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Conceptualizing and Measuring Mental Illness Stigma: The Mental Illness Stigma Framework and Critical Review of Measures

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Abstract

Although the last decade has seen a proliferation of research on mental illness stigma, lack of consistency and clarity in both the conceptualization and measurement of mental illness stigma has limited the accumulation of scientific knowledge about mental illness stigma and its consequences. In the present article, we bring together the different foci of mental illness stigma research with the *Mental Illness Stigma Framework (MISF)*. The MISF provides a common framework and set of terminology for understanding mechanisms of mental illness stigma that are relevant to the study of both the stigmatized and the stigmatizer. We then apply this framework to systematically review and classify stigma measures used in the past decade according to their corresponding stigma mechanisms. We identified more than 400 measures of mental illness stigma, two thirds of which had not undergone any systematic psychometric evaluation. Stereotypes and discrimination received the most research attention, while mechanisms that focus on the perspective of individuals with mental illness (e.g., experienced, anticipated, or internalized stigma) have been the least studied. Finally, we use the MISF to discuss the strengths and weaknesses of mental illness stigma measurement, identify gaps in the literature, and provide recommendations for future research.

Keywords

stigma; mental illness stigma; Mental Illness Stigma Framework

> "A sustainable, coherent theory of stigma can improve…stigma research and intervention planning because how we define stigma structures our understanding of how to measure it, and how to design and evaluate interventions"

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(Deacon, 2006 pg. 419)

> "The terminology we use…should be clear, precisely defined, and used consistently to aid unambiguous clinical and scientific communication and promote clearer appraisal of, and generalizations from, empirical findings"

(Kelly, 2004 pg. 80)

Mental illness stigma is as a major obstacle to well-being among people with mental illness (PWMI). According to findings from the most recent nationally representative study of public attitudes toward mental illness in the U.S., only 42% of Americans aged 18–24 believe PWMI can be successful at work, 26% believe that others have a caring attitude toward PWMI, and 25% believe that PWMI can recover from their illness (NAMI-GC, 2013; Substance Abuse and Mental Health Services Administration [SAMHSA], 2008). A robust body of evidence demonstrates that PWMI experience discrimination in nearly every domain of their lives, including employment (Farina & Felner, 1973; Link, 1987; Stuart, 2006), housing (Corrigan et al., 2003; Farina, Thaw, Lovern, & Mangone, 1974), and medical care (Thornicroft, Rose, & Kassam, 2007). Experiences of stigma are associated with increased symptom severity (e.g., Boyd, Adler, Otilingham, & Peters, 2014), decreased treatment seeking (e.g., Corrigan, 2004) and treatment non-adherence (e.g., Sirey et al., 2001).

Given the prevalence of mental illness and the deleterious effects of stigma, mental illness stigma has been a widely studied research topic in a variety of disciplines, including psychology, sociology, public health, and medicine. Beginning with Erving Goffman's (1963) seminal essay *Stigma: Notes on the Management of Spoiled Identity*, research on stigma has continued to grow each year, with the majority of stigma research occurring in the last decade (Bos, Pryor, Reeder & Stutterheim, 2013). Across disciplines, but especially within the field of psychology, researchers have been primarily concerned with examining mental illness stigma at the individual level (Link & Phelan, 2001). As Figure 1 demonstrates, the number of published, peer-reviewed mental illness stigma articles appearing in searches of PubMed, PsycInfo/EBSCO, and Web of Science has steadily increased each year for the past ten years. As the psychological research on mental illness stigma has progressed, the stigma construct has been parsed into a number of different constructs, or *mechanisms*. Borrowing from the work of Link (2001), we use the term "stigma mechanism" throughout the present article to emphasize that these different constructs represent ways in which individuals respond to having, or not having, a mental illness (Earnshaw & Chaudoir, 2009; Link, 2001).

The proliferation of research on mental illness stigma mechanisms in the psychological literature has been accompanied by a sharp increase in stigma measures. In 2004, Link and colleagues published a review of mental illness stigma measures, with guidelines and suggestions for researchers interested in studying and measuring mental illness stigma. In addition to describing the already substantial number of stigma measures that existed at that time, they identified a number of gaps in stigma measurement, including the need for measures related to the experiences of PWMI (e.g., internalized stigma). As Figure 2 demonstrates, more than 400 new measures of mental illness stigma have been developed

since 2004. The overabundance of measures may be attributed, in part, to the lack of consistency in how stigma mechanisms are defined, which may make it difficult for researchers to identify existing measures that meet their needs. Such inconsistencies in terminology and measurement make it difficult to evaluate the state of the field, and in turn, may hinder efforts to develop interventions to reduce or eliminate mental illness stigma.

Aims of the Review

In the present article, we first review existing limitations and challenges currently facing the mental illness stigma literature with a primary focus on the psychological literature. Next, we bring together the different foci of mental illness stigma research in an overarching conceptual framework for understanding how individuals experience stigma, the *Mental Illness Stigma Framework* (Figure 3). After overviewing key aspects of this framework—and their associated benefits for organizing mental illness stigma research, we demonstrate the usefulness of this framework by applying it— to systematically review and classify mental illness stigma measures that have appeared in the literature since Link and colleagues' (2004) previous measure review. We then identify gaps in the literature and limitations with the measurement of mental illness stigma, and provide recommendations for future research.

Because stigma is a social process that manifests at multiple levels, researchers in fields such as sociology and anthropology have also developed theoretical perspectives on mental illness stigma. Many of these theories consider the processes whereby mental illness stigma is socially constructed and reinforced. Consequently, researchers from other fields have studied other forms of stigma including structural stigma (e.g., Hatzenbuehler, Phelan, & Link, 2013) as well as cultural manifestations of stigma (e.g., Abdullah & Brown, 2011; Yang et al., 2007). In the present review, we focus our attention on individual-level experiences of stigma, and draw from a substantial body of primarily psychological literature to further understanding of how individuals experience, and are impacted by, mental illness stigma. In the discussion section, we briefly consider how other forms of stigma may contribute to our larger understanding of how mental illness stigma operates.

Limitations and Challenges of the Mental Illness Stigma Literature

Clear and consistent terminology is important to all fields of inquiries. A number of researchers have pointed out the confusion, complexity, and/or lack of clarity in the mental illness stigma literature (e,g., Angermeyer & Dietrich, 2006; Brohan et al., 2010; Livingston & Boyd, 2010; Thornicroft, 2008). This lack of conceptual clarity is not unique to mental illness stigma research. In reference to the HIV/AIDS stigma literature, Deacon (2006) noted that "the concept of stigma has suffered from 'conceptual inflation' and a consequent lack of analytical clarity" (pg. 419). For example, the term "stigma" is often used to refer to "both the stigmatizing beliefs themselves and the effects of these stigmatization processes" (p. 419). The same can be said for the mental illness stigma literature, and even the broader stigma construct itself, which has been criticized for its complexity and variability in definitions both within and across disciplines (Link & Phelan, 2001; Pescosolido & Martin, 2015; Phelan, Link, & Dovidio, 2008).

A prominent issue within the mental illness stigma literature is that researchers frequently use different terms to describe the same stigma concepts and the same terms to refer to different constructs. For example, the term perceived stigma is sometimes used to refer to what others term experienced stigma or internalized stigma. The concept of anticipated stigma, as we define it in this article, is sometimes referred to as stigma concerns, stigma apprehension, or stigma consciousness. And the terms internalized stigma and self-stigma are often used interchangeably. This proliferation of terminologies and definitions of mental illness stigma represent a critical barrier to the advancement of mental illness stigma research. A search for articles on experienced stigma may not reveal important research on perceived stigma; a search for anticipated stigma may not reveal articles on stigma concerns, and a search for studies of perceived stigma could produce studies of not only perceived stigma, but also studies of stereotypes, prejudice, and discrimination, as well as experienced or internalized stigma.

Another challenge to the field has been the siloing of research based on the particular type of mental disorder under study. Mental illness encompasses a broad and diverse set of disorders and it is possible that mental illness stigma may manifest slightly differently depending on the type of disorder with which an individual has been labeled. For example, an individual diagnosed with Schizophrenia may be viewed as more dangerous than someone diagnosed with an anxiety or depressive disorder (Feldman & Crandall, 2007). Likewise, because the cause of posttraumatic stress disorder is typically believed to be external rather than internal (i.e., trauma exposure), an individual diagnosed with this disorder is likely to be considered less responsible for their mental illness than an individual diagnosed with a personality disorder.

While a disorder–specific approach to the study of mental illness stigma has a number of benefits, in the present review we have taken a broader approach for several reasons. First, a broad approach can bring together the common threads of the experiences of mental illness stigma. Second, such an approach is consistent with macro-level theories of stigma that cross-cut stigmatized identities (Link & Phelan, 2001; Phelan, Link & Dovidio, 2008; Pescosolido & Martin, 2015), as well as meta-analyses demonstrating that the effects of stigma are similar across a variety of stigmatized conditions (Pascoe & Smart Richman, 2009) and different mental health disorders (Mak, Poo, Pun, & Cheung, 2007). Third, the feasibility of a broad approach is evidenced by the finding that stigmatization of PWMI is driven by three core stereotypes—dangerousness, rarity, and responsibility—and disorders can be ranked in terms of their level of social rejection (Feldman & Crandall, 2007; Silton, Flannelly, Milstein, & Vaaler, 2011). Finally, van Brakel (2006) argues that the impact of stigma is similar across a variety of health conditions, suggesting that generic stigma measures can provide an accurate assessment of how people experience stigma. This work suggests that a macro-level framework of mental illness stigma could provide much needed clarity to the field of mental illness stigma research.

Another limitation of mental illness stigma literature is that most of the existing stigma models and frameworks do not incorporate stigma concepts that are relevant to both research on the stigmatizer and the stigmatized. Yet, such an approach has important benefits, as the inclusion of the perspective of both individuals who have and do not have mental illness

recognizes that experiences and outcomes of stigma are fundamentally shaped by whether the individual possesses the socially devalued characteristic. Classic theories of stigma (Link & Phelan, 2001), as well as theories of intergroup relations (Allport, 1954; Brewer, 2007) emphasize that "separation" is an important component of stigma. The distinction between "us" and "them" is what allows stigma to unfold (Link & Phelan, 2001).

To address some of the limitations of the mental illness stigma literature and guide our review of mental illness stigma measures, we developed the Mental Illness Stigma Framework (MISF; Figure 3). The development of the MISF was informed by a number of prominent mental illness stigma theories, conceptualizations and definitions, including modified labeling theory (Link, Cullen, Struening, Shrout, & Dohrenwend, 1989), Link and Phelan's (2001) definition of stigma, social cognitive theory of public and self-stigma (Corrigan & Watson, 2002; Corrigan, Watson, & Barr, 2006; Corrigan, Kerr, & Knudson, 2005), Pryor and Reeder's (2011) four manifestations of stigma, the constructs of anticipated and experienced discrimination (Brohan et al., 2013; Thornicroft et al., 2007), and the construct of internalized stigma (Boyd Ritsher, Otilingam, & Grajales, 2003). Our proposed framework is meant to complement, not replace, existing frameworks, models, or theories. A key benefit of the framework is that by integrating existing definitions and conceptualizations of mental illness stigma through common terminology, we tie together the immense and varied body of mental illness stigma research and delineated the types of stigma that are most important to outcomes for people with and without mental illness, regardless of the specific condition under study.

The Mental Illness Stigma Framework

The top box of the MISF represents the identification of mental illness as a culturally-situated and socially devalued identity. How do individuals understand, respond to, and experience mental illness stigma? The answer to this question depends on whether an individual has experienced a mental illness. Existing research on mental illness stigma at the individual level can be broken down into two major categories: Research focused on the perspective of those doing the stigmatizing, typically the general public, and research focused on those who are on the receiving end of stigmatization, individuals with mental illness (or a history of mental illness). Thus, the MISF separates stigma mechanisms accordingly. Separating stigma mechanisms based on perspective is consistent with existing theories and definitions of stigma, (Bos, et al., 2013; Clement et al., 2015; Corrigan & Watson, 2002; Corrigan, Rafacz, & Rusch, 2011; Link & Phelan, 2001; Martin, Pescosolido, Olafsdottir, & McLeod, 2007; Pescosolido & Martin, 2015; Pryor & Reeder, 2011; van Brakel, 2006).

