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Experiences of Stigma by Association Among Family Members of People With Mental Illness

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Objective: To investigate the relationships between public stigma, stigma by association (SBA), psychological distress, perceived closeness, perceived heredity, and the type of family relationship among family members of people with a mental illness. Method: In this cross-sectional survey, data from 527 family members of people with a mental illness were analyzed. Results: Perceptions of public stigma were found to be positively related to SBA and SBA correlated with greater psychological distress and less perceived closeness. SBA also mediated relationships between perceived public stigma and psychological distress, and between perceived public stigma and perceived closeness. Further, among participants who reported SBA, immediate family members showed lower levels of perceived closeness than extended family members. Also, the perceived heredity of mental illness was associated with perceptions of public stigma and psychological distress. Conclusion: The findings suggest that family members of people with a mental illness could benefit from education on mental illnesses, their treatment, and the extent to which they are hereditary. Additionally, particular attention should be paid to the psychological needs that arise from being a caregiver of someone with a mental illness.

Impact and Implications

Although mental illness stigma has been studied extensively, stigma by association (SBA) among family members of people with mental illness (PWMI) has not. This cross-sectional survey aims to advance our understanding of SBA by investigating the relationships between perceived public stigma, SBA, psychological distress, and perceived closeness while also considering the role of the perceived heredity of mental illnesses and family relationships.

The findings show that perceived public stigma and SBA contribute to psychological distress among family members of PWMI. They also indicate that believing mental illness is hereditary is associated with greater psychological distress. Further, lower levels of perceived closeness were reported among immediate family members who had experienced SBA than among extended family members who had experienced SBA.

Given their important role as caregivers and providers of social support, we suggest that interventions focus on aiding immediate family members of PWMI in their provision of social support by providing education regarding mental illnesses, their impact, their treatment, and the extent to which they are hereditary.

Introduction

Historically, people with mental illness (PWMI) have always been stigmatized. This stigma pervades writings from medieval to modern times. Thought to be possessed by demons in medieval times, and viewed as constitutionally weak, dangerous, and responsible for their own plight in recent decades, the diagnosis of a mental illness is almost always accompanied by stigma (Fink & Tasman, 1992). The term stigma refers to a distinctive, discrediting characteristic that renders its bearer tainted, flawed, or inferior in the eyes of others (Bos, Kok, & Dijker, 2001; Crocker, Major, & Steele, 1998). The origin of stigmatization lies in the cognitive representations of people who possess the stigmatized condition. These cognitive representations may trigger emotional and behavioural reactions from others that subsequently result in stigmatizing behaviour such as avoidance, blaming, and exclusion (Bos, Schaalma, & Pryor, 2008; Dijker & Koomen, 2003). As such, stigma can occur as discrimination, rejection, and other negative social interactions (Black & Miles, 2002; Corrigan, Larson, & Kuwabara, 2007). Mental illness stigma has a strong and enduring effect on psychological well-being (Link, Struening, Rahav, Phelan, & Nuttbrock, 1997). Unfortunately, stigma continues to complicate the lives of PWMI, even as treatment improves their symptoms and functioning.

