-vignette questions about the participants' evaluation of the situations and their outcomes, general opinions of youth with mental health problems and their treatment, and trust toward physicians.

Almost a third of participants in the NSS-C reported that they considered children with ADHD to be somewhat or very likely to be dangerous to themselves or others (Pescosolido, Fettes, Martin, Monahan, & McLeod, 2007). Most NSS-C participants (81%) held similar beliefs about children with major depression. In contrast, only 13% of the sample considered children with asthma to be dangerous. The study also found that 45% of parents fear rejection at school and ramifications later in life for children who receive mental health services (Pescosolido, Perry, et al., 2007). Finally, 35% of those surveyed believed that the legal system should force treatment for children with depression, suggesting that many people do not trust parents to seek treatment for their own children.

As demonstrated by the NSS-C study, one of very few to examine this issue, stigma related to children's mental health is both a serious and common concern. Research on stigma related to children's mental health may be especially important given that symptoms of most adult mental illnesses first appear in childhood (Beauchaine & Hinshaw, 2008), and early intervention can prevent the development of more serious mental conditions throughout the lifespan (Heflinger & Hinshaw, 2010). Additionally, the mental illnesses that develop most frequently in childhood (e.g., autism, attention-deficit hyperactivity disorder) are unlikely to be transient, and they typically persist into adulthood (Beauchaine & Hinshaw, 2008). The investigation of stigma as a barrier to childhood mental health service utilization has important

implications not only for children and their families, but also for reducing the burden of adult mental illness and its cost to society (\$193.2 billion in lost earnings per year; Kessler et al., 2008).

Stigma related to childhood mental health is thus both an important and understudied topic. It may be particularly significant because it contributes to caregiver failure to meet children's needs for mental health services. One factor limiting the study of stigma associated with youth mental health and its treatment is the lack of psychometrically sound measures. The goal of this study was to develop and conduct a preliminary evaluation of the factor structure of such a measure, which was developed based on a review of the literature on stigma and associated constructs, and reflects existing knowledge about stigma as it pertains to childhood mental health. In the following sections, I provide an overview of the construct of stigma and ambiguities in the ways that theorists and researchers have defined the term. Subsequently, I discuss behaviors in which individuals engage in efforts to avoid being the targets of stigma. Next, I address the role of caregivers as pertains to stigma and childhood mental illness. I end the section with an overview of the current study and its aims.

### **1.1 Defining the Construct of Stigma**

The term stigma has had many different definitions in the research literature, and a single, universally-accepted meaning has not emerged. The concept of stigma has also been criticized as vaguely defined (Link & Phelan, 2001), which has made it challenging to study. Differences in use of the word may make it difficult for researchers to interpret one another's work and to compare findings across studies.

This ambiguity has been salient with regard to research on stigma associated with mental illness, and has resulted in part because researchers from many disciplines have investigated the

topic (Pescosolido, 2013). Variations in use of terminology have contributed to conflicting findings, with some research showing that mental health stigma has decreased in recent decades and other work supporting the idea that it is still prevalent (Pescosolido, 2013). Discrepant findings may affect allocation of resources targeting stigma, which underscores the importance of consensus around a precise definition.

The word stigma originated in ancient Greek and translates literally as “mark made by a pointed instrument, brand, to prick, puncture” (Oxford English Dictionary, 2016). Stigma was initially used in ancient Greek and Latin societies to describe cuts or burns inflicted on criminals, traitors, or slaves to signify that they had poor moral values and should be avoided (Goffman, 1963). In 1963, the sociologist Erving Goffman published a series of essays on stigma with the goal of examining the experiences of people who are not considered to be “normal” by societal standards and exploring how and why these people conceal information about themselves. In this work, Goffman combined previous metaphorical and literal meanings to describe stigma as “an undesired differentness” that “can obtrude itself upon attention and turn those of us whom he meets away from him, breaking the claim that his other attributes have on us” (Goffman, 1963, p.5).

Since Goffman’s (1963) popularization of the term, several social scientists have attempted to further clarify and refine the construct of stigma. Link and Phelan (2001), both sociologists, identified stigma as the end result of a series of co-occurring “components” (labeling, stereotyping, separation, and status loss and discrimination). Although these processes manifest in a largely universal way, the characteristics that make an individual vulnerable to stigma vary across cultures (Stier & Hinshaw, 2007). Importantly, Link and Phelan (2001) emphasize that stigma only occurs in the context of social, economic, and political power

differentials. Central to their model is the idea that even if all the components of stigma occur, stigma does not result unless the stigmatizing person is in a position of power over the stigmatized individual.

The first process in Link and Phelan's (2001) model of stigma is labeling, in which people notice characteristics that set people apart from others and assign labels on the basis of these features. For example, people who experience psychopathology may be labeled as "mentally ill," which implies that mental illness is the individual's identity rather than acknowledging the person's broader identities, of which mental illness is a part. During stereotyping, the second process, people who have been labeled are linked to a set of qualities that members of their culture and social context consider to be negative. These evaluations, or judgments, appear to be made automatically and, typically, without awareness (Cauthen, Robins, & Krauss, 1971). One commonly held stereotype regarding individuals with mental illness, particularly addictions or schizophrenia, is that they are violent or dangerous (Link, Phelan, Bresnahan, Stueve, & Pescosolido, 1999), a largely inaccurate notion that is often perpetuated by news and other media sources (Hinshaw & Stier, 2008; Teplin, McClelland, Abram, & Weiner, 2005).

People appear to use stereotyping, which has been studied extensively in the field of social psychology, to help make sense of the world around them in a rapid fashion (Allport, 1954; Hamilton, 1981). Humans have limited resources for processing information, and therefore, stereotypes provide a rough shorthand through which we try to understand other people by linking them to characteristics of a group. McGarty, Yzerbyt, and Spears (2002) note that stereotypes are not always inaccurate, and are not inherently negative. Particularly relevant to stigma is work showing that stereotypes, even when activated outside awareness, can lead to



automatic changes in behavior that may lead to unintentionally negative interactions with the stigmatized individual (Chen & Bargh, 1997).

During the separation process of Link and Phelan (2001)'s model, a community's members place labeled individuals into categories in order to distinguish them from the general population. For example, people may believe that individuals with mental illness are inferior and therefore should be separated from psychologically healthy people. In the final component of Link and Phelan's (2001) model, labeled individuals experience status loss and discrimination. Discrimination occurs via social distancing, which is the desire to stay away from a stigmatized individual and to make an effort to avoid contact, even if minimal (Corrigan, Edwards, Green, Diwan, & Penn, 2001). Status loss occurs when those who have been labeled experience downward movement in their social standing or societal status as a consequence of the imposed label. In addition, the separation caused by having been labeled leads to discrimination on a broader social scale, and stigmatized individuals experience reduced access to societal power.

Link et al. (2004) added emotional reactions, or responses, as a process in their model, given that stigma engenders emotional responses in both the individuals who have a socially discredited attribute and the individuals who stigmatize them (the "stigmatizers"). For example, a stigmatizer may feel emotions such as anger, anxiety, or pity when thinking of the target group. The stigmatized individual may notice this emotional response (e.g., as a result of change in the stigmatizer's tone of voice) or other salient cues and develop awareness that they are being stigmatized. In addition, stigmatizers are likely to attribute a stigmatized individual's behavior to that person's mental illness, rather than to other possible causes. Finally, perceptions of stigma are likely to lead to a cascade of effects in which one individual's (i.e., the stigmatizer's) emotional response can trigger and amplify emotional responses in someone else (i.e., the

stigmatized).

Hinshaw (2005) provides another interpretation of stigma from a psychological perspective, integrating and expanding upon previous work in other fields, particularly sociology. In defining stigma, he states: “Currently, the term has more of a psychological meaning, signaling an invisible, internal mark of shame related to membership in a deviant or castigated subgroup” (Hinshaw, 2005, p.715). As Link and Phelan (2001) did in their sociological model, Hinshaw takes a process approach, explaining that stigma encompasses three processes: stereotyping, prejudice, and discrimination. The central distinction between Hinshaw (2005)’s and Link and Phelan (2001)’s models is that Hinshaw addresses the individual-level, psychological processes that occur as a part of stigma in addition to the social processes emphasized in the Link and Phelan model, which presents stigma from a sociological perspective. Specifically, Hinshaw (2005) remarks that stigma comes with a strong likelihood that stigmatized individuals will internalize society’s views toward them, and distinguishes between internalized stigma (also called self-stigma) and perceptions of stigma in the public. Internalized stigma is a process in which individuals with a stigmatized characteristic identify with negative stereotypes related to their identity and expect to be treated differently (Livingston & Boyd, 2010). With regard to mental illness, self-stigma might lead to expectations of rejection and a belief that one is not a valued member of society. Perceived stigma refers only to an individual’s awareness of a stereotype and does not necessarily indicate that a person believes these stereotypes apply to himself or herself (Livingston & Boyd, 2010).

Not only are individuals who possess undesired attributes vulnerable to stigma, but those connected to or identified with these individuals (e.g., parents, offspring) may also become targets (Goffman, 1963). This distancing from individuals linked to a stigmatized person is

called “courtesy stigma,” and may impact help-seeking behaviors. For example, if caregivers fear that they themselves, in addition to or instead of their children, will be stigmatized, they may be particularly unlikely to seek support or treatment for stigmatized characteristics, such as childhood mental illness. Their children, even those with relatively mild conditions, may consequently be at elevated risk for more serious mental illness, including substance abuse, and may face social challenges such as difficulty finding employment or housing (Corrigan & Watson, 2002; National Research Council and Institute of Medicine, 2009; Richardson, 2001).

## **1.2 Avoidance of Stigma**

Given the serious consequences that people face when they experience stigma, it is not surprising that they may go to great lengths to avoid being perceived as having stigmatized qualities and thus being treated poorly. One strategy for avoiding stigma involves managing others’ impressions by concealing or masking the attributes that increase one’s vulnerability to being stigmatized. This strategy, called impression management, is composed of two discrete processes: impression motivation and impression construction (Leary & Kowalski, 1990). Impression motivation encompasses the extent to which people are motivated to control the way others perceive them and to resolve discrepancies between the way they are currently perceived and the way they would prefer to be perceived. The tendency to change behaviors in an attempt to manage others’ perceptions is called impression construction. Impression construction involves deciding on the image one wants to project as well as the methods one will use to promote this image, and may be particularly relevant in explaining why caregivers may not pursue treatment for their children.

One important reason people seek to manage their impressions is to avoid damage to their self-esteem (Leary & Kowalski, 1990). Self-esteem may play an important role in caregivers’

decisions about seeking treatment for their children, as they may have concern that their child's mental illness could be a consequence of their parenting, or that others may believe that they are bad parents who have caused their child's condition. Caregivers who are highly motivated to manage their impressions may be more likely to perceive signs of stigma in other people. It is therefore important to consider the degree to which parents are concerned about impression management, as it may be linked to their perceptions of stigma.