Perspective of the Stigmatizer

Drawing from the social psychological (Allport,1954; Brewer, 2007; Dovidio, Glick, & Rudman, 2005; Nelson, 2009), mental illness (Corrigan et al., 2005; Corrigan & Watson, 2002; Thornicroft, Rose, Kassam, & Sartorius, 2007), and broader stigma literature (Bos, Pryor, & Reeder, 2013; Pryor & Reeder, 2011), the three mechanisms that are most relevant to individuals who do not have (or have never had) a mental illness are stereotypes,

prejudice, and discrimination. These three mechanisms represent the cognitive, affective, and behavioral responses people may have to someone who possesses a devalued identity. Stereotypes are *beliefs, or "cognitive schemas" about the characteristics and behaviors of groups of individuals* (Corrigan, 2005; Dovidio, Hewstone, Glick, & Esses, 2010; Stangor, 2009) and represent the cognitive response to someone with mental illness stigma. The core stereotypes associated with mental illness include dangerousness, rarity, responsibility, incompetence, weakness of character, and dependence (Feldman & Crandall, 2007; Taylor & Dear, 1981).

The affective component of mental illness stigma is reflected in prejudice, defined as the *emotional reaction or feelings that people have toward a group or member of a group* (Stangor, 2009). Most often, these feelings are negative, although they do not necessarily need to be. The most common forms of prejudice toward PWMI are fear, pity, and anger (Corrigan, 2005; Corrigan, Watson, Warpinksi, & Garcia, 2004). Prejudice is strongly connected to stereotypes. As examples, the stereotype of dangerousness may lead to feelings of fear and the stereotype of incompetence may lead to feelings of pity. Prejudice toward PWMI may also be expressed or experienced as anxiety, leading to awkward interactions (Hebl, Tickle, & Heatherton, 2000) and/or serve as a precursor to the behavioral aspect of stigma, discrimination. Discrimination is defined as the *unfair or unjust behaviors directed at PWMI* (Allport, 1954; Brewer, 2007). Discriminatory behaviors exist along a continuum from subtle to overt, but which result in the "differential and disadvantaged treatment of the stigmatized" (Pescosolido & Martin, 2015). There are four common types of discrimination directed towards PWMI described in the literature: withholding help, avoidance, segregation, and coercion (Corrigan & Rüsch, 2002; Corrigan & Watson, 2002).

Stereotypes, prejudice, and discrimination lead to a range of outcomes that affect both people living with and without mental illness. Individuals who endorse stigmatizing attitudes toward PWMI are less likely to support insurance parity (i.e., covering mental illness at the same level as other medical conditions) and increased government funding for mental health treatment (Barry & McGinty, 2014). In the workplace, discrimination can limit the economic opportunities of PWMI. Additionally, these mechanisms prevent people without diagnoses of mental illness from seeking mental health support to avoid gaining the label of mental illness (Corrigan, 2004).

Perspective of the Stigmatized

Three stigma mechanisms are most relevant to PWMI (or people with a history of mental illness): *experienced stigma, anticipated stigma, and internalized stigma.* Experienced stigma is defined as *experiences of stereotypes, prejudice, and discrimination from others in the past or present* (Cechnicki, Angermeyer & Bielańska, 2011; Quinn & Earnshaw, 2011; Wahl, 1999) and is sometimes referred to as enacted stigma (Bos et al., 2013). Experienced stigma includes both chronic, day-to-day experiences of unjust or unfair treatment (e.g., interpersonal slights) as well as acute, major experiences (e.g., fired from one's job), both of which are related to a range of deleterious outcomes among people with stigmatized identities (Williams, Neighbors, & Jackson, 2003). Anticipated stigma, sometimes referred to as felt stigma (Bos et al., 2013), is defined as *the extent to which a person with mental*

illness expects to be the target of stereotypes, prejudice, or discrimination in the future (Quinn & Chaudoir, 2009; Quinn & Earnshaw, 2011). Because PWMI are likely aware of the negative stereotypes associated with mental illness and negative ways in which PWMI are treated, they may worry about people viewing them as weak or dangerous, being afraid or avoiding them, or being denied work. PWMI may therefore anticipate stigma even if they have never personally experienced stigma. Finally, we define internalized stigma as *the extent to which people endorse the negative beliefs and feelings associated with the stigmatized identity for the self* (Bos et al., 2013; Boyd Ritsher et al., 2003; Corrigan, Watson, & Barr, 2006; Link, 1987; Quinn & Earnshaw, 2011). In other words, internalized stigma represents the application of negative stereotypes and prejudice to the self. For PWMI, this may involve perceiving that they are dangerous, to be blamed for their illness, are incompetent, or childlike (Taylor & Dear, 1981). Internalized stigma is sometimes referred to as self-stigma, a term which reflects the application of mental illness stigma to the self (Corrigan, Rafacz, & Rüsch, 2011; Corrigan & Rao, 2012). When an individual applies negative stereotypes of mental illness to the self, they may believe they are devalued (Quinn & Earnshaw, 2013), which in turn may lead to increased psychological distress (Ritsher & Phelan, 2004) or decreased self-esteem (Corrigan, et al., 2011; Corrigan & Rao, 2012).

Experienced, anticipated, and internalized stigma are associated with negative outcomes for PWMI. Perceived and anticipated stigma undermine mental illness treatment adherence and initiation (Corrigan, 2004; Sirey et al., 2001). Anticipated and experienced stigma are stressors (Link & Phelan, 2006), which may elicit psychological and physiological stress responses that impact mental and physical health. Internalized stigma is associated with depression, decreased self-esteem, and increased symptom severity (Boyd et al., 2014).

Perceived Stigma

Perceived stigma is the one stigma mechanism in the framework that is shared by both people with and without mental illness. We define perceived stigma as *perceptions of societal beliefs (stereotypes), feelings (prejudice), and behaviors (discrimination)* toward PWMI (Bos et al., 2013; Griffiths, Christensen, Jorm, Evans, & Groves, 2004; Link, 1987). Perceived stigma is distinct from an individual's own beliefs, feelings, and behaviors about PWMI, which Griffiths and colleagues refer to as personal stigma (and which is captured by the mechanisms of stereotypes and discrimination in the MISF). Research has established the importance of treating personal and perceived stigma as distinct constructs. Griffiths et al. (2008) found that whereas people's own stigma-related beliefs were associated with greater psychological distress, less previous contact with people with depression, and lower depression literacy, perceived stigma was only associated with psychological distress. Additionally, demographic variables (e.g., gender, age, education, experience with someone with depression, country of birth) explained 22% of the variance in individual's own stigma-related beliefs, while only explaining 1.6% for perceived stigma.

The extent to which people perceive the stigma of mental illness is shaped by whether they have experienced mental illness. For example, studies have shown a positive relationship between mental illness symptom severity and perceived stigma (Freidl, Piralic, Spitzl, &

Aigner 2008; Golberstein, Eisenberg, & Gollust, 2008; Griffiths et al., 2008). Further, perceived stigma is associated with negative outcomes for PWMI. In Link's (1987) seminal paper examining the negative labeling effects of mental illness, he showed that for PWMI who have been labeled as mentally ill, perceived discrimination and devaluation were associated with a number of negative outcomes associated with employment, earnings, and demoralization (Link, 1987; Link et al., 2004), but this was not the case for PWMI who had never received the label.

Intersectionality

Finally, the MISF recognizes that there is intersectionality in experiences of stigma, a perspective that emphasizes that individuals also live with other characteristics representing privilege and marginalization, and that it is important to take these other characteristics into account in order to understand their lived experiences and outcomes (Cole, 2009; Crenshaw, 1991; hooks, 1990). This perspective therefore allows for commonality in experiences of stigma across all PWMI, while simultaneously emphasizing that individual experiences of mental illness stigma may vary depending on one's specific mental illness diagnosis, treatment engagement, socio-economic status, gender, race, culture, and/or other characteristics.

Application of the Mental Illness Stigma Framework to Measurement

The proliferation of research on mental illness stigma has been accompanied by a stark increase in stigma measures. While the availability of multiple measures is not inherently problematic, the development of new measures may be inefficient when validated measures of the same construct already exist. The availability and use of so many measures can also present difficulties for researchers trying to draw broad conclusions from the literature. In their meta- analysis of stigma change programs, Corrigan and colleagues (2012) noted that there were 22 different outcome measures in their analysis, assessing a range of attitudes, affects, and behavior intentions. As the choice of measures is tied to how researchers define constructs, the use of so many measures can make it difficult to draw firm conclusions about mental illness research.

Additionally, to the extent that the mental illness stigma measures in use today do not differentiate between stigma mechanisms, researchers may miss opportunities to examine the implications of different stigma mechanisms and may inadvertently dilute or amplify the effects of one particular mechanism by failing to acknowledge that their measure reflects multiple mechanisms. For example, Livingston and Boyd (2010) found a robust negative relationship between internalized stigma, hope, self-esteem and treatment adherence, and a positive association between internalized stigma and symptom severity in their meta-analysis. However, their broad definition of internalized stigma incorporated measures of experienced stigma, anticipated stigma, stereotypes, and perceived stigma. While their findings present a broad picture of the relationship between mental illness stigma and various outcomes, they cannot inform conclusions about the role of internalized stigma as defined by other researchers (Corrigan et al., 2006; Quinn & Earnshaw, 2011).

Understanding which stigma mechanisms are being assessed in any given measure is vitally important. Each stigma mechanism may impact people uniquely. For example, a recent meta-analysis of stigma and help-seeking found that internalized stigma predicted help-seeking, whereas perceived, experienced, and anticipated stigma did not (Clement et al., 2015). To move the study of mental illness stigma forward, we need to identify measures that can be used to reliably and validly measure different mechanisms of mental illness stigma (Corrigan & Shapiro, 2010). In the next section, we use MISF to guide a systematic review and evaluation of mental illness stigma measures. We focused our review on the ten year period following Link et al.'s (2004) review of mental illness stigma measures. Unlike previous reviews (e.g., Brohan et al., 2010; Corrigan & Shapiro, 2010; Link et al., 2004), we provide a broad review of measures of mental illness stigma, whether validated or unvalidated, in order to present a comprehensive overview of the state of mental illness stigma measurement.

Method

We conducted a literature search on articles published between 2004 and 2014 using PubMed, EBSCO databases (PsycInfo, Academic Search Premier, Education Full Text, General Science Full Text, PsycArticles, Psychology and Behavioral Sciences Collection, Social Sciences Full Text, Women's Studies International), and Web of Science. The search was limited to peer-reviewed, quantitative or empirical manuscripts published in English. Using titles, abstracts, and keywords, we searched for articles containing the keyword *stigma* and any of the following: *mental health, mental illness, schizo*, depress*, anxiety, PTSD, posttraumatic, eating disorder*, anorexia, bulimia, or personality* disorder*. We excluded the following keywords: *epilepsy, HIV, AIDS, dementia*. Next, we checked the reference sections of reviews and meta-analyses articles published in the past ten years (Brohan et al., 2010; Clement et al., 2015, Livingston & Boyd, 2010; Mak, Poon, Pun, & Cheung, 2007; Schomerus & Angermeyer, 2008) and our personal libraries for additional articles.

Screening of Studies

An initial screening of the titles and abstracts of 3901 articles resulted in the identification of 1282 articles that were potentially relevant to our review. The first author reviewed all 3901 articles and a second coder reviewed 1086 articles (35%) to ensure reliability. Coders agreed 95% of the time and all disagreements (n =51) were included in the full-text review. The full-text of each of the 1282 articles was then reviewed to determine if the study contained a mental illness stigma measure. After the full-text review, an additional 326 articles were excluded. In total, 957 articles contained at least one stigma measure. Supplemental Figure S1 contains the PRISMA diagram with the literature search details (Moher, Liberati, Tetzlaff, Altman, & The PRISMA Group, 2009).

Organizing Measures

For each of the 957 articles, we identified the stigma measure(s) that was used and classified it into one of two categories. The first category represents measures that have been cited in at least one study (not including the study in which the measure was originally published)

and/or measures that have documented psychometrics. Measures in this category can be found in Table 1 (n = 140).