Stigmatization not only affects PWMI, but also their families. This phenomenon is known as stigma by association (SBA) (Mehta & Farina, 1988; Neuberg, Smith, Hoffman, & Russell, 1994) or courtesy stigma (Angermeyer, Schulze, & Dietrich, 2003; Goffman, 1963). SBA represents the process through which the companions of stigmatized persons are discredited (Pryor, Reeder, & Monroe, 2012). Although kinship relationships provide a powerful conduit for the spread of stigma from “marked” to “unmarked” persons, stigma can also spread through relatively arbitrary associations created by proximity or similarity (Neuberg et al., 1994; Pryor, Reeder, & Monroe, 2012). Pryor, Bos, Reeder, Stutterheim, Willems, and McClelland (2012) theorized that there are common affective, cognitive, and behavioural dimensions of reactions to having relatives or other social associates with stigmatizing conditions. They found experiences of SBA to be strongly related to perceived public stigma (i.e., societal reactions to the stigma) and to predict poorer psychological well-being across various stigmatized conditions. Further, their findings suggest that experiencing SBA is associated with psychologically distancing oneself from a stigmatized relative. Reactions to SBA are thus not only personal reactions to the stigma itself, but also reactions to being connected to someone who possesses the stigma. Like the primary experience of stigma, SBA can directly affect the health and well-being of family members of PWMI (Angermeyer et al., 2003; Östman & Kjellin, 2002; Phelan, Bromet, & Link, 1998). Psychological complaints, such as brooding, inner unrest, and irritability, and physical complaints, such as insomnia, fatigue, and neck and shoulder pain, have been reported as symptoms of psychological distress caused by SBA (Angermeyer, Liebelt, & Matschinger, 2001). Family members of PWMI have also reported avoiding social interactions, suffering social exclusion, and spending energy and resources to conceal their relationship to their family member as a result of SBA (Larson & Corrigan, 2008).

SBA can impact, and is impacted by, perceived closeness. Psychological closeness in relationships can be defined as the degree to which one includes the other in one’s self (Aron & Aron, 1986; Aron, Aron, Tudor, & Nelson, 1991). Aron and colleagues have posited that, in a close relationship, one acts

as if some or all aspects of the other (e.g., resources, perspectives, characteristics) are partially one's own. Closeness thus represents a vicarious sharing of the other's traits and abilities. However, being associated with a stigmatized person poses a dilemma. In the case of a family member with a mental illness, one must either embrace the fate of that family member as a stigmatized person and identify with him or her, or one must reject sharing the discredit by avoiding or minimizing the relationship (Kreisman & Joy, 1974). At the same time, closeness permits one to see qualities other than the stigma. The closer the relationship, the less the stigma is perceived as defining the person. As such, closeness can yield reductions in stigma (Werner, Goldstein, & Buchbinder, 2010).

According to Corrigan, Watson, and Miller (2006), SBA may also vary by family role (e.g., parent, sibling, child). In fact, they reviewed ways in which various family roles were impacted by SBA and concluded that parents were blamed for causing their child's mental illness, siblings were blamed for not assuring that relatives with mental illness adhere to treatment plans, and children were fearful of being "contaminated" with the mental illness of their parent.

Many PWMI, as well as their families and clinicians, have expressed hopes that knowledge about the perceived heredity of mental illnesses will decrease stigma by demonstrating that mental illness is primarily biologically determined and that individuals should not be blamed for their illness. However, some researchers contend that knowledge of the genetics of mental illness worsens stigma by making the diagnostic label of mental illness "stickier" (Hoop, 2008; Phelan, 2005; Phelan, Cruz-Rojas, & Reiff, 2002; Read & Harré, 2001). As such, perceived heredity allows social connections to be fortified by biological ones. This view is supported by work indicating that attributions to heredity enhance negative reactions to PWMI (Dietrich et al., 2004) as well as to members of their families (Koschade & Lynd-Stevenson, 2011).

Experiences of SBA among family members of PWMI have received comparatively little attention in empirical research. The present study therefore examined the relationships between perceived public stigma, SBA, psychological distress, perceived closeness, perceived heredity, and the type of family relationship (immediate vs. extended family) in a large sample of family members of PWMI in the Netherlands. We hypothesized, first, that perceived public stigma would be positively related to SBA and, second, that SBA would be positively related to psychological distress and negatively related to perceived closeness. We further hypothesized positive associations between perceived heredity, on the one hand, and perceived public stigma, SBA, and psychological distress, on the other. In addition, we posited that the type of family relationship (immediate vs. extended) would moderate the relationships between SBA and psychological distress and between SBA and perceived closeness. More specifically, we expected SBA to be associated with higher levels of psychological distress and lower levels of perceived closeness more in immediate family members than in extended family members.