Caregivers' perceptions of mental health stigma in their environment likely play a role in whether or not children ultimately receive needed psychological services. In one study, parents were asked about their expectations of how it would feel to them to seek mental health services for their child (Richardson, 2001). These parents had many negative expectations regarding the process of seeking children's mental health services. During this face-to-face survey, many parents reported concern about stigma associated with seeking mental health care for their children: approximately 25% of parents reported concerns that someone would find out that their child was in treatment and 11.9% anticipated feeling embarrassed if they had to take their child to a mental health professional. Nearly half of these parents reported that they did not expect mental health professionals to be trustworthy. However, this study did not examine the way in which stigma may impact parents' expectations. Consistent with Richardson's (2001) findings, another study reported that parents had concerns, for example, that professionals might share confidential information with third parties (Ormrod & Ambrose, 1999). A fear of breach of confidentiality may be especially threatening to caregivers who are concerned about mental health stigma and managing their impressions. These findings indicate the real world consequences of stigma and their role in limiting children's access to treatments.

Another way people may seek to avoid stigma is by labeling characteristics associated

with stigma (e.g., depression) with terms less likely to elicit negative responses (e.g., burnout; Bahlmann, Angermeyer, & Schomerus, 2013). Similarly, individuals may attempt to avoid labeling; they might, for instance, deny having a diagnosis or ensure that they have no association with relevant institutions (e.g., mental health treatment centers; Corrigan, Druss, & Perlick, 2014, Clement et al., 2015). Individuals may use this strategy to avoid experiencing both public stigma (i.e., from others in their environment) and internalized stigma (i.e., one's own beliefs directed toward oneself). Likewise, people may be more likely to pursue intervention when it is framed as counseling for a mental health challenge as opposed to treatment for a psychiatric illness (Corrigan, Druss, et al., 2014).

Research shows that individuals weigh costs and benefits when deciding to seek treatment, and if stigma is perceived as a significant cost, individuals may decide not to pursue treatment (Corrigan, Druss, & Perlick, 2014). Treatment participation may also be affected by the perception of stigma and whether or not an individual believes that it is more important to avoid stigma than to address mental health difficulties. It is likely that caregivers consider the costs and benefits to both themselves and their children when deciding whether or not to initiate treatment. For example, parents skeptical of the effectiveness of therapy may decide it is less valuable than their time and money.

### **1.3 Stigma and Caregivers**

Stigma regarding childhood mental illness is also distinctively complicated in that it can extend to caregivers as well as to affected offspring. One study of parents whose children had a variety of physical, psychological, and behavioral difficulties found that in addition to courtesy stigma, caregivers are at risk for experiencing the stigma of “being a bad parent” (Francis, 2012). The stigma of “being a bad parent” is a fear that people will view parents as responsible for their

child's difficulties (Francis, 2012). This stigma has roots in the blame that many psychological treatment providers historically placed on caregivers (e.g., suggesting that caregivers are at fault for their children's mental illness; Phares, 1993).

These types of "stigma by association" may be less likely to occur in the context of adult mental health conditions, given long-standing, cross-culturally consistent expectations that adults assume responsibility for themselves and their behavior (Arnett, 1998). Notably, however, demographic and social shifts that have increased ambiguity around the timing of the transition to adulthood in recent decades (Arnett, 2000) may also have increased the likelihood that stigma will be extended to parents of adult children with mental illness as well. If level of offspring dependency, rather than age alone, influences risk for stigma imposed on caregivers, this variable will be important to consider, because children, as well as dependent adults, typically rely on their caregivers to seek treatment on their behalf.

One factor that may affect the likelihood that parents' help-seeking behaviors will be affected by caregiver stigma is the attributions that parents make about the cause of their child's mental illness (Mukolo & Heflinger, 2011); for example, whether or not they attribute their child's symptoms to biology or to bad parenting. There are cultural differences in attributions, with parents of African American, Asian/Pacific Islander, and Latino youth less likely to endorse biopsychosocial causes of childhood mental illness than parents of White youth (Mukolo & Heflinger, 2011). The discrepancies between these views and the medical community's understanding of the nature of childhood mental illness and its development may contribute to increased stigma regarding children's mental health in some cultural contexts (e.g., if in the community, mental illness is attributed to inadequate parenting).

Of the research that has been conducted on stigma related to childhood mental health, the majority has focused on stigma regarding specific disorders (e.g., attention-deficit hyperactivity disorder, depression) rather than on stigma regarding psychopathology or its treatment more generally (Mukolo & Heflinger, 2011). The lack of attention to treatment-related stigma is especially unnerving, given findings from one study that many people in the United States (U.S.) endorse the belief that stigma may actually result from children receiving mental health services rather than from their displays of characteristics associated with mental illness. Of respondents in this study, who were sampled representatively from the U. S. population, 45% reported expecting that receiving mental health treatment would call attention to a child's mental illness and lead to negative consequences, such as rejection by peers and to suffering in adulthood if others discovered that an individual had received therapy as a child (Pescosolido, Perry, et al., 2007). However, this research did not address whether the reported stigma is related to treatment itself or due to increased difficulties concealing mental illness.

## **2 CURRENT STUDY**

Although the NSS-C provides evidence that stigma is associated with childhood mental illness and treatment, more research is needed to identify stigma's correlates and consequences, particularly with regard to treatment-seeking. An important factor limiting this research is the small number of suitable and psychometrically strong measures of caregivers' perceived stigma. At the time of Link, Yang, Phelan, and Collins' (2004) review of mental health stigma measures, only four measures related to children were available, and all surveyed children directly rather than their caregivers. Recently developed measures of stigma tend to focus on adults (e.g., Corrigan, Powell, & Michaels, 2014; King et al., 2012; Kobau, Diiorio, Chapman, & Delvecchio, 2010), specific mental illnesses (e.g., Saldivia et al., 2014), and specific minority groups (e.g.,

Interian et al., 2010). In addition, one measure targets children's perceived stigma rather than their caregivers' (e.g., Pinto-Foltz, Hickman, & Thomas, 2014). It is important to create a measure targeted solely at caregivers, since they are generally responsible for making treatment decisions on their children's behalf.

Some extant measures of parents' perceived stigma are narrow in focus and measure only perceived stigma toward psychological services (e.g., Turner, 2011) rather than the broader concept of stigma regarding youth psychopathology. Other measures of parents' perceived stigma were developed specifically for use with rural populations (e.g., Heflinger, Wallston, Mukolo, & Brannan, 2014; Williams & Polaha, 2014). Thus, these measures may not be valid for use with a broader sample of caregivers. Stigma in rural populations involves factors that may not be relevant to stigma in the population at large; these include the unique considerations of living in a community where most people know one another.

The measure developed as part of this study included caregivers' perceptions of stigma related to childhood psychopathology, in addition to stigma related to seeking and receiving treatment. This measure is designed to minimize burden on participants by allowing researchers to assess each of these important components with a single questionnaire. The measure developed for this study is also intended to be useful for studying caregivers from diverse backgrounds.

Measure development generally followed Link and Phelan's conceptualization, as it is the most nuanced and encompasses the core components of stigma found across models. The measure was also informed by Francis's (2012) descriptions of courtesy stigma and the stigma of being a bad parent, as well as a review of the many strategies people use to avoid stigma. In order to better understand how stigma affects caregivers' treatment seeking on behalf of their



children, it is crucial to measure the stigma they perceive in their environment regarding youth psychopathology and mental health treatments. This goal of this study was to develop a measure of caregivers' mental health stigma for use in future research aimed, for example, at helping us to better understand family choices about mental health treatments for youth.

### **3 MEASURE DEVELOPMENT AND VALIDATION**

#### **3.1 Item development**

Items relevant to stigma associated with childhood psychopathology (broadly defined) and its treatment were developed based on (1) a review of the theoretical and empirical literatures on stigma, as well as literature specific to mental health stigma; and (2) semi-structured interviews with caregivers about perceived stigma related to childhood psychopathology and its treatment. The resulting items were subjected to an exploratory factor analysis to examine the underlying structure of the variable set. Based on the results of these analyses, a subset of items was retained to yield a measure with psychometric support.

##### ***3.1.1 Literature review***

The first step in developing a measure is generating items, typically based on relevant literature. Commonalities across literature are used to develop the "content areas" of interest (i.e., the specific topics the researcher hopes to target in the measure; Clark & Watson, 1995). (Morgan, 1998). Once the content areas are identified, at least 5 items are generated per theme. When developing a scale, it is recommended that the item pool be broader and more comprehensive than the researcher's view of the construct and that it include items that may later be considered tangential or unrelated to the core theoretical construct. Use of such a broad, wide-ranging item pool is recommended, because poor items will be eliminated after the psychometric analyses (Clark & Watson, 1995). Therefore, the item pool may include items that

appear redundant or only loosely related to the theme. Qualitative methods such as interviews can also help ensure that items are appropriately phrased, using language familiar to the participants.

Items were structured so that participants responded to each with a rating on a 5-point Likert scale (with anchors ranging from “strongly disagree” to “strongly agree”). Each question had 5 response options so as to avoid dichotomizing the scale and forcing respondents to decide if they “agree” or “disagree” (Clark & Watson, 1995). The 5-point scale included the middle category option, “neither agree nor disagree,” given that some respondents may not have a strong opinion about a particular item. Although middle-category response options may be interpreted ambiguously (e.g., one respondent might interpret the middle category to mean no opinion, while another might interpret it to mean non-applicable; Kulas & Stachowski, 2009), respondents prefer middle-category response options and when scales are well constructed, the number of ambiguous middle-category responses should be limited (Kulas & Stachowski, 2009).

**3.1.1.1 Methodology.** The literature review was conducted iteratively using the PsycInfo and Google Scholar Databases (primary key words included “stigma,” “parents,” and “youth”). All articles located with these terms were reviewed to verify that any relevant citations had not been overlooked. Additionally, the reference databases were used to identify, or “trace,” more recent literature that cited the articles previously located using the search terms.

**3.1.1.2 Themes.** The content areas, or themes, that emerged from the literature review include courtesy stigma, stigma of being a bad parent, stereotyping/labeling, status loss/discrimination, avoidance of stigma: impression management, and avoidance of stigma: avoiding labeling (see Appendix A for items generated based on literature).