The second category consisted of measures described as being specifically created for the study, measures where no citation information was provided, measures that were created by pulling items from multiple measures, and newly developed measures of stigma that had not yet been cited or psychometrically validated in other studies. We refer to this set of measures as "study-created measures" and although they are not included in Table 1, we classified the stigma mechanisms assessed in each measure and summarize the findings. In total, we identified 304 study-created measures (reference list of articles containing study-created measures is available from the first author).

Not included in either category of measures are national or international "indicator" measures of stigma (n = 8). These measures were typically one or two items and were designed to be easily administered in population-level studies to gauge overall levels of stigma in a particular country or context (e.g., General Social Survey, National Survey Study-Children, National Comorbidity Study). A list and description of these measures is available from the first author.

Classifying Measures

We attempted to obtain a copy of each measure included in Table 1. We were not able to obtain original copies of two measures that were not published in English (Sibitz et al., 2013; Zeng et al., 2009). If the article in which the original measure was cited provided the items or enough detail to classify the type of stigma measured, we kept it in Table 1. Our final list included 140 measures of stigma, comprising 330 scales or subscales. For each measure, we recorded the psychometric properties described in the paper and the number of times it was cited in our search. We examined the items included in the measure and classified the stigma mechanism(s) the measure captured at the factor or subscale level. For some measures, there were multiple versions or adaptations available (e.g., validated in a different language or for a different population than the original measure). If an alternative version of a measure had a published psychometric paper available, we counted it as a separate measure when determining the total number of measures we identified and when examining the psychometric characteristics available for the measures. However, in order to avoid over-inflating the totals for the stigma mechanisms contained in the measures, we grouped multiple versions of measures together and only classified the stigma mechanisms once for all versions of the measure (assuming they shared the same items and factor structure). Operational definitions and example items for each stigma mechanism are included in Supplemental File 2.

Psychometric Evaluation of Measures

Information regarding the availability of psychometric properties of each measure is included in Table 1 and a more detailed evaluation of the quality of the evidence for these measurement properties is included in Supplemental File 3. In Table 1, measures were given an "R" if details about at least one form of reliability (e.g., internal consistency, test-retest) were available and a "V" if details about at least one form of validity (e.g., construct,

convergent, predictive, concurrent) were available. Measures were given a "D" if the underlying dimensionality (i.e., factor structure) of the measure was reported. We gave a rating of "P" if there was a published paper specifically describing the development of the measure. A measure was considered well-established in the literature and given a rating of "WE" if it had been cited at least 10 times. For measures that were developed before 2004, we checked PsycInfo to see if it had been cited more than 10 times.

In Supplemental File 3, we evaluated measures using the quality criteria developed by Terwee et al. (2007). As part of the COSMIN initiative (Consensus-based Standards for the selection of health Measurement Instruments), Terwee, Mokkink, and colleagues developed a set of standard measurement quality criteria in order to facilitate comparisons of health outcomes questionnaires (Mokkink et al., 2010a, 2010b; Terwee et al., 2007). Terwee et al. provide guidelines for assessing the quality of evidence for content validity, internal consistency, criterion validity, construct validity, reproducibility, responsiveness, floor and ceiling effects, and interpretability. For each measurement property, measures are given a "+", "−," "indeterminate," or "no information available" rating. A full description of each rating is provided in Supplemental File 3. Within the stigma literature, the COSMIN criteria have been used to evaluate measures of internalized stigma (Stevelink, Wu, Voorend, & van Brekel, 2012) and measures of experiences of mental illness stigma (Brohan et al., 2010). In the present study, we followed the same procedures as Brohan et al. (2010) and evaluated measures based on a subset of the COSMIN criteria most relevant to measures of stigma: content validity, internal consistency, construct validity, test-retest reliability, and floor-ceiling effects.

Results

Overview of mental illness stigma measures

Figure 2 presents the number of stigma measures that have been developed in the past decade, broken down by whether the measure has been psychometrically validated for its intended use. The findings are striking. On average, 36 measures of stigma have been developed *per year* since 2004. On average since 2004, measures without established psychometrics have appeared in the literature about six times as often as new validated measures. Measures have been developed to assess every stigma mechanism, and for a wide range of mental illnesses, including depression (e.g., Griffiths et al., 2004; Griffiths et al., 2008), alcohol and substance use disorders (e.g., Brown, 2011; Glass, Kristjansson, & Bucholz, 2013; Luoma, O'Hair, Kohlenberg, Hayes, & Fletcher, 2010; Luoma et al., 2007; Luoma et al., 2013), schizophrenia (e.g., Ucok et al., 2006), suicide (e.g., Batterham, Calear, & Christensen, 2013), suicide attempts (e.g., Scocco, Castriotta, Toffol, & Preti, 2012), generalized anxiety disorder (e.g., Griffiths, Batterham, Barney, & Parsons, 2011), and attention deficit hyperactivity disorder (e.g., Fuermaier et al., 2012).

Overall Psychometric Summary of Mental Illness Measures

The fifth column of Table 1 contains a description of the psychometric characteristics of each measure. In total, 55.0% ($n = 77$) of measures had a published psychometric paper available (i.e., a paper describing the development of the measure and its psychometric

characteristics) and 17.1% (n = 24) had been cited at least ten times. Information regarding the dimensionality of the measure was described for 58.6% (n = 82), and 48.6% (n = 68) had information about at least one form of validity. The majority of scales (n = 115, 82.1%) had information regarding the reliability of the measure. Fourteen measures did not report any psychometric properties and three measures were found to have no psychometric support.

Of the measures with a psychometric paper available, 61.0% (n = 47) included an examination of at least one form each of reliability, validity, and dimensionality. A total of eight of those measures have been cited at least 10 times in the past decade (although we acknowledge that the 14 measures published since 2012 that have all three psychometric characteristics available may not have been in the literature long enough to be cited 10 times). While there were at least two psychometric characteristics available for most measures in Table 1 (n = 91, 65.0%), 34 measures (24.3%) had only one type of psychometric data available.

Mental Illness Stigma Mechanisms

Before examining the measures associated with each of the stigma mechanisms in the MISF, we began by looking at the number of measures that were associated with the perspective of the stigmatizer versus those associated with the perspective of the stigmatized. Of all the measures we identified, 39 (28%) addressed the perspective of the stigmatized and 100 (72%) were developed from the perspective of the stigmatizer. In the broader literature search, 327 articles (34.2%) were focused on the perspective of the stigmatized (i.e., PWMI).

Stereotypes—Stereotypes were the most widely measured stigma mechanism in our review, with 418 of the 957 articles (43.5%) containing a measure of the extent to which people endorse stereotypical beliefs about mental illness. Among the measures we identified, stereotypes were captured in 128 different scales or subscales. Of those 128 different scales or subscales, 63.3% (n = 81) solely measured stereotypes. The remaining scales or subscales (n = 47) included items assessing at least one other stigma mechanism, with discrimination being the most common mechanism to co-occur within the scale (n = 35).

In terms of their psychometric properties, 28 measures reported information on reliability, validity and dimensionality, and another 29 measures reported only two of those three characteristics. Fifteen measures only reported information on one psychometric characteristic, and eight measures did not provide any psychometric information. In total, 45 measures had a psychometric paper available, and 9 measures were classified as well-established.

The most widely used measure containing stereotypes was the ISMI scale (Boyd Ritsher et al., 2003; n = 89), followed by the Depression Stigma Scale (DSS; Griffiths et al., 2004; 2008; n = 56), the Attribution Questionnaire (AQ; Corrigan, Green, Lundin, Kubiak, & Penn, 2001; n = 48), and the Community Attitudes Toward the Mentally Ill Scale (CAMI; Taylor & Dear, 1981; n = 43). Both the ISMI and CAMI are well-validated measures, with psychometric information available regarding their reliability, validity and dimensionality

(although only the ISMI has a published psychometric paper). Reliability and dimensionality have been examined with the AQ and DSS.

The most common stereotypes addressed in the stereotype measures were that PWMI are weak, dangerous, unpredictable, violent, and that they are responsible for their condition. Some measures focus on the stereotypes associated with specific disorders. For example, the "personal stigma" subscale of the DSS asks people the extent to which they think that people with depression can snap out of it. Although the ADHD stigma scale (Kellison, Bussing, Bell & Garvan, 2010) focuses on ADHD, the items were adapted from an HIV stigma scale and could be adapted for other mental illnesses. The "personal stigma" subscale of the Generalised Anxiety Stigma Scale (Griffiths et al., 2011) also addresses stereotypes that could be applied to other mental disorders. Thus, although numerous measures have focused on a specific disorder, for the most part, the stereotypes included could apply to any disorder.

Prejudice—Prejudice was the least measured stigma mechanism, measured in 141 articles (14.7%), and captured in 42 scales or subscales. Twenty measures or subscales also included items assessing other stigma mechanisms, with stereotypes being the most common co-occurring mechanism. The most cited measures of prejudice were the AQ and the CAMI. A total of ten measures had information related to all three psychometric characteristics, 13 measures presented two psychometric characteristics, and nine measures reported just one. Two measures did not provide any psychometric information. Three measures were well-established, and 16 had a psychometric paper.

Fear and anger appear to be the most common forms of prejudice captured in the measures. The AQ contains a fear subscale, and the CAMI includes items that address fear (e.g., *It is frightening to think of people with mental problems living in residential neighborhoods*) and lack of sympathy (e.g., *The mentally ill do not deserve our sympathy*).

Discrimination—Discrimination was the second most widely measured stigma mechanism in our review, with 43.1% (n = 412) of articles containing a measure of discrimination. Among the measures we identified, discrimination was captured in 69 different scales or subscales, and was the sole stigma mechanism measured in 29 (42.0%) of the scales or subscales. Stereotypes were the most common co-occurring stigma mechanism.

In terms of psychometric characteristics of the measures, eight measures were rated as well-established and 15 measures had information available regarding reliability, validity and dimensionality. A total of 19 measures reported two psychometric characteristics, 13 measures reported only one, and four measures did not provide any psychometric information.

The most cited measure of discrimination was also the most cited overall—social distance. Social distance was measured in 213 of 957 articles (22.3%). The original social distance scale (SDS) was a type of Guttman scale developed by Bogardus (1933) and contains seven equidistant items related to people's willingness to engage in social contact with people from other social groups. Participants are asked to read each statement and indicate whether they would be willing to engage in that type of social relationship (yes/no). However, many

researchers use modified versions of the SDS or created their own. For example, Link et al. (1987) modified the Bogardus SDS so that the seven items were no longer necessarily equidistant, and participants respond to each of seven items using a 0 to 3 Likert scale. Others tie the social distance scale to a vignette describing someone with mental illness (e.g., Boyd, Katz. Link & Phelan, 2010; Yap, Reavley, & Jorm, 2013). Given the variability in how social distance is measured, it is challenging to assess the psychometric characteristics of the measure. However, reliability information is available for both the Bogardus and Link versions of the scales.

Other concepts that were captured in the discrimination measures include avoidance, social restrictiveness, and willingness to help. For example, the AQ contains subscales that assess willingness to help someone with mental illness as well as the extent to which people agree that PWMI should be segregated from the general population (i.e., put in mental hospitals).

Experienced Stigma—Experienced stigma was captured in 17.2% (n =165) of the articles and we identified 27 scales or subscales measuring experienced stigma. The majority of measures exclusively focused on experienced stigma (63.0%). However, ten subscales also captured other mechanisms, with anticipated or internalized stigma co-occurring most often. In terms of psychometrics, nine measures reported all three psychometric characteristics, four measures reported two forms, six reported only one form, and one did not present any. Six measures were well-established, and 12 measures had psychometric papers available.

The most cited measure of experienced stigma was the ISMI, which includes an experienced stigma subscale that assesses day-to-day discrimination experienced by PWMI. The next most cited measures of experienced stigma were the CESQ, Link et al.'s (1997) Rejection Experiences Scale, and Fife & Wright's (2000) Social Impact Scale (SIS), all of which include items assessing both day-to-day discrimination (e.g., being avoided), as well as more acute forms of discrimination (e.g., being denied a job).

Anticipated Stigma—In total, 10.0% (n = 96) of articles cite measures that assesses anticipated stigma, and we identified 37 anticipated stigma scales or subscales. Fifteen measures provided information regarding reliability, validity, and dimensionality, and twelve of those also included a published psychometric paper. Six measures presented two forms of psychometrics, eight presented only one form, and two did not present any psychometric information.