Method

Participants and Procedure

In November 2010, family members of PWMI in the Netherlands were recruited from an online panel (N = 13,196) through an email that asked whether they had a family member with a mental illness

who was receiving or had received mental health care and if they were willing to participate in a survey on this topic. Approximately 6,800 panel members responded to this email, and we confirmed that 39% (n = 2,654) had a family member with a mental illness who was receiving or had received mental health care. A random sample of 666 cases drawn from these 2,654 panel members meeting the inclusion criteria were subsequently invited by email to participate in the survey and a reminder was sent 4 days after the initial invitation. Of the 666 invitees, 527 completed the survey, yielding a response rate of 79.1%. Informed consent was obtained, and participants were given points that could be exchanged for discount coupons on survey completion. The study was approved by the ethics committee at Maastricht University's Faculty of Psychology and Neuroscience.

Participant characteristics are displayed in Table 1. In short, 211 were men and 316 women. Ages ranged from 18-85 years (M = 43.4, SD = 14.9). In terms of educational attainment, 48.0% had a low (i.e., elementary school or lower vocational training), 27.7% a moderate (i.e., secondary or midlevel vocational training), and 24.3% a high (i.e., college or university) level of education. The relationship of participants to their family member with mental illness varied widely: 17.3% were parents, 21.3% were children, 16.3% were siblings, 12.1% were spouses, 9.6% were in-laws, and 23.4% had some other family relationship.

Table 1 Demographic and Background Characteristics of Sample (N=527)

Variable	Percentage (%)
Family relationship:	
Spouse	12.1
Child	21.3
Parent	17.3
Sibling	16.3
In-laws	9.6
Other	23.4
Gender	
Male	59.0
Female	41.0
Age	
Years [mean (SD)]	43.4 (14.9)
Range (min-max)	18 - 85
Level of Education*	
Low	48.0
Moderate	27.7
High	24.3
Marital status	
Single	18.1
Common-law	17.6
Married	56.9
Divorced	5.7
Widowed	1.7
Ethnicity	
Dutch	97.5
Other	2.5

* Low = elementary school or lower vocational training; moderate = secondary school or mid-level vocational training; high = college or university

Measures

The type of mental illness participants' family member had was assessed by asking participants to select their family member's mental illness(es) from the following list: schizophrenia or psychotic disorder, eating disorder, depressive disorder, addiction, personality disorder, attention deficit hyperactivity disorder (ADHD), autism, anxiety disorder, bipolar or other mood disorder, or another mental illness. More than one disorder could be selected.

Perceived public stigma was assessed using the 18-item Public Stigma Scale (Pryor, Bos, et al., 2012, see supplemental online Appendix; $\alpha = .84$) in which items represent constructs examined in prior studies of public stigma (i.e., Corrigan, Markowitz, Watson, Rowan, & Kubiak, 2003; Crandall & Moriarty, 1995; Feldman & Crandall, 2007; Link, Cullen, Struening, Shrout, & Dohrenwend, 1989; Link, Phelan, Bresnahan, Stueve, & Pescosolido, 1999; Vogel, Wade, & Hackler, 2007). On each item, participants were asked to rate the degree to which they thought most people would react as described to a PWMI, on a 5-point scale ranging from 1 (strongly disagree) to 5 (strongly agree). Cronbach's alpha was .83.