### **3.1.2 *Semi-structured interview with caregivers***

#### **3.1.2.1 *Methodology***

Qualitative methodology can be useful in measure development to ensure that the scale is informed by the target population's perspectives rather than just academic reports of the population's views (Morgan, 1998). Including qualitative methodology in measure development can also aid researchers in developing items that are meaningful and understandable to the population of interest. The use of qualitative methodology helps to diversify the content base from which the items are generated (Clark and Watson, 1995). The semi-structured interviews in the present study were conducted with the goal of collecting information about caregivers' perceptions of stigma that may not be adequately addressed in the literature.

Individual interviews were deemed the most appropriate qualitative research method for this study because they allow participants to speak privately and candidly with the researcher, increasing the likelihood that they will feel comfortable discussing sensitive topics (Whitley & Kite, 2013). Focus group methodology is less preferred for discussing stigma (central to which is perceived disapproval from others), as caregivers might feel uncomfortable discussing personal experiences or be more likely to censor their thoughts in a group so as to avoid judgment from others.

There are three styles of research interviews: unstructured, semi-structured, and structured (DiCicco-Bloom & Crabtree, 2006). Structured interviews typically consist of

standardized questions and are used to test hypotheses. Structured interviews are most often used to generate quantitative data, while semi-structured and unstructured interviews are qualitative approaches. Unstructured interviews originated in anthropology as an ethnographic technique (DiCicco-Bloom & Crabtree, 2006), and typically consist of casual, unscheduled conversations with key “informants” in the population being studied. Unstructured interviews are generally used in conjunction with observational data. In contrast, semi-structured interviews are more frequently used as the only data source for a study and they are the most commonly used interview format. Unlike unstructured interviews, semi-structured interviews are scheduled in advance and use a set of predetermined, open-ended questions while also allowing for follow-up questions related to the conversation (DiCicco-Bloom & Crabtree, 2006). They combine the focus of a structured interview with the flexibility of an unstructured interview.

Semi-structured interviews were selected for use in this study to allow the researcher to learn about aspects of caregivers’ experiences that may not have been expected based on the literature. During semi-structured interviews, all interviewees are asked to answer core questions, but the order of these questions can be modified so as to match the flow of the conversation (Whitley & Kite, 2013). The researcher also uses “probes” to learn more about the experiences participants have described. Probes are predetermined so they are asked in the same way for each participant; however, probes are only used when they are needed in a particular interview to gain additional information. The use of probes also allows the conversation to be more casual and comfortable than it is during a structured interview, which does not provide the interviewer with flexibility to adapt any aspects of the interview based on the unique nature of each conversation.

Crucial components to the success of a semi-structured interview are building rapport with the participant and carefully considering the types of question asked (Leech, 2002). Developing rapport may be especially critical to the success of interviews on stigma given the sensitive nature of the topic, as caregivers who perceive heightened stigma might be reluctant to share their perceptions. Rapport is also important to ensure the participant does not feel pressure to impress the researcher. It is helpful for the interviewer to show knowledge of the topic, but also to emphasize that the interviewee is more knowledgeable about the topic as it pertains to his/her life. It was made clear in the present study that the researcher's goal was to learn from the participant. It is crucial to make participants feel at ease, as many have likely never been involved in academic interviews (Leech, 2002).

### ***3.1.2.2 Participants***

Ten caregivers of children ages 6-18 years were recruited to complete semi-structured interviews with the researcher. Typically, participants are recruited until saturation has been reached; that is, until no new themes emerge from additional interviews (DiCicco-Bloom & Crabtree, 2006). Recruitment for this component of the study halted after ten interviews, however, since the goal of the interviews was item generation rather than a comprehensive qualitative study of stigma. The child age range was selected to sample caregivers of children who are already attending school, when factors such as discrimination and fear of "being a bad parent" may be more of concern. In addition, evidence-based treatments are available for a wide range of problems at this age, which increases the likelihood that caregivers are familiar with and can access psychological treatment for youth. Caregivers were excluded if they could not speak English fluently (as assessed during the recruitment process) to ensure that participants understood the researcher's questions.

### **3.1.2.3 Recruitment**

Recruitment and other study procedures were approved by the Institutional Review Board. Initial participants were recruited through personal contacts, and snowball sampling was used to recruit additional participants.

### **3.1.2.4 Procedure**

Prior to conducting the interviews, the researcher developed an interview guide, which acted as a script for the conversation (see Appendix C; Whitley & Kite, 2013). Questions in this guide addressed the overall research aim (i.e., understanding the nature of caregivers' perceived stigma) as well as more specific aspects of the topic (e.g., fear of being a bad parent). The questions were worded in a conversational, colloquial manner rather than being academically phrased (Whitley & Kite, 2013). The questions were open-ended, as this phrasing elicits more detailed responses than would close-ended questions (DiCicco-Bloom & Crabtree, 2006). The researcher was careful to avoid asking leading questions, which aim for a particular response, and questions were asked in a sensitive, nonjudgmental manner to be certain that questions do not presume any kind of experiences. Double-barreled or compound questions (e.g., Would you expect treatment to be useful and enjoyable?) were avoided, as a respondent may answer just one of the questions or provide an ambiguous response.

In addition to the more general, overarching questions, the researcher developed probes to gain additional information related to the interviewee's initial response. The probes were also used to encourage the participant to continue speaking after pauses, and to focus the conversation if the interviewee begins to talk about topics unrelated to the project (DiCicco-Bloom & Crabtree, 2006). Although these probes were predetermined, they were only used when relevant to a particular conversation. Probes can be informal, such as using responses to show the

interviewer is listening (e.g., “yes,” “uh-huh”). Probes can also be formal, and used to target important aspects of the overarching questions the interviewee has not yet addressed.

When developing an interview guide, it is also important to consider the order of the questions (DiCicco-Bloom & Crabtree, 2006). Easier questions should be asked first, to build rapport, and more personal or sensitive questions should be asked later, after the participant has become comfortable. To ensure there is enough time for the interviewee to answer adequately, personal/sensitive questions should not be asked at the very end of the interview.

During the interview, the researcher first explained the nature of the interview to the participant and allowed him/her to ask any questions. After each question the interviewee answered, the researcher restated the response in a concise manner. Restating the answer confirms that the researcher has understood the interviewee and also lets the interviewee know the researcher is interested and has been listening carefully (DiCicco-Bloom & Crabtree, 2006).

Whiting (2008) stated that semi-structured interviews usually last from 30 minutes to several hours. In this study, interviews were limited to one hour to reduce participant burden. The interviews took place in locations selected by the interviewees. The interviews were audio recorded to facilitate transcription of the discussion for qualitative analysis. The audio recordings were stored on a private drive only accessible to the research staff. After completion of the interview, caregivers received a \$5 gift card to a local coffee shop. Caregivers were offered a referral guide listing resources for mental health treatment for both adults and children.

### ***3.1.2.5 Analysis***

The interviews were transcribed in order to prepare for thematic analysis (Braun & Clarke, 2006). The plan was for use of a broad coding scheme to increase the likelihood that all of the information being analyzed could be categorized (Whitley & Kite, 2013). When broad

coding schemes are used, the generation of few high-level categories is prioritized over minor distinctions (i.e., as in narrow coding schemes, which generate numerous highly specific categories). Narrow coding schemes involve making many decisions about what is important to address, which is preferred when there is a large research base on the topic. Since there is relatively little research on caregivers' perceived stigma regarding youth mental health treatment and psychopathology, use of a narrow coding scheme might have resulted in neglecting potentially important information.

In developing the coding scheme, the researcher's plan was to consult Braun and Clark's (2006) guidelines for the use of thematic analysis in psychological research. Thematic analysis is used to identify, analyze, and report themes within data and seeks to describe patterns across qualitative data. A theme is defined as a "level of patterned response or meaning within the data set" (Braun & Clark, 2006, p. 10). Themes do not have to reflect the topics that participants most frequently discuss, and they do not have to be theoretically based. The methodology selected for this study was an inductive thematic analysis strategy, which involves coding data without trying to fit them into a pre-existing framework or to match them to the researcher's expectations of the themes that will emerge (Braun & Clarke, 2006). This strategy was selected over theoretical thematic analysis, which is driven by the researcher's a priori theories and generally yields a less detailed description of the dataset as a whole, focusing instead on more specific aspects of the data (Braun & Clarke, 2006).

The graduate student researcher was to serve as the primary coder and one undergraduate research assistant was to serve as a secondary coder. The graduate student researcher planned to ensure that the undergraduate coder understood the coding system, the meaning behind the system, and the importance of consistency as well as the social and cultural context surrounding



children's mental health stigma (Whitley & Kite, 2013). Researchers intended to code only the manifest content of the participants' words, because different coders may make different inferences about the meaning of a statement (Hoyt & Kerns, 1999). The unit of analysis, or coding unit, was to be based on each coder's judgment, given the likely variability in the number of ideas each participant might express in a single statement. Each coder would have been asked to assign categories independently. After coding is complete, it is important to compute Cohen's kappa (Cohen, 1960; Fleiss, 1971) as a measure of intercoder reliability. Cohen's kappa represents the percentage of agreement between coders, corrected for the probability that coders would agree by chance.

After interviews were transcribed, it became evident that questions created for the interview guide had failed to elicit responses that focused on stigma related to child psychopathology or its treatment and that responses varied only minimally. This redundancy across respondents, indicative of data saturation (Saunders et al., 2017), raised questions about the utility of a formal thematic analysis strategy. As a consequence, an informal analysis style (i.e., reviewing the content of transcribed interviews) was used to identify information of relevance to the study design, interpretation of results, and directions for future research.

### ***3.1.2.6 Results***

The qualitative data did not indicate a need for major changes to the measure's preliminary items, because participants nearly unanimously denied perceptions of and/or experiences of stigma related to childhood mental illness and its treatment. Instead, their responses focused on perceptions that the current environment (e.g., prevalence of social media) may lead children to experience more distress than they have historically. Many parents also expressed a preference for counseling over medications; the measure already included items that

addressed these preferences. These data thus did not provide grounds for expanding or altering the initial item set.

However, informal inspection of the data yielded useful information that led to two changes to the study measures. Caregivers often stated that they found the questions difficult to answer because their responses would differ depending on which mental illness they focused on. As a result of this finding, a qualitative question was added to the survey asking participants to list all the mental illnesses they could think of. This question was added to elicit information that could facilitate contextualization of results by providing insight into the illnesses that participants were thinking about when completing the measure. Second, an open-ended question was added to the survey after the MSTIC so that participants could elaborate on their responses or add information that they considered relevant. This question was added to allow participants to explain their responses, including their interpretation of the items.

Despite comprehensive research support for caregivers' experiences of stigma, few interviewees reported concerns related to or experiences of stigma. Given the small sample recruited for the semi-structured interviews, responses cannot be considered reflective of beliefs held widely in the caregiver population. This pattern of response, however, raised the possibility that responses to the measure under study could be affected by social desirability bias. The 13-item short form of the Marlow-Crowne Social Desirability Scale (MC-SDS; Crowne & Marlowe, 1960; Reynolds, 1982) was therefore added to allow for the examination of social desirability biases that could have affected participants' responses.