Interestingly, 19 of the 37 scales or subscales (51.4%) that assessed anticipated stigma also include items that address at least one other stigma mechanism, with internalized stigma and experienced stigma co-occurring most often. Additionally, the most cited measures of anticipated stigma are primarily measures of experienced stigma that include items that also assess anticipated stigma: the SIS (n = 10) and CESQ (n = 16). One recently developed measure, the Questionnaire on Anticipated Discrimination (QUAD; Gabbidon et al., 2013), is entirely focused on anticipated stigma and appears to be a psychometrically valid and promising measure.

In our framework, anticipated stigma is one of the mechanisms specific to PWMI. Therefore, one needs to have a mental illness in order to anticipate stigma related to mental illness. However, 27.0% (n = 10) scales or subscales identified as assessing anticipated stigma were designed to be completed by people who may or may not have mental illness. In some of these measures, individuals are asked to report how they *think they would feel* (e.g., If I had a mental illness, I would feel bad about myself) if they were to have a mental illness. For PWMI, these items may be capturing aspects of anticipated or internalized stigma (or both). For people who do not have mental illness, it is unclear what mechanism is being tapped.

Some of these measures assess how they think others would react to them if they had a mental illness (e.g., “If I had a mental illness, friends and family would think I am weak”). For PWMI, these measures are likely tapping anticipated stigma because they are asking to what extent people expect to be the target of stereotyping and discrimination. For people who do not have mental illness, these measures are likely tapping perceived stigma—how do people think others will react to PWMI.

Internalized Stigma—Of articles in the broader search, 150 (15.7%) include a measure of internalized stigma. A total of 29 scales or subscales assess internalized stigma. More than one-third (34.5%) of internalized stigma measures also included items that address other stigma mechanisms (n = 10), with anticipated stigma co-occurring the most often.

In terms of the psychometric characteristics, eight measures provided information on reliability, validity, and dimensionality, and all of them were accompanied by a published psychometric evaluation. However, only three measures were categorized as well-established, and only one of those three had a published psychometric paper (ISMI). Four measures provided two psychometric characteristics, five provided only one, and two measures did not have any psychometric information provided.

The most cited measure of internalized stigma was the ISMI (90 citations in the broader search). The ISMI is a well-cited, validated measure with five subscales: alienation, stereotype endorsement, discrimination experiences, social withdrawal, and stigma resistance. Scores on the five scales can be summed for a total ISMI score, or the scales can be treated individually. However, by generating a total ISMI score, the effect of internalized stigma is conflated with other stigma constructs. Importantly, only two of the subscales—alienation and social withdrawal, assess internalized stigma as conceptualized in the current article. For example, while the stereotype endorsement scale addresses internalized stigma, it also includes items that reflect endorsement of personal stereotypes. The discrimination experiences subscale measures experienced stigma. The stigma resistance scale was intended to reflect how much an individual feels they resist internalizing the stigma of mental illness (e.g., *I can have a good, fulfilling life, despite my mental illness*). However, psychometric support for the reliability of the scale is quite low, with some researchers finding internal consistency reliability estimates as low as 0.15 (Werner, Stein-Shvachman, & Heinik, 2009). Others have found support for stigma resistance as a separate construct (Sibitz, Unger, Woppmann, Zidek, & Amering 2011). Nevertheless, more than half (n = 50, 55.6%) of the articles citing the ISMI include stigma resistance in their analyses.

Recently, the authors of the ISMI reviewed international applications of the ISMI since its development (Boyd et al., 2014). There are more than 50 versions of the ISMI in existence. It has been translated to multiple languages, and modified for use with specific mental (e.g., depression, schizophrenia, eating disorders) and physical health conditions (e.g., epilepsy, inflammatory bowel disorder). Reliability and validity for the overall scale and subscales are consistently high (with the exception of the stigma resistance subscale). Chang and colleagues (2014) recently conducted additional psychometric analyses on the ISMI, demonstrating that ISMI shows good internal consistency, test-retest, and concurrent validity, as well as measurement invariance across time (again with the exception of the stigma resistance subscale).

Perceived Stigma—Perceived stereotypes and discrimination were measured in 200 and 203 articles (20.9 and 21.2%, respectively) in the broader search, respectively. Of the scales and subscales we identified, 19 measured perceived stereotypes, and 22 measured perceived discrimination. None of the measures were classified as assessing perceived prejudice. Only two of the perceived stigma measures were classified as well-established, and neither of those had a published psychometric paper available. Nine measures presented information regarding reliability, validity, and dimensionality; seven measures presented two psychometric characteristics, five presented one, and three did not present any psychometric information.

Link's (1987) Perceived-Devaluation Discrimination (PDD) measure was the most cited measure of both perceived stereotypes and discrimination, and was the second most used stigma measure overall (n = 123, 12.9%). The PDD is a well-established measure, having been cited over 100 times in the past decade with good internal consistency. However, the original PDD has never undergone a full psychometric evaluation.

As a perceived stigma measure, the PDD asks what people think *other people* feel and act towards PWMI. Because the measure is designed to be completed by people both with and without mental illness, the items are written more generally, and ask the extent to which people agree or disagree about what "most people" believe about PWMI. An important benefit of asking people about others' beliefs is the avoidance of socially desirable responding, as participants may feel more comfortable reporting that others view PWMI negatively, rather than endorsing those views themselves. Nevertheless, it is important to keep in mind that although personal beliefs may be correlated with perceived beliefs, they are distinct constructs that differentially impact outcomes for PWMI.

Although we classified the PDD as a measure of perceived stigma, there was variability in how the PDD was used. Some authors refer to the PDD as a measure of self- or internalized stigma (e.g., Jung and Kim, 2012; Kondrat, 2012; Livingston & Boyd, 2010; Vauth, Kliem, Wirtz, & Corrigan, 2007).

The DSS was also a common measure of both of perceived stereotypes and discrimination and includes two subscales: personal stigma and perceived stigma. The DSS has been adapted for other mental health conditions, including addiction, alcohol use, and generalized anxiety. The perceived stigma subscale also asks participants the extent to which they

believe most people hold negative beliefs about people with depression and whether they feel most people discriminate against people with depression.

Study-Created Measures

Study-created measures were used in 239 of the 957 articles (25.0%) for a total of 304 measures. Measures assessing stereotypes were the most common (*n* =156, 51.3%), followed by personal discrimination (*n* = 83, 27.3%), personal prejudice (*n* = 50, 16.5%), anticipated stigma (*n* = 29, *n* =9.5%), perceived discrimination (*n* = 26, 8.6%), experienced stigma (*n* = 21, 6.9%), perceived stereotypes (*n* = 15, 4.9%), internalized stigma (*n* =14, 4.6%), and finally, perceived prejudice (*n* = 6, 2.0%).

General Discussion

In the present article, we present a comprehensive framework for organizing research on the mechanisms through which individuals experience mental illness stigma, and apply it to evaluate the current state of measurement with respect to those mechanisms. This framework – the Mental Illness Stigma Framework – is not meant to replace existing conceptual models of stigma mechanisms. Instead, it was designed to capture the most common ways that individuals experience stigma, address key aspects of mental illness stigma that are relevant to a broad range of mental illnesses, and differentiate between mechanisms that are most relevant for people who do not have mental illness—stereotypes, prejudice, and discrimination—versus those that are most important for those who do have mental illness—experienced, anticipated, and internalized stigma. Most importantly, it ties together a substantial body of mental illness stigma research through common language and terminology, which can guide communication about relevant research findings, inform future research efforts, and aid researchers in selecting measures that correspond to the mental illness stigma mechanisms in which they are interested.

Current State of Mental Illness Stigma Measurement

The application of the MISF to systematically review mental illness stigma measures revealed that a striking number of measures—more than 400—have been used since 2004. Notably, more than two thirds of these measures were created for a particular study and had not undergone systematic psychometric validation. And yet, this review revealed that there is at least one well-validated measure of mental illness stigma for each of the mechanisms in the MISF. This begs the question of why researchers continue to create their own measures rather than use existing measures. There are several potential explanations. First, the complexity and multidimensionality of mental illness stigma likely plays a role. The interdisciplinary nature of mental illness stigma research is also likely an important factor, with researchers in different disciplines varying in their use of terminology and measurement. However, probably one of the biggest reasons for the large number of stigma measures is the lack of a unified conceptual framework that provides common terminology and definitions for mental illness stigma researchers. The MISF was designed to address this limitation by integrating the core mental illness stigma mechanisms that have been examined in this literature.

Through the application of the MISF, we were able to determine which stigma mechanisms have received the most, and the least, attention in the literature. By far, the most widely studied stigma mechanisms were stereotypes and discrimination, which were measured in 43.5% and 43.1% of the articles we identified, respectively. The research emphasis on stereotypes and discrimination parallels international efforts to reduce stigmatizing attitudes in the general public. The widespread prevalence of stereotypes and discrimination contributes to a cultural context in which individuals with mental illness may come to anticipate and experience stigma (Link & Phelan, 2001). Ideally, efforts to reduce and eliminate stereotypes and prejudice can create a cultural shift that would ultimately improve the lives of PWMI.

Less research exists on anticipated stigma (10% of the 957 articles). Compared to other mechanisms in the MISF, there appears to be less consistency in how researchers define and assess anticipated stigma. Several anticipated stigma measures we identified required participants to take the perspective of someone who has mental illness when (i.e., “If I had a mental illness…”). However, it is difficult to determine which stigma construct is being assessed when items are written this way. They may be picking up on anticipated, internalized, or perceived stigma, or a combination of all of these mechanisms. Because anticipated stigma is inherently tied to having a mental illness, it is often appropriate to limit the assessment of anticipated stigma to PWMI. However, there may be some research questions that benefit from asking individuals who do not have a confirmed mental illness these types of questions. For example, there may be assessment contexts in which individuals are reluctant to acknowledge mental health problems and therefore limiting the sample to those with a priori mental illness may not be feasible. There may also be assessment contexts in which it is not possible to limit the sample to PWMI before data collection. In such instances, care should be taken in carefully defining the stigma mechanisms under study.

Another issue we identified in our review is that many stigma measures assess multiple constructs within a single scale or subscale. This was particularly true for anticipated stigma and discrimination, where it occurred in more than half of their respective scales. Anticipated stigma was often included as a subscale (or part of a subscale) of measures addressing internalized or experienced stigma. In fact, we identified only four measures in which anticipated stigma was the sole stigma mechanism assessed (QUAD, Pinel’s (1999) Stigma Consciousness Scale, Link et al.’s (1991) secrecy scale, and Quinn & Chaudoir's (2009) anticipated stigma measure). Similarly, discrimination was the sole mechanism measured in in about half of the discrimination scales, with stereotypes most commonly co-occurring.

Including items that assess multiple constructs within a scale or subscale is not inherently problematic if one is interested in capturing a broader conceptualization of stigma. However, it is important not to *conflate* stigma mechanisms by including items that measure multiple stigma mechanisms within the same scale or subscale because they may be related to important outcomes in different ways. For example, the ISMI scale includes five subscales. Although researchers can generate a total ISMI score by summing across all items, some of the ISMI scales do not measure internalized stigma (e.g., the stereotype endorsement

subscale addresses stereotypes, and the discrimination experiences subscale measures experienced stigma). By generating a total ISMI score, it appears that the effect of internalized stigma is conflated with other stigma constructs. We recommend that researchers who use the ISMI, or any other measure assessing multiple stigma mechanisms, consider the value of using the subscales independently.

The sheer volume of mental illness stigma measures we identified, and in particular, the use of unvalidated measures, suggests that we may be close to a saturation point when it comes to the development of mental illness stigma measures. Instead of continuing to use unvalidated measures in new studies, we suggest that researchers carefully consider the stigma mechanism they are interested in examining, and whenever possible, identify a preexisting measure that meets their needs. Additionally, research should focus on validating some of the more promising measures of mental illness stigma with population(s) for which the measure was intended—i.e., those measures that are well-cited but have not yet undergone a psychometric evaluation. In cases where researchers would like to focus their attention on a specific disorder, there are a number of options. They can use existing measures that were designed for broad application to mental illness. The benefit of such an approach is that it facilitates future comparisons across disorders using the same measure. Another option is to use one of the many well-validated measures developed or adapted for a specific disorder. Finally, if needed, researchers can adapt an existing well-validated measure to fit their needs, being sure to provide information regarding reliability, validity, and dimensionality of their adapted measure.