SBA was measured using the 28-item Stigma-by-Association Scale (Pryor, Bos, et al., 2012, see supplemental online Appendix; $\alpha = .94$) that measures participants' cognitive, emotional, and behavioural reactions to being related to someone with a stigmatized condition. Items were rated on a 9-point scale, ranging from 1 (strongly disagree) to 9 (strongly agree). Cronbach's alpha was .90. Psychological distress was assessed using the 18-item Mental Health Inventory (MHI) ($\alpha = .94$; Veit & Ware, 1983). The MHI measures depression (e.g., "Have you felt downhearted or blue?"), anxiety (e.g., "Have you been a nervous person?"), positive affect (e.g., "Has your daily life been full of things that you been in firm control of your behaviour, thoughts, emotions, feelings?") over the 4 weeks prior to administration by having participants score items on a 6-point scale, ranging from 1 (none of the time) to 6 (all of the time). A higher score is indicative of greater psychological distress. The MHI is a valid and reliable measure of mental health that has been used extensively in both clinical and nonclinical samples (Cassileth et al., 1984; Heubeck & Neill, 2000; Rosenthal et al., 1991; Veit & Ware, 1983). It was also used previously to examine the impact of stigma on psychological distress (Stutterheim et al., 2009; Stutterheim et al., 2011). Cronbach's alpha was .94.

Perceived closeness was assessed using the single-item Inclusion of Other in the Self Scale (IOS; Aron, Aron, & Smollan, 1992). In the administration of this scale, seven diagrams are presented. Each diagram depicts two circles, one labelled self and the other labelled other. The two circles have varying degrees of overlap, from no overlap to almost complete overlap. Participants are asked to pick the diagram that best represents their relationship to the person of interest. In our study, this was their family member with a mental illness. Greater overlap represents more perceived closeness. The scale, widely used in relationship research, has demonstrated strong predictive and construct validity as a general measure of closeness. In fact, Aron et al. (1992) reported an alternate-form reliability of .95 and a test-retest reliability over 2 weeks of .85 (Lewandowski, Aron, Bassis, & Kunak, 2006). The IOS has also been found to correlate significantly with other popular closeness measures

such as the Relation Closeness Inventory ($r = .22$), the Subjective Closeness Inventory ($r = .34$), and the Sternberg Intimacy Scale ($r = .45$) (Agnew, Loving, Le, & Goodfriend, 2004).

Perceived heredity was measured by a single item, namely, "To what extent do you believe that your family member's mental illness is genetically determined?" This item was scored on a 5-point scale, ranging from 1 (not at all) to 5 (very much). A higher score was considered indicative of greater perceived heredity.

Demographic variables including age, sex, educational attainment, marital status, ethnicity, and religious orientation were also assessed, as was the type of family relationship between participants and their family member with a mental illness (i.e., mother, father, brother, sister, son, daughter, spouse, uncle, aunt, cousin, grandparent, or in-law).

Results

First, descriptive statistics for the various categories of mental illness were generated. The most frequently reported mental illness among family members was depression 44.0% ($n = 232$). ADHD by 13.5% ($n = 71$), personality disorder by 12.0% ($n = 63$), schizophrenia or psychotic disorder by 9.3% ($n = 49$), addiction by 8.3% ($n = 44$), and eating disorder by 5.5% ($n = 29$). An additional 6.8% ($n = 36$) indicated that their family member had a mental illness other than the abovementioned disorders. Note that participants were allowed to select more than one mental disorder. As such, the sum of the percentages exceeds 100%.

Next, we compared our participants' scores on psychological distress (MHI) and perceived closeness (IOS) to scores of samples in earlier studies. When comparing scores on the MHI, for which no clinical cut-off scores have been established, we first compared our sample's scores to normative data collected from the general population by Manne, Ostroff, Fox, Grana, and Winkel (2009) and by Stewart, Sherbourne, and Hays (1992). We compared mean scores with a t test and found the mean in our sample ($M = 50.30$, $SD = 14.72$) to be significantly higher than the normative mean ($M = 23.00$, $SD = 19.20$) in the general population, $t(526) = 13.02$, $p < .001$. We then, in accordance with prior studies suggesting that scores with a standard deviation greater than 1.5 above the normative mean should be used as a clinical cut-off for psychological distress (Norton et al., 2004), categorized participants' scores as low (< 0.5 SD above the normative mean), moderate (0.5 - 1.49 SD above the normative mean), and high (> 1.5 SD above the normative mean), and found that 12% of our sample had scores indicating low psychological distress, 46% had scores suggesting moderate psychological distress, and 42% percent had scores indicating high levels of psychological distress. The percentage of participants with high levels of psychological distress was significantly higher than that of the general population. Similarly, we compared our sample's scores on the IOS to normative data derived from a study conducted by Aron et al. (1992), in which undergraduate students in the United States were asked to describe their relationship with their closest other. We compared mean scores in our sample ($M = 3.86$, $SD = 2.11$) to those of Aron et al.'s sample ($M = 4.74$, $SD = 1.48$), while acknowledging that the samples may be qualitatively different, and found perceived closeness to be significantly lower in our sample, $t(526) = 9.54$, $p < .001$.