The researcher also added questions, displayed after the MSTIC, to ask about family experience with mental illness. These items were added in light of many interview participants' responses that made evident the hypothetical wording used to ask about mental illnesses was

confusing. The interview questions were designed to ensure that participants did not have to reveal sensitive information about personal experiences with mental illness. However, many participants indicated that the questions were difficult to answer in a “hypothetical” manner given their personal experience. Therefore, family history was added to help contextualize the backgrounds from which participants might have come (i.e., under the presumption that it could have affected responses to MSTIC items).

### **3.2 Preliminary examination of measure’s psychometric properties**

#### **3.2.1 *Participants.***

Approximately 5-10 participants per item were needed to maintain adequate power for the exploratory factor analysis (Floyd & Widaman, 1995). A total of 483 caregivers with at least one child between 6 and 18 years of age were recruited, yielding an item to participant ratio of 8.03/1. This age range was selected to sample caregivers of children who are attending school and are more likely than younger children to be exposed to peers with mental illnesses; in addition, their caregivers are more likely to encounter stigma, given their greater exposure to other caregivers and higher likelihood of having been exposed to discrimination. In addition, evidence-based treatments are available for a wide range of problems at this age, which increases the likelihood that caregivers have had exposure to and can access psychological treatments.

Recruitment was conducted through Amazon’s Mechanical Turk (MTurk) service (Amazon, 2017). MTurk yields high-quality data (Buhrmester, Kwang, & Gosling, 2011) and samples generally approximate the demographic make-up of the United States (Ross, Zaldivar, Irani, & Tomlinson, 2010). For this study, the sample was limited to MTurk users located in the United States to control for potential differences in stigma across countries. Generally, MTurk participants’ race and ethnicity are representative of the U.S. population (Ross et al., 2010). In

this sample, female respondents were overrepresented, and significantly more participants chose to answer the survey about a male child than about a female child. More than half of participants reported family history of mental illness.

*Table 1. Demographic Information*

*Note. \*Participants could select more than one ethnic/racial background with which they identified.*

	<i>n</i>	Range	<i>M</i>	<i>SD</i>
<u>Age</u>				
Caregiver	483	19-70	37.38	8.64
Child	483	6-18	10.46	3.73
<u>Gender</u>				
	<i>n</i>	Percentage		
<u>Caregiver</u>				
Female	374	77.4		
Male	104	21.5		
Transgender	2	.4		
Other	1	.2		
<u>Child</u>				
Female	208	43.1		
Male	270	55.9		
Transgender	5	1.0		
<u>Ethnic/Racial</u>				
	<i>n</i>	Percentage		
<u>Background*</u>				
African-American/Black	45	9.3		
Chinese	2	.4		

Filipino	7	1.4
Indian	6	1.2
Japanese	2	.4
Korean	4	.8
Southeast Asian	4	.8
White (non-Hispanic)	391	81
Hispanic or Latino/a/x	30	6.2
Mexican	16	3.3
American Indian/Alaskan Native	9	1.9
Middle Eastern	4	.8
Self-Identified	2	.4

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Sexual Orientation	<i>n</i>	Percentage
Heterosexual	445	92.1
Gay/Lesbian/Homosexual	4	.8
Bisexual	30	6.2
Pansexual	1	.2
Other	1	.2

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Education	<i>n</i>	Percentage
High school or GED	39	8.1
Some college	146	30.2
Associate's degree	73	15.1
Bachelor's degree	136	28.2

Some graduate school	20	4.1
Master's degree	57	11.8
PhD/MD/JD/Doctorate	9	1.9
<hr/>		
Approximate Household	<i>n</i>	Percentage
<hr/>		
Income		
<hr/>		
<\$20,000	51	10.6
\$20,000-\$40,000	100	20.7
\$40,000-\$60,000	125	25.9
\$60,000-\$80,000	84	17.4
\$80,000-\$100,000	54	11.2
>\$100,000	68	14.1
<hr/>		
Employment Status	<i>n</i>	Percentage
<hr/>		
Full-Time	282	58.4
Part-time (<35 hours/week)	68	14.1
Homemaker	93	19.3
Unemployed	26	5.4
<hr/>		
Region	<i>n</i>	Percentage
<hr/>		
South	211	43.7
Midwest	96	19.9
West	90	18.6
Northeast	81	16.8
U.S. Territory	3	.6
<hr/>		

Region's Population	<i>n</i>	Percentage
Urban	99	20.5
Rural	155	32.1
Suburban	227	47
Religious Preference	<i>n</i>	Percentage
Yes	254	52.6
No	212	43.9
Family History of Mental Illness	<i>n</i>	Percentage
Yes	265	54.9
No	193	40.0

### 3.2.2 Procedure

All study procedures were approved by the Georgia State University Institutional Review Board. Eligible caregivers were asked to complete online questionnaires anonymously through the secure online survey system Qualtrics (<http://www.qualtrics.com>) via a link to the Qualtrics survey at the Amazon MTurk website (<https://www.mturk.com/mturk/>). Before completing the survey, caregivers viewed a consent form. The form instructed the caregiver to close the survey in the web browser if she or he was not interested in participating. Participants were reminded that their participation was voluntary and that they were free to skip items or withdraw from the study at any time. After survey completion, the caregivers received compensation of \$0.30 which is in the typical range for academic studies on MTurk. Items were presented in a random

order, which differed by participant. All items related to treatment included parallel items referencing psychotherapy and psychopharmacological treatments.

### ***3.2.3 Preliminary Data Screening***

In online data collection, it is possible that respondents may answer items haphazardly (i.e., insufficient effort responding; Huang, Curran, Keeney, Poposki, & DeShon, 2012), which results in data that are not valid and therefore inappropriate to include in analyses. One way to address this is to include bogus items (e.g., “Have you been to Mars?”) to which most respondents who are attending to the measure will respond in the same manner (frequency approach; Beach, 1989; Huang et al., 2012). If a participant does not choose the correct response, it can be assumed that he/she was not attending to the survey (Meade & Craig, 2012). The bogus items included the same response options as the stigma items so they did not appear distinct, which could have led participants to spend more time on or pay greater attention to them (Huang et al., 2012). Meade and Craig (2012) recommend including one infrequency response item on each page of the survey. These items were randomly distributed throughout the survey. If a participant answered one or more of these questions incorrectly, his/her data were excluded. Inclusion of these items also served to screen out participants who did not speak English fluently, as they were unlikely to have answered all bogus items correctly. Of the participants who completed the survey through MTurk ( $N=614$ ), 79% provided data that were retained ( $N=484$ ) after checking for incorrect responses to these items. One participant who reported her age as 4 was also excluded; therefore, the final analyses were conducted with a sample of 483 participants.



### **3.3 Analysis of measure's factor structure**

#### **3.3.1 *Factor structure***

Factor analysis is a technique used to examine patterns among large sets of observable variables and to reduce these data into smaller groups of unobservable, or latent, variables called 'factors' or 'clusters' according to the detected patterns (Field, 2013; Yong & Pearce, 2013).

The latent variables are constructs that are present in the data but cannot be directly measured by individual items; rather, they are identified through an analysis of the shared variance among items.

There are two kinds of factor analysis: exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). EFA is used to explore a dataset and to find patterns in the data. EFA is an iterative process that examines the data in multiple ways to understand the latent structure. Whereas CFA is used to test a priori hypotheses about the latent factor structure of the observed variables (i.e., to see if the structure conforms to the researcher's hypothesized model; Child, 2006; Yong & Pearce, 2013), the only hypothesis in EFA is that there exist unobservable factors in the dataset. EFA helps to identify the smallest number of these unobservable factors that can account for the correlations present in the dataset (McDonald, 1985). EFA was used in this study to determine the measure's latent constructs, since there were no a priori hypotheses about the measure's factor structure and the study was exploratory in nature. It is important to note that since EFA is an exploratory process, there is often no single correct way to proceed, and researchers typically conduct the analyses using several different approaches before deciding which solution is best.

### 3.3.2 *Data Analysis*

Before initiating the EFA, the Kaiser-Meyer-Olkin measure of sampling adequacy (KMO; Kaiser, 1970) was used to ensure the sample was large enough to conduct a factor analysis. The KMO statistic is the ratio of the squared correlation between variables to the squared partial correlations between the variables. A KMO value of 0, the lowest possible value, indicates dispersion in the pattern of correlations (i.e., there are likely no underlying latent factors), suggesting that factor analysis is not an appropriate technique. A KMO value of 1, the highest possible value, indicates that the pattern of correlations is compact; therefore, factor analysis is appropriate and will likely produce distinct and reliable factors. The exploratory factor analysis was planned to proceed if the KMO statistic was at least .5, as per Hutcheson and Sofroniou's (1999) guidelines. If the KMO statistic was less than .5, more data would have been collected. Prior to conducting the EFA, the KMO was calculated; the value exceeded .9, indicating that the sample size was adequate (Hutcheson & Sofroniou, 1999).

Next, the correlations among all variables (i.e., each question in the measure) were examined. Variables with several correlations below .3 were excluded from the factor analysis, as they were unlikely to load onto any factors. Since the questions were intended to measure sub-components of a single construct, it was expected that most variables in the dataset would correlate above .3 with other items.

Variables that show extreme correlations, known as multicollinearity, must be excluded from factor analyses because it is impossible to determine their unique contributions to a factor. Extreme multicollinearity was evaluated by examining the determinant of the R-matrix. The R-matrix is a table displaying the correlations between each pair of questions in the measure. The determinant of a matrix reflects the overall area or spread of the data and ranges in value from 0

to 1. When data show no pattern (i.e., are scattered), the determinant is equal to 1; when the correlation matrix is singular (i.e., data are perfectly correlated), the determinant is 0. A factor analysis can be conducted with all items if the determinant of the R-matrix is greater than .00001 (Field, 2013).

For all items with correlations greater than .8, a trial and error method of removing each item and examining the effects on multicollinearity would have been used to determine if the item should be excluded. No items fell into this category. Another test used to evaluate multicollinearity is Bartlett's test of sphericity, which yields an estimate of whether the correlations between variables differ significantly from zero. However, when sample sizes are large, Bartlett's test can appear significant even when correlations are small, so examination of the R-matrix was used for this study (Field, 2013).

Next, each variable's distribution was checked for normality. Univariate descriptive statistics were calculated for all items and the resulting means and standard deviations were used to examine the distribution of the data. The frequency distribution was examined for each item, and skewness and kurtosis were checked. Skewness did not exceed |2| and kurtosis did not exceed |7| for any items; these guidelines are as recommended by West, Finch, and Curran (1995) for sample sizes larger than 300.