Directions for Future Research

Our application of the MISF to review stigma measures provides valuable information regarding gaps in the mental illness stigma literature. In general, stigma mechanisms that are most relevant to the experiences of PWMI—experienced, anticipated, and internalized stigma—have been the least studied, and were measured in less than 20% of the studies in our review. There is a still a great deal of work to be done to explore these mechanisms and their corresponding outcomes for PWMI. For example, research is needed to understand relationships *between* stigma mechanisms, as research on other stigmatized identities (e.g., chronic physical illnesses) suggests that experienced and internalized stigma may lead to anticipated stigma, which in turn negatively impact healthcare access and overall quality of life (Earnshaw & Quinn, 2012). Understanding how PWMI experience stigma through mechanisms such as anticipated, internalized, or experienced stigma can also pave the way for the development of strategies to resist or reduce stigma. How people who possess a socially devalued identity experience these identities can vary greatly (Crocker & Major, 1989). PWMI may respond to stigmatization with righteous anger (Corrigan & Watson, 2002), feelings of empowerment (Rusch, Lieb, Bohus, & Corrigan, 2006), or by resisting stigma (Sibitz et al., 2011). These responses may impact the wellbeing of PWMI. Although research in this area is somewhat limited, the existing evidence suggests that empowerment is associated with decreased internalized stigma (Brohan et al., 2010; Sibitz et al., 2011).

Importantly, this review underscores the need for additional longitudinal research to better understand how mental illness stigma impacts individuals. The majority of studies we

reviewed were cross-sectional, which necessarily limits their generalizability. The call for more longitudinal stigma research is not new. Ten years ago in his review of mental illness stigma measures, Link et al. (2004) also encouraged researchers to take prospective view of mental illness stigma. Yet, we have not seen a marked increase in longitudinal work in this area. Of course, longitudinal research presents its own sets of challenges, namely cost and time. But if we want to advance our understanding of mental illness stigma, longitudinal studies are essential.

We hope the MISF can be a starting point for other researchers by delineating the most common ways in which people experience stigma and providing common terminology that can guide measurement selection. We also hope that researchers will be able to build upon the MISF to advance our understanding of mental illness stigma. How stigma mechanisms influence one another and how individuals respond to stigmatization (i.e., stigma resistance or coping) are two important ways in which the MISF could be elaborated upon.

Understanding the multidimensionality of stigma is key to advancing both theory and research (Pescosolido & Martin, 2015). An essential future direction for the MISF will be to examine the dimensionality of the stigma mechanisms themselves. For example, Quinn, Williams, & Weisz (2015) recently argued for a distinction between acute experiences of discrimination such as getting fired for having a mental illness, versus “day-to-day” discrimination such as being disrespected or avoided due to one’s mental illness. Both of these types of behaviors are captured in the discrimination mechanism of the MISF; however, different forms of discrimination may differentially impact PWMI. The same may be true with respect to other mechanisms in the MISF.

It is also important to acknowledge that our framework is just one way of conceptualizing mental illness stigma and there may be other informative conceptualizations. The MISF may be used in tandem with other conceptualizations of stigma to move the field forward. For example, Pescosolido and Martin (2015) propose a systems-level conceptualization of stigma, the stigma complex. Their conceptualization of stigma is based on the Framework Integrating Normative Influences on Stigma (FINIS; Pescosolido, Martin, Lang, & Olafsdottir, 2008). The FINIS is a broad theoretical model positing that stigma is the result of the dynamic interplay of both individual and community level factors. However, unlike the MISF, the FINIS does not identify the specific stigma mechanisms that capture the different ways in which people experience mental illness stigma. Future stigma researchers might examine ways in which these two theoretical frameworks work together to better understand how the different components of stigma (at both the individual and community level) interact.

Most of the theoretical and empirical work on mental illness stigma has focused on the individual level, which is also the emphasis of the MISF. However, future research can build upon and expand the MISF to include other important manifestations of stigma, including courtesy stigma, structural stigma, and cultural stigma. Courtesy stigma is the stigma experienced by people *associated* with those who possess a devalued identity, and is sometimes referred to as stigma-by-association (Goffman, 1963), family stigma (Corrigan &Miller 2004; Larson & Corrigan, 2008) or affiliate stigma (Mak & Cheung, 2008). Family

members, friends, caregivers, and service providers may all be the target of stigma (i.e., stereotyping, prejudice, or discrimination), or they may experience, anticipate, or internalize stigma (Mak & Cheung, 2008) because of their relationship to the stigmatized person. Structural stigma occurs when laws, policies, procedures, and cultural norms intentionally or unintentionally restrict the opportunities of those individuals who possess a stigmatized identity (Corrigan, et al., 2005; Link & Phelan, 2001; Hatzenbuehler & Link, 2014; Pugh, Hatzenbuehler, & Link, 2015). Structural stigma focuses on macro-level social forces that negatively impact the lives and well-being of PWMI (or any other stigmatized identity). Although research on structural stigma as it relates to mental illness is limited, two comprehensive reviews describe the state of current research on structural stigma and provide suggestions for future research (Livingston, 2013; Pugh et al., 2015). An important limitation of existing research on structural stigma is that it tends to be descriptive in nature, and consequently, there is a need for research examining the causal relationship between structural stigma and outcomes for PWMI (Pugh et al., 2015).

The integration of intersectionality theory may also help to further focus and unite the mental illness stigma literature. Intersectionality theory suggests that experiences and outcomes of mental illness stigma may be shaped by other characteristics of the stigmatized or stigmatizer, including the type of mental illness, treatment engagement, socio-economic status, gender, race, and others. For example, at the intersection of gender and mental illness, some Latina women living with mental illness define themselves as “good girls” and “church ladies” in opposition to stigmatizing labels (e.g., “loca”) (Collins, von Unger, & Armbrister, 2008). Identifying with cultural identities that are well-respected is a way of resisting the stigma associated with mental illness (Collins et al., 2008). Additionally, some work at the intersection of race/ethnicity, culture, and mental illness suggests that there is variability in the extent to which different racial and ethnic groups endorse stigmatizing beliefs about mental illness, and these differences may be attributed to different socialization and cultural values related to mental illness (Abdullah & Brown, 2011; Rao, Fienglass, & Corrigan, 2007; Whaley, 1997). Understanding how race and ethnicity impact people’s conceptualizations and experiences of mental illness stigma has important implications for individuals’ overall health and well-being, especially because racial and ethnic minorities are more likely to have unmet mental healthcare needs (Wang et al., 2007).

Finally, it is important to recognize culture as a lens through which we can better understand how stigma impacts individuals (Yang et al., 2007). The extent to which culture has been incorporated into measurements of stigma was recently examined in a measure review by Yang and colleagues (2014). The majority of cultural measures they identified involved adapting an existing measure to a specific culture, with very few measures being developed specifically for a particular culture. Yang et al. (2014) call for the development of culture-specific stigma measures, as they may have stronger predictive value over generic measures. Importantly, such measures should consider the cultural values that matter the most and therefore threaten people’s ability to successfully function in their social worlds (Yang et al., 2007).

Mental Illness Treatment Stigma

One area of mental illness stigma measurement that we excluded from our review was *treatment* stigma. There is a substantial body of literature examining the stigma associated with seeking treatment or help for mental health problems, and a number of treatment stigma scales have also been developed (e.g., Elhai, Schweinle, & Anderson, 2008; Skopp et al., 2012; Vogel, Wade, & Haake, 2006; Vogt et al., 2014). Some researchers treat mental illness stigma and treatment stigma as synonymously, including treatment and help-seeking items among other items assessing mental illness stigma. Others view treatment-seeking as a behavioral cue that identifies someone as mentally ill. Because mental illness can be concealed, seeking treatment may signal to others that the individual has a mental illness, and these individuals may become the target of stereotyping, prejudice, and discrimination.

A study conducted by Tucker and colleagues (2013) demonstrated that the internalized stigma of seeking treatment and the internalized stigma of mental illness are distinct constructs (they refer to these constructs as self-stigma of treatment and mental illness, respectively). Further, they each uniquely predicted outcomes such as shame, self-blame, social inadequacy, and help-seeking. Understanding the differences between the two constructs may have important implications for designing stigma interventions. For example, interventions targeting mental illness stigma mechanisms might focus on changing stereotypes of PWMI, or reducing internalized stigma (Lucksted et al., 2011). Interventions targeting treatment stigma might focus on negative beliefs about the efficacy of therapies and medications (Schomerus & Angermeyer, 2008), or challenging the belief that seeking treatment makes one weak.

Given the evidence supporting the distinction between treatment stigma and mental illness stigma, researchers should avoid conflating the two constructs in their conceptualization and measurement of mental illness stigma. Additional research is needed to fully understand the similarities and differences between these constructs, and how they work together to impact individuals with mental illness. For example, it is possible that treatment stigma may serve as a mediator between mental illness stigma and treatment-related outcomes. As previously mentioned, seeking treatment may also serve as a moderator of mental illness stigma mechanisms, affecting how PWMI experience mental illness stigma.

Conclusions

In their 2004 review of stigma measures, Link et al. proposed six questions that researchers should consider when selecting measures of stigma: *(1) What is the research question, and what are the variables one must measure to answer the question posed? (2) Is there an existing measure available, (3) Is it suitable for the population under examination (or can it be modified to make it appropriate)? (4) Is the measure appropriate to the study methodology in use? (5) Is the measure reliable and valid, and could social desirability influence responses to the measure? (6) Is the administration of the measure feasible for participants?* Despite the inherent wisdom of this guidance, there has been a proliferation in use of both validated and unvalidated mental illness stigma measures over the past 10 years, with little signs of slowing down. The field of mental illness stigma research has reached a point where there needs to be convergence across researchers with respect to both

terminology and measurement to move forward. We believe the MISF can help researchers articulate their constructs of interest with shared terminology, and that our review of mental illness stigma measures can help researchers identify validated scales that can be used to study those constructs.

One of the most important implications of the MISF and our review of the field's measurement of mental illness stigma is its potential to inform stigma reduction interventions. As Bos et al. (2013) note, many stigma interventions lack a theoretical foundation and sound methodology. They recommend that stigma reduction interventions identify and target specific stigma mechanisms and use measures that correspond to those mechanisms. The MISF and our review of measures can help researchers do exactly that. We hope that the next decade of mental illness stigma research is characterized by a greater synthesis of existing and newly discovered knowledge, and that researchers leverage that knowledge to reduce stigma and ultimately, improve the lives of those who experience mental illness.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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*indicates reference for a stigma measure described in Table 1.