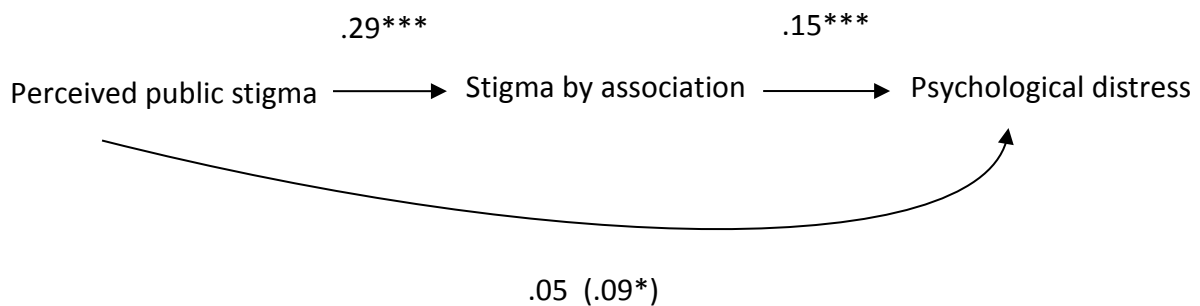
We subsequently examined the bivariate relationships between the primary variables in our study and found perceived public stigma to correlate positively with SBA, $r = .29, p < .001$, and psychological distress, $r = .09, p < .05$, and correlate negatively with perceived closeness, $r = -.10, p < .05$. SBA correlated positively with psychological distress, $r = .15, p < .001$ and negatively with perceived closeness, $r = -.16, p < .001$. These correlations, along with the means and standard deviations for the primary study variables, are presented in Table 2. Regression analyses, in which we controlled for demographic variables, showed similar results.

Table 2 Means, standard deviations, and intercorrelations for main study variables

Variable	<i>M</i>	<i>SD</i>	1	2	3	4
1. Perceived public stigma	3.51	.48	--	.29***	.09*	-.10*
2. Stigma by association		1.93	1.06	--	.15***	-.16***
3. Psychological distress		2.79	.82		--	.06
4. Perceived closeness	4.00	.21				--

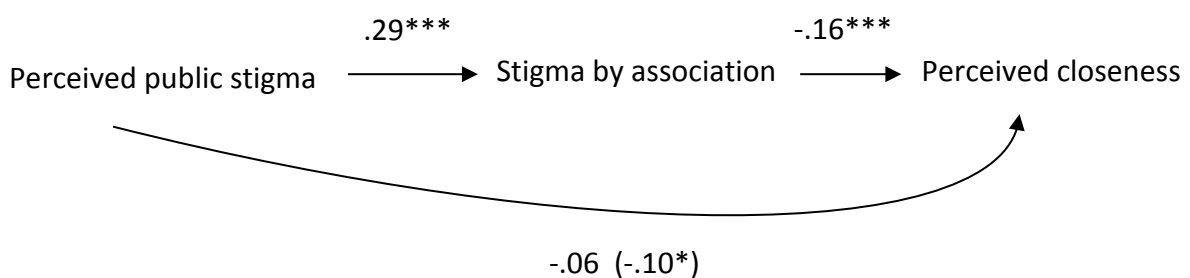
* $p < .05$, ** $p < .01$, *** $p < .001$

Next, we conducted mediation analyses in accordance with Baron and Kenny (1986). We found SBA to fully mediate the relationship between perceived public stigma and psychological distress, $z = 3.02, SE = .02, p < .01$ (see Figure 1). SBA also fully mediated the relationship between perceived public stigma and perceived closeness, $z = -3.31, SE = .06, p < .001$ (see Figure 2), thus suggesting that, as perceived public stigma increases, so does SBA, but that experiences of SBA are more proximally related to psychological distress and closeness.