After these assumptions were checked, factors were extracted using SPSS 22.0 software. Extraction produces eigenvalues, which reflect the amount of variance represented by a factor and indicate whether a factor is meaningful (Field, 2013). Eigenvalues were examined to determine how many factors should be extracted. R software was used to conduct a parallel analysis of eigenvalues to determine the number of factors to extract when the EFA was conducted in SPSS (Humphreys, 1975; Silverstein, 1987; Zwick & Velicer, 1986). Parallel

analysis is a Monte Carlo simulation used to compare the observed dataset to randomly generated datasets with the same number of participants. Parallel analysis involves four steps (Hayton, Allen, & Scarpello, 2004). First, a random data correlation matrix is generated with the same number of participants and variables as the dataset being factor analyzed. Next, eigenvalues are extracted from the randomly generated data using principal components analysis. The first two steps are repeated a minimum of 50 times, as recommended by Hayton et al. (2004). In the third step, the average of the 50 eigenvalues are calculated, as well as the 95<sup>th</sup> percentile. Finally, the eigenvalues from the real data are compared with the eigenvalues from the randomly generated data. Factors identified in the present study were retained if their eigenvalues exceeded the eigenvalues from the randomly generated dataset (Hayton & Allen, 2004). This number of factors was then used for the EFA.

Parallel analysis is the preferred method for determining the number of factors to extract. Other methods include Kaiser's criterion and Cattell's scree test. Cattell's scree test shows a plot of the eigenvalues against possible numbers of factors. The researcher examines this plot to determine when the line begins to level off, which is called the point of inflection, and uses this point of inflection to determine how many factors need to be retained. Kaiser's criterion suggests that all factors should be retained if their eigenvalue is greater than one (Yong & Pearce, 2013). Neither Kaiser's criterion nor Cattell's scree test is recommended, as they have been shown to overestimate the number of factors (Hayton et al., 2004).

After the factors were extracted, the factor loading for each variable on each factor was calculated. Factor rotation is used to differentiate factors. There are two types of factor rotation, orthogonal and oblique. Orthogonal rotation assumes the variables are independent and not correlated with each other (Child, 2006) whereas oblique rotation assumes correlations between

items. Both methods of factor rotation were used in this study and results were compared. From a theoretical standpoint, oblique rotation is appropriate, since it is rare for any variables related to human behavior to be completely independent (Child, 2006). However, it is recommended that one first run analyses using orthogonal rotation, because if the factors are not significantly correlated, the orthogonal solution may be appropriate (Field, 2013). The results of both analyses are compared using the factor transformation matrix to determine which analysis is superior. This matrix converts the unrotated factor loadings into rotated loadings. The matrix's values represent the degree to which each factor has been rotated.

There are three kinds of orthogonal rotations: varimax, quartimax, and equamax. Varimax is used to maximize the dispersion of loadings onto the factors, which leads to factor clusters that are more interpretable compared to the other methods. Quartimax maximizes the spread of factor loadings for a variable across all of the factors extracted, which makes interpreting variables easier; however, the quartimax method often leads to many of the variables loading onto a single factor. The equamax method reflects a combination of the quartimax method and varimax method. Tabachnick and Fidell (2012) suggest that the equamax method is erratic and should therefore be avoided. Field (2013) recommends the varimax method because it simplifies factor interpretation.

Oblique rotations are more complex since the factors can correlate with one another. There are two kinds of oblique rotation methods available in SPSS: direct oblimin and promax. With direct oblimin, the extent to which the factors can correlate is determined by a constant, which is called "delta." Delta can be adjusted to limit or maximize correlation between factors; however, the default recommendation for delta is 0 (Pedhazur & Schmelkin, 1991). Promax is a fast procedure designed for use with large datasets, while the oblimin procedure is more

appropriate for small samples sizes (Field, 2013). The promax procedure for oblique rotations was used for this study given the large sample size.

After extraction, the pattern matrix and structure matrix were examined to determine how many items should be retained for each factor. The pattern matrix displays the factor loadings and the structure matrix takes into account the correlations between factors. For each item, factor loadings were examined to determine the factor on which it loads most highly. Factor loadings represent the correlation of each item with the latent factor. As per Whitley and Kite's (2013) guidelines, for items to be retained, they must show a loading of at least .3 on a factor; items that do not load on to any factors should be eliminated. If an item loads onto several factors above the .3 level (cross-loading), it should be retained as part of the factor onto which it loads most highly; however, if the loadings are less than .1 apart, the item should be dropped as it cannot be used to discriminate constructs. The minimum number of items for retaining a factor was three, as recommended by Costello and Osborne (2005). Factors with fewer than three items tend to be unstable and do not indicate a solid factor. Based on which items clustered together, each factor was appropriately named.

With the oblique rotation, inter-factor correlations are computed and if there are high correlations between factors, the latent constructs are related to one another. If the constructs are unrelated, the oblique and orthogonal solutions will be identical. If the factors do correlate, as they did in this study, the oblique solution is superior.

Finally, it is important to determine the reliability of the scales. The internal consistency of each factor was examined using Cronbach's alpha, the most common measure of a scale's internal consistency (Field, 2013). Cronbach's alpha values below .7 are considered "questionable" to "unacceptable," values between .7 and .8 are considered "acceptable," values

between .8 and .9 are “good,” and values greater than or equal to .9 are deemed “excellent” (Field, 2013). Cronbach’s alpha was computed for the entire scale, as well as for each factor that emerged from the EFA. If a factor’s Cronbach’s alpha is below .7, items should be removed if doing so would improve the internal consistency of the scale (Field, 2013). SPSS can calculate “Cronbach’s alpha if item deleted,” which was used to determine if removing an item would improve the scale. Inter-item correlations were also examined to investigate the measure’s reliability. When a scale is reliable, each item correlates with the overall scale (Field, 2013). Each item correlated with the overall scale. Whenever an item is removed, the factor analysis must be run again to ensure the factor structure is still the same.

#### 4 RESULTS

At the initial stage of the EFA, with 42 items included, the KMO exceeded .9, indicating an adequate sample. Throughout all subsequent stages of the EFA, the KMO remained above .9. Next, all data checking procedures were completed. First, inspection of data led to concerns that participants may have overlooked the reverse wording for 3 reverse-coded items (Items 40-42), as these items correlated negatively with the rest of the items. Consequently, these items were removed.

Next, correlations between all remaining items were examined. There were no items with correlations  $>.8$ . However, significant multicollinearity was evident based on the R-matrix determinant of  $6.964^{-12}$ . Therefore, items were removed one by one, in a trial and error process, to determine which of them contributed to the observed multicollinearity. After this process was complete, 15 items were removed, leaving 42 items. At this point, the determinant of the R-matrix exceeded 0.00001, indicating that extraction of factors could proceed.

During each iteration of the factor analysis, these processes (i.e., inspection of KMO and for multicollinearity, with removal of items are necessary) were repeated. The factor analysis process was repeated a total of 7 times before a solution emerged. Because items correlated at a high level, the promax method was used to calculate the eigenvalues needed for parallel analysis. Analyses were also conducted using the varimax method (see Appendix D). These results are presented for purposes of comparison, but it should be noted that the promax solution is the most appropriate for this data given correlations between the items and factors.

During each iteration, parallel analysis was used to determine the appropriate number of factors to extract. After the factor extraction process, 14 low- and cross-loading items were removed. The final parallel analysis indicated that a five-factor solution provided the best fit for the data (see Table 1). Each factor had at least three items with loadings  $> .3$ ; therefore, no factors were removed. Inter-factor correlations were examined, and each factor was significantly correlated with each of the other factors and with the total scale. Cronbach's alpha was calculated for each factor and indicated "good" to "excellent" internal consistency (Field, 2009). A single item was removed from Factor 3, as analyses indicated that removing this item would improve the reliability of this factor. After this item was removed, the factor analysis was repeated and the factor structure was retained.

In the final solution (see Appendix C), a total of 27 items loaded onto five factors. Each factor was named according to the themes that were common across its constituent items. Factor 1 included 10 items that reflect concerns about negative outcomes for children as a result of stigma ("Consequences for Child"), Factor 2 included seven items that reflect concerns about stigma-related negative outcomes for caregivers ("Consequences for Caregiver"), Factor 3 included four items related to concerns about children's mental health treatment ("Treatment



Concerns”), Factor 4 included three items about worries related to perceptions of a child’s mental health in the school context (“School Concerns”), and Factor 5 included 3 items about the long-term consequences of childhood mental illness (“Lifelong Consequences”). The final model accounted for 60.22% of the total variance in the included variables. Individual factors accounted for distinct amounts of variance as follows: Consequences for Child (41.11%), Consequences for Caregiver (8.37%), Treatment Concerns (4.52%), School Concerns (3.77%), and Lifelong Consequences (2.44%). For the final scale, Cronbach’s alpha was .95, and alpha for each scale was as follows: Consequences for Child (.90), Consequences for Caregiver (.92), Treatment Concerns (.85), School Concerns (.89), and Lifelong Consequences (.85).

Table 2. MSTIC Promax Rotation Eigenvalues

	Factor	Factor	Factor	Factor	Factor
	1	2	3	4	5
If people found out my child had a mental health problem, I am concerned he/she would be labeled as “mentally ill.”	<b>.761</b>				
My child’s teacher would judge him/her if he/she had a mental health problem.	<b>.357</b>				
If my child were diagnosed with a mental health problem, I fear he/she would be perceived as dangerous.	<b>.542</b>				
If my child were diagnosed with a mental health problem, I’m concerned that the diagnosis would overshadow other important things about my child.	<b>.569</b>				
If I took my child to a psychiatrist (i.e., a doctor who prescribes medications for mental health problems), he/she would be labeled as “mentally ill.”	<b>.500</b>				
If my child had a mental health problem, other children probably would not like him/her.	<b>.519</b>				
People want to avoid children with mental health problems.	<b>.698</b>				
If my child were diagnosed with a mental health problem, I fear other parents would not want their child to spend time with my child.	<b>.752</b>				
If my child were diagnosed with a mental health problem, I fear he/she would be the target of gossip.	<b>.859</b>				
If my child were diagnosed with a mental health problem, people would treat him/her differently.	<b>.796</b>				
If I took my child to a psychiatrist (i.e., a doctor who prescribes medications for mental health problems), people would look down upon me.		<b>.498</b>			