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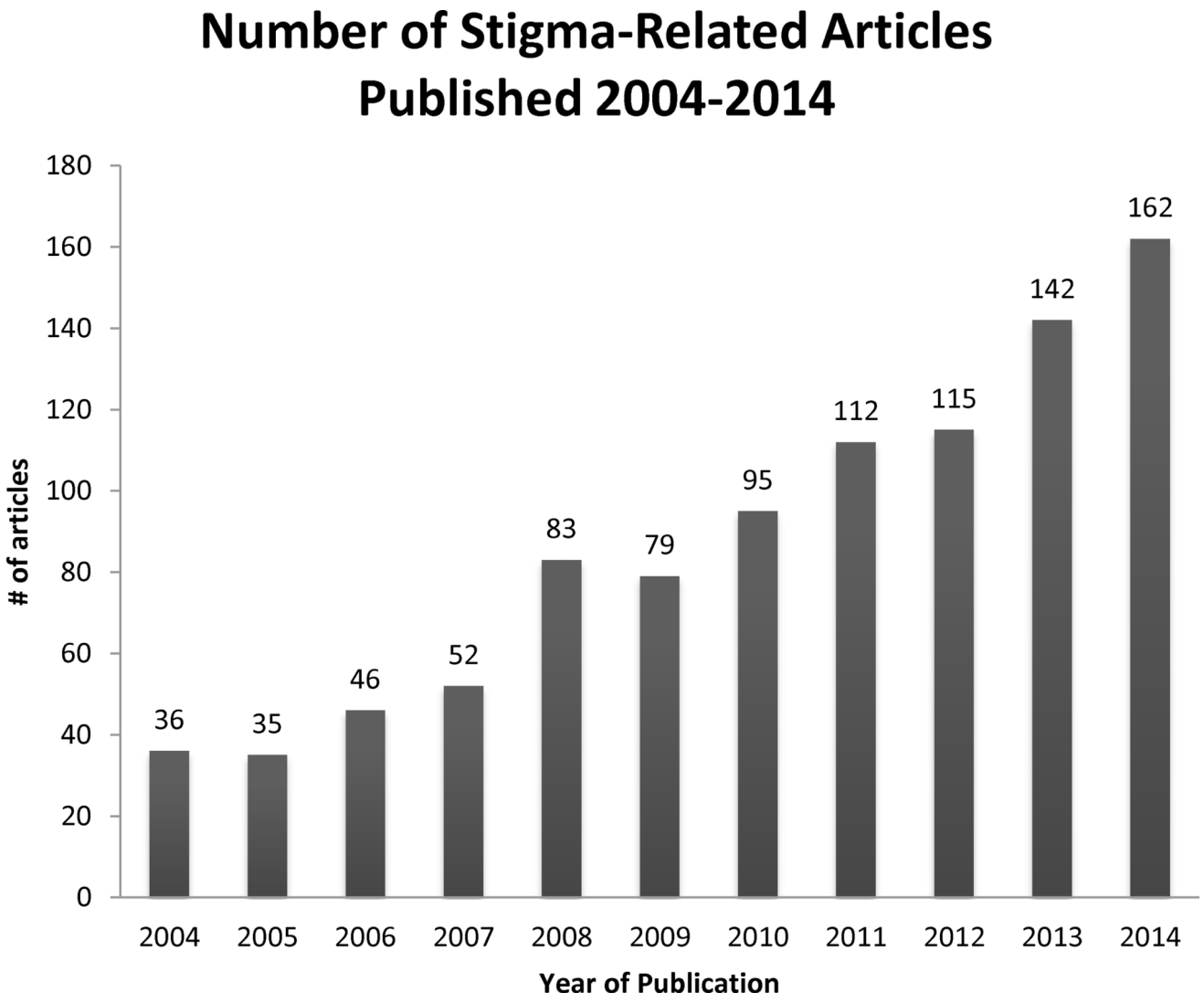

Figure 1.

Number of Stigma-Related Peer-Reviewed Publications appearing in searches of EBSCO/PsycInfo databases, PubMed, and Web of Science, 2004–2014

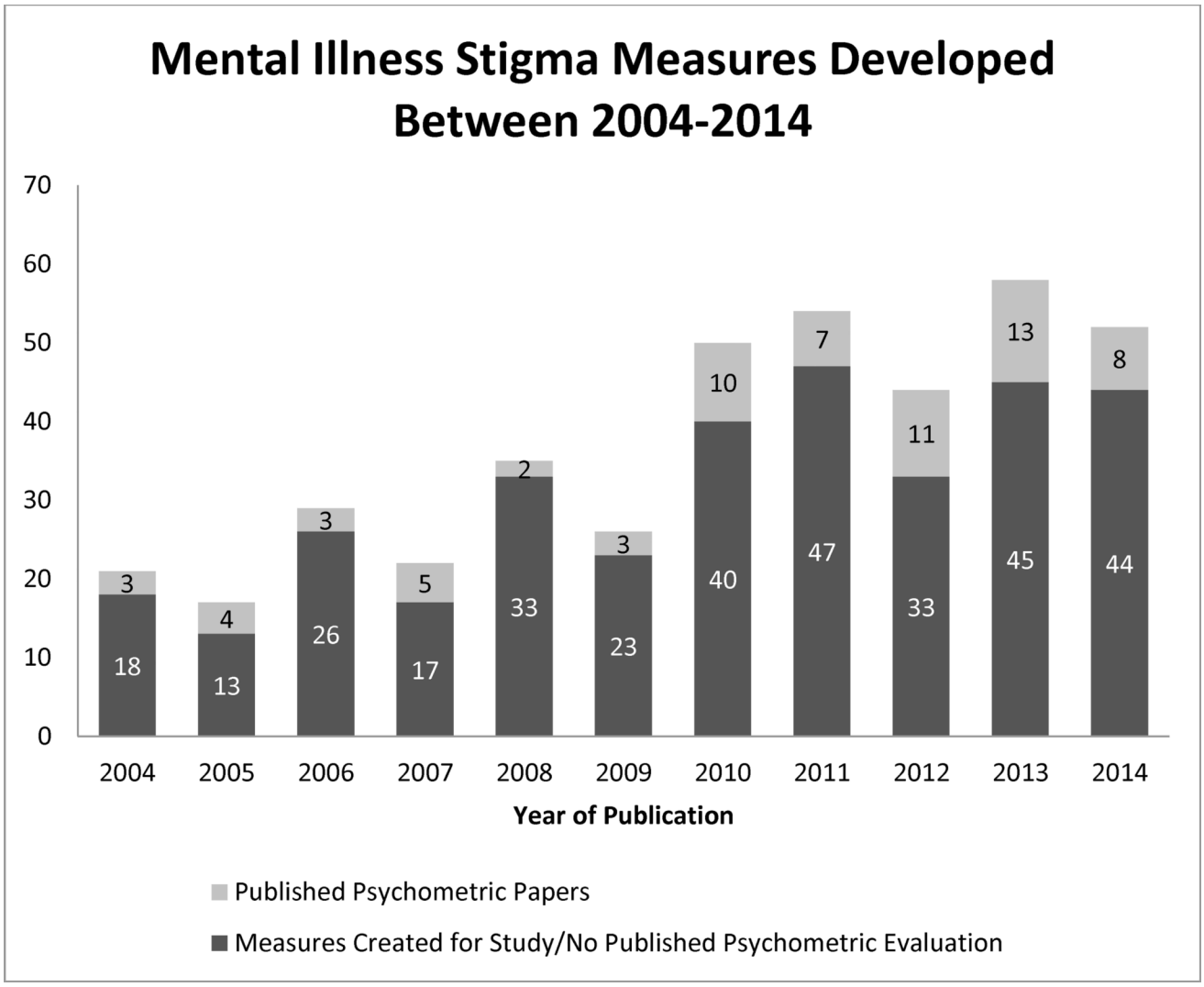

Figure 2.
Mental Health Stigma Measures Identified in searches of EBSCO/PsycInfo databases, PubMed, and Web of Science, 2004–2014

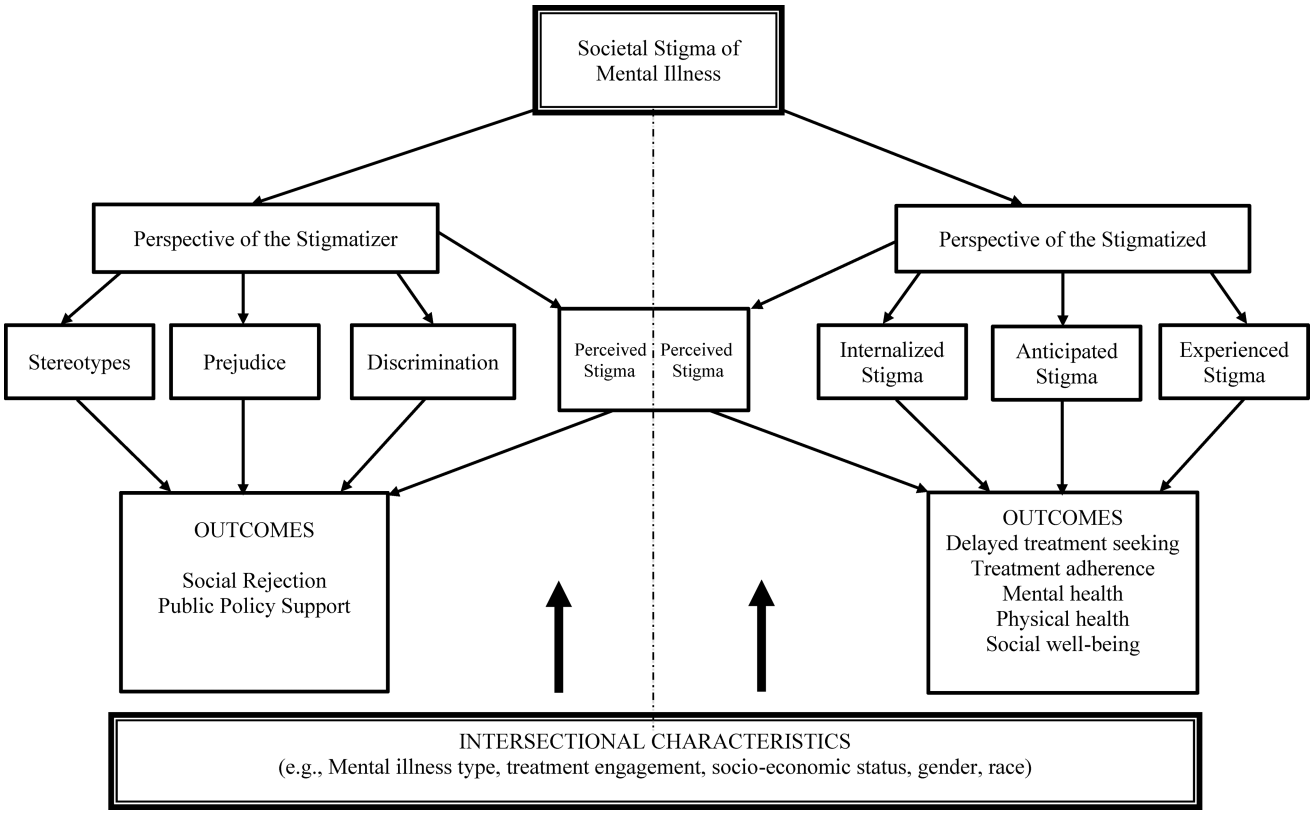

Figure 3.
The Mental Illness Stigma Framework

Table 1

Mental Illness Stigma Measures and their Corresponding Mechanisms according to the Mental Illness Stigma Framework

	Year	Authors	Measure or Scale Name	Psychometric Characteristics	Subscales	MI Stigma Mechanism	*N* cites*	Sample
1	1933	Bogardus	Social Distance Scale	R, WE		D	213	Community
2	1987	Link et al.		R				Community
3	1962	Cohen & Struening	Opinions about MI	DI, P, R, V, WE	Authoritarianism	S	13	Hospital personnel
	1963	Struening & Cohen			Benevolence	S		
					Hygiene	S		
					Social restrictiveness	S, D		
					Interpersonal etiology	S		
4	1981	Taylor & Dear	Community Attitudes Toward the Mentally Ill	DI, P, R, V, WE	Authoritarianism	S, D	43	Community/Undergrad
					Benevolence	S, P		
					Social restrictiveness	S, D		
					Community MH ideology	S, P		
5	1996	Wolff et al.	Community Attitudes Toward the Mentally Ill	DI	Fear and exclusion	S, P, D		Community
					Social control	S, D		
					Goodwill	P, D		
6	2012	Hogberg et al	New CAMI-S (Swedish)	DI, P, R	Intention to Interact	S, D		
					Fearful and avoidant	P, D		
					Open-minded and pro-integration	S, D		
					Community MH ideology	PD		
7	1985	Stephan & Stephan	Intergroup anxiety	DI, R, V, WE		P	2	Hispanic college students
	2012	Stathi et al.	Mental illness version					
8	1986	Link & Cullen	Perceived Dangerousness	R		S	10	Community
	1987	Link et al.						
9	1987	Kelly et al.	Social Interaction Scale	R, WE		D	1	Medical students
10	1987	Link	Perceived Devaluation-Discrimination Scale	R, V, WE		PS, PD	124	Community & Psychiatric