* $p < .05$, ** $p < .01$, *** $p < .001$

Figure 1. Mediation analyses whereby SBA mediates the relationship between perceived public stigma and psychological distress



* $p < .05$, ** $p < .01$, *** $p < .001$

Figure 2. Mediation analyses whereby SBA mediates the relationship between perceived public stigma and perceived closeness

Following the mediation analyses, we examined, via correlation and regression analyses, the relationship between perceived heredity and the other study variables. Correlation analyses showed perceived heredity to correlate positively to perceived public stigma, $r = .12$, $p < .01$, and psychological distress, $r = .18$, $p < .001$, but no significant relationship to SBA was found. Similar findings were yielded in regression analyses. Perceived heredity was associated with perceived public stigma, $F(1, 525) = 7.49$, $\beta = .12$, $p < .01$, and psychological distress, $F(1, 525) = 17.61$, $\beta = .18$, $p < .001$, but not with SBA.

Lastly, we investigated how the family relationship between the participant and his or her relative with a mental illness related to the other study variables. To do this, we dichotomized the sample into immediate family members of PWMI (parent, sibling, or child; $n = 290$) and extended family members of PWMI (not a parent, sibling, or child; $n = 237$). We then ran one-way analyses of variance to test for differences in SBA, psychological distress, and perceived closeness, and found that only perceived closeness differed significantly across immediate ($M = 4.11$, $SD = 2.04$) and extended family ($M = 3.57$, $SD = 2.17$), $F(1, 525) = 8.91$, $p < .01$, $\eta^2 = .02$. Next, we explored whether the type of family relationship moderated the relationships between SBA and psychological distress and between SBA and perceived closeness. In both analyses, we first entered the independent (SBA) and moderating (type of family relationship) variables (Step 1), then entered these variables into a regression equation (Step 2), and, lastly, we added an interaction term representing the product of SBA and the type of family relationship to the analyses (Step 3). We found no significant moderating effect in the psychological distress analyses, but we did find a significant moderating effect in the perceived closeness analyses, $F(1, 525) = 7.13$, $p < .01$, and we found the interaction between SBA and the type of family relationship to be significant, $\beta = .25$, $p < .01$. Simple slopes analyses were then conducted to further investigate this significant interaction (Aiken & West, 1991). These analyses showed that when the family relationship was immediate, SBA correlated negatively to perceived closeness, $\beta = .27$, $p < .001$. However, when the relationship was extended, SBA did not correlate significantly to perceived closeness, $\beta = .05$, $p < .46$. We followed this with linear regression analyses to determine which specific relationships were significant in the association between SBA and perceived closeness; we found that being a parent, $F(1, 109) = 5.15$, $\beta = .21$, $p < .05$, a sibling, $F(1, 86) = 4.47$, $\beta = .22$, $p < .05$, or a child, $F(1, 89) = 7.15$, $\beta = .27$, $p < .01$, of someone with a mental illness is significant. Similar linear regression analyses were also conducted for association between SBA and psychological distress. They showed that being a parent, $F(1, 109) = 4.37$, $\beta = .20$, $p < .05$, or child, $F(1, 89) = 4.09$, $\beta = .21$, $p < .05$, of someone with a mental illness is significant.