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People think children might develop mental health problems as a result of bad parenting.	<b>.516</b>
If my child needed a therapist (i.e., someone who provides talk therapy), people would take that to mean I was not a good parent.	<b>.868</b>
If my child needed a psychiatrist (i.e., a doctor who prescribes medications for mental health problems), people would take that to mean I was not a good parent.	<b>.861</b>
If my child needed a therapist (i.e., someone who provides talk therapy), people would take that to mean I failed somehow as a parent.	<b>.790</b>
If my child needed a psychiatrist (i.e., a doctor who prescribes medications for mental health problems), people would take that to mean I failed somehow as a parent.	<b>.892</b>
If my child had a mental health problem, people would think I was a bad parent.	<b>.800</b>
If my child had a mental health problem, I'd rather to take him/her to a pediatrician (i.e., a doctor who specializes in children's health rather than mental health) than a psychiatrist (i.e., a doctor who prescribes medication for mental health problems) because I'd be scared of being judged.	<b>.610</b>
If my child had a mental health problem, I would prefer to read self-help books than to take them to a therapist (i.e., someone who provides talk therapy) because I'd be scared of being judged.	<b>.922</b>
If my child had a mental health problem, I would prefer to read self-help books than to take them to a psychiatrist (i.e., a doctor who prescribes medications for mental health problems) because of what others might think.	<b>.956</b>

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If my child had to take medication for a mental health problem, I wouldn't want other people to see me pick it up at the pharmacy.	<b>.404</b>
If my child were diagnosed with a mental health problem, I would not want his/her school to find out.	<b>.915</b>
If I took my child to a therapist (i.e., someone who provides talk therapy), I would not want his/her school to find out.	<b>.855</b>
If my child had a mental health problem, I would not want his/her school to know.	<b>.824</b>
If my child were diagnosed with a mental health problem, he/she would have fewer opportunities than he/she would otherwise	<b>.929</b>
If anyone ever found out my child went to a therapist (i.e., someone who provides talk therapy), he/she would have fewer opportunities later in life.	<b>.781</b>
If anyone ever found out my child went to a psychiatrist (i.e., a doctor who prescribes medications for mental health problems), he/she would have fewer opportunities later in life.	<b>.697</b>

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*Note.* Factor loadings <.3 are suppressed.

In order to examine social desirability bias, correlations between the MC-SDS, the MSTIC total score, and each MSTIC subscale were inspected. The MC-SDS total score was significantly negatively correlated with the MSTIC total score, Factor 1 (Consequences for Child), Factor 2 (Consequences for Caregiver), and Factor 5 (Lifelong Consequences).

*Table 3. Correlations between MSTIC, Factors, and MC-SDS (n=483)*

Notes. \*\* $p < .01$ ; MC-SDS = Marlow-Crowne Social Desirability Scale; MSTIC = Mental Health Stigma Inventory for Caregivers

	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
1. MC-SDS	-					
2. Factor 1	-.12**	-				
3. Factor 2	-.15**	.71**	-			
4. Factor 3	.01	.41**	.47**	-		
5. Factor 4	.00	.44**	.44**	.54**	-	
6. Factor 5	-.16**	.66**	.57**	.50**	.44**	-
7. MSTIC	-.12**	.89**	.87**	.67**	.66*	.77**
Total Score						

## 5 DISCUSSION

Despite high prevalence rates of childhood mental illness (National Research Council and Institute of Medicine, 2009), approximately half of affected children do not receive treatment (CDC, 2014). There is evidence that for a subset of these children, perceived stigma related to mental illness may prevent their caregivers from seeking services (Hinshaw, 2005). The degree to which stigma-related concerns affect parents' decisions about their children's care, however, remains unclear. To facilitate research on caregivers' perceived stigma as a barrier to treatment-

seeking, the current study was conducted to develop a measure—the Mental Health Stigma Inventory for Caregivers (MSTIC) and to test its internal consistency and structure.

Potential items were generated following both a thorough literature review and qualitative analysis of interviews with a small set of caregivers. Notably, the interviews yielded information that informed the creation of the study, but did not contribute to the development of additional items beyond those based on the literature. Items were then subjected to exploratory factor analysis using promax rotation with data from a large, diverse sample of caregivers. Results of this analysis showed that the final 27 items clustered into a clear and coherent five-factor structure. The pattern according to which items clustered suggests that the MSTIC captures meaningful constructs that align with existing theory and empirical data regarding stigma. Moreover, both the measure as a whole and the five individual factors displayed good to excellent internal consistency, as indicated by Cronbach's alpha.

### **5.1 Final Factor Structure**

The items on the five factors clustered in ways that were generally consistent with themes identified in the preliminary literature review, which included courtesy stigma, stigma of being a bad parent, stereotyping/labeling, status loss/discrimination, avoidance of stigma: impression management, and avoidance of stigma: avoidance of labeling. Factors were labeled as follows: Consequences for Child (Factor 1), Consequences for Caregiver (Factor 2), Treatment Concerns (Factor 3), School Concerns (Factor 4), and Lifelong Consequences (Factor 5). Items loading on some factors mapped clearly onto individual themes (e.g., all items in Factor 3 appeared to tap avoidance of stigma: impression management). Items retained on other factors, however, appeared to reflect two themes; for example, Factor 1 comprised items that aligned with both stereotyping/labeling and status loss/discrimination themes. Notably, two identified themes were

not well-represented among the items retained in the final solution. Only one item came from the “courtesy stigma” theme, and none came from the “avoidance of stigma: avoiding labeling” theme.

There are a few potential reasons why items regarding courtesy stigma and avoidance of labeling were poorly represented. First, the items generated may not have adequately captured these themes. Second, it is conceivable that these items overlapped excessively with other items, and therefore did not emerge as distinct. A third possibility is that these items reflect constructs other than stigma and, given that the promax method assumes correlations among factors, the items did not fit well with the overall measure.

The first factor, labeled Consequences for Child, comprises 10 items that describe unpleasant outcomes that children might experience if others were to find out they have mental health problems. These outcomes include being mistreated because of their mental health issues, being the target of gossip, and having assumptions made about them that may be inaccurate. The Consequences for Child factor includes six items from the “stereotyping/labeling” theme identified in the literature and four items from the “status loss/discrimination” theme. The finding that items reflecting these two themes clustered together in the analysis suggests that they may overlap in ways that have been overlooked in the literature or that a broader latent construct at least partially underlies both of the identified themes. However, this overlap is not entirely surprising given that both of these themes were informed primarily by Link and Phelan (2001)’s model, which defines stigma as the end result of the co-occurrence of labeling, stereotyping, separation, and status loss and discrimination.

Factor 2, which was assigned the label “Consequences for Caregiver,” includes seven items that describe what a caregiver thinks he/she would experience were his/her child to

experience a mental health problem. In particular, this factor includes fears that others will think that a caregiver's parenting behavior has caused the child's difficulties. This factor comprises six items from the "stigma of being a bad parent" theme identified in the initial literature review, as well as one item from the "courtesy stigma" theme. The emergence of this factor is consistent with the idea that caregivers may fear being perceived as using poor parenting practices, should their children have mental health problems.

The Treatment Concerns factor (Factor 3) encompasses four items describing fears that caregivers might have about pursuing mental health treatment for their children. All concerns in this factor relate to judgment from others that caregivers might experience as a result of treatment-seeking. It is notable that all of these items come from the "avoidance of stigma: impression management" theme identified in the literature. This finding could indicate that parents' concerns about treatment are primarily related to fear of judgment. This factor does not correlate significantly with Marlow-Crowne Social Desirability Scale scores (see Table 3), indicating that the items comprising this factor were endorsed relatively equally by participants with both low and high levels of social desirability. Each of the items in this factor describe concerns about others' judgment related to mental health treatment seeking on behalf of youth. Specifically, each describes a way to avoid interacting with mental health providers (e.g., reading a self-help book instead) in an effort to keep mental health problems private.

Also notable is that the item concerning caregiver preference to visit a pediatrician rather than a psychiatrist was retained, but the parallel item about preference for visiting a pediatrician versus a therapist was not. This pattern of item retention may reflect differences in biases, or may simply indicate that comparison to a pediatrician is more relevant in the context of distinctions between two medical doctors. Little research has compared attitudes toward primary



care providers and mental health specialists. However, one study (Kovess-Masféty et al., 2007) sampled 441 randomly-selected adults and asked about intentions to seek help if they had a psychological disorder; this study found that 57.8% of respondents would seek out a general practitioner if they experienced a psychological or behavior difficulty. Of participants who reported they would seek out a mental health practitioner, there was no difference in reported intention to seek out a psychiatrist as compared to a psychologist.

School Concerns (Factor 4) describes concerns about the ways in which school personnel might respond when informed that a child has a mental health problem. All three items relate to a desire to keep mental health status private from a child's school. Two of these items come from the "stereotyping/labeling" theme, and one comes from the "avoidance of stigma: impression management" theme. As with Treatment Concerns (Factor 3), this factor does not correlate with Marlow-Crowne Social Desirability Scale scales (see Table 3). Although these items loaded onto distinct factors, items on both subscales reflect privacy concerns. The absence of a link to social desirability bias suggests that caregivers feel relatively comfortable indicating their true preference for keeping mental health information private.

The three items that make up the Lifelong Consequences factor (Factor 5) describe caregiver concerns about how mental health problems or treatment might affect children later in life. Specifically, they relate to fears that a child's mental health status or treatment would limit the child's opportunities as they enter adolescence and adulthood. These were items all generated based on the "status loss/discrimination" theme. Not surprisingly, this factor correlated most strongly with the Consequences for Child factor; however, the moderate strength of the association suggests that concerns about present and future impacts of mental illness on children's outcomes may manifest in somewhat distinct ways.

## 5.2 Implications of Semi-Structured Interviews

As noted earlier, the interviews conducted with caregivers did not elicit anticipated information about personal experiences with stigma regarding children's mental illness that might have informed the initial list of items. Nonetheless, they did yield information that ultimately improved the study by spurring the collection of additional data. In particular, the interview data made clear the importance of including measures of social desirability bias in studies of mental health stigma. Despite significant research support for the presence of stigma, interviewees rarely reported views or experiences consistent with stigmatizing beliefs of their own or with concerns about such beliefs in others. Although the interview sample cannot be considered representative of the general population (i.e., due to small sample size and convenience sampling methodology) their data nevertheless support the importance of examining social desirability biases in research on stigma.

Henderson, Evans-Lacko, Flach, and Thornicroft (2012)'s study of mental health stigma yielded similar findings. They compared social desirability biases between participants who completed in-person interviews and those who provided data via online collection methodologies and found that social desirability scores were significantly lower for the participants who completed an online survey. They similarly concluded that online survey methodologies are superior to in-person interviews when studying mental health stigma. However, as is reflected in the significant correlations between the Marlowe-Crowne and the MSTIC (see Table 3), it is clear that online data collection procedures are not immune to the effects of social desirability biases. This finding calls attention to the likelihood that the MSTIC, along with other measures of mental health stigma, underestimates the degree to which caregivers perceive stigma. When the MSTIC is used in future research, it will be important to note this caveat. Further study of

the MSTIC measure might benefit from examining the effects of rephrasing items to ask respondents only what “other parents” would think of their children, or what parents should do to avoid judgment, as a potential way to address the influence of social desirability.