	Year	Authors	Measure or Scale Name	Psychometric Characteristics	Subscales	MI Stigma Mechanism	*N* cites*	Sample
	1989	Link et al.						
	1991	Link et al.						
	1997	Link et al.						
11	2007	Bjorkman et al.	Swedish version	P, R				PWMI
12	2009	Moses	Adolescent version	P, R, V				Adolescent MH
13	1988	Weller & Grunes	Attitudes toward the Mentally Ill	R		S, P, D	1	Nurses
14	1991	Link et al.	Secrecy Scale	R, WE	Secrecy	AS	10	Psychiatric
	1997	Link et al.						
	2002	Link et al.						
15	1992	Botega et al.	Depression Attitude Questionnaire	DI, P, R, WE	Antidepressant/ psychotherapy		3	Doctors
					Professional unease			
					Inevitable course of depression	S		
					Identification of depression	S		
16	1994	Penn et al.	Penn Affective Reactions	R, WE		P	9	Undergraduates
17			Penn Characteristics	R		S	6	
18			Penn Dangerousness	R		S	4	
19	1996	Wolff et al.	Fear and behavioral intentions	Not reported	Fear	P	1	Community
20	2011	Svensson et al.	Fear and behavioral intentions	P, R (no support)	Behavioral intentions	D		
21	1997	Angermeyer and Matschinger	Emotional Reactions	DI, R	Feelings of anxiety	P	5	General population
					Aggressive emotions	P		
					Prosocial reactions			
22	1997	Batson et al.	Attitudes toward people with AIDS	R		S, P, D, PD	1	College students
	2010	Kalyanaraman et al.	Adapted for schizophrenia					
23	1997	Link et al.	Link Rejection	R, V, WE	Rejection experiences	ES	15	MH patients
24	2007	Björkman et al.	Rejection Experiences-Swedish	P, R		ES		
25	1997	Raguram, & Weiss	Explanatory Model Interview Catalogue-Stigma Scale	R, WE		PD	4	MH

	Year	Authors	Measure or Scale Name	Psychometric Characteristics	Subscales	MI Stigma Mechanism	*N* cites*	Sample
	1997	Weiss						
	1992	Weiss et al.						
26	1997	Williams et al.	Everyday discrimination scale	R		D	1	Community
27	1998	Singh et al.	Attitudes To Mental Illness Questionnaire	Not reported		S	2	Medical students
28	1999	Magliano et al.	Questionnaire of Family Opinions	DI, P, R, V	Social restrictions	D	3	Family members
	2004	Magliano et al.	Questionnaire on the Opinions about MI		Social distance	D		General public
					Utility of treatments			
					Biopsychosocial causes	S		
29	1999	Pinel	Stigma Consciousness Scale	DI, P, R, V, WE		AS	3	Undergraduates, Gay/Lesbian
30	1999	Wahl	Consumer experiences of discrimination	V, WE		AS, ES	16	MH Consumers
31	2013	Switaj et al.	Polish version	DI, P, R, V				
32	2000	Corrigan et al.	Psychiatric Disability Attribution Questionnaire	DI, R	Stability	S	2	Community
					Controllability	S, D		
33	2000	Crisp	Attitudes to MI ("Changing Minds")	Not reported		S	11	Community
34	2011	Svensson et al.		P, R (No support)				
35	2000	Fife & Wright	Social Impact Scale	DI, R, WE	Social rejection	ES	10	Consumers (HIV/Cancer)
					Financial insecurity			Depression, HIV/AIDS, Schizophrenia
					Internalized shame	IS, AS		
					Isolation	IS		
36	2007	Pan et al.		DI, P, R	Unidimensional	AS, ES, IS		
37	2000	Hirai & Clum	Beliefs Toward MI Scale	DI, P, R, V	Dangerousness	S, P	1	Undergraduates
					Poor interpersonal and social skills	S; AS		
					Incurability			
38	2013	Royal & Thompson		DI, P, R, V	Unidimensional			Protestant service goers
39	2000	Lauber et al.	Stereotype endorsement scale	Not reported		S	5	General population
			Social restrictions scale			D	3	

	Year	Authors	Measure or Scale Name	Psychometric Characteristics	Subscales	MI Stigma Mechanism	*N* cites*	Sample
40	2000	Ng & Chan	Opinion about Mental Illness in Chinese Community	DI, R	Benevolence	S, D		students
			Attitude Scale for MI		Separation	S		
					Stereotyping	S		
					Restrictiveness	D		
					Pessimistic prediction	D, PD		
					Stigmatization	S, D		
41	2001	Corrigan et al.	Attribution Questionnaire (AQ--27)	DI, R, WE	Personal responsibility	S	48	Undergraduate (community college)
	2002	Corrigan et al.			Dangerousness	S		
	2003	Corrigan et al	AQ-9 (blame, anger, pity, help, dangerousness, fear, avoidance, segregation, coercion)		Anger	P		
	2004	Corrigan et al.			Concern	P		
42	2012	Pingani et al.	Italian Version	DI, P, R, V	Fear	P		
43	2012	Pinto et al.	r-AQ (5 items, unidimensional)	DI, P, R	Helping-avoidance	D		Adolescents
44	2004	Watson et al.	r-AQ (9 items, for adolescents)	R	Segregation-coercion	D		Adolescents
					Fear/dangerousness	S, P		
					Help/interact	D		
45	2008	Brown	Attribution Questionnaire	DI, P, R, V	Responsibility	S	2	Undergraduates
					Forcing treatment	D		
					Empathy	P		
					Negative emotions	P		
46	2001	Harvey	Stigmatization Scale	DI, P, R, V, WE		ES	2	Stigmatized group members
47	2001	Lai et al.	Stigma Questionnaire	DI	Social rejection	AS, ES	1	MH Patients
	2005	Chee et al.			Negative Media perceptions	PD		Outpatient MH
					Shame	IS		
					Social discrimination	AS		
48	2001	Struening et al.	Devaluation of Consumers Scale	DI, R	Status reduction	PS	3	Caregivers
					Role restriction	PD		
					Friendship refusal	PD		

	Year	Authors	Measure or Scale Name	Psychometric Characteristics	Subscales	MI Stigma Mechanism	*N* cites*	Sample
49	2001	Read & Harre	Questionnaire on Attitudes towards MH	R	Predicted response items	D	1	Undergraduates
					Semantic differentials	S		
50	2012	Dalky	Stigma-Devaluation Scale, Jordan	DI, P, R, V	Status reduction	PS, PD		
					Role restriction	PD		
					Community rejection	PS, PD		
51	2002	Christison et al.	Medical Condition Regard Scale	DI, P, R, V, WE		S, P, D	4	Medical Students
52	2002	Thompson et al.	Attitudes toward people with mental illness	Not reported		S	4	Community, medical, students, members of Schizophrenia advocacy group
53	2003	Pinfold et al.	Stigma Questionnaire	Not reported		S	2	Students
54	2003	Angermeyer & Matschinger	Emotional Reactions to MI Scale	DI, R	Fear	P	8	General public
					Pity	P		
					Anger	P		
55			Personal Attributes Scale	DI, R	Dangerousness	S	5	
					Dependency	S		
56	2003	Boyd Ritsher et al.	Internalized Stigma of MI Scale	DI, P, R, V, WE	Alienation	IS	91	MH outpatients
57	2013	Sibitz et al.	German version	DI, P, R, V	Stereotype endorsement	S, IS		
58	2014	Boyd et al.	Brief version	DI, P, R, V	Discrimination experiences	ES		
	2014	Chang et al		DI, P, R, V	Social withdrawal	IS		
59	2014	Ociskova et al.	Czech version	DI, P, R, V	Stigma resistance			
60	2003	Schulze et al.	Questionnaire on Social Distance	R	Stereotypes	S	8	Students
					Social distance	D		
61	2004	Austin et al.	Child Stigma Scale	P, R, V		ES, AS	2	Parents
	2009	Moses						
62	2004	Fortney et al.	Community Stigma	Not reported	Community judgment of drinking	PS, IS	1	At-risk drinkers
					Community judgment about treatment seeking			

	Year	Authors	Measure or Scale Name	Psychometric Characteristics	Subscales	MI Stigma Mechanism	*N* cites*	Sample
					Community judgment of specialty treatment services			
					Primary care provider judgment			
					Specialty provider judgment			
					Specialty care lack of privacy			
63	2004	Angermeyer & Matschinger	Stereotypes of Schizophrenia	DI, R	Dangerousness	S	6	General public
					Attribution of responsibility	S		
					Creativity	S		
					Unpredictability/incompetence	S		
					Poor prognosis	S		
64	2004	Griffiths et al.	Depression Stigma Scale	DI, R, WE	Personal stigma	S, D	56	Depressed
	2008	Griffiths et al.			Perceived stigma	PS, PD		Community, General Pop, Depressed subset
65	2004	Sanders Thompson et al.	Experience of Discrimination Scale	V		ES	1	Mental illness
66	2004	Tanaka et al.	Mental Disorder Prejudice Scale	DI, P, R	Rejection	S, D		General public
					Peculiarity	S		
					Human right alienation	D		
67	2005	Baker et al.	Attitudes Toward Acute Mental Health Scale	DI, P, R	Care of control	S		Nursing staff
					semantic differentials	S		
					therapuetic perspectives	S, D		
					hard to help	S		
					positive attitudes	S		
68	2014	Gang	Korean version	DI, P, R, V	Professional perspective		1	Korean nursing staff
					semantic differentials	S		
					positive attitude	S		
69	2005	Haghighat	Standardized Stigmatization Questionnaire	DI, P, R, V	Social self-interest	PD	2	Patients and Relatives
					Psychological self-interest	PD		
					Evolutionary self-interest	PS, PD		

	Year	Authors	Measure or Scale Name	Psychometric Characteristics	Subscales	MI Stigma Mechanism	*N* cites*	Sample
70	2005	Watson et al.	Attitudes Toward Serious MI Scale–	DI, P	Threat	S, P, D, AS†		Adolescent
			Adolescent Version		Social construction/concern	S		
					Wishful thinking	S		
					Categorical thinking	S, D		
					Out of control	S		
71	2005	Wrigley et al.	Perceived Stigma Scale	Not reported		PS, PD	5	Community
72	2005	Yen et al.	Self-Stigma Assessment Scale, Chinese Version	R		IS	3	MH outpatients
73	2005	Kira et al.	Stigma Consciousness	Not reported		PS, PD, D, AS	2	MH clients
74	2006	Bowers & Allan	Attitudes Toward Personality Disorder Scale	DI, P, R, V	Enjoyment v. loathing	P	1	Nurses, prison officers, psychiatric professionals
					Security v. vulnerability	P		
					Acceptance v rejection	P		
					Purpose v. futility			
					Exhaustion v. enthusiasm			
75	2006	Corrigan et al.	Self-Stigma of MI Scale	P, R, V, WE	Stereotype awareness	S	24	Psychiatric disabilities
76	2007	Fung et al.	Chinese Version	DI, P, R, V	Stereotype agreement	S		Severe MI
77	2012	Corrigan et al.	Short Form	P, R, V	Self-concurrence	IS		
					Self-esteem decrement	IS		
78	2006	Kroska & Harkness	Stigmatized Sentiments	V	Evaluation (good v bad)	P	2	PWMI
					Potency (powerful v weak)			
					Activity (active v weak)			
79	2006	Kroska & Harkness	Stigmatized Identity Meanings	V	Evaluation (good v bad)	IS		PWMI
					Potency (powerful v weak)			
					Activity (active v weak)			
80	2006	Luty et al.	Attitudes Toward Mentally Ill Questionnaire	DI, P, R, V, WE		S, D	16	General population
81	2006	Ucok et al.	Attitudes Toward Schizophrenia	DI		S, D	2	General practitioners

	Year	Authors	Measure or Scale Name	Psychometric Characteristics	Subscales	MI Stigma Mechanism	*N* cites*	Sample
82	2006	Wood & Wahl	IOOV Attitudes and Knowledge	Not reported	Attitudes	D, P		Undergraduates
83	2007	Day et al.	MI Stigma Scale	DI, R	Anxiety	P	4	College Students
					Relationship disruption	S, D		Community
					Hygiene	S		
					Visibility	S		
					Treatability	S		
					Professional efficacy			
					Recovery	S		
84	2007	Gilbert et al.	Attitudes Toward Mental Health Problem Scale	R	Attitudes toward MH problems	PS, PD		Female university students
					External Shame/Stigma awareness	AS†		
					Internal shame	IS		
					Reflected Shame 1			
					Reflected Shame 2			
85	2007	King et al.	The Stigma Scale	DI, P, R	Discrimination	ES	2	MH service users
					Disclosure	AS		
					Positive aspects	S (1 item)		
86	2007	Luoma et al.	Substance Abuse Perceived Stigma Scale	DI, V	Self-devaluation	IS	3	Substance abusers in Tx
					Fear of enacted stigma	AS		
					Stigma avoidance	AS		
					Values disengagement			
87	2007	Marcks et al.	Vignette Questionnaire	DI, R, V	Social rejection	D	1	College students
	2013	Cathey & Witterneck	Modified for OCD		Hiding a drug/alcohol problem	S		
					Psychological/Medical problem	S		
					Concern	P		
88	2007	Happell & Gough	Mental Health Nursing Education Survey	DI, R	Negative Stereotypes	S	1	Nursing students
					Preparedness for MH field			
					Valuable contribution			

	Year	Authors	Measure or Scale Name	Psychometric Characteristics	Subscales	MI Stigma Mechanism	*N* cites*	Sample
					Anxiety surrounding MI	P		
					Interest in MH nursing as a career			
89	2008	Collins et al.	Stigma in Psychiatric Illness and Sexuality Among Women	R	Mental illness stigma	ES	1	Serious MI
					Relationship stigma	S		
					Ethnic stigma			
					Perceived attractiveness			
					Discrimination	ES		
90	2008	Eack and Newhill	Attitudes Toward Individuals with Schizophrenia	DI, R	General attitudes	S, D	1	Social workers
					Attitudes about working with individuals with Schizophrenia	D		
91	2008	Kanter et al.	Depression Self-Stigma Scale	DI, P, R, V	General self-stigma	ES, AS	7	Depressed undergrads and community
					Secrecy	AS		
					Public stigma	S, D		
					Treatment stigma			
					Stigmatizing experiences	ES		
92	2009	Magliano et al.	User Opinions Questionnaire	P, R, V	Affective problems	P	1	Schizophrenia patients
					Social distance	S, D		
					Usefulness of drug and psychosocial treatments			
					Right to be informed			
					Recognizability	S, P		
					Social equality	D		
93	2009	Masuda et al.	Stigmatizing Attitudes-Believability	R		S	4	Undergraduates
94	2009	Quinn & Chaudoir	Anticipated Stigma Scale	R		AS	1	College students
95	2010	Aromaa et al.	Attitudes towards people with mental disorders	DI, P, R	Depression is a matter of will	S	2	General population
					Mental problems have negative consequences	S		

	Year	Authors	Measure or Scale Name	Psychometric Characteristics	Subscales	MI Stigma Mechanism	*N* cites*	Sample
					One should be careful with antidepressants			
					You never recover from mental problems	S		
96	2010	Barney et al.	Self-Stigma of Depression Scale	DI, P, R, V	Shame	IS, AS†		Undergraduate, Internet, Depressed, General pop Depressed
					Self-blame	IS, AS†		
					Social inadequacy	IS, AS†		
					Help-seeking inhibition	IS, AS		
97	2010	Bell et al.	Stereotypic Beliefs	Not reported		S	1	Pharmacy Students
98	2010	Evans-Lacko et al.	Mental Health Knowledge Schedule	P, R, V, WE		S	16	General public
99	2010	Fresan et al.	Public Conception of Aggressiveness Questionnaire	DI, P, R	Aggressiveness	S		General public
					Mental disease	S		
100	2010	Gabriel & Violato	Attitudes towards depression and its treatments	DI, P, R, V	Acceptance of treatment			Depressed
					Perceived stigma and shame	IS, ES		
					Negative attitudes toward antidepressants	ES		
					Self-stigma	S, ES		
					Preference for psychotherapy			
101	2010	Karidi et al.	Self-Stigmatization Questionnaire	Not reported		ES, AS, IS	1	Schizophrenia outpatients
102	2010	Kassam et al.	MI: Clinicians' Attitudes Scale	DI, P, R, V		S, D, AS†	5	Medical students
103	2013	Gabbidon et al.	MI: Clinicians' Attitudes Scale (healthcare professions version)	DI, R, V	Views of health/social care field and MI	D		Healthcare Professionals
					Knowledge of MI	S		
					Disclosure	AS†		
					Distinguishing mental and physical health			
					Patient care for people with MI	D		

	Year	Authors	Measure or Scale Name	Psychometric Characteristics	Subscales	MI Stigma Mechanism	*N* cites*	Sample
104	2010	Kellison et al.	ADHD Stigma Questionnaire	DI, P, R, V	Disclosure concerns		3	Community adolescents
					Negative self-image	S; IS		
					Concern with public attitudes	PS, ES, AS		
105	2010	Kobau et al.	Generic Scale for Public Health Surveillance of MI Associated Stigma (HealthStyles Survey 2006)	DI, P, R, V	Negative stereotypes	S		General public
					Recovery and outcomes	S		
106	2010	Luoma et al.	Perceived Stigma of Addiction Scale	DI, P, R, V		PS, PD		Substance abuse tx
107	2010	Mak & Cheung	Self-Stigma Scale–Short Form	DI, P, R, V	Affective	IS	2	MH consumers
					Behavioral	IS		Immigrants
					Cognitive	IS		Sexual minorities
108	2011	Brown	Social Distance Scale for Substance Users	P, R, V		D		undergraduates
109			Dangerous Scale for Substance Users	P, R, V (no support)		S		
110			Affect Scale for Substance Users	P, R, V		P		
111	2011	Clayfield et al.	Mental Health Attitude Survey for police	DI, P, R	Positive attitudes toward EDPs	S,D		Police
					Negative attitudes toward community responsibility for EDPs	D		
					Not adequately prepared to deal with EDPs			
					Positive attitudes toward EDPs living in the community	P,D		
112	2011	Evans-Lacko et al.	Reported and Intended Behaviour Scale	P, R, V, WE	Reported behavior	D	17	General population
113	2014	Yamaguchi et al.	Japanese version	DI, P, R, V	Intended behavior	D		
114	2011	Griffiths et al.	Generalized Anxiety Stigma Scale	DI, P, R, V	Personal stigma	S, D	3	General population
					Perceived stigma	PS, PD		
115	2011	Palamar	Drug Use Stigmatization Scale	DI, P, R, V	Stigma of drug users scale	S	3	Adults
					Drug use stigmatization scale	PS, PD		
116	2011	Scheerder	Attitudes Toward Depression	Not reported		S	2	Community and Health Professionals

	Year	Authors	Measure or Scale Name	Psychometric Characteristics	Subscales	MI Stigma Mechanism	*N* cites*	Sample
117	2011	Wahl et al.	Knowledge and Attitudes about MI	R	Knowledge	S	1	Adolescents
					Attitudes	S, P, D, AS†		
118	2012	Birchwood et al.	Personal Beliefs about Illness Questionnaire-Revised	DI, P, R, V	Entrapment	IS	6	MH Patients
	1993	Birchwood et al.	Personal Beliefs about Illness Questionnaire		Loss	IS		MH Patients
					Social marginalization	IS		
					Shame	IS		
					Control	IS		
119	2012	Fuermaier et al.	Adult ADHD Stigma Scale	DI, P, R	Reliability and social functioning	S, D	1	Undergraduates, community
					Malingering and misuse of medication	S		
					Ability to take responsibility	S, D		
					Norm-violating and externalizing behavior	S		
					Consequences of diagnostic disclosure	S		
					Etiology	S		
120	2012	Kassam et al.	Opening Minds Scale for Health Care Providers	DI, P, R, V	Attitudes of healthcare providers	S, P	4	Healthcare providers
					Attitudes toward disclosure	AS		
					Attitudes of healthcare providers toward PWMI			
					Disclosure/help-seeking			
					Social distance	D		
121	2014	Modgill et al.	15-item version	DI, P, R, V	Attitudes	S, P		Healthcare providers
					Disclosure/help-seeking	AS		
					Social distance	D		
122	2012	Madianos et al.	Public Attitudes Toward MI Greece	DI, P, R, V	Stereotyping	S		General population
					Optimism	S		
					Coping			
					Understanding	PS, PD		

	Year	Authors	Measure or Scale Name	Psychometric Characteristics	Subscales	MI Stigma Mechanism	*N* cites*	Sample
123	2012	Scocco et al.	Stigma of Suicide Attempt	DI, P, R	Supportive/respectful/caring attitudes	D		Gen Pop, MH patients, attempters, SO who lost someone to suicide
					Stigmatizing attitudes and beliefs	S, D		
124	2012	Siu et al.	Attitudes Toward Mental Disorders	Not reported		S, P, D	2	Secondary school, community (elderly,public and private housing)
125	2012	van der Heijden	Nurses' Perceptions of MH Care	DI, P, R, V	Student s' views on psychiatric patients	S, PS		students
					Students' views on a career in mental health care			
126	2013	Batterham et al.	Stigma of Suicide Scale	DI, P, R, V	Stigma	S	4	University student and staff (community)
127			Short Form	DI, P, R, V	Isolation/depression	S		
					Glorification/normalization	S		
128	2013	Brohan et al.	Discrimination and Stigma Scale	DI, P, R, V, WE	Unfair treatment	ES	19	Community MH service users
					Stopping self	AS		
					Overcoming stigma			
					Positive treatment			
129	2013	Gabbidon et al.	Questionnaire on Anticipated Discrimination	P, R, V		AS	1	Community MH service users
130	2013	Glass et al.	Perceived Alcohol Stigma Scale	DI, P, V		PS, PD		General population
131	2013	Hirsch	Biases Toward Children with Psychological and Behavioral Problems Scale	DI, P, R,V		S		Professionals and students
132	2013	Ilic et al.	Multifaceted Stigma Experiences Scale	DI, P, R, V	Hostile discrimination	ES	1	MH Tx seekers
					Benevolent discrimination	ES		
					Taboo	ES		
					Denial	ES		
133	2013	Luoma et al.	Substance Abuse Self-Stigma Scale	DI, P, R, V	Self-devaluation	IS		Substance abusers
					Fear of enacted stigma	AS		
					Stigma avoidance	AS, IS		
					Values disengagement			

	Year	Authors	Measure or Scale Name	Psychometric Characteristics	Subscales	MI Stigma Mechanism	*N* cites*	Sample
134	2013	Michaels & Corrigan	Knowledge Test	P, R, V		S	2	Undergraduates, MH Providers, MH consumers
135	2013	Mileva et al.	Inventory of Stigmatizing Experiences	P, R	Stigma experiences scale	AS, IS, ES	7	MH patients
	2005	Stuart et al.			Stigma impact scale	ES		
136	2013	Segal et al.	Attitudes Toward Persons With MI Scale	DI, R	Rejection-- intimate contact	D	1	Community mental health clients
					Rejection-- competence/trustworthiness	S, D		
					Rejection--severity of illness	S, D		
137	2014	Heflinger et al.	Attitudes about Child Mental Health Questionnaire	DI, P, R, V	Child dangerousness/incompetence	S		Community
					General stereotypes	S		
					Community devaluation/discrimination	PS, PD		
					Personal attitudes	P, D		
138	2014	Karidi et al	Stigma Inventory for Mental Illness	DI, P, R, V	Perceptions of Social Stigma	AS		Schizophrenia outpatients
					Self-efficacy			
139	2014	Mak et al.	Stigma and Acceptance Scale	DI, R	Public stigma	S, P, D	1	Community
					Stigma acceptance	D		
140	2014	Vogt et al.	Endorsed and Anticipated Stigma Inventory	DI, P, R, V	Negative beliefs about MH treatment		1	Veterans
					Negative beliefs about MH treatment seeking	S		
					Negative beliefs about mental illness	S		
					Concerns about stigma-- family/ friends	AS†		
					Concerns about stigma-- workplace	AS†		

Notes.

*Number of citations in the current review; MI = mental illness; MH = mental health; For psychometric evaluation: DI = dimensionality examined, R = at least one form of reliability reported (e.g., internal consistency, test-retest), P = published psychometric paper, V = at least one form of validity examined (e.g., construct, convergent, divergent, concurrent, discriminant, predictive),WE = well-established measure in the literature with 10+ citations in the past ten years. For stigma mechanisms: D = discrimination, S = stereotypes, P = prejudice, PS = perceived stereotypes, PD = perceived discrimination, AS= anticipated stigma, AS

AS† indicates an anticipated stigma measure that can be administered to the general population, IS = internalized stigma, ES = experienced stigma