Discussion

This study is, to our knowledge, the first to examine the relationships between the perceived public stigma of mental illness, SBA, psychological distress, the perceived closeness to one's family member with mental illness, the perceived heredity of mental illness, and the role of family relationship in a large sample of family members of PWMI. Our results show that the perceived public stigma of mental illness stigma correlates positively to experiencing SBA. This supports the notion that SBA is, at least in part, derived from an awareness of the general societal reactions to a stigma. Other research has shown that internalized stigma, often called self-stigma, also correlates with perceived

public stigma (Bathje & Pryor, 2011; Vogel, Wade, & Hackler, 2007). The results also show SBA to correlate positively to psychological distress and negatively to perceived closeness. This supports the contention that SBA may motivate family members of PWMI to psychologically distance themselves from a relative with a mental illness, perhaps in an effort to detach oneself from the stigma carried by their family member. This is in line with studies that have examined the experiences of people whose family members have serious mental illnesses (Östman & Kjellin, 2002). At the same time, it is important to recognize that psychological distress and perceived closeness within families of PWMI are complex processes. In fact, as previously outlined by Schene (1990), the lives and social relationships of family members of PWMI can be substantially disrupted or diminished as a result of providing intensive care to a family member with mental illness or because of economic or practical burdens that result from having a relative with mental illness. This may, in part, explain why the participants in our study experienced higher levels of psychological distress and diminished perceived closeness than comparison samples derived from the general population. Another potential explanation is that family members of PWMI are more sensitive to negative experiences in their social environment, including SBA.

We also found SBA to mediate the relationships between perceived public stigma and psychological distress and between perceived public stigma and perceived closeness. This may imply that the psychological impact of SBA on family members is not solely a reaction to the stigma itself, but also a reaction to being connected to someone with the stigma of mental illness. It also supports the idea that SBA is related to, but to some extent distinct from, family members' sense of public stigma.

Our finding that the perceived heredity of mental illness is associated with both perceived public stigma and psychological distress supports the work of Phelan et al. (2002), who found that people who thought that mental illness was attributable to genes were less likely to think mental illness could be improved with appropriate help. In their study, they concluded that the "stickiness" of a mental illness label could be exacerbated by a genetic attribution. In our study, the perceived heredity of mental illness was not related to SBA, but was, nonetheless, associated with psychological distress. This seems to suggest that when mental illness is considered genetically determined, uncertainty about one's health may ensue and concerns regarding latent mental illness may result. We believe that being confronted with a family members' mental illness and stigma may stimulate fear and uncertainty (Hoop, 2008), which, in turn, may contribute to psychological distress. An alternative explanation is that family members of PWMI who believe their family member's mental illness is hereditary find that their family member is neither responsible nor blameworthy for his or her mental illness (Hoop, 2008). This could not only make family members of PWMI more sensitive to public stigma, but could also make them identify public stigma as a social injustice (Corrigan, Watson, Byrne, & Davis, 2005; Johnstone, 2001), which, in turn, might be associated with higher levels of distress.

We also found that immediate family members (i.e., parents, siblings, and children of PWMI) who reported experiences of SBA had lower levels of perceived closeness than extended family members who reported experiences of SBA. This could be because immediate family members, who are often directly and on a day-to-day basis confronted with their family members' mental illness, the corresponding stigma, and its consequences, seek to distance themselves from their family members' stigma, traits, and abilities. They may even conceal their relationship to their family member with a mental illness to avoid SBA. This too is in accordance with work conducted by Phelan et al. (1998), who, in a study of perceptions of, and reactions to, stigma among relatives of psychiatric patients, found that relatives actively forestall avoidance by concealing their relative's mental illness from others. In addition, in Phelan et al.'s study, parents and children of PWMI who reported experiences of SBA also had higher levels of psychological distress than other family

members. In earlier studies, psychological distress and burden have been found to be greater when patient contact is extensive or when patients live with their families (Burke, 2003; Robinson, Rodgers, & Butterworth, 2008). Another characteristic of family relationships that may contribute to psychological distress is the inevitable responsibility (parents) and dependency (children) of the actors within these relationships. Possibly, psychological distress in parents and children of PWMI is the result of feelings of loss, sadness, the frustration caused by changing relationships and/or grief for the loss of person's former personality or previous family lifestyle (Shah, Wadoo, & Latoo, 2010).