Interview data also suggested that participant responses to questions about mental illness and associated stigma are likely to vary depending on the mental illnesses that are salient to each person. Based on this finding, an item that asked the respondent to name the mental illnesses that first came to mind was added to the survey that the participants in the exploratory factor analysis portion of the study completed. A total of 472 participants (98% of the sample) provided at least one response to this item, of these, 459 provided two or more responses (97%). The most frequently reported illnesses were depression, anxiety, bipolar disorder, ADHD, and schizophrenia. These responses provide useful information with which to interpret scores on the MSTIC. Especially notable is the frequency with which participants listed illnesses that are rare (e.g., schizophrenia; Jones, 2013) or controversial (e.g., bipolar disorder; Parens & Johnston, 2010) among children, but may nonetheless have factored in to participants’ thinking about stigma. In future research, it will be important to include a similar question. For example, if scores on the MSTIC are found to predict treatment-seeking behaviors, it will be helpful to understand if these effects are driven by attitudes regarding more extreme mental illnesses.

Relatedly, answers to interview questions also suggested that people vary widely in their understanding of broad terms such as “mental illness” and “mental health problem.” For example, several respondents asked the interviewer if ADHD was a mental health problem. Researchers should be careful to address these variabilities, and to recognize that such terms may carry very different connotations for clinical researchers and for members of the general public, who may, in accordance with school classifications, think of ADHD as a general health

conditions rather than as a mental illness. One way to begin to account for such inconsistencies would be to include a measure of “mental health literacy” as a covariate; for example, the Mental Health Literacy Scale (MHLS), which O’Connor and Casey (2015) developed to measure mental health knowledge (e.g., ability to recognize disorders, knowledge of available treatment, etc.) and attitudes. Data from such a measure would allow researchers to assess for differences in caregivers’ mental health literacy that could explain differences in perceived stigma.

Another possible consequence of the individual variability in understanding of key terminology is that measures referencing “mental illness” or “mental health problem” may not always target the constructs that researchers intend to study. One way to address this issue, both before and after measure use, would be to present participants with study items and to have them explain their interpretations of each item. Another possibility that is less cumbersome would be to define the terms in the instructions or body of the measure. This approach, too, is not without limitations, as it prevents researchers from examining attitudes toward mental illness without influencing how participants understand the term. Researchers will need to consider carefully the benefits of operationalizing this terminology or of allowing participants to respond based on their own conceptualizations.

### **5.3 Limitations**

Although the present study yielded initial evidence of good psychometric properties for the MSTIC, it has several limitations that warrant attention. First, guidelines suggest that optimal samples for factor analysis include a minimum of 10 participants per item; this study included only approximately 8 participants per item. However, it should be noted that the KMO statistic remained excellent at each stage of analysis, indicating that the sample size was sufficient. Nonetheless, replication of the current findings in a larger sample would allow for

increased confidence that the factor structure ascertained in the present work is accurate and stable.

Second, while the decision to collect data online had advantages, including the recruitment of a nationally diverse sample of caregivers, it precluded determining with certainty that participants genuinely met participation criteria. Additionally, IRB guidelines prevented the researchers from rejecting, or stating that they would reject, work from participating workers who did not respond correctly to the insufficient effort responding items, or did not complete the entire survey. Guidelines also prevented researchers from restricting the “HIT” to participants who had not yet completed the task, which meant that workers could take the survey multiple times. Many surveys on the MTurk platform, however, include such stipulations in order to maximize the likelihood that participants will provide valid responses. It is thus possible that workers recognized that incomplete responses would not be penalized, and therefore were incentivized to respond haphazardly or to otherwise provide invalid data. To protect against the impact that inattentive or erratic responders may have had on the data collected, participants who did not answer the insufficient effort items correctly were removed from the sample prior to analysis (see Section 3.2.3); however, it is not possible to know how many workers completed the survey multiple times.

Although the study sample was representative of the general United States population in many ways, female participants were overrepresented. This finding is not surprising, given that studies related to childhood psychopathology typically include more female than male caregivers (Parent, Forehand, Pomerantz, Peisch, & Seehuus, 2017). However, it was unanticipated that participants would be more likely to answer questions about a male child. Instructions simply stated, “If you have more than one child, please select only ONE to think about when answering

these questions.” It is unclear whether this overrepresentation of males reflects the actual distribution of male and female children in the sample; the caregivers were not asked to report the gender of all their children. However, this discrepancy is meaningful given that prevalence rates for many childhood mental illnesses differ by sex (Merikangas, et al. 2010a; Merikangas et al., 2010b). If replicable, future research may seek to investigate this finding and to understand whether and why caregivers are more likely to respond about male children.

#### **5.4 Conclusions and Future Directions**

The measure developed from this study reflects only a preliminary psychometric analysis, but supports a 27 item, five-factor scale. Each subscale, and the MSTIC as a whole, shows “good” to “excellent” internal consistency. This initial analysis serves as the foundation for further research into the MSTIC’s psychometric properties, and subsequently, refinement of the measure.

Firstly, any future exploratory analyses should use a sample size of at least 600. There are several ways that conducting additional exploratory factor analyses would help expand our understanding of the MSTIC. During the initial scale development, each treatment-focused item was included in the measure twice, with only the reference to kind of treatment changed (e.g., “psychiatrist” or “therapist”). Many of the factors that emerged included both parallel items; factor loadings were generally similar within pairs (see Table 2). Loadings for these items were often quite high, suggesting that these items explained a large portion of the variability within the factor. It is possible that due to this overlap, items that would have otherwise comprised these factors were dropped after the EFA. It would be worthwhile to run additional exploratory factor analyses including only one set of these items (i.e., using only items referencing psychotherapy or only referencing psychopharmacology). It is possible that such analyses would yield a

measure that targets a wider variety of themes. However, it would be important to consider how including only one set of terminologies might affect the meaning of the measure, and therefore, its utility in research about barriers to treatment.

Another important next step will be to conduct a confirmatory factor analysis with a new sample. In measure development, confirmatory factor analyses are crucial to determining whether a measurement model supports the latent factors identified through Exploratory Factor Analyses. With regard to psychometric analysis, it is also critical to examine concurrent and divergent validity of a measure with measures of similar constructs. This examination can be accomplished by comparing scores on the MSTIC to scores on existing measures related to child and adult mental health stigma. The MSTIC appears to represent a unique contribution to the literature, which could facilitate further study of factors that may prevent children from receiving needed mental health treatment. Eventually, this information may allow for the development of interventions that target these specific barriers, thereby reducing the burden of youth mental health problems.

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## APPENDICES

### Appendix A: Preliminary Items (organized by theme)

#### Courtesy stigma

1. If my child were diagnosed with a mental health problem, I would not want other parents to find out.
2. If my child were diagnosed with a mental health problem, I fear other parents would judge me.
3. My extended family would judge me if my child had a mental health problem.
4. If my child were diagnosed with a mental health problem, other parents would not want to become friends with me.
5. If my child were diagnosed with a mental health problem, people would avoid me.
6. If my child had a mental health problem, his/her teacher would judge me.
7. If I took my child to a therapist (i.e., someone who provides talk therapy), people would look down upon me.
8. If I took my child to a psychiatrist (i.e., a doctor who prescribes medications for mental health problems), people would look down upon me.
9. If my child were diagnosed with a mental illness, it would change how people perceive me.

#### Stigma of being a bad parent

10. I think parents are blamed for their children's mental health problems.
11. People think children might develop mental health problems as a result of bad parenting.
12. Other people view my child's mental health as a reflection of my parenting abilities.
13. When I hear about a child with a mental health problem, I wonder what the parents did wrong.

14. If my child needed a therapist (i.e., someone who provides talk therapy), people would take that to mean I was not a good parent.
15. If my child needed a psychiatrist (i.e., a doctor who prescribes medications for mental health problems), people would take that to mean I was not a good parent.
16. If my child needed a therapist (i.e., someone who provides talk therapy), people would take that to mean I failed somehow as a parent.
17. If my child needed a psychiatrist (i.e., a doctor who prescribes medications for mental health problems), people would take that to mean I failed somehow as a parent.
18. If my child had a mental health problem, people would think I was a bad parent.

### **Stereotyping/labeling**

19. If my child were diagnosed with a mental health problem, I would not want his/her school to find out.
20. If I took my child to a therapist (i.e., someone who provides talk therapy), I would not want his/her school to find out.
21. If I took my child to a psychiatrist (i.e., a doctor who provides medication for mental health problems), I would not want his/her school to find out.
22. If people found out my child had a mental health problem, I am concerned he/she would be labeled as “mentally ill”.
23. My child’s teacher would judge him/her if he/she had a mental health problem.
24. If my child had a mental health problem, I would tell him/her not to tell anyone.
25. If my child were diagnosed with a mental health problem, I fear he/she would be perceived as dangerous.

26. If my child were diagnosed with a mental health problem, I'm concerned that the diagnosis would overshadow other important things about my child.
27. If I took my child to a therapist (i.e., someone who provides talk therapy), he/she would be labeled as "mentally ill".
28. If I took my child to a psychiatrist (i.e., a doctor who prescribes medications for mental health problems), he/she would be labeled as "mentally ill".

**Status loss/discrimination**

29. If my child had a mental health problem, other children probably would not like him/her.
30. People want to avoid children with mental health problems.
31. If my child were diagnosed with a mental health problem, I fear other parents would not want their child to spend time with my child.
32. If my child were diagnosed with a mental health problem, I fear he/she would be the target of gossip.
33. If my child were diagnosed with a mental health problem, other children would reject him/her.
34. If my child were diagnosed with a mental health problem, people would treat him/her differently.
35. If my child were diagnosed with a mental health problem, he/she would have fewer opportunities than he/she would otherwise.
36. If people knew my child went to a therapist (i.e., someone who provides talk therapy), they would probably treat him/her unfairly.
37. If people knew child went to a psychiatrist (i.e., a doctor who prescribes medications for mental health problems), they would probably treat him/her unfairly.

38. If anyone ever found out my child went to a therapist (i.e., someone who provides talk therapy), he/she would have fewer opportunities later in life.
39. If anyone ever found out my child went to a psychiatrist (i.e., a doctor who prescribes medications for mental health problems), he/she would have fewer opportunities later in life.
40. I do not think my child would be treated differently if he/she were diagnosed with a mental health problem (R)
41. I do not think my child would be treated differently if he/she went to a therapist (i.e., someone who provides talk therapy). (R)
42. I do not think my child would be treated differently if he/she went to a psychiatrist (i.e., a doctor who prescribes medications for mental health problems). (R)

**Avoidance of stigma: impression management**

43. I fear that if my child's school found out he/she has a mental health problem, they would not keep this information confidential.
44. If my child had a mental health problem, I would not want his/her school to know.
45. If my child had symptoms of a mental health problem, I would prefer to take him/her to a pediatrician than a therapist (i.e., someone who provides talk therapy).
46. If my child had a mental health problem, I'd rather to take him/her to a pediatrician (i.e., a doctor who specializes in children's health rather than mental health) than a psychiatrist (i.e., a doctor who prescribes medication for mental health problems) because I'd be scared of being judged.
47. If my child had a mental health problem, I would prefer to read self-help books than to take them to a therapist (i.e., someone who provides talk therapy) because I'd be scared of being judged.

48. If my child had a mental health problem, I would prefer to read self-help books than to take them to a psychiatrist (i.e., a doctor who prescribes medications for mental health problems) because of what others might think.
49. If my child had to take medication for a mental health problem, I wouldn't want other people to see me pick it up at the pharmacy.
50. If I took my child to see a mental health professional, I would be scared someone I know (e.g., a friend or neighbor) would see me.

**Avoidance of stigma: avoiding labeling**

51. If my child were diagnosed with a mental health problem, I would not want to share with him/her what it was called.
52. If a health provider told me my child had a mental health problem, I would look for other explanations.
53. I am more comfortable with saying my child receives "counseling" than "therapy."
54. If I took my child to a therapist (i.e., someone who provides talk therapy), I would not explain to him/her that the visit was for mental health.
55. If I took my child to a psychiatrist (i.e., a doctor who prescribes medication for mental health problems), I would not explain to him/her that the visit was for mental health.
56. If my child were prescribed medication for a mental health problem, I would not want to explain to him/her why he/she was taking it.
57. If my child were prescribed medication for a mental health problem, I would not want him/her to know what the medication was called.
58. If my child were diagnosed with a mental health problem, I'm concerned that people would make assumptions about my child that aren't accurate.

59. In describing my child's mental health problem to others, I wouldn't want to use the exact words used by the mental health professional.
60. If my child were diagnosed with a mental health problem, I would not want to tell him/her.



## **Appendix B: Final Items**

### **Factor 1 (10 items) *Consequences for Child***

1. If people found out my child had a mental health problem, I am concerned he/she would be labeled as “mentally ill.”
2. My child’s teacher would judge him/her if he/she had a mental health problem.
3. If my child were diagnosed with a mental health problem, I fear he/she would be perceived as dangerous.
4. If my child were diagnosed with a mental health problem, I’m concerned that the diagnosis would overshadow other important things about my child.
5. If I took my child to a psychiatrist (i.e., a doctor who prescribes medications for mental health problems), he/she would be labeled as “mentally ill”.
6. If my child had a mental health problem, other children probably would not like him/her.
7. People want to avoid children with mental health problems.
8. If my child were diagnosed with a mental health problem, I fear other parents would not want their child to spend time with my child.
9. If my child were diagnosed with a mental health problem, I fear he/she would be the target of gossip.
10. If my child were diagnosed with a mental health problem, people would treat him/her differently.

### **Factor 2 (7 items) *Consequences for Caregiver***

11. If I took my child to a psychiatrist (i.e., a doctor who prescribes medications for mental health problems), people would look down upon me.

12. People think children might develop mental health problems as a result of bad parenting.
13. If my child needed a therapist (i.e., someone who provides talk therapy), people would take that to mean I was not a good parent.
14. If my child needed a psychiatrist (i.e., a doctor who prescribes medications for mental health problems), people would take that to mean I was not a good parent.
15. If my child needed a therapist (i.e., someone who provides talk therapy), people would take that to mean I failed somehow as a parent.
16. If my child needed a psychiatrist (i.e., a doctor who prescribes medications for mental health problems), people would take that to mean I failed somehow as a parent.
17. If my child had a mental health problem, people would think I was a bad parent.

**Factor 3 (4 items) *Treatment Concerns***

18. If my child had a mental health problem, I'd rather to take him/her to a pediatrician (i.e., a doctor who specializes in children's health rather than mental health) than a psychiatrist (i.e., a doctor who prescribes medication for mental health problems) because I'd be scared of being judged.
19. If my child had a mental health problem, I would prefer to read self-help books than to take them to a therapist (i.e., someone who provides talk therapy) because I'd be scared of being judged.
20. If my child had a mental health problem, I would prefer to read self-help books than to take them to a psychiatrist (i.e., a doctor who prescribes medications for mental health problems) because of what others might think.

21. If my child had to take medication for a mental health problem, I wouldn't want other people to see me pick it up at the pharmacy.

**Factor 4 (3 items) *School Concerns***

22. If my child were diagnosed with a mental health problem, I would not want his/her school to find out.

23. If I took my child to a therapist (i.e., someone who provides talk therapy), I would not want his/her school to find out.

24. If my child had a mental health problem, I would not want his/her school to know.

**Factor 5 (3 items) *Lifelong Consequences***

25. If my child were diagnosed with a mental health problem, he/she would have fewer opportunities than he/she would otherwise.

26. If anyone ever found out my child went to a therapist (i.e., someone who provides talk therapy), he/she would have fewer opportunities later in life.

27. If anyone ever found out my child went to a psychiatrist (i.e., a doctor who prescribes medications for mental health problems), he/she would have fewer opportunities later in life.

## Appendix C: Interview Guide

[Consent Form] We are here today to talk about feelings that come up for parents [caregivers] when they think about kids' mental wellbeing. I want to know your thoughts about these issues because I am trying to create a questionnaire to learn more about this topic. As a parent [caregiver], you are an expert on your own experiences with this topic, and my goal is to learn from you so I can better understand what parents [caregivers] like you think. Although there is published research on this topic, research cannot always capture what real parents [caregivers] experience. I am really looking forward to hearing what you have to say, and I really appreciate you helping me!

1. Imagine your child has a mental health problem. What thoughts come to mind?
  - Good?
  - Bad?
2. How do you define child mental health? What's an example?
3. Please talk to me about what you know about treatment for children's mental health problems.
  - What comes to mind when I say "mental health treatment"?
  - What do you think about medication? Therapy? [clarify whether they are talking about adults, and if so, ask about children]
4. Tell me how you would feel, as a parent [caregiver], if your child had a mental health problem.
  - Negative feelings → What would you [worry, feel ashamed, feel disappointed] about?
  - How would you feel about yourself as a caregiver?

5. How do you imagine other parents [caregivers] would respond if they learned your child had a mental health problem?
6. How do you think it could potentially affect your relationships with friends? Other caregivers?
7. How do caregivers in your community talk about kids' mental health problems?
  - For example, if people heard a child got diagnosed with something like ADHD or depression, what might they say?
8. What are your thoughts on mental health treatment for kids? Medicine? Therapy?
  - How would it make you feel as a parent [caregiver] if your child had therapy?  
Took medication?
  - How do you think you would feel if people found out your child was in therapy?  
Took medication?
9. If your child were diagnosed with a mental illness, what would you tell him/her?
  - [if they say they wouldn't tell them anything] Why?
  - What kind of words would you use?
  - What would you want to tell him/her about talking to other people about this?
10. If you took your child to a therapist, what would you say to him/her, if anything, about the reason for the visit?
  - [if they say they wouldn't tell them anything] Why?
11. If your child had a mental health problem, what would you want his/her school to know?
  - How important would it be to you to keep things private or share things openly?  
Why?
  - How do you think teachers at his/her school would treat him/her?

- How do you think kids at his/her school would treat him/her?

Follow-up questions

12. Is there anything about children's mental health problems that I didn't ask about, but that you would like to share?
13. When I was asking you about "mental health problems," what were you thinking of?
14. What does "mental health stigma" mean to you?

[Provide Referrals]

### Appendix D: MSTIC Varimax Rotation Eigenvalues

	Factor 1	Factor 2
	<b>.707</b>	
If my child were diagnosed with a mental health problem, people would treat him/her differently.		
If my child were diagnosed with a mental health problem, other children would reject him/her.	<b>.690</b>	
If people found out my child had a mental health problem, I am concerned he/she would be labeled as “mentally ill.”	<b>.684</b>	
If people knew my child went to a psychiatrist (i.e., a doctor who prescribes medications for mental health problems), they would probably treat him/her unfairly.	<b>.670</b>	.383
If people knew my child went to a therapist (i.e., someone who provides talk therapy), they would probably treat him/her unfairly.	<b>.669</b>	.303
If my child were diagnosed with a mental health problem, I fear other parents would not want their child to spend time with my child.	<b>.669</b>	.340
If my child were diagnosed with a mental health problem, I fear he/she would be the target of gossip.	<b>.629</b>	
If my child had a mental health problem, other children probably would not like him/her.	<b>.625</b>	
People want to avoid children with mental health problems.	<b>.618</b>	
If my child were diagnosed with a mental health problem, I fear he/she would be perceived as dangerous.	<b>.576</b>	.322
If my child were diagnosed with a mental health problem, I’m concerned that the diagnosis would overshadow other important things about my child.	<b>.559</b>	.309
If I took my child to a psychiatrist (i.e., a doctor who prescribes medications for mental health problems), he/she would be labeled as “mentally ill”.	<b>.546</b>	
If anyone ever found out my child went to a psychiatrist (i.e., a doctor who prescribes medications for mental health problems), he/she would have fewer opportunities later in life.	<b>.507</b>	.364

If anyone ever found out my child went to a therapist (i.e., someone who provides talk therapy), he/she would have fewer opportunities later in life.	<b>.483</b>	.383
If I took my child to a therapist (i.e., someone who provides talk therapy), he/she would be labeled as “mentally ill.”	<b>.463</b>	.319
If my child needed a psychiatrist (i.e., a doctor who prescribes medications for mental health problems), people would take that to mean I failed somehow as a parent.		<b>.802</b>
If my child needed a psychiatrist (i.e., a doctor who prescribes medications for mental health problems), people would take that to mean I was not a good parent.	.319	<b>.792</b>
If my child had a mental health problem, people would think I was a bad parent.	.352	<b>.774</b>
If my child needed a therapist (i.e., someone who provides talk therapy), people would take that to mean I failed somehow as a parent.	.341	<b>.751</b>
Other people view my child's mental health as a reflection of my parenting abilities.	.366	<b>.705</b>
If I took my child to a therapist (i.e., someone who provides talk therapy), people would look down upon me.	.361	<b>.631</b>
My extended family would judge me if my child had a mental health problem.		<b>.447</b>

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*Note.* Factor loadings <.3 are suppressed.