Study Strengths and Limitations

Our study has strengths and limitations. Our primary strength is our large representative sample that allowed for the examination of SBA and other related constructs across a broad spectrum of mental illnesses. The cross-sectional nature of our data is, however, a limitation because no conclusions about causality can be drawn. We suggest that future research adopt a longitudinal design. Our reliance on self-reported data is also a possible limitation. However, the potential bias that results from self-reported data was minimized insofar as was possible by using previously validated measures and by assuring participants that data would be processed anonymously. Further, it is possible that the external validity of the study was compromised by our use of an Internet panel. Using an Internet panel may have led to particularly motivated individuals participating more than less motivated individuals. Additionally, because participants were selected from a pool of family members of PWMI who had received treatment, the findings can only be generalized to families of PWMI who have received treatment. As such, it is possible that the participants in our study had previously been offered support by mental health institutions, social workers, and/or advocacy groups, thus enabling them to better cope with public stigma and SBA. If this were the case, SBA may be underestimated in our study. Another possible limitation is the fact that we did not document whether participants lived together with their family member with mental illness. This should be documented in future studies, because it may influence the intensity and impact of the interactions between PWMI and their family members. Future research should also investigate SBA qualitatively such that the various relationships and the context to which SBA is experienced can be explicated and given context. Additionally, we recommend linking data on perceived stigma among PWMI to data on SBA among their family members.

The findings of our study have implications for both practice and theory. Our finding that the perceived heredity of mental illnesses is positively associated with perceived public stigma and psychological distress suggests that presumed heredity of mental illness may negatively impact not only PWMI but also their families' members. Our findings also point to the need for education about the degree to which a family member's mental illness is hereditary and the potential impact this may have on one's own mental health. In thinking about these associations, the whole family should be considered (Phelan et al., 2002). Information on recognizing mental health problems and local sources of treatment and support should be made readily available to family members of PWMI and attention should be paid to the needs of family members of PWMI as caregivers. More specifically, families need support, contact, education, understanding, empathy, and respite when exhausted as a result of caregiving (Robinson et al., 2008; Corrigan & Miller, 2004). Health care professionals can play an important role in helping family members of PWMI enhance existing coping skills. They can also facilitate the development of new ones (Shah et al., 2010). Additionally, we suggest that health care professionals involve family members of PWMI in their treatment and encourage family members of PWMI to participate in psychoeducation because this may reduce perceptions of SBA and lessen fears of genetic contamination. We also recommend, given our finding that the type of family relationship influences the association between SBA and perceived closeness, that social support provision within immediate families of PWMI be promoted. In fact, we recommend

openness about family members' mental illness within the family and selective disclosure to others because this likely stimulates social support provision and lessens stigmatizing responses (Bos, Kanner, Muris, Jansen, & Mayer, 2009).

In terms of theory, our findings contribute to the literature on mental illness stigma and, in particular, SBA among family members of PWMI. Bos, Pryor, Reeder, and Stutterheim (2013) have argued that empirical research on the interrelatedness of stigma manifestations is essential. Our study demonstrates that stigma by association mediates the relationship between perceived public stigma and psychological distress among family members of PWMI. Our findings also contribute substantially to the debate on the impact of thinking that mental illness is hereditary. They support the contention that perceived heredity and type of family relationship are linked to perceived public stigma, SBA, and psychological well-being.

Conclusion

This study has investigated and thereby contributed to our understanding of the relationships between perceived public stigma, SBA, psychological distress, and perceived closeness. It has also added to the current literature by demonstrating that both the perceived heredity of mental illnesses and the type of family relationship are related to perceptions of stigma, SBA, psychological distress, and perceived closeness.